100
Initiatives of Citizen Science
Solutions Mapping
Third edition 2023
### Definition and glossary

**Citizen Science Project**

A collective and open scientific research approach, characterized by the participation of individuals who may not necessarily have affiliations with academic or research institutions, but who are interested in a specific research topic that helps build scientific knowledge, often in collaboration with science professionals.

<table>
<thead>
<tr>
<th><strong>Description of citizen participation</strong></th>
<th><strong>Type of citizen science project</strong></th>
<th><strong>Geographic scope</strong></th>
</tr>
</thead>
</table>
| It includes the different activities of the research process that are carried out by the citizens who take part in the initiative. | It refers to the type of project based on the degree of citizen participation. The variants identified are exclusively the following:  
  - Contributory project: It is designed by members of the scientific community, and citizens participate in data collection.  
  - Collaborative project: Citizens participate in data collection and analysis.  
  - Co-created project: Citizens participate in all stages of the scientific process. | It refers to towns/provinces/countries where the initiative was implemented. |
| **Stakeholders involved** | **Project development members** | **Time frame** |
| Academic, scientific, and/or civil society organizations that promoted or are currently promoting the project and are part of the initiative. | **Number of participants** | It indicates both the start date of the initiative and its end date (if applicable), in the following format: mm/dd/yyyy. |
| **Status** | **Frequency of project execution** | **Scope of the initiative** |
| It indicates the initiative’s execution status. The variants identified are exclusively the following:  
  - Under design  
  - In progress  
  - Finished | It specifies the frequency with which the initiative is carried out. The variants identified are exclusively the following:  
  - One-time only  
  - Seasonal (by time of year)  
  - According to the demands or approaches to the community/communities.  
  - Uninterruptedly  
  - Other/s | It refers to the territory where the initiative is implemented. The variants identified are exclusively the following:  
  - Local (city, province)  
  - National (two or more provinces)  
  - International (two or more countries) |
| **Scope of the initiative** | **Participation period** | **Action/s involving citizen participation** |
| It refers to the territory where the initiative is implemented. The variants identified are exclusively the following:  
  - Local (city, province)  
  - National (two or more provinces)  
  - International (two or more countries) | It indicates the period required for citizen participation, which can be days, weeks, or months. | It refers to the list of action/s involving citizen participation. The variants identified are non-exclusively the following:  
  - Problem definition  
  - Data collection  
  - Data analysis  
  - Phenomenon monitoring  
  - Solution planning  
  - Solution deployment  
  - Across the project  
  - Other/s |
| **Frequency of project execution** | **Type of citizen participation** | **Recruitment methods** |
| It specifies the frequency with which the initiative is carried out. The variants identified are exclusively the following:  
  - One-time only  
  - Seasonal (by time of year)  
  - According to the demands or approaches to the community/communities.  
  - Uninterruptedly  
  - Other/s | It refers to the different activities of the research process that are carried out by the citizens who take part in the initiative.  
  - Data collection and analysis. | It refers to the means used and the types of calls organized. For example: social media, meetings, and workshops, among other invitation and promotion means. |
| **Participation period** | **Geographic scope** | **Project development members** |
| It indicates the period required for citizen participation, which can be days, weeks, or months. | It refers to towns/provinces/countries where the initiative was implemented. | It refers to the people who developed the initiative. The variants identified are exclusively the following:  
  - The initiative was developed with the collaboration of both members of the scientific community and participants without formal training.  
  - The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.  
  - Entirely developed by participants with formal scientific training.  
  - Entirely developed by participants without formal scientific training.  
  - Other/s |

### Other relevant clarifications

- **Replicability**: It refers to the replication of the initiative in another context and/or geographic scope.
- **Scalability**: It refers to the shown ability of the initiative to increase its capacity, either by expanding the number of participants and/or the tools required, among other variables.
- **Open data**: It refers to the availability and open, free, and free-of-charge access to the primary research data generated in the initiative for its use, distribution, and reuse by any person.
- **Feedback**: It refers to updates on the project’s progress and results shared with the participating citizens. It can be through email, direct contact, newsletters, social media, or other means.
- **Linkage with government**: It refers to cooperation and/or a joint action between the initiative and public sector entities, at any level. It excludes the scientific or academic institutions involved in the research activities.
- **Institutional funds**: It refers to the initiative’s type of financing. For example: the project’s funds, internal cooperation, funds of national institutions, etc.
- **Awards/distinctions**: It includes awards and distinctions in local or international competitions or contests.
- **N/A (Not Applicable)**: is used in each form as an answer and express indication in the fields that require information that is not relevant, not applicable, or not valid for that initiative. A dash (-) is used in each form as an answer and express indication in the fields where no information has been obtained. Each form includes the disciplines involved in each initiative, based on the table proposed by the Organisation for Economic Co-operation and Development (OECD), as well as the Sustainable Development Goals (SDGs) addressed.
Objectives

Overall goal
Determine the existence and degree of anthropic impact in a remaining area of the Atlantic Forest through a collaborative biodiversity record in two differently managed areas.

Specific goals
• Create a baseline of biodiversity data for selected taxa of flora, fauna, fungi, and soil microbiology from the study areas.
• Describe and compare the observed diversity patterns.
• Develop a monitoring plan together with the Mbya Guarani community.

Description of citizen participation
This project works with members of the Mbya Guarani community, traditional inhabitants of the Atlantic Forest with extensive knowledge and relationship with the environment. In participatory workshops between the local and scientific communities, worldviews and methodologies are exchanged between both cultures. In addition, biodiversity sampling is designed and implemented in two environments with varying degrees of human intervention. The sampling will be repeated four times a year by teams with professional and non-professional members. Observations will also be discussed from academic and traditional perspectives and will contribute to the creation of an integrated biological and cultural database. The results and discussions will help participants jointly devise a monitoring plan that the community can continue after the project is finished.

Type of citizen science project
Collaborative project: Citizens participate in data collection and analysis.

Participating parties:
• Instituto Misionero de Biodiversidad (IMiBio, by its Spanish acronym) [Institute of Biodiversity of Misiones]
• Yryapú village of the Mbya Guarani community

Status: In progress.
Time frame. 11/1/2023-N/A.
Frequency of project execution. Seasonal.
Participation period. Two weeks per quarter.
Scope of the initiative. Local (city, province).
Geographic scope. Puerto Iguazú, province of Misiones, Argentina.

Project development members. Entirely developed by participants with formal scientific training.

Number of participants. From 1 to 50.

Action/s involving citizen participation
• In-person meetings in the village

Technological device/tool required.
• Binoculars
• Handheld GPS
• Desktop computer
• Outdoor flashlight
• UV flashlight
• Macro lens for Nikon camera
• Mobile phone
• Camera trap

Recruitment methods. In-person meetings in the village.

Replicability. -

Scalability. -

Open access to data. Biodiversity data will be available on the IMiBio page.

Feedback. -

Linkage with state agency/government. The Instituto Misionero de Biodiversidad (IMiBio) is an autonomous and decentralized public legal entity in the province of Misiones.

Institutional funds.
• IMiBio
• Subsidio de Promoción a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Promote Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation

Awards/distinctions. -

Comments. The initiative’s most valuable characteristic is the chance for cultural exchange with the original inhabitants of the Misiones jungle.

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences
NATURAL AND EXACT SCIENCES / Biology
HUMANITIES / Other Humanities

Leaders.
• Emanuel M. Grassi, Instituto Misionero de Biodiversidad (IMiBio), emanuelgrassi@imibio.misiones.gov.ar
• Alejandro Saint Esteven, IMiBio, asaintesteven@gmail.com

Contact information.
E-mail: emagrassi@outlook.com, asaintesteven@gmail.com
Adopto un Cuerpo de Agua como mi Mascota [Adopting a Waterbody as my Pet]

Educational linkage, interinstitutional integration, environmental monitoring, and establishing ties with the community

Objectives

Overall goal: Enhance the appearance and quality of the waterbodies which are significant for each educational community on the basis of responsible stewardship. For this purpose, the project aims to improve the appearance and quality of waterbodies by adopting them responsibly, taking care of its watershed, monitoring the quantity and quality of runoff, cleaning its margins, re-educating neighbors and the educational community and raising their awareness of this issue.

Specific goals:

• Establish ties at every educational level (from the earliest level to postgraduate courses) between public and private educational establishments.
• Draw analogies between responsible pet care and surface waterbody stewardship.
• Identify waterbodies with a high impact on different educational communities.
• Propose that the watershed of these surface waterbodies be considered a territorial unit to perform responsible water resource stewardship and management.
• Perform surveys, among other field activities, in the waterbody adopted by applying simple and advanced experimental techniques developed by the research team.
• Together with the community, co-create knowledge to be shared with the rest of society and the agencies responsible for water resource management.

Description of citizen participation

The following activities are carried out by the students, the teaching staff, and the project work team:

• Definition of comparisons between properly caring for pets and properly caring for surface bodies of water.
• Determining the bodies of water that are significant to the community and the boundaries of their contribution.
• Analysis of the temporal evolution of bodies of water using cutting-edge technology and historical descriptions of the community that interacts with this body of water.
• Participating in fieldwork (surveys, monitoring, and others).
• Transfer of findings to organizations in charge of managing water resources.

Type of citizen science project

Co-created project: Citizens participate in all stages of the scientific process.

Participating parties:

• Faculty of Exact, Physical and Natural Sciences (FCEyN, in Spanish)/National University of Córdoba (UNC, in Spanish).
• National Scientific and Technical Research Council (CONICET, in Spanish) of Argentina.

Status: In progress.

Time frame: 01/03/2013 – N/A

Frequency of project execution: Based on demand or community outreach.

Participation period: On a sustained basis.

Scope of the initiative: Local (city, province).

Geographic scope: The project originated in Villa Carlos Paz, province of Córdoba. It is being implemented in different regions of the province.

Project development members: It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants: From 101 to 500.


Technological device/tool required:

• Basin model
• Multi-parameter water quality meter (provided by the university and approved by said directorate).
• Photographic cameras
• River gauges and eco-friendly rain gauges (made of recyclable material)
• Chronometer
• Tracer (pieces of wood)
• Multi-parameter water quality meter (provided by the university and approved by said directorate)
• Rain gauges and eco-friendly rain gauges (made of recyclable material)
• Low-cost automatic weather stations for commercial application
• Photographic cameras
• River gauges and eco-friendly rain gauges (made of recyclable material)
• Low-cost automatic weather stations for commercial application

Recruitment methods: Educational establishments joined the initiative as a result of the interest of both students and the teaching staff. Agreement has been signed with the Directorate of Technical Schools of the Province of Córdoba for this project to become part of the curricula recommended by said directorate.

Replicability: Action is being taken towards extending the activities performed with Instituto Dante Alighieri to other schools, both public and private, including all educational levels, from the earliest level to the third year of high school orientation cycle.

Scalability: New educational communities join the initiative by adopting other waterbodies, such as streams, rivers, lakes and wetlands.

Open access to data: The knowledge gained through crowdsourcing is transferred to the agencies responsible for water resource management. Students also spread knowledge among their families, friends and acquaintances, and consequently ensure that this is an extensionist project.

Feedback: Students, educators and the residents of educational communities create a set of guidelines which are incorporated into the new stages of the project.

Linkage with state agency/government:

• Ministry of Public Services of the Province of Córdoba.
• Ministry of Education of the Province of Córdoba.
• Provincial Administration of Water Resources of Córdoba.
• Instituto Nacional del Agua, subgerencia de la Región Semiárida (CIRSA).
• Municipality of Villa Carlos Paz, Córdoba province.
• Municipality of Río Ceballitos, Córdoba province.
• Ministry of Laborde, Córdoba province.

The data generated are transferred directly to the government agencies in charge of monitoring the water resources of the province of Córdoba. A Bill proposing that one of the adopted waterbodies be named “Huahuas Mayún” (Children’s Stream) was passed by the Legislature of the province of Córdoba (law No. 10350). The name was proposed by educational communities that develop their activities in regions drained by this stream.

Institutional funds:

• Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation
• Extension secretariats of the universities responsible for this initiative.
• Ministry of Public Services of the Province of Córdoba.
• Provincial Administration of Water Resources of Córdoba.

Linkage with state agency/government:

• Ministry of Public Services of the Province of Córdoba.
• Ministry of Education of the Province of Córdoba.
• Provincial Administration of Water Resources of Córdoba.
• Instituto Nacional del Agua, subgerencia de la Región Semiárida (CIRSA).
• Municipality of Villa Carlos Paz, Córdoba province.
• Municipality of Río Ceballitos, Córdoba province.
• Ministry of Laborde, Córdoba province.

The data generated are transferred directly to the government agencies in charge of monitoring the water resources of the province of Córdoba. A Bill proposing that one of the adopted waterbodies be named “Huahuas Mayún” (Children’s Stream) was passed by the Legislature of the province of Córdoba (law No. 10350). The name was proposed by educational communities that develop their activities in regions drained by this stream.

Institutional funds:

• Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation
• Extension secretariats of the universities responsible for this initiative.
• Ministry of Public Services of the Province of Córdoba.
• Provincial Administration of Water Resources of Córdoba.

Linkage with state agency/government:

• Ministry of Public Services of the Province of Córdoba.
• Ministry of Education of the Province of Córdoba.
• Provincial Administration of Water Resources of Córdoba.
• Instituto Nacional del Agua, subgerencia de la Región Semiárida (CIRSA).
• Municipality of Villa Carlos Paz, Córdoba province.
• Municipality of Río Ceballitos, Córdoba province.
• Ministry of Laborde, Córdoba province.

The data generated are transferred directly to the government agencies in charge of monitoring the water resources of the province of Córdoba. A Bill proposing that one of the adopted waterbodies be named “Huahuas Mayún” (Children’s Stream) was passed by the Legislature of the province of Córdoba (law No. 10350). The name was proposed by educational communities that develop their activities in regions drained by this stream.
Objectives
• Ascertain the population status of five species of large forest eagles present in the province of Misiones (harpy eagle, ornate hawk-eagle, black hawk-eagle, Philippine eagle, and black-and-white hawk-eagle) and contribute to their long-term conservation through participatory and active monitoring.

Description of citizen participation
Citizens actively participate in the collection of data aimed at creating an “information network” that centralizes observations of the species of interest and, especially, their nests. Participating citizens are trained through in-person workshops in areas identified as key to the project. The purpose of these workshops is to inform the people involved about the project and determine new strategies for action or potential conflicts, so these can be addressed. The project encourages citizens to collaborate on monitoring marked specimens and participate in potential ecotourism initiatives associated with these species.

Type of citizen science project
Contributory project: It is designed by members of the scientific community, and citizens participate in data collection.

Participating parties.
• Instituto Misionero de Biodiversidad (IMiBio, by its Spanish acronym) [Institute of Biodiversity of Misiones]
• “Félix de Azara” Natural History Foundation
• Centro de Rescate de Fauna Silvestre GüiráOga [GüiráOga Wildlife Rescue Center]

Status. In progress.
Time frame. 3/1/2022 - N/A.
Frequency of project execution. Uninterruptedly.
Participation period. Sustained over time.
Scope of the initiative. Local (city, province).
Geographic scope. Misiones (Argentina).
Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.
Number of participants. From 1001 onwards.
Action/s involving citizen participation
• Data collection
• Phenomenon monitoring

Technological device/tool required.
• Mobile phones
• Camera
• GPS
• Binoculars
• Drone

Recruitment methods. Through social media, mass media (radio and television), and in-person workshops.
Replicability. Mexico has a similar initiative based on this one.
Scalability. -
Open access to data. -
Feedback. Through social media or direct communication (WhatsApp) and workshops.
Linkage with state agency/government. Government of the province of Misiones.
Institutional funds.
• They have been obtained from the project’s own funding sources
• Funds from the Federal Investment Council (CFI, by its Spanish acronym)

Awards/distinctions. -

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences
NATURAL AND EXACT SCIENCES / Biology

Leaders.
• Emanuel Grassi, Instituto Misionero de Biodiversidad (IMiBio).
• Julián Baigorria, associate researcher - IMiBio.

Contact information.
E-mail: aguilasdemisiones@gmail.com
Website: imibio.misiones.gob.ar/es/ampliar/noticias/el-instituto-misionero-de-biodiversidad-lanza-el-proyecto-aguilas-de-misiones
**Alertamos** [We Alert]

**Environmental monitoring. Meteorology**

**Objectives**

**Overall goal:**
- Advance in the understanding of high-impact weather phenomena associated with deep moist convection and their spatial and temporal distribution in Argentina in order to improve the operational monitoring and forecasting tools available to the National Meteorological Service.

**Specific goals:**
- Implement products derived from remote sensors and numerical models for high-impact weather situations.
- Develop tools for the diagnosis, analysis, and monitoring of severe phenomena associated with convection.
- Develop tools for the immediate forecast of severe phenomena associated with convection.

**Description of citizen participation**

Through the Alertamos mobile app, citizens report, in real time, where they are and what phenomena they observe, such as the sky condition (clear, partly cloudy, cloudy, etc.); the prevailing weather phenomena (drizzle, rain, snow, hail, tornadoes, whirlwinds, electrical activity, etc.); and, if applicable, the impacts of such phenomena on the place where the person is located (flooding, wind damage, reduced visibility, etc.). These reports are very useful for the validation of monitoring and forecasting tools, as well as for the advancement of knowledge of the spatial and temporal distribution of these high-impact weather phenomena in Argentina.

**Type of citizen science project**

**Contributory project:** It is designed by members of the scientific community, and citizens participate in data collection.

**Participating parties.**
- National Scientific and Technical Research Council (CONICET, by its Spanish acronym).
- National Meteorological Service (SMN, by its Spanish acronym).

**Status.** Finished.

**Time frame.** 03/01/2015 - 08/31/2018.

**Frequency of project execution.** Uninterruptedly.

**Number of participants.** From 1001 onwards.

**Recruitment methods.** Social media, workshops, and digital press.

**Open access to data.** No data has been published in open formats.

**Linkage with state agency/government.** National Meteorological Service (SMN) of Argentina.

**Institutional funds.** National Meteorological Service (SMN).

**Awards/distinctions.**

**Comments.** Alertamos was the first official Argentinian app to report surface weather phenomena and the one chosen as a citizen tool for the Alert.Ar project. The collected reports are available upon request by e-mail communication.

**Leaders.**
- Yanina García Skabar, National Meteorological Service (SMN) and National Scientific and Technical Research Council (CONICET)
- Paola Salio, Centro de Investigaciones del Mar y la Atmósfera (CIMA)/CONICET
- Maximiliano Sacco, SMN
- Luciano Vidal, SMN

**Contact information.**
E-mail: yanina@smn.gob.ar; salio@cima.fcen.uba.ar; msacco@smn.gob.ar; lvidal@smn.gob.ar.

**Knowledge areas/disciplines (OECD)**
- NATURAL AND EXACT SCIENCES / Information and Computer Sciences
- NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences
Anticipando la crecida [Anticipating floods]
Community-based strategies for disaster reduction and urban flooding

Objectives
Overall goal
Contribute to disaster risk reduction associated with hydro-meteorological events, through dialogue with terri-
torial stakeholders in order to improve the community early warning system focused on the population.

Specific goals
• Identify hydro-meteorological monitoring and forecasting needs for the sectors involved.
• Improve communication, dissemination and interpretation mechanisms for forecasts and alerts.
• Create a space for permanent joint knowledge building between the academic-scientific sector and the commu-
nity, as a strategy for social ownership of information about hydro-meteorological events in a given territory.

Description of citizen participation
The activities include dialogue and community development of vulnerability and exposure maps describing
how water moves in the territory, either due to the overflowing of rivers and streams, and/or rainfall affecting
the neighborhoods located along the riverbanks.

Prior to the workshop, the scientific-technical sector investigates the issues in each neighborhood to identify
characteristics that help explain the water risks.

During the workshop, the community is asked to transfer all their knowledge about water risks on a map or a
high-resolution photo of their neighborhood. In addition, a tour of the neighborhood is organized in order to
identify possible sites where the rain gauge and the level ruler will be installed in a nearby river or stream easily
accessible so that observations can be recorded at all times. Community leaders send photos of each device at
identifiable moments, which are then used to analyze the information during possible flood events.

Subsequently, in a final stage, the knowledge is consolidated in a single geo-referenced map that is used by the
relevant stakeholders, which are then used to analyze the information during possible flood events.

Type of citizen science project
Co-created project: Citizens participate in all stages of the scientific process.
**Apiarios Centinela** [Sentinel Apiaries]

**Prevalent diseases in honey-producing hives. Epidemiological monitoring and surveillance.**

**Objectives**

**Overall goal:**
- Learn about the incidence and prevalence of the main diseases of interest within the beekeeping community in the province of Santa Fe, in order to contribute to decision-making related to their prevention, control, or eradication.

**Specific goals:**
- Identify sources and routes involved in the transmission of disease etiologic agents.
- Identify at-risk populations that should be monitored or prioritized for disease prevention, control, or eradication actions.
- Identify management and handling practices increasing the likelihood of the transmission of disease etiologic agents related to beekeeping.
- Research the potential emergence of new health issues and predict changes in disease occurrence at the regional level.

**Description of citizen participation**

Honey producers and students from agrotechnical secondary schools take field samples at three different times of the year for the detection of diseases of interest within the beekeeping community (varroosis and nosema). Participants collect samples from bees inside 6 hives using 12 containers (one container for each disease) with alcohol and properly labeled with the name of the apiary and the date of collection. They also complete a form including a brief visual description of the state of the hive (number of frames with bees, larvae, honey, and pollen). In some cases, samples are taken with the assistance of professional researchers. In addition, participants complete two surveys per year to provide information on the acaricides used and time of application, hive mortality, agrochemical application in the fields surrounding the apiary, distribution of nearby apiaries, and annual honey production. Data obtained from both sample analysis and survey responses are entered into Excel spreadsheets for their later evaluation with statistical software by professional researchers. Once a year, after analyzing all the information obtained, the participants collaborate in drafting the final report and elaborating hypotheses on possible answers to the surveyed issues. If possible, apiary management and handling changes are implemented and follow-up is carried out.

**Type of citizen science project**

**Collaborative project:** Citizens participate in data collection and analysis.

**Participating parties.**
- National Scientific and Technical Research Council (CONICET, by its Spanish acronym)
- National Institute of Agricultural Technology (INTA, by its Spanish acronym)
- Escuela de Educación Secundaria Modalidad Técnico Profesional n° 486 “Francisco Nez” (secondary school), Carcará, province of Santa Fe
- Escuela Agrotécnica “Libertador General San Martin” (secondary school), National University of Rosario, Casilda, province of Santa Fe
- Escuela de Agricultura, Ganadería y Granja (secondary school specialized in agriculture and livestock farming) of the National University of the Litoral
- COSAP Ltda. (beekeeping supply cooperative)

**Status.** In progress.

**Time frame.** 2/01/2017 - N/A.

**Frequency of project execution.** Uninterruptedly.

**Program period.** The project includes three one-day monitoring visits per year and virtual or in-person meetings (2 to 3 per year).

**Scope of the initiative.** Local (city, province).

**Geographic scope.** Province of Santa Fe.

**Project development members.** The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

**Number of participants.** From 1 to 50.

**Action/s involving citizen participation.**
- Data collection
- Phenomenon monitoring
- Solution planning
- Solution deployment

**Technological device/tool required.**
- Newly labeled plastic containers with alcohol; for varroosis, a drop of detergent is added.
- Field forms
- Double strainer or sieve with mosquito netting to strain bees (one retains bees and the other one retains varroa mites).

**Recruitment methods.** Direct contact with the target population.

**Replicability.**

**Scalability.** The project started with less than 10 apiaries and, as of early 2023, has 22 per year.

**Feedback.** The results of each monitoring and the annual report are shared with project participants through email or WhatsApp and then made public on INTA’s website.

**Linkage with state agency/government.**

**Institutional funds.**
- Fondo para la Investigación Científica y Tecnológica (FONCYT, by its Spanish acronym) [Fund for Scientific and Technological Research]
- National Agency for the Promotion of Research, Technological Development and Innovation (Agencia I+D+i in Spanish)
- National Institute of Agricultural Technology (INTA)
- Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation

**Awards/distinctions.**

**Contact information.**
- Emanuel Orellano, National Institute of Agricultural Technology
- Adriana Pacini, CONICET
- Agostina Giacobino, National Scientific and Technical Research Council (CONICET)
- Email: giacobino.agostina@inta.gob.ar; pacini.adriana@inta.gob.ar; orellano.emanuel@inta.gob.ar
- Web: inta.gob.ar/documentos/proyecto-apiarios-centinela-aplicacion-de-un-sistema-de-vigilancia-epidemiologica-en-colmenas-de-la-provincia-de-santa-fe

**Knowledge areas/disciplines (OECD)**
- NATURAL AND EXACT SCIENCES / Other Natural and Exact Sciences
- AGRICULTURAL SCIENCES / Dairy and animal production
- AGRICULTURAL SCIENCES / Veterinary Sciences

**Leaders.**
- Agostina Giacobino, National Scientific and Technical Research Council (CONICET)
- Adriana Pacini, CONICET
- Emanuel Orellano, National Institute of Agricultural Technology (INTA)

**Institutional funds.**
- Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]
- Argentine Ministry of Science, Technology, and Innovation

**Public access to data.**

**Comments.**

**Description of citizen participation**

Honey producers and students from agrotechnical secondary schools take field samples at three different times of the year for the detection of diseases of interest within the beekeeping community (varroosis and nosema). Participants collect samples from bees inside 6 hives using 12 containers (one container for each disease) with alcohol and properly labeled with the name of the apiary and the date of collection. They also complete a form including a brief visual description of the state of the hive (number of frames with bees, larvae, honey, and pollen). In some cases, samples are taken with the assistance of professional researchers. In addition, participants complete two surveys per year to provide information on the acaricides used and time of application, hive mortality, agrochemical application in the fields surrounding the apiary, distribution of nearby apiaries, and annual honey production. Data obtained from both sample analysis and survey responses are entered into Excel spreadsheets for their later evaluation with statistical software by professional researchers. Once a year, after analyzing all the information obtained, the participants collaborate in drafting the final report and elaborating hypotheses on possible answers to the surveyed issues. If possible, apiary management and handling changes are implemented and follow-up is carried out.

**Type of citizen science project**

**Collaborative project:** Citizens participate in data collection and analysis.
Objectives

Overall goal: Study freshwater environments (rivers, lakes, lagoons and estuaries) both for scientific and educational purposes.

Specific goals: The scientific purpose is to analyze the condition of inland water ecosystems using citizen participation strategies. Particularly, the project aims to: identify the environmental factors that positively and negatively impact freshwater ecosystems; generate new tools for monitoring such ecosystems; and calibrate existing tools for assessment.

Besides, the educational purpose is to create materials related to the preservation of freshwater ecosystems. To achieve such purpose, the project aims at: drawing up simple manuals for monitoring said ecosystems to be used in educational activities; making available to educational institutions maps showing the condition of courses of freshwater; and educating on scientific reasoning, by directly involving citizen scientists in some or all stages of the scientific method.

Description of citizen participation

Citizen scientists assess habitat condition in aquatic environments by using an app for Android or a website. The information sent is concentrated in the AppEAR database and used to create a real-time map showing aquatic habitat conditions, both of which may be freely accessed.

Also, citizen scientists are able to learn about the aquatic environments present in their communities and educate others using the educational resources generated by themselves. People interaction and active involvement in discussion forums are useful to measure habitat quality in aquatic environments, to learn how to generate educational resources for these ecosystems, and even to improve AppEAR.

Type of citizen science project

Contributory project. It is designed by scientists, and citizens participate in data collection.
ArgentiNat.org
Biodiversity.

Objectives

Overall goal: Learn more about the life cycles, distribution and population dynamics of all species existing in Argentina.

Specific goals:
• Promote the culture of biodiversity observation, recording and dissemination.
• Boost the National Biodiversity Database (BNDB, in Spanish).

Description of citizen participation

Anyone who is interested in the project may participate using the platform or mobile app to:
• Share observations and contribute to the creation of species lists.
• Take part in the identification of their own observations, as well as of other users', together with natural science specialists and enthusiasts.
• Find an interesting project or start their own.
• Plan a massive event where participants try to find as many species as possible.

This platform makes it possible to share recorded observations with other naturalists, and to engage in dialogue with specialists (researchers or enthusiasts).

Type of citizen science project

Collaborative project: Citizens participate in data collection and analysis.

Participating parties.
• Fundación Vida Silvestre Argentina (Argentine Wildlife Foundation) and
• iNaturalist.

Status. In progress.

Time frame. 11/13/2019 – N/A

Frequency of project execution. Uninterruptedly.

Participation period. N/A

Scope of the initiative. International (two or more countries).

Geographic scope. Global, focused on Argentina.

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. Over 1001.

Action/s involving citizen participation
• Data collection.
• Data analysis.
• Phenomenon monitoring.

Technological device/tool required.
• Cell phone.
• Photographic camera.
• Sound recorders.
• Lenses, etc.

Recruitment methods. Through social media, social events, and buy-in from users and other institutional stakeholders.

Repliability. ArgentiNat is the national node of iNaturalist. Projects may be replicated under different conditions within the platform (for instance, a birding project implemented in the province of San Luis can be replicated to create another one for La Pampa). The national web portal helps and boosts other projects at an international level, e.g., those in Chile or Uruguay.

Scalability. By the end of 2020, as compared with the previous year, the community had grown by 75%; the quantity of shared observations had risen by 64%; the new species recorded had gone up by 15%, and the number of participants performing identification tasks had increased by 13%.

Open access to data. Most observations create open data, which are shared with the Global Biodiversity Information Facility (GBIF). The coordinates of certain taxa are hidden to prevent risks. Researchers may request to be entrusted with such data. Openly-licensed images are generated, which may be used by them and other persons.

Feedback. Two annual events are held at which final results are shared. Recently, recognition was granted to users selected by the community and to those who made the greatest contributions.

Linkage with state agency/government. Argentine Museum of Natural Sciences (MACN, in Spanish) – National Scientific and Technical Research Council (CONICET, in Spanish)

Institutional funds.
• National Geographic, with human resources provided by Fundación Vida Silvestre Argentina.
• Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation

Awards/distinctions.

Comments. ArgentiNat is the iNaturalist node for Argentina, the largest citizen science global network with over one million active users worldwide. Although they are not different projects, ArgentiNat is aimed at the local public and customized for local institutions and participants. iNaturalist was developed by the California Academy of Sciences and is supported by National Geographic.

Knowledge areas/disciplines (OECD)
NATURAL SCIENCES / Biological sciences

Project leaders.
Leonel Roget, Fundación Vida Silvestre Argentina.

Contact information.
Email: leonel.roget@vidasilvestre.org.ar
Web: www.argentinat.org

(REDACTED)
Aves rapaces urbanas [Urban birds of prey]
Monitoring populations of birds of prey in cities.

Objectives
• Monitor the identity, species richness, and abundance of individuals of predatory birds present in cities and urban spaces with different characteristics over time.
• Assess the characteristics of cities and urban spaces that could impact the richness and abundance of predatory birds in these environments.

Description of citizen participation
Six specific annual surveys are carried out at simultaneously fixed locations (between 20 and 50) throughout Argentina. Groups of bird watchers (made up of residents near the place with some type of interest in birds) use binoculars, cameras, and telescopes to detect birds. They record observations on-site and then upload them to databases and photo repositories. A continuous survey of occasional sightings is also carried out. These sightings can be uploaded by anyone through a mobile phone application and they also enrich the primary information.

Type of citizen science project
Collaborative project: Citizens participate in data collection and analysis.

Participating parties.
• Aves Argentinas (NGO)
• Fundación Cabureí (foundation)

Status. In progress.

Time frame. 1/17/2021 - N/A.

Frequency of project execution. Seasonal (time of year). General surveys are carried out every two months on Sundays. Additional surveys of occasional sightings are carried out throughout the year and their data enrich the 6 general surveys (these additional surveys are uploaded directly with mobile phones).

Participation period. 2 hours every two months.

Scope of the initiative. National (two or more provinces).

Geographic scope. Argentina.

Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

Number of participants. From 51 to 100.

Action/s involving citizen participation
• Data collection.
• Data analysis.

Technological device/tool required.
• Binoculars and telescopes
• Cameras
• Devices with Internet access

Recruitment methods. Participants are invited through the social media of each Club de Observadores (COA, by its Spanish acronym) [Bird Watchers Club] involved.

Replicability.

Scalability. The initiative originated in the Autonomous City of Buenos Aires, and then more and more cities of the provinces of Argentina began to participate.

Open access to data. Information is freely accessible at: www.coarecs.com.ar/relevamientoderapaces.

Feedback. The complete information collected and the data analyzes are made available to all participants and the general public through the website (every two months, as soon as the surveys are finished). Specific comments are discussed continuously (throughout the year) with the participants of the WhatsApp group (the group was created from the first survey and new participants are added). Exceptional sightings with photos are received by email and also uploaded to photo repositories.

Linkage with state agency/government.
Institutional funds. They have been obtained from the project’s own funding sources.
Awards/distinctions.

Comments. The initiative addresses working on environmental education and demystifying this group of birds.

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences
NATURAL AND EXACT SCIENCES / Ecology
NATURAL AND EXACT SCIENCES / Other Natural and Exact Sciences

Project leaders.
• Guillermo Ivan Spajic, Aves Argentinas

Contact information.
Email: guilleivanramone@gmail.com
Website: www.coarecs.com.ar/relevamientoderapaces
Bajemos los decibeles [Let’s lower the noise]
Detection of noisy environments.

Objectives
Overall goal:
- Articulate an extension practice that strengthens open collaboration in the study of everyday phenomena and research, among researchers and citizens, especially youth.

Specific goals:
- Promote a scientific and collaborative analysis of the environment of activities such as teaching and health to identify noise pollution and the extent to which other activities are affected.
- Develop the ability to make the results obtained through research available to the community.
- Encourage the interpretation of the data collected and generate the appropriate space for discussion and exchange of ideas among different actors.
- Train for the presentation of reports to public agencies in charge of environmental decision-making and impact on society, such as municipal and provincial governments.
- Promote collaboration with other organizations, networks, and associations to monitor and care for the Tucumán environment.
- Make an approach to the cultural identity of the region from a sound perspective, that is, to identify those sounds that are typical of the region (from birdsong to business noises), in order to integrate sound to the urbanistic view of an area.

Description of citizen participation
This is a proposal and part of it is in process, so some steps may change depending on previous studies.

Measurements:
- First, students from primary and secondary schools discuss, analyze, and conduct a noise pollution measurement protocol organized by researchers from the National University of Tucumán. The measurements will be conducted with cell phone applications suitable for this purpose that allow measuring sound levels and geolocation. Once the measurement is generated, the data is uploaded to a map that displays the data on a web page.
- The information is completed with a survey of the population of the study area (problematic areas from the point of view of noise in the microcenter of Tucumán, which will allow a first approach to the design) invited to participate through a web page. With the data obtained, researchers from the National University of Tucumán (UNT in Spanish), who participate in different research projects.
- Board of Experimental Schools from the University.
- Fundación Cultura para Todos (Culture for All Foundation).
- Status. Under design.
- Time frame. 07/03/2022 - N/A
- Frequency of project execution. Don’t know/No answer.
- Participation period. Sustained over time.
- Geographic scope. Local (city, province).
- Project development members. It has been developed with the collaboration of both scientists and participants without formal training.
- Number of participants. From 1 to 50.

Participants
- Research teachers at the National University of Tucumán (UNT in Spanish), who participate in different research projects.
- University students from Exact Sciences, Arts, and Cinema disciplines and high school students from pre-university schools of the UNT.
- Board of Experimental Schools from the University.

Recruitment methods:
For the purposes of design participation, UNT institutional communication channels and facilities will be used for meetings. When the project is ongoing, colleges and schools will be used as convening venues.

Replicability:
- Scalability:

Open access to data:
The maps generated with the data inputs will be open and interactive, allowing access to audio files and geo-referencing data. Each of the maps will contain different information for each analysis zone.

Feedback:
Several feedback meetings will be held where participants will be able to express their doubts, suggestions, and practical solutions.

Institutional funds: The project was approved by the UNT Extension Secretariat, without budget. It is currently seeking subsidies from various sources.

Contact information:
Email: walter.diaz@fbsf.unt.edu.ar
**Objectives**

Evidence the potential of whale watching boats for whale research, and of citizen science as a form of crowdsourcing for studies on whale habitat and conservation.

**Description of citizen participation**

Photographs taken by professional photographers from whale watching boats are added to a catalog of identified southern right whale. The photographs allow for the identification of the specimens present in the waters surrounding Puerto Pirámides between June and December, and for recording more information on the same whale while in the Nuevo Golfo area. This photographic evidence supplements that obtained during the annual aerial survey conducted by ICB and Ocean Alliance along the coast of Peninsula Valdés in September, during the peak season of whale population density. The photographs provided by AGB document with sufficient detail the calves’ pattern of callosities, hardly visible from a certain height. This allows for their identification in the year of their birth and makes it possible to know their age and the family they belong to.

**Type of citizen science project**

Contributory project: It is designed by scientists, and citizens participate in data collection.

---

**Photo-identification of individual whales**

**Ballena Franca Austral** [Southern Right Whale]

Photo: Bonafide whale with its calf on El Doradillo beach (Golfo Nuevo, Puerto Madryn) Image obtained in September 2018 through a drone.

Credit: Frederik Christiansen

---

**Participating parties.**

Asociación de Guías Balleneros de Puerto Pirámides (Association of Whale Watching Tour Guides of Puerto Pirámides) (AGB, in Spanish) in agreement with Instituto de Conservación de Ballenas (Whale Conservation Institute) (ICB, in Spanish).

**Status.** In progress.

**Frequency of project execution.** Uninterruptedly.

**Participation period.** On a sustained basis, during the whale watching season, from June to December.

**Scope of the initiative.** Local (city, province).

**Geographic scope.** Península Valdés, province of Chubut.

**Project development members.** It has been developed with the collaboration of both scientists and participants without formal training.

**Number of participants.** From 1 to 50.

**Action/s involving citizen participation**

- Data collection.
- Dissemination of findings by interacting with whale watching tourists.

**Technological device/tool required.**

- Professional cameras: to take photographs of whales.
- Computers used by ICB: to analyze the photographs submitted and to identify individual whales.
- Three special computer programs: two of them to photo-identify right whales. And an artificial intelligence algorithm developed with Vates’ company to speed up the process by sorting the photographs received and identifying those that include whales.

**Recruitment methods.** At an annual exchange and updating meeting held at AGB headquarters.

**Replicability.** It is unknown whether an identical initiative has been implemented in another setting, but there are very similar ones.

**Scalability.** The number of researchers actively working on this project has upscaled from one to six researchers at the time. Two volunteers have recently been trained and incorporated.

**Open access to data.** Project findings are made available in scientific publications and pieces of popular science.

**Feedback.** Findings are reported and guidelines for image capture and photo curatorship are proposed at the annual exchange and updating meeting held at AGB headquarters.

**Linkage with state agency/government.** –

**Institutional funds.**

- Project’s own funding sources. Marine Conservation Action Fund.
- Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation

**Classification of knowledge areas (OECD).**

NATURAL SCIENCES / Computer and information sciences
NATURAL SCIENCES / Biological sciences

**Project leaders.**

Florencia Vilches, Institute of Whale Conservation (ICB, in Spanish).

**Contact information.**

Email: info@icb.org.ar ; florencia.vilches@icb.org.ar

Web: www.ballenas.org.ar

Facebook: facebook.com/icb.argentina

Instagram: instagram.com/icb.argentina


---

**Ballena Franca Austral** [Southern Right Whale]
**Objectives**

**Overall goal**
- Co-create a digital repository of ultrasonic bioacoustic records of local bats to contribute to the conservation and study of these mammals and, at the same time, promote technological and scientific professions among secondary school students.

**Specific goals**
- Acquire, co-design, and implement the hardware and software necessary to store, manage, and share bioacoustic records.
- Obtain bioacoustic records in field sampling distributed throughout the country.
- Co-design tools for mathematical analysis of ultrasonic signals.
- Assess how the experience affects the academic journey of secondary school participants.

**Description of citizen participation**

The project’s citizen scientists are secondary school students who participate in science clubs. Depending on the interests of the participating clubs (environment, electronics, computing, or mathematics), the citizen scientists, together with the coordination team, university students, and specialists, form different commissions in charge of specific co-creative tasks aligned with the specific objectives.

**Type of citizen science project**

**Co-created project:** Citizens participate in all stages of the scientific process.

---

**Institutional funds.**
- Subsidio de Promoción a Proyectos del Programa Nacional de Ciencia Ciudadana (Grant to Promote Projects from the National Citizen Science Program)/Argentine Ministry of Science, Technology, and Innovation
- National University of Entre Ríos

**Awards/distinctions.**
- Work with science clubs began in 2023 through a nested project (BatiRancho) structured as a sustainable design competition.

---

**Participating parties.**
- School of Engineering/National University of Entre Ríos (UNER, by its Spanish acronym)
- Secondary school science clubs

**Status.** Under design.

**Time frame.** 1/10/2023 - N/A.

**Frequency of project execution.** Uninterruptedly.

**Participation period.** Regularly.

**Scope of the initiative.** National (two or more provinces).

**Geographic scope.** First stage: Entre Ríos, Corrientes, Santa Fe, and Chaco. Second stage: Buenos Aires, Salta, Córdoba, and Misiones.

**Project development members.** The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

**Number of participants.** From 1 to 50.

**Action/s involving citizen participation**
- Data collection
- Data analysis
- Phenomenon monitoring
- Solution planning
- Solution deployment

**Technological device/tool required.**
- The first rounds of meetings are held with science clubs and external specialists who are not part of the coordination team through the Meet platform.

**Recruitment methods.** Invitation to science clubs through an email list provided by Red de Clubes de Ciencia (Science Clubs Network)/Argentine Ministry of Science, Technology, and Innovation.

**Replicability.**
- Open access to data. All data generated in field sampling will be freely accessible online.

**Contact information.**
- Email: lasbi@ingenieria.uner.edu.ar
- Facebook: Laboratorio de Salud y Bienestar Integral (LaSBI, FIUNER).

---

**BatiMate, biblioteca bioacústica de murciélagos argentinos**

[BatiMate, bioacoustic library of Argentine bats]

Sampling and management of bioacoustic signals and promotion of technological and scientific professions.
**Biocorredores [Wildlife corridors]**

Environmental restoration of Escobar district in Buenos Aires

---

**Objectives**

**Overall goal:**
- Restore and reconnect wildlife corridors in Escobar district to give food and shelter to pollinators.

**Specific goals:**
- Create wildlife corridors in all the towns of the Escobar district and add the community’s gardens with native plants in an online collaborative map with georeferencing, photos, and descriptions.
- Improve large spaces of biodiversity and pollinators’ capacity to pollinate the big municipal agroecological vegetable gardens of the district.

**Description of citizen participation**

Citizen participation consists of many tasks. Citizens receive training every month on topics related to wildlife corridors, native species, and environmental restoration. Citizen participation also consists of seed collection and exchange among neighbors for the creation of seedlings in different garden centers of native species around Escobar. In the same way, butterfly gardens and tiny native forests are created in the public squares of the district, the port of Escobar on the Paraná Delta, and every sidewalk where there are urban trees. By taking part in these activities organized by the municipality, citizens can take the following things to their homes: seedlings they made from native plants, butterfly shelters with native plants, native trees, seeds for agroecological gardening, aromatic plants for insects, compost made with pruning waste done at the municipality, pots of vegetable gardens of the district.

**Participating parties.**
- University professors
- Researchers
- Activists
- Argentine Ministry of Social Development
- Argentine Ministry of Environment and Sustainable Development
- University of Buenos Aires (UBA)
- National Institute of Agricultural Technology (INTA in Spanish)
- Ciervo de los Pantanos National Park
- Fundación Temaikén [Temaikén Foundation]

**Status.** In progress.

**Time frame.** 08/13/2021 - N/A.

**Frequency of project execution.** Uninterruptedly.

**Scope of the initiative.** Local (city, province).

**Geographic scope.** Escobar district (Buenos Aires).

**Project development members.** It has been developed with the collaboration of both scientist and participants without formal training.

**Number of participants.** From 1001 onwards.

**Action/s involving citizen participation.**
- Data collection
- Phenomenon monitoring
- Solution planning
- Solution deployment

**Technological device/tool required.**
- Mobile phone for georeferencing of native plants.

**Recruitment methods.** Through social media, mass media, and mailing.

**Replicability.** The model was developed in the municipality of Escobar and Cielo de los Pantanos National Park in Campana, Buenos Aires. The project was launched at the Argentine Ministry of Environment and Sustainable Development as a model to be replicated under forest fire emergencies in the provinces of Misiones and Corrientes, together with Parque Nacional and Fundación Temaikén.

**Scalability.** Continuous; more and more neighbors participate by helping by having their wildlife corridors at their institutions; environmental activists take part by exchanging seeds, among other things. As of August 2022, more than 140 schools enrolled in the program have had butterfly gardens at their establishments. Other citizen science activities are also being carried out at Reserva Natural Educativa [Educational Nature Reserve] in Ingeniero Maschwitz, Buenos Aires.

**Contact information.**
- María Victoria Bandin, municipality of Escobar.
- Email: vickybandin88@gmail.com
- Web: www.escobar.gob.ar/biocorredores

---

**Awards/distinctions.**

- **Knowledge areas/disciplines (OECD):**
  - NATURAL AND EXACT SCIENCES / Biology
  - AGRICULTURAL SCIENCES / Agricultural biotechnology
  - SOCIAL SCIENCES / Communication and media

**Leaders.**
- María Victoria Bandin, municipality of Escobar.
- Argentina Ministry of Social Development
- National Institute of Agricultural Technology (INTA in Spanish)
- Ciervo de los Pantanos National Park
- National Scientific and Technical Research Council (CONICET in Spanish)
- School of Agriculture / University of Buenos Aires (UBA)
- Universidad de Buenos Aires (UBA)
- National Institute of Agricultural Technology (INTA in Spanish)
- Ciervo de los Pantanos National Park
- Fundación Temaikén

---

**Open access to data.** On the Escobar district website: www.escobar.gob.ar/biocorredores.

**Feedback.** The creation of wildlife corridors can be followed in real time as they appear on the collaborative map.

**Linkage with state agency/government.**
- National Scientific and Technical Research Council (CONICET in Spanish)
- School of Agriculture / University of Buenos Aires (UBA)
- National Institute of Agricultural Technology (INTA in Spanish)
- Ciervo de los Pantanos National Park

---

**Institutional funds.** Project’s own funding sources. INTA, Parque Nacional de los Pantanos, Fundación Temaikén [Temaikén Foundation].

**Comments.**

- **Project's own funding sources.** INTA, Parque Nacional de los Pantanos, Fundación Temaikén [Temaikén Foundation].

---

**Description of citizen participation**

Citizen participation consists of many tasks. Citizens receive training every month on topics related to wildlife corridors, native species, and environmental restoration. Citizen participation also consists of seed collection and exchange among neighbors for the creation of seedlings in different garden centers of native species around Escobar. In the same way, butterfly gardens and tiny native forests are created in the public squares of the district, the port of Escobar on the Paraná Delta, and every sidewalk where there are urban trees. By taking part in these activities organized by the municipality, citizens can take the following things to their homes: seedlings they made from native plants, butterfly shelters with native plants, native trees, seeds for agroecological gardening, aromatic plants for insects, compost made with pruning waste done at the municipality, pots of vegetable gardens of the district.

**Participating parties.**
- University professors
- Researchers
- Activists
- Argentine Ministry of Social Development
- Argentine Ministry of Environment and Sustainable Development
- University of Buenos Aires (UBA)
- National Institute of Agricultural Technology (INTA in Spanish)
- Ciervo de los Pantanos National Park
- National Scientific and Technical Research Council (CONICET in Spanish)
- School of Agriculture / University of Buenos Aires (UBA)
- National Institute of Agricultural Technology (INTA in Spanish)
- Ciervo de los Pantanos National Park
- Fundación Temaikén [Temaikén Foundation]

**Status.** In progress.

---

**Time frame.** 08/13/2021 - N/A.

**Frequency of project execution.** Uninterruptedly.

**Scope of the initiative.** Local (city, province).

**Geographic scope.** Escobar district (Buenos Aires).

**Project development members.** It has been developed with the collaboration of both scientist and participants without formal training.

**Number of participants.** From 1001 onwards.

**Action/s involving citizen participation.**
- Data collection
- Phenomenon monitoring
- Solution planning
- Solution deployment

**Technological device/tool required.**
- Mobile phone for georeferencing of native plants.

**Recruitment methods.** Through social media, mass media, and mailing.

**Replicability.** The model was developed in the municipality of Escobar and Cielo de los Pantanos National Park in Campana, Buenos Aires. The project was launched at the Argentine Ministry of Environment and Sustainable Development as a model to be replicated under forest fire emergencies in the provinces of Misiones and Corrientes, together with Parque Nacional and Fundación Temaikén.

**Scalability.** Continuous; more and more neighbors participate by helping by having their wildlife corridors at their institutions; environmental activists take part by exchanging seeds, among other things. As of August 2022, more than 140 schools enrolled in the program have had butterfly gardens at their establishments. Other citizen science activities are also being carried out at Reserva Natural Educativa [Educational Nature Reserve] in Ingeniero Maschwitz, Buenos Aires.

---

**Contact information.**
- María Victoria Bandin, municipality of Escobar.
- Email: vickybandin88@gmail.com
- Web: www.escobar.gob.ar/biocorredores

---

**Awards/distinctions.**

- **Knowledge areas/disciplines (OECD):**
  - NATURAL AND EXACT SCIENCES / Biology
  - AGRICULTURAL SCIENCES / Agricultural biotechnology
  - SOCIAL SCIENCES / Communication and media

**Leaders.**
- María Victoria Bandin, municipality of Escobar.
- Argentina Ministry of Social Development
- National Institute of Agricultural Technology (INTA in Spanish)
- Ciervo de los Pantanos National Park
- National Scientific and Technical Research Council (CONICET in Spanish)
- School of Agriculture / University of Buenos Aires (UBA)
- Universidad de Buenos Aires (UBA)
- National Institute of Agricultural Technology (INTA in Spanish)
- Ciervo de los Pantanos National Park
- Fundación Temaikén

---

**Comments.**

- **Project's own funding sources.** INTA, Parque Nacional de los Pantanos, Fundación Temaikén [Temaikén Foundation].

---

**Description of citizen participation**

Citizen participation consists of many tasks. Citizens receive training every month on topics related to wildlife corridors, native species, and environmental restoration. Citizen participation also consists of seed collection and exchange among neighbors for the creation of seedlings in different garden centers of native species around Escobar. In the same way, butterfly gardens and tiny native forests are created in the public squares of the district, the port of Escobar on the Paraná Delta, and every sidewalk where there are urban trees. By taking part in these activities organized by the municipality, citizens can take the following things to their homes: seedlings they made from native plants, butterfly shelters with native plants, native trees, seeds for agroecological gardening, aromatic plants for insects, compost made with pruning waste done at the municipality, pots made with processed ecobricks, or plantable pencils, that is, everything allowing citizens to grow and take care of species at their gardens at home. Thus, another instance of citizen participation involves identifying and georeferencing native species at private home gardens, contributing to the creation of a collaborative map on which urban wildlife corridors are rebuilt.

**Type of citizen science project**

**Collaborative project:** Citizens participate in data collection and analysis.
Biodiversidad de arrecifes [Biodiversity of Reefs]
Monitoring and mapping of the communities living in natural reefs and shipwrecks in Mar del Plata

Objectives
Overall goal
Promote the conservation of the marine ecosystem, in general, and the communities and underwater cultural heritage of natural and artificial reefs in Mar del Plata, specifically.

Specific goals
• Monitor the communities living in natural and artificial reefs in Mar del Plata.
• Establish the similarities between the communities living in artificial reefs and those in natural reefs.
• Analyze the development of the different populations inhabiting artificial structures since the moment they sunk.
• Broaden knowledge about the biological communities living in the reefs and shipwrecks in order to offer guidelines about their conservation and handling.

Description of citizen participation
Divers from the city make videos of the dives and take pictures of different natural and artificial reefs. The digital information or input that divers may have about their experience, such as visibility, current, or a certain type of living organism, etc., is sent for analysis through platforms such as WeTransfer and WhatsApp. It is also made available at in-person meetings and workshops.

In most cases, some of the questions addressed in these meetings are answered on the spot while sometimes others work as triggers for future workshops or research.

Type of citizen science project
Contributory project: It is designed by scientists, and citizens participate in data collection.

Participating parties.
• Gabriel Gennaro, Researcher at the National Scientific and Technical Research Council (CONICET in Spanish) and Professor at the School of Exact, Physical and Natural Sciences (FCEyN in Spanish)/University of Mar del Plata (UNMdP in Spanish), the Institute of Marine and Coastal Research (IMyC in Spanish).
• Pablo Meretta, Research Professor at FCEyN-UNMdP, IMyC.
• Asociación Civil Thalassa (Dive training center), participating non-profit organization.

Status. In progress.
Time frame. 1/1/2008 - N/A.
Frequency of project execution. Uninterruptedly.
Participation period. Sustained over time.
Scope of the initiative. Local (city, province).
Project development members. It has been developed with the collaboration of both scientists and participants without formal training.
Number of participants. From 1 to 50.
Action/s involving citizen participation.
• Problem definition
• Data collection
• Phenomenon monitoring

Technological device/tool required.
• Diving equipment
• Dive computer
• Boat
• GPS
• Echo sounder
• Underwater camera

Recruitment methods.
• Diving equipment
• Dive computer
• Boat
• GPS
• Echo sounder
• Underwater camera

Replicability.
Scalability. In recent years, the number of participating divers has increased, expanding the spatial and temporal range of monitoring.
Open access to data.
Feedback. Workshops and meetings are held and the results of the collaborative work are posted on social media.
Linkage with state agency/government.

Institutional funds.
Extension projects by the Secretariat of University Policies (SPlU in Spanish) and the National University of Mar del Plata, and also research projects by the UNMdP.

Awards/distinctions.

Comments.
• Based on the collaborative work done with the divers from the city, both in monitoring data collection and discussions about the benthic community, the project has achieved many milestones: an undergraduate thesis, student scholarships for undergraduate theses, marine biology courses for divers, scientific diving courses, conferences with specialists, talks at the museum Museo Municipal de Ciencias Naturales L. Scaglia, talks for divers at the Argentinean Federation of Underwater Activities (FAAS in Spanish), and the creation of the book Arrecifes, restitigas y bancos rocosos de Mar del Plata [The Reefs, Rocky Seabed and Shoals of Mar del Plata] (selected to be published by UNMdP’s publishing house EUDEM in Spanish) and launched at the Book Fair of Mar del Plata).
• Moreover, counseling about the expansion of the underwater park of Mar del Plata was given to municipal and provincial bodies, the Argentine Naval Prefecture [PNA in Spanish] and Consorcio Portuario Regional [the Regional Port Committee] of Mar del Plata, respectively.
• In November 2022, thorough monitoring of the shipwreck Simbad, sunk on 8/2/2022, is being carried out.
• As of November 2022, the project has 4,000 photos and 2,000 videos (from the 2000s up to now) being classified.

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Biology

Leaders.
• Gabriel Gennaro, the Institute of Marine and Coastal Research (IMyC) / National Scientific and Technical Research Council (CONICET) / University of Mar del Plata (UNMdP).
• Pablo Meretta, UNMdP-IMyC.

Contact information.
Email: gennarogabriel@gmail.com; pabliomeretta@gmail.com
Website: biodiversidaddearrecifes.ar
Instagram: @instagram.com/biodiversidaddearrecifes
Collaborative project:
Citizens participate in data collection and analysis. Citizens propose problematic sites or sites lacking biological information and participate in the sampling with the naturalist community, identifies each record and monitor and corroborate the data. In addition, suggested by comparing submissions to the entries of the database. The scientific community, together lists of species and drylands are submitted. By means of artificial intelligence, possible identifications arecies identification, date, and geographic location. For each record, photographs, sound recordings, and

EcoRegistros. Participants share observations of animals, plants, and fungi, including macro and microorganisms. For each organism observed, at least three important pieces of information are recorded: species identification, date, and geographic location. For each record, photographs, sound recordings, and lists of species and drylands are submitted. By means of artificial intelligence, possible identifications are suggested by comparing submissions to the entries of the database. The scientific community, together with the naturalist community, identifies each record and monitor and corroborate the data. In addition, citizens propose problematic sites or sites lacking biological information and participate in the sampling and workshops with local authorities.

Type of citizen science project
Collaborative project: Citizens participate in data collection and analysis.

Participants
- Instituto Argentino de Investigaciones de Zonas Áridas (IADIZA, by its Spanish acronym) [Argentina Research Institute of Arid Zones/National Scientific and Technical Research Council (CONICET, by its Spanish acronym)] - National University of Cuyo (UNCUYO, by its Spanish acronym)
- Secretaría de Ambiente y Ordenamiento Territorial [Secretariat of Environment and Land Management] and Consejo de Coordinación de Políticas Públicas para el Área Metropolitana (UNCIPID, by its Spanish acronym) [Public Policies Coordination Council for the Metropolitan Area] / Government of the Province of Mendoza
- Subsecretaría de Ambiente y Desarrollo Sostenible [Undersecretary of Environment and Sustainable Development]/Municipality of Mendoza
- Municipality of Lavelle (Mendoza)
- Fundación Vida Silvestre (wildlife protection association)
- Asociación para la Conservación de la Diversidad Biológica Argentina (BDTA in Spanish) [Association for the Conservation of Argentine Biological Diversity]
- Asociación Argentina de Fotógrafos de Naturaleza (AFONA, by its Spanish acronym) [Argentine Nature Photographers Association]
- Club de Observadores de Aves (COA, by its Spanish acronym) [Bird Watchers Club] Potrerillos
- Grupo Águila Coronada Naturalistas de Mendoza (wildlife protection association)
- Cosmos and Naoki estates/Casarena winery
- Instituto Argentino de Investigaciones de Zonas Áridas (IADIZA, by its Spanish acronym) - National University of Cuyo (UNCUYO, by its Spanish acronym)
- Secretaría de Ambiente y Desarrollo Sostenible/City of Mendoza

Institutional funds:
- IADIZA/CONICET

Awards/distinctions:
- In progress.

Scope.
- Province of Mendoza, Argentina.
- Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

Number of participants:
From 1001 onwards.

Timeline:
- 01/01/2019 - N/A.
- Frequency of project execution. Uninterruptedly.
- Participation period. Uninterruptedly. It is intensified by bioblitz events, that is, biodiversity data collection events.
- Scope of the initiative. Local (city, provincial).
- Geographic scope. Province of Mendoza, Argentina.

Feedback.
Data is published on websites and social media accounts and shared through workshops.

Contact information.
Emails: ccampos@mendoza-conicet.gob.ar; stabeni@mendoza-conicet.gob.ar
Phone: +54 261 426 0034
Website: www.mendoza.conicet.gov.ar/iadiza/ciencia-ciudadana/

Awards/distinctions:
- In progress.

Scalability.
Ever since its inception in 2019, the initiative has experienced sustained growth in data contributed by citizens: the community grew by 91%; the number of observations shared increased by 93%, and species identification increased by 26%. As of March 2023, nearly 17,000 observations were recorded throughout the province. There was an increased visibility of the vulnerable ecosystems in the province of Mendoza, from the point of view of biodiversity and the communities that inhabit them.

Open access to data.
- Data is published on websites and social media accounts and shared through workshops.

Linkage with state agency/government.
- Secretaría de Ambiente y Ordenamiento Territorial/Government of the Province of Mendoza
- Subsecretaría de Ambiente y Desarrollo Sostenible/City of Mendoza
- Dirección de Ambiente [Department of Environment]/Municipality of Lavelle

Social media, workshops, written press, and web pages of the participating entities.
Bioleft
Participatory seed innovation

Objectives

Overall goal
Build an open seed network for its conservation, exchange and breeding to offer alternative solutions to current and future agricultural challenges, based on collective intelligence, open knowledge and scientific knowledge.

Specific goals

• Create technological and legal tools to guarantee the ongoing exchange of germplasm for personal use, research, and development purposes, with the aim of strengthening farmers’ roles in seed conservation and breeding.
• Increase the availability of resilient and biodiverse seeds as a commons; this will promote food and technological sovereignty, as well as biological, cultural, and economic diversity.
• Enhance collaborative and/or participatory breeding, where seed exchanges are tracked and mapped, combining technology with collective knowledge into an ongoing co-designed digital platform.

Description of citizen participation

Bioleft is a community for the conservation, exchange, and breeding of open seeds that offers alternative solutions to current and future challenges of agriculture, through the co-design of tools for conservation, dissemination and open collaborative breeding. The licenses and the digital platform are co-designed with multiple stakeholders, and they are constantly reviewed and improved based on their contributions.

The project involves agricultural producers using different farming practices (from organic production to family farming), who innovate in the seeds they produce, specialists in plant breeding, research teams from public institutions (such as the School of Agricultural Studies at the University of Buenos Aires and the National Institute of Agricultural Technology) who innovate in the seeds they produce, specialists in plant breeding, research teams from public institutions, extension agents, and participants with expertise in agriculture, economics, agronomy and psychology, practitioners, software developers, extension agents, and participants with expertise in agriculture.

Number of participants: Over 1001.


Technological device/tool required: Cell phones (with internet access). Computer (with internet access).

Recruitment methods: Through existing participants, by holding face-to-face and online workshops, etc. Dissemination through communication pieces (audiovisual and written).

Scalability strategy: By means of a knowledge transfer process, funded by The Conservation, Food and Health Foundation and The Global Consortium for Sustainable Outcomes, the project contributed to the setup of Bioleft Mexico, led by LANCIS - UNAM. The project leader of this initiative is Ana Escudero. Project period: 2015 - 2020.

Scalability: The scalability strategy is designed in three stages:
1. First, the project is sustained from the demands of agriculture and commercial seeds. We identified two protection strategies: the promotion of non-reimbursable funds and market protection, through the creation of a critical map of users.
2. In the second stage, networks are being consolidated and diversified to include new networks of farmers and new crops, groups of female farmers and breeders (who are underrepresented in current organizations), developers of new technologies, legal actors, and artists.
3. The third stage entails interaction and communication with participants in the traditional agricultural system and efforts related to it that are carried out outside the agro-food system and/or in the areas in which they are currently being implemented (replicability).

Open access to data: There are three types of data:
• Seed-related agronomic data: Access to these data is granted to those interested in implementing and promoting an open-source seed logic. Requests for data are being documented and access is only granted to users who have requested it.
• Informative data related to the records displayed on the platform: It is feared that they might be “mined” by companies intending to profit from this information, and consequently, exclude communities. For this reason, only users who have signed up and shared their own data may access the data displayed on the platform.
• Data on platform design and process: They are available at gitlab https://gitlab.com/bioleft/bioleft and https://gitlab.com/bioleft/organizacion/bioleft, respectively.

Feedback: The construction we worked with one of the teams, to receive constant feedback. The process is shared during the different meetings that take place during the Bioleft Project. As regards the workshops related to the network of experiments on corn and tomatoes, informal meetings are held after their development to receive feedback on the design and progress of those workshops.

Links with state agency/government:
• SemARN program - Ministry of Agriculture, Livestock and Fisheries (MAGyP)
• National Institute of Agricultural Technology (INTA) in Argentina
• Argentine Ministry of Science, Technology, and Innovation (MECYT)
• National Institute of Seeds (INAS) in Argentina.

Institutional funds:
• National public institutions: the project is executed within the framework of CENIT-UNSAM, which provide infrastructure and research assistance to the National Scientific and Technical Research Council (CONICET, in Spanish), some members of the research team are CONICET’s researchers, and FAUBA, part of the research and extension team is based in its facilities, where trials are conducted, seeds are multiplied, etc. Subsidies of the National Committee of Projects of the National University of Cordoba (Consejo de Innovación Tecnológica) are being used to support the project.
• International organizations: the third cycle of grants awarded by the Conservation, Food and Health Foundation is starting.

Classification of knowledge areas (OECD):
NATURAL SCIENCES / Biological Sciences
AGRICULTURAL SCIENCES / Agriculture, Forestry, and Fisheries
SOCIAL SCIENCES / Economics and Business

Project leader:
• Antonio Paladino, School of Exact, Physical and Natural Sciences (FCEN/UNS), National University of Córdoba.
• Leonardo Núñez, FCEN/UNS and CONICET
• Carlos Mancio García Rodríguez, FCEN/UNS and CONICET

Contact information:
Email: a.marin@ids.ac.uk; acremaschi@unsam.edu.ar
Web: https://www.bioleft.org
Blog: https://instagram.com/bioleft
LinkedIn: https://www.linkedin.com/company/bioleft
BIOMCI - Biomonitoreo Ciudadano [BIOMCI - Citizen Biomonitoring]

Biomonitoring of the ecological quality of water from rivers and streams in Patagonia

Participating parties:
- National University of Río Negro (UNRN), by its Spanish acronym
- National University of the Patagonia San Juan Bosco (UNPSJB), by its Spanish acronym
- National Scientific and Technical Research Council (CONICET), by its Spanish acronym
- General Directorate of Aquatic Biology, Undersecretary of Environment of the province of Neuquén
- Secretariat of Environment and Climate Change of the Provincial Government of Río Negro
- Municipal Control Agency of the Municipality of San Martín de los Andes (Neuquén)
- Col Mapuche Vera (Mapuche community)
- Elementary and High schools
- Fishermen’s associations and clubs

Status. In progress.

Time frame. 2/1/2017 - NA.

Frequency of project execution. Uninterruptedly.

Participation period. Sustained over time.

Scope of the initiative. National (two or more provinces).

Geographic scope. Valcheta, El Bolsón, Allen, Mainqué, General Roca, and Villa Reina in the Río Negro province; Neuquén, San Martín de los Andes and Villa Pehuenia in Neuquén province; Esquel in Chubut province; Perito Moreno and Los Antiguos in Santa Cruz province.

Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

Number of participants. From 1001 onwards.

Action/s involving citizen participation:
- Problem definition
- Data collection
- Data analysis
- Phenomenon monitoring
- Other/s: Analysis of causes and possible solutions

Technological device/tool required:
- Sampling kit (nets, hundred-magnifying glass, plastic trays, and entomological tweezers)
- Macroinvertebrate identification booklet, designed by the project, which includes the calculation of the biotic index
- Offline mobile application (BIOMCI)

Recruitment strategy. Promotion through provincial and municipal media and media from the National University of Río Negro (UNRN), workshops and meetings in the cities, and social media (Facebook).

Replicability. The initiative began in the city of Valcheta, and was later replicated in other cities within Río Negro, Neuquén, Chubut and Santa Cruz.

Scalability. The initiative has had the participation of more than 1,000 citizens, boosted by the use of the mobile application.

Open access to data. -

Feedback. The data is public and shared with the different social actors in an environmental map of the ecological quality of water, available on the website, or through workshops with the community and state agencies, and conferences.

Linkage with state agency/government:
- General Directorate of Aquatic Biology, Undersecretary of Environment of the province of Neuquén
- Secretariat of Environment and Climate Change of the Provincial Government of Río Negro
- Control Agency of the Municipality of San Martín de los Andes (Neuquén)

Institutional funds:
- University Volunteering Program “Universidad, Cultura y Territorio” (University, Culture, and Territory) (National Secretariat of University Policies)
- University Outreach Office (National University of Río Negro [UNRN])
- Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana (Grant to Support Projects from the National Citizen Science Program)/ Argentine Ministry of Science, Technology, and Innovation

Awards/distinctions. -

Comments. The initiative was conceived under the name BiomonitoreoRN and is now called BIOMCI (Biomonitoreo Ciudadano [Citizen Biomonitoring]). This modification is due to the extension of its geographical scope since it has now expanded beyond the limits of the province of Río Negro. On the other hand, the samples shared by citizens are available on the map on the project’s website.

Knowledge areas/disciplines (OECD):
- Natural and Exact Sciences / Earth and Environmental Sciences
- Natural and Exact Sciences / Biology
- Social Sciences / Education sciences

Leaders:
- Pablo Antonio Macchi, Institute for Research in Paleobiology and Geology (IPGP)/ National University of Río Negro (UNRN)-National Scientific and Technical Research Council (CONICET)
- Lorena Laffitte, General Directorate of Aquatic Biology, Undersecretary of Environment of the province of Neuquén (DGBA)
- Cecilia Brand, Esquel Mountain and Patagonian Steppe Research Center (CIESMAPs)/ National University of the Patagonia San Juan Bosco (UNPSJB)-CONICET
- Santiago Torres, Santa Cruz Research and Transfer Center (National University of the Patagonia Austral)-CONICET
- Yeny Labaut, IIPG/UNRN-CONICET
- Santiago Torres, Santa Cruz Research and Transfer Center (National University of the Patagonia Austral)-CONICET
- Yeny Labaut, IIPG/UNRN-CONICET

Contact information.
Email: pmacchi@unrn.edu.ar
Web: www.riomiparticipante.com
Facebook: https://www.facebook.com/profile.php?id=100093410513313
Instagram: https://www.instagram.com/biomci/
Twitter: (to follow)
BIOMCI application: https://biomci.ar/descargar-app

Description of citizen participation
Citizen scientists use nets to remove rocks and aquatic plants from the river bed to observe and collect aquatic macroinvertebrates (snails, crustaceans, insects, among others) in plastic buckets. Then, using booklets or through the application, participants identify the macroinvertebrate families observed and calculate the biotic index of ecological quality of water, based on the level of sensitivity or tolerance of the macroinvertebrate families to pollution. Macroinvertebrates are used as bioindicators of ecological status, as they are considered the best methodological alternative for detecting alternations in aquatic ecosystems. Community workshops are held for the scientific community and citizens (students and teachers at the primary, secondary, and undergraduate levels, members of fishermen’s associations, communities of indigenous peoples, technicians from water management agencies and amates, etc.) to communicate and foster biomonitoring, promote environmental awareness and add more participants for data collection. Data collection can also be performed individually through the mobile application. Changes have been incorporated into the data collection protocols based on the field experience of the fishermen or state technicians.

Type of citizen science project
Collaborative project: Citizens participate in data collection and analysis.

Objectives: Overall goal:
- Jointly promote the use of bioindicators based on aquatic macroinvertebrates and encourage the integrated management of water resources.

Specific goals:
- Develop tools for the implementation of citizen biomonitoring that include macroinvertebrate identification booklets, an application for mobile devices, sampling kits, a website, and other communicative devices.
- Design a guide for biomonitoring training that integrates environmental aspects and, through data analysis, allows the work team to build valuable and contextualized knowledge.

Geographic scope:
- Valcheta, El Bolsón, Allen, Mainqué, General Roca, and Villa Reina in the Río Negro province; Neuquén, San Martín de los Andes and Villa Pehuenia in Neuquén province; Esquel in Chubut province; Perito Moreno and Los Antiguos in Santa Cruz province.

Participation period:
- Sustained over time.

Scope of the initiative:
- National (two or more provinces).

Technological device/tool required:
- Sampling kit (nets, hundred-magnifying glass, plastic trays, and entomological tweezers)
- Macroinvertebrate identification booklet, designed by the project, which includes the calculation of the biotic index
- Offline mobile application (BIOMCI)

Recruitment strategy:
- Promotion through provincial and municipal media and media from the National University of Río Negro (UNRN), workshops and meetings in the cities, and social media (Facebook).

Replicability:
- The initiative began in the city of Valcheta, and was later replicated in other cities within Río Negro, Neuquén, Chubut and Santa Cruz.

Scalability:
- The initiative has had the participation of more than 1,000 citizens, boosted by the use of the mobile application.

Open access to data:
- Feedback. The data is public and shared with the different social actors in an environmental map of the ecological quality of water, available on the website, or through workshops with the community and state agencies, and conferences.

Linkage with state agency/government:
- General Directorate of Aquatic Biology, Undersecretary of Environment of the province of Neuquén
- Secretariat of Environment and Climate Change of the Provincial Government of Río Negro
- Control Agency of the Municipality of San Martín de los Andes (Neuquén)

Institutional funds:
- University Volunteering Program “Universidad, Cultura y Territorio” (University, Culture, and Territory) (National Secretariat of University Policies)
- University Outreach Office (National University of Río Negro [UNRN])
- Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana (Grant to Support Projects from the National Citizen Science Program)/ Argentine Ministry of Science, Technology, and Innovation

Awards/distinctions:
- Comments. The initiative was conceived under the name BiomonitoreoRN and is now called BIOMCI (Biomonitoreo Ciudadano [Citizen Biomonitoring]). This modification is due to the extension of its geographical scope since it has now expanded beyond the limits of the province of Río Negro. On the other hand, the samples shared by citizens are available on the map on the project’s website.

Knowledge areas/disciplines (OECD):
- Natural and Exact Sciences / Earth and Environmental Sciences
- Natural and Exact Sciences / Biology
- Social Sciences / Education sciences

Leaders:
- Pablo Antonio Macchi, Institute for Research in Paleobiology and Geology (IPGP)/ National University of Río Negro (UNRN)-National Scientific and Technical Research Council (CONICET)
- Lorena Laffitte, General Directorate of Aquatic Biology, Undersecretary of Environment of the province of Neuquén (DGBA)
- Cecilia Brand, Esquel Mountain and Patagonian Steppe Research Center (CIESMAPs)/ National University of the Patagonia San Juan Bosco (UNPSJB)-CONICET
- Santiago Torres, Santa Cruz Research and Transfer Center (National University of the Patagonia Austral)-CONICET
- Yeny Labaut, IIPG/UNRN-CONICET

Contact information:
Email: pmacchi@unrn.edu.ar
Web: www.riomiparticipante.com
Facebook: https://www.facebook.com/profile.php?id=100093410513313
Instagram: https://www.instagram.com/biomci/
Twitter: (to follow)
BIOMCI application: https://biomci.ar/descargar-app
Breathe 2 change
Air quality monitoring

Objectives

Overall:
• Collect data that reveal the causes of air pollution and explore solutions to reverse its consequences.

Specific:
• Monitor the air, analyze the data collected, and drive the ideation and implementation of policies for change.

Description of citizen participation

The activities carried out are directly related to the environmental issues of each particular area. The B2C Social Lab plans the geographic distribution of the sensor modules by first considering the communities most affected by biomass burning. Once the area has been identified, the citizens of the affected community adopt a sensor module that is installed in their neighborhoods for a period of 2 years. The stored data are integrated into an open-access, user-friendly dashboard intended to be accessible to any citizen wishing to check the air quality in a given area. For this purpose, real-time data from the modules are displayed on a map with a color-coded air quality index that is easy to read. Periodic workshops are also held collaboratively with citizens, students, and technical personnel from SEMA Tucumán (Secretary of State for the Environment, Tucumán) and researchers from INQUINOA-UNT (Institute of Chemistry of Northwest Argentina/National University of Tucumán) for the interpretation of the data.

Type of citizen science project

Collaborative project: Citizens participate in data collection and analysis.

Participating parties.

National:
• Laboratory of Atmospheric Research [LFA, by its Spanish acronym]
• Institute of Chemistry of Northwest Argentina [INQUINOA, by its Spanish acronym];
• National Scientific and Technical Research Council [CONICET, by its Spanish acronym];
• National University of Tucumán [UNT, by its Spanish acronym];
• Argentine Ministry of Science, Technology, and Innovation
• Ministry of Productive Development, government of Tucumán
• State Secretariat of Technological Innovation and Development, government of Tucumán
• United Nations Development Program (UNDP)
• National University of Tucumán (UNT)
• National University of Córdoba [UNC, by its Spanish acronym]
• Italian Embassy in Buenos Aires
• University of Wuppertal, Germany

International:
• Alexander von Humboldt Foundation
• University of Genova, Italy
• Neuer Weg Sensoren, a German-Argentine start-up company
• University of Wuppertal, Germany
• ICARE Research Center, France

Status: In progress.

Time frame: 10/01/2020 - N/A

Frequency of project execution: Uninterruptedly.

Participation period: Sustained over time.

Scope of the initiative: National (two or more provinces).

Geographic scope: Provinces of Tucumán, Córdoba, and Buenos Aires.

Specific subject: Indoor ventilation monitoring by measuring carbon dioxide (CO2).

Project development members: It has been developed with the collaboration of both scientists and participants with formal training and without it.

Number of participants: 1 to 5.

Action/s involving citizen participation:
• Solution planning
• Solution deployment

Technological device/tool required:
• Air sensor modules supplied by Neuer Weg Sensoren, produced in Argentina.

Recruitment methods: Through the website and Instagram.

Scalability: Collaborators are joining the initiative on a daily basis.

Open access to data: The data obtained by the sensors are freely accessible and can be found on the online platform.

Feedback: The data are shared publicly and in real-time on the viewing platform hosted on the breathe2change.org website.

Contact information:
Email: rodrigo.gibilisco@breathe2change.org; adrian.morrone@breathe2change.org
Web: www.breathe2change.org
Instagram: @breath2change

Awards/distinctions: Awarded initiative by the Alexander von Humboldt Foundation from Germany.

Classification of knowledge areas [OECD]:
ENGINEERING AND TECHNOLOGY / Electrical engineering, electronic engineering, and information engineering.
ENGINEERING AND TECHNOLOGY / Chemical engineering.
ENGINEERING AND TECHNOLOGY / Environmental engineering.

Project leaders:
• Rodrigo Gibilisco, Laboratory of Atmospheric Research of the Institute of Chemistry of Northwest Argentina, National Scientific and Technical Research Council (CONICET)
• Adrián Morrone, Neuer Weg Sensoren (Argentina).

Linkage with state agency/government:
• Argentine Ministry of Science, Technology, and Innovation
• Ministry of Productive Development, government of Tucumán
• State Secretariat of Technological Innovation and Development, government of Tucumán.

Institutional funds:
• Alexander von Humboldt Foundation, University of Wuppertal (Germany); ICARE Re-
Cardenal Amarillo [Yellow Cardinal]
Monitoring of yellow cardinals (Gubernatrix cristata)

Objectives

Overall goal:
• Record and geolocate sites where the yellow cardinal (Gubernatrix cristata) appears to identify populations and determine its viability (according to the abundance of individuals in each population) and isolation/ connectivity (according to the continuity/discontinuity of records).
• Update the information of sites where remaining populations of yellow cardinals appear (search at historical sites and with current presence of the species).
• Raise public awareness of the conservation issues affecting the species.

Specific goals:
• Assess the viability and connectivity among the populations of the species.
• Recommend release sites for yellow cardinals rescued from illegal wildlife trafficking based on updated information on populations.
• Identify priority areas for the yellow cardinal’s conservation.
• Raise public awareness of conservation issues affecting the species through community participatory activities.
• Promote local groups working on the conservation of the species.

Description of citizen participation

After the recruitment of census takers posted on the Aves Argentinas’s social media, sites of interest are shared to survey the presence of cardinals. Additionally, citizens suggest sites in their residential regions. Before carrying out a census, census takers receive training in search methodology and useful information. The census compiles information about geolocations, the number of individuals, and, if possible, the sex and maturity stage (adult/juvenile) of recorded cardinals. As an optional activity, citizens are asked to send photos of or data about the environment at observation sites. Data is recorded in spreadsheets that are sent in digital format or through a mobile application that was specifically designed at UBA for yellow cardinal censuses.

Type of citizen science project

Contributory Project: It is designed by members of the scientific community, and citizens participate in data collection and analysis. The initiative was developed with the collaboration of both members of the scientific community and participants without formal training.

Participating parties.
• Aves Argentinas (NGO)
• University of Buenos Aires (UBA)
• National Scientific and Technical Research Council (CONICET, by its Spanish acronym)
• Laboratory of Biodiversity, Ecology and Conservation (CoBEC, by its Spanish acronym)/School of Exact and Natural Sciences (FCEN)/National University of La Pampa (UNLPam, by its Spanish acronym)

Status. In progress.

Time frame. 4/1/2014 - N/A.

Frequency of project execution. Seasonal (from September to October).

Participation period. One month a year.

Scope of the initiative. National (two or more provinces).

Geographic scope. Corrientes, Entre Ríos, Santa Fe, La Rioja, San Luis, Córdoba, Mendoza, La Pampa, Rio Negro, Neuquén, Buenos Aires (only a few provinces participate in the censuses every year).

Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants without formal training.

Number of participants. From 101 to 500.

Action/s involving citizen participation.
• Data collection
• Technological device/tool required.
  • Mobile phone or speaker to play a calling sound and record data
  • Camera (optional)

Recruitment methods. Aves Argentinas’s social media.

Replicability. -

Scalability. -

Open access to data. Open access to data through the publication of results in a specialized scientific journal. Moreover, the data obtained and the census reports are shared with the wildlife offices of national and provincial public administrations, who can use this information and on sites where yellow cardinals appear, and thus manage the populations through greater monitoring, handling measures at observation sites to reduce threats, etc.

Feedback. The results were posted on social media. Moreover, an English copy of the published article and its translation were sent to the citizens who participated.

Linkage with state agency/government.
• Wildlife offices of national and provincial public administrations who are part of Alianza Cardenal Amarillo [Yellow Cardinal Alliance]
• National parks: Parque Nacional Iberá, Parque Nacional El Palmar, Parque Nacional Sierra de las Quijadas, Parque Nacional Lihué Calel, and Reserva Natural de la Defensa Campo Garabato

Institutional funds.
• They have been obtained from the project’s own funding sources
• Aves Argentinas
• Banco Galicia (bank)

Awards/distinctions. -

Comments. -

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences
NATURAL AND EXACT SCIENCES / Biology

Leaders.
• Marisol Domínguez, University of Potsdam
• Bettina Mahler, School of Exact and Natural Sciences (FCEN)/University of Buenos Aires (UBA)
• Rocío Lapido, Office of Conservation, Aves Argentinas

Contact information.
Email: dominguez@fvs.potsdam.de; bemahler@ege.fcen.uba.ar
lapido@avesargentinas.org.ar
Web: www.avesargentinas.org.ar
Facebook: facebook.com/avesargentinasAOP
Twitter: twitter.com/AvesArgentinas

Institutional affiliation.
• NALU (National University of La Pampa)
• National parks: Parque Nacional Iberá, Parque Nacional El Palmar, Parque Nacional Sierra de las Quijadas, Parque Nacional Lihué Calel, and Reserva Natural de la Defensa Campo Garabato

Supporting pages.
5. (only a few provinces participate in the censuses every year).
6. Parque Nacional Sierra de las Quijadas, Parque Nacional Lihué Calel, and Reserva Natural de la Defensa Campo Garabato

Social media.
• Facebook: facebook.com/avesargentinasAOP
• Instagram: instagram.com/avesargentinas
• Twitter: twitter.com/AvesArgentinas
• YouTube: youtube.com/user/AvesArgentinasAOP

For more information, refer to the full document.
**Caza Mosquitos** [Mosquito Catchers]

Study of vector-borne diseases (transmitted by animals)

**Objectives**
- Study the distribution of mosquito vectors, including Aedes aegypti, a species transmitting dengue, Zika, chikungunya and yellow fever viruses
- Involve citizens in analyzing and questioning their environment, and lead them to take individual actions to contribute to the prevention of the spread of the insect vector

**Description of citizen participation**
Through the project’s social media or by a digital, educational and free app, citizens are encouraged to collect data for the creation of a database to study the distribution of mosquito vectors, such as Aedes aegypti, among other significant species present in Argentina. It is also an opportunity for citizen scientists to receive information on actions to prevent mosquito-borne diseases and on other relevant aspects in connection with this issue.

Using this app, citizen scientists can report the presence of mosquitoes and potential breeding sites by submitting photographs and sharing the location detected by their mobile devices. A panel of expert reviewers helps users to identify mosquitoes and determine whether they are potential disease vectors. Then, citizen scientists are informed of such determination. All information is included in the database created to determine mosquito distribution at a national level.

**Type of citizen science project**
*Contributory project.* It is designed by scientists, and citizens participate in data collection.

**Participating parties.**
- Institute of Limnology of La Plata (ILPLA).
- National Scientific and Technical Research Council (CONICET, in Spanish).
- National University of La Plata (UNLP, in Spanish).

**Status.** In progress.

**Time frame.** 03/01/2017 – N/A

**Geographic scope.** Argentina.

**Frequency of project execution.** Uninterruptedly.

**Project development members.** It has been entirely developed by people with formal scientific training.

**Action/s involving citizen participation**
- Data collection.

**Participation period.** On a sustained basis.

**Technological device/tool required.**
- Cell phone
- App

**Number of participants.** Over 1001.

**Recruitment methods.** Through social media, news websites and science fairs.

**Replicability.** -

**Scalability.** -

**Open access to data.** All the information collected may be freely accessed on the project website.

**Feedback.** Participants receive their feedback through social media, by the app, or via e-mail, depending on the communication channel selected.

**Linkage with state agency/government.** The Ministry of Health of the Province of Buenos Aires showed interest in implementing it as a tool for the management of the dengue virus.

**Institutional funds.** Project’s own funding sources.

**Awards/distinctions.**
- “Science, Technology and Innovation 2017” award granted by the Scientific Research Commission of the province of Buenos Aires
- Honey Bee Network Creativity & Inclusive Innovation Awards (HB-NCRIA) 2020

**Contact information.**
- Email: cazamosquito@gmail.com
- Web: cazamosquitos.com.ar
- Instagram: instagram.com/caza_mosquitos

**Project leaders.**
- Cristian Di Battista, Institute of Limnology “Raúl A. Ringuelet” (ILPLA) / National Scientific and Technical Research Council CONICET-National University of La Plata (UNLP).
- Fernando Garelli, Physics of Liquids and Biological Systems Institute (IFLYSIB) / CONICET-UNLP
- Joaquín Cochero, Institute of Limnology “Raúl A. Ringuelet” (ILPLA)/CONICET-UNLP
- Ana Dumrauf, IFLYSIB / CONICET-UNLP
- Mariana Sanmartino, IFLYSIB / CONICET-UNLP

**Area/s (OCDE).**
- NATURAL SCIENCES / Biological Sciences
- MEDICAL AND HEALTH SCIENCES / Basic Medicine
Participating parties.
The project is led by the Faculty of Exact, Physical and Natural Sciences (FCEFyN, in Spanish) of the National University of Córdoba (UNC, in Spanish). It is supported by the following institutions:
- National Scientific and Technical Research Council (CONICET, in Spanish) of Argentina
- Ministry of Public Services of the Province of Córdoba
- Provincial Administration of Water Resources of Córdoba

Status. In progress.

Time frame. 10/01/2014 – N/A

Frequency of project execution. Seasonal (on a particular season of the year)

Participation period. On a sustained basis.

Scope of the initiative. International (two or more countries).

Geographic scope. Córdoba, Tucumán, Salta and Paraguay.

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 1 to 50.

Action/s involving citizen participation
- Problem identification.
- Data collection.
- Phenomenon monitoring.

Technological device/tool required.
- Mobile phone
- Camera
- Unmanned aerial vehicles (UAV)

Recruitment methods. Through news programs, social media (Twitter) and workshops carried out in different towns.

Replicability. Every year, the number of participants increases significantly.

Open access to data. The main findings and knowledge are transferred to society through social media and by means of the reports prepared by project members.

Feedback. Participants create a set of guidelines which are incorporated into the new stages of the project.

Objectives

Overall goal
Expand the availability of existing hydrological data, especially data about water flows running in river courses or urban areas in different regions of the country.

Specific goals
- Include citizens in the project to record hydrological data in watercourses and urban areas.
- Increase the amount of water flow data available as it is essential for sustainable management of water resources and water risk.
- Train firefighters, civil defense, and police personnel to properly record videos necessary to estimate flows, given that these organizations work during extreme flash flood events.
- Raise awareness about the importance of monitoring and preserving water resources by encouraging citizens to participate in activities such as video recording and results sharing.

Description of citizen participation
Citizens, firefighters, civil defense staff, and law enforcement personnel record videos of flash floods in urban rivers and basins. Then, the videos are sent to a team of scientists who will process the relevant data. The material can be sent through the project’s website and social networks, or by contacting members of the GDT and sharing it by e-mail.

Type of citizen science project
Contributory project: It is designed by scientists, and citizens participate in data collection.
Censo Forestal Urbano de la ciudad de Bragado
[Urban Tree Census in the city of Bragado]

Developing and planning activities for the care and conservation of urban forests

Objectives

**Overall goal:** Conduct a census of the entire tree population in the chief town of the district (Bragado) for future public policy-making

**Specific goals:**
- Expand the urban tree census to the remaining towns located in the District of Bragado.
- Create technical and scientific material based on the surveys conducted.
- Identify and solve issues related to urban forests in the medium and long term.
- Plan public strategies for proper tree care and pruning.
- Set solid foundations for future landscape designs to be used for city planning, based on such previously assessed needs.

**Description of citizen participation**

Citizens collect tree census data using a mobile app, after having been trained (both on the operation of the app and on the botanical knowledge required for tree identification).

**Type of citizen science project**

**Contributory project:** It is designed by scientists, and citizens participate in data collection.

**Participating parties.**

- Members of Foro Ambiental de Bragado (Bragado Environmental Forum).
- Residents with different occupations (e.g., nursery owners, university students in similar fields, high school students, etc.).
- Municipal staff, including both administrative and technical personnel employed in this specific area (holding degrees in Engineering and Biology).
- Members of the local legislature.

The following people participated as consultants:

- Argentinian Network of Municipalities Facing Climate Change (RAMCC, in Spanish).
- Developers of MuniArbol app.

**Specific subject:**

- Developing and planning activities for the care and conservation of urban forests.
- Assessing the status of tree populations in the city.
- Identifying species belonging to the urban forest structure.
- Planning and designing landscapes.
- Implementing new technologies to determine the geographical location of every tree in the city.

**Status.** In progress.

**Time frame.** 03/21/2021 - N/A

**Frequency of project execution.** Seasonal (on a particular season of the year)

**Participation period.** The activity lasted 4 weeks, including training sessions and the subsequent data collection process. In the future, it will continue so as to expand its geographical scope and increase data collection in the city.

**Scope of the initiative.** Local (city, province).

**Geographic scope.** Bragado, province of Buenos Aires

**Project development members.** It has been developed with the collaboration of both scientists and participants without formal training.

**Number of participants.** From 1 to 50.

**Action/s involving citizen participation**

Data collection.

**Technological device/tool required.**

- Cell phone with photographic camera
- App: to collect the necessary data

**Recruitment methods.** Through Foro Ambiental de Bragado and social media, where this activity was disseminated.

**Replicability.** It has been replicated in other cities. In the city of Córdoba, an urban tree census has also been conducted using MuniArbol app. However, in this case, data collection was carried out by technical personnel.

**Scalability.**

Open access to data. The data collected are available for consultation by the public at large using MuniArbol web app. Then, they may be accessed on the official website of the Municipality of Bragado, in the form of a didactic map generated from the data collected and georeferenced. Said data are displayed on the map together with a photograph of the relevant species.

**Feedback.** Certificates of participation and appreciation were handed out and information on project progress was exchanged.

**Linkage with state agency/government.** The Municipality took part in the initiative from its inception, providing support, collaboration, and guidance in every stage of the process.

**Institutional funds.** Municipality of Bragado, specifically from the budget allocated to the Secretariat of Urban and Environmental Development.

**Awards/distinctions.**

**Classification of knowledge areas (OECD).**

- Natural Sciences / Earth and related Environmental sciences
- Biological Sciences
- Engineering and Technology

**Project leaders.**

- Maximiliano Dorado
- Silvina Guayta
- Luciano Burghetti
- Marcelo Bondoni
- Luciano Burghetti
- Marcelo Bondoni

**Contact information.**

Email: maximiliano_dorado@yahoo.com.ar
Email: guayta@hotmail.com
Email: luchoburghetti@gmail.com
Email: bondonimarcelo@gmail.com

The initiative has been posted on the official website of the Municipality of Bragado, on the Citizen Science tab, as well as on the social media accounts of the local government and Foro Ambiental de Bragado.

Web: www.bragado.gov.ar/participacion-ciudadana
Ciencia, educación y desarrollo sostenible local
[Science, education, and local sustainable development]

Education for Sustainable Development (ESD) and localization of the Sustainable Development Goals (SDG)

Objectives

Overall goal
Contribute to the transition to sustainable development through the co-production of knowledge aimed at localizing the SDGs.

Specific goals
• Diagnose the existing socioeconomic and institutional situation to localize the SDGs.
• Develop a localization plan for the SDGs.
• Incorporate Education for Sustainable Development in the curriculum of Colegio Superior 42 (CS42).
• Build a communications strategy to engage society around the SDGs.

Description of citizen participation

Teaching staff, civil servants and social organizations participate in workshops where records are produced. The workshops will basically comprise two types depending on their participants. Type I workshops consist of civil society participants, professionals, stakeholders, specialists, and other participants deemed appropriate for better process development and promotion. In both workshops, people in charge of coordinating the project prepare a work agenda with the topics to be discussed, considering the problems that will be addressed, the hypothesis and the knowledge that they intend to process and discuss from a local perspective. The workshops are interactive and written and visual records are obtained for later use in reports and publications. In addition, in both cases, surveys are conducted to establish the starting points (baselines) of the project, involving high school and college teachers, municipal officials, and representatives of local organizations and institutions.

Type of citizen science project
Co-created project: Citizens participate in all stages of the scientific process.

Participating parties.
The co-production of knowledge is performed by scientists and non-scientists (teachers, local government officials, and members of social organizations).
• Social actors of the Commercial and Industrial Center, neighborhood associations, and other high school and technical colleges in Vera.
• Officials of the executive and legislative power of the city of Vera.
• Teachers of Colegio Superior N.º 42 (CS42).

Status. In progress.

Time frame. 01/03/2021 - N/A

Frequency of project execution. According to the demands or approaches to the community/communities.

Participation period. As requested by teachers and authorities of Colegio Superior N.º 42 “Dr. Agustín Rossi”, the project has an initial duration of 4 years.

Scope of the initiative. Local (city, province).

Geographic scope. Vera, province of Santa Fe, Argentina.

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 51 to 100.

Action/s involving citizen participation.
• Problem definition.
• Data collection.
• Data analysis.
• Phenomenon monitoring.

Technological device/tool required.
• Cameras and cellphones.

Recruitment methods. By means of educational institutions and the Municipality of Vera, which publish the activities and results of the project through the Communications Office, which reports to the Secretary of Institutional Relations of Santa Fe, together with the Project’s Communications Module.

Replicability. It has not been replicated yet.

Scalability. It began in Colegio Superior 42; currently, representatives from other colleges are participating. In addition, a Focal Point was created (area designated by the highest authority of the Municipality Vera, responsible for the process of incorporating the SDG 2030 Agenda into local management.)

The Focal Point is essential for scalability; some of its functions are (i) to promote the SDG initiative among local executive and legislative offices, and the community; (ii) to contribute to local diagnosis and the localization plan of the ODS; and (iii) to coordinate the localization plan monitoring.

Comments. There is great potential for the initiative to be replicated in other cities. Initial results can be observed and measured in the first year, based on the data recorded in the baselines.

Knowledge areas/disciplines (OECD) SOCIAL SCIENCES / Education Sciences SOCIAL SCIENCES / Political Science

Leaders. Alberto Cimadamore, National Scientific and Technical Research Council (CONICET, in Spanish).

Contact information.
Email: alberto.cimadamore@conicet.gov.ar
Web: cs42.sfe.infd.edu.ar/tlco/investigacion-proyecto/
Citizen Collaboration in the Design and Evaluation of Sustainable Urban Drainage (COINCIDE: DPLUS)

Technical and diagnostic assessment on urban floods

Objectives

Overall goal: Conduct assessments on urban floods, by directly engaging the affected community in data collection and in the proposal of joint solutions incorporating their experience and needs.

Specific goals:
- Perform a diagnostic assessment of the environmental issues of urban areas, identifying the different hazards to which the community is exposed depending on its place of residence.
- Work with students at all educational levels and the community in recording and characterizing the rainfall events affecting the community (determine the rainfall level that causes flooding).
- Calculate the amount of stormwater runoff on streets using photographs and videos recorded by the residents previously trained.
- Study the effects of urban floods on the community through systematic questionnaires. In particular, the project is focused on the impacts on health and social well-being.

Description of citizen participation

The community offers valuable insight into the wide basin behavior, which is combined with the technical expertise of the research team to produce a conceptual model of the system operation. Both hydromete- orological (rainfall) and hydrological data (flows draining through the streets) must be recorded for this.

In this context, citizens collaborate to define pertinent locations for collecting hydrological data. Different solutions are also proposed in collaboration, working on their sustainability and feasibility, both to be presented to the corresponding governmental institution and to be applied by the community. The research team in charge of the project receives the records created by the community. Reports are created, published, and sent to the community following the record validation. Finally, questionnaires are carried out to evaluate the impact that urban flooding has on the daily life of the community, especially on health and social well-being.

Type of citizen science project

Co-created project: Citizens participate in all stages of the scientific process.

Participating parties:
- School of Exact, Physical and Natural Sciences (FCEFyN), National University of Córdoba (UNC), National Scientific and Technical Research Council (CONICET) in Argentina, with the support from affiliated institutions.
- Research teams and people who receive scholarships.
- Members of community organizations (neighborhood centers).
- Overall residents.

Status. In progress.

Time frame: 01/08/2019 – N/A

Frequency of project execution: Uninterruptedly.

Participation period: On a sustained basis.

Scope of the initiative: Local (city, province).

Geographic scope: Neighborhoods surrounding the Suquía River in the City of Córdoba, province of Córdoba.

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 51 to 100.

Action/s involving citizen participation
- Problem definition
- Data collection
- Data analysis
- Phenomenon monitoring
- Solution design
- Solution deployment
- Identification of impacts through questionnaires

Citizens are involved in the entire process.

Technological device/tool required.
- Rain gauge to measure rainfall occurring in the catchment area
- Mobile phone/camera: to record surface water levels in the streets, as well as to record videos that will later be processed to calculate the stormwater runoff quantity in the streets using the large-scale particle image velocimetry (LSPIV) technique
- Materialized scales in the basin for recording levels

Questionnaires: printed form with questions

Recruitment methods. Through an approach made by the community (neighborhood association) to the research team. Then, it is consolidated with periodical visits to the area.

Replicability. It is being implemented in other urban areas in the province of Córdoba.

Scalability. A great interaction with residents was accomplished and the ties with the community were strengthened day by day. New proposals have been made by the community to conduct research on sewage effluents or urban waste issues.

Open access to data. Reports are shared with the community after each recorded event. Rainfall data is openly shared by the project. Regarding the video and photographic records, a georeferenced database is being developed with the intention of making it freely accessible through the Internet. Currently, the project’s videos and photographs recorded are available on the project's YouTube channel (https://www.youtube.com/98ProjectsCOINCIDE ). Rainfall data is available to the community at the link (https://www.youtube.com/98ProjectsCOINCIDE ).

Feedback. All this information can be accessed online through the community’s website (https://matteo.aprhi.gob.ar/#/arcgis ). Rainfall data is available to the community at the link (https://www.youtube.com/98ProjectsCOINCIDE ).

Contact information.
- Andrés Portigliatti, FCEFyN-UNC, CONICET
- José Manuel Díaz Lozada, FCEFyN-UNC, CONICET
- Sebastián López, FCEFyN-UNC, CONICET
- CCarlos Marcelo García Rodríguez, School of Exact, Physical and Natural Sciences (FCEFyN) - UNC, National Scientific and Technical Research Council (CONICET)
- Sebastián López, FCEFyN-UNC, CONICET
- José Manuel Díaz Lozada, FCEFyN-UNC, CONICET
- Andrés Portigliatti, FCEFyN-UNC, CONICET

Emails: slopez@mi.unc.edu.ar; carlos.marcelo.garcia@unc.edu.ar; jmdiazlozada@unc.edu.ar. Contact information.

Languages: Spanish.

Sección de Investigación, Ciudadanos y Tecnología, Instituto de Ingeniería, Universidad Nacional de Córdoba.

Proyecto en línea: https://www.youtube.com/98ProjectsCOINCIDE .

Awards/distinctions. Do not know/do not answer

Classification of knowledge areas (OECD).

INGENIERÍAS Y TECNOLOGÍAS / Ingeniería Civil.

INGENIERÍAS Y TECNOLOGÍAS / Ingeniería del Medio Ambiente.

Project leaders.
- Carlos Marcelo García Rodríguez, School of Exact, Physical and Natural Sciences (FCEFyN) - UNC, National Scientific and Technical Research Council (CONICET)
- Sebastián López, FCEFyN-UNC, CONICET
- José Manuel Díaz Lozada, FCEFyN-UNC, CONICET
- Andrés Portigliatti, FCEFyN-UNC, CONICET

Contact information.

Emails: slopez@mi.unc.edu.ar; carlos.marcelo.garcia@unc.edu.ar; jmdiazlozada@unc.edu.ar.
**Citizens for the Coastal Environment (CiUPAC)**

**Coastal environmental monitoring**

**Objectives**

**Overall goal:**
- Analyze the environmental dynamics of coasts in the province of Buenos Aires.
- Create a solid database that is sustained over time in which local stakeholders participate and play a major role in different complex issues, such as erosion, sedimentation, storm effects, and landscape changes.

**Specific goals:**
- Implement an environmental data monitoring system that is continuous and sustained over time throughout the coast of the province of Buenos Aires.
- Analyze the impact of extreme weather events, its year-over-year and seasonal variation and tendency on beaches of the province of Buenos Aires.
- Based on citizen participation, create a database of socio-environmental dynamics in each study town.
- Strengthen the links among research institutions, civil society organizations, and decision-makers.

**Description of citizen participation**

Citizen participation starts by defining the coastal area to be measured based on the social or environmental issues citizens note or perceive on their own. After the area is defined, participants collect data every month (type of breaker, wave height and period, longshore drift speed and direction, sediment size, and beach profile) using measurement techniques learned in previous training sessions. Finally, the collected data is uploaded to the website, where its interface analyzes it in real time. This data is also sent after a storm and/or extreme temperature event along with photos and/or videos and pre-designed forms regarding the citizens’ perceptions of the storm or event’s effect on their town.

Participants also have at their disposal and for recording purposes 15 weather stations and 80 rain gauges for the storm or event’s effect on their town. Participants also have access to all these records on the project’s website.

Participants also have at their disposal and for recording purposes 15 weather stations and 80 rain gauges for the storm or event’s effect on their town. Participants also have access to all these records on the project’s website.

**Participants’ involvement:**
- Monitoring cameras
- Weather stations
- Rain gauges
- RTK GPS
- Mobile phone (camera and stopwatch)

**Recruitment methods:** The project has held training sessions and in-person meetings and carried out virtual surveys. In a few months, it plans to begin with the organization of participatory workshops and conferences where citizens can share their experiences.

**Technological device/tool required:**
- Monitoring cameras
- Weather stations
- Rain gauges
- RTK GPS
- Mobile phone (camera and stopwatch)

**Recruitment methods:** The project has held training sessions and in-person meetings and carried out virtual surveys. In a few months, it plans to begin with the organization of participatory workshops and conferences where citizens can share their experiences.

**Open access to data:** Data is uploaded to the website [http://ciupac.iado-conicet.gob.ar](http://ciupac.iado-conicet.gob.ar)

**Description of citizen participation**

Citizen participation starts by defining the coastal area to be measured based on the social or environmental issues citizens note or perceive on their own. After the area is defined, participants collect data every month (type of breaker, wave height and period, longshore drift speed and direction, sediment size, and beach profile) using measurement techniques learned in previous training sessions. Finally, the collected data is uploaded to the website, where its interface analyzes it in real time. This data is also sent after a storm and/or extreme temperature event along with photos and/or videos and pre-designed forms regarding the citizens’ perceptions of the storm or event’s effect on their town.

Participants also have at their disposal and for recording purposes 15 weather stations and 80 rain gauges for the storm or event’s effect on their town. Participants also have access to all these records on the project’s website.

Participants also have at their disposal and for recording purposes 15 weather stations and 80 rain gauges for the storm or event’s effect on their town. Participants also have access to all these records on the project’s website.

**Participants’ involvement:**
- Monitoring cameras
- Weather stations
- Rain gauges
- RTK GPS
- Mobile phone (camera and stopwatch)

**Recruitment methods:** The project has held training sessions and in-person meetings and carried out virtual surveys. In a few months, it plans to begin with the organization of participatory workshops and conferences where citizens can share their experiences.

**Technological device/tool required:**
- Monitoring cameras
- Weather stations
- Rain gauges
- RTK GPS
- Mobile phone (camera and stopwatch)

**Recruitment methods:** The project has held training sessions and in-person meetings and carried out virtual surveys. In a few months, it plans to begin with the organization of participatory workshops and conferences where citizens can share their experiences.
CoAct. Ciencia Ciudadana para la Justicia Ambiental en la Cuenca Matanza Riachuelo [Science for Environmental Justice in the Matanza Riachuelo Basin]

Environmental justice; sanitation

Objectives
Overall goal
Organize, systematize, and share the knowledge acquired over the years about the basin.

Specific goals
Contribute towards environmental justice, which is defined as the equitable distribution of environmental burdens and benefits by promoting citizen participation in decision-making on environmental issues.

Description of citizen participation
An online platform is developed on the basis of new insights and ideas contributed by the communities living in the Matanza Riachuelo basin and by other stakeholders from the scientific and public policy fields.

Through the development of key definitions, data collection and subsequent analysis by the communities this platform will enable the following:
- Build knowledge to find solutions to these issues.
- Give visibility to their significance for different community groups.
- Facilitate specific actions for transformation.

Type of citizen science project
Co-created project: Citizens participate in all stages of the scientific process

Participating parties.
- Research Center for Transformation (CENIT, in Spanish) of the National University of San Martin (UNSAM, in Spanish).
- Environment and Natural Resources Foundation (FARN, in Spanish).

Status. In progress,

Time frame. 01/04/2020 - 01/01/2023

Frequency of project execution. Over the 3 years of the project, a digital platform will be co-designed together with the communities to generate citizen data that will function permanently to record the experiences and knowledge of the people on three environmental justice issues. See map.

Participation period. Sustained over time.

Scope of the initiative. Local (city, province).

Geographic scope. Matanza Riachuelo basin Buenos Aires Metropolitan Area (for its national and environmental chapter).

Project development members. Collaboration between members of the academic community, civil society organizations, and communities of the basin.

Number of participants. From 51 to 100.

Action/s involving citizen participation.
- Data collection.
- Data analysis.
- Phenomenon monitoring.
- Design of the citizen science tool.

Technological device/tool required. Electronic devices with Internet connection (mobile or not).

Recruitment methods. Convening through personal contact and through the networks of participating social organizations.

Replicability. The co-designed tool is open source and can be reused for other initiatives.

Scalability. As of July 2022, the use of the tool depends on the social media networks of those who participated in co-designing. It is expected that it will be scaled up to other areas of the basin.

Open access to data. The data generated in the platform are open access and available in Zenodo. They can be downloaded in formats that allow their use, modification, and redistribution.

Feedback. At the current stage of development, feedback is provided at each stage of co-design and implementation with its participants.

Linkage with state agency/government.
- Matanza Riachuelo Basin Authority [ACUMAR, in Spanish].
- Provincial and municipal officials.
- Towards the end of the project, a workshop for public policy actors will be organized.

Institutional funds.
- Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program] (Argentina Ministry of Science, Technology, and Innovation)
- They have been obtained from Horizon 2020, the European Union’s programme that provides monetary support for the development of science, innovation, and technology.

Comments. The platform that is co-designed under this project (CoAct) is a re-launch of the platform ¿Qué Pasa, Riachuelo? [What’s up, Riachuelo?], (QPR, in Spanish); this project is also part of the mapping and co-designed with a social citizen science approach.

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences
SOCIAL SCIENCES / Sociology
SOCIAL SCIENCES / Law
SOCIAL SCIENCES / Political Science

Leaders.
- Valeria Arza, Research Center for Transformation (CENIT)/National University of San Martin (UNSAM)
- Guillermia Actis, CENIT/UNSAM
- Leticia Castro, CENIT/UNSAM
- Santiago Cane, Environment and Natural Resources Foundation (FARN)
- Pia Marchegiani, FARN
- Andres Napoli, FARN

Contact information.
Email: varza@unsam.edu.ar; gactis@unsam.edu.ar; pmarchegiani@farn.org.ar; anapoli@farn.org.ar
Web: farn.org.ar/coact-justicia-ambiental
Objectives
Overall goal
Survey the number and type of road accidents that occurred in the city of Chacabuco, Buenos Aires, Argentina, between 2006 and 2011.

Specific goals
Evaluate the effects of Chacabuco’s traffic layout design on the road accidents surveyed and develop proposals for improvement.

Description of citizen participation
Participants - professionals from different disciplines and areas - collected local documentary sources, specifically from the ViveChacabuco website, where detailed information on the different road accidents was provided daily. In addition, the project’s leader developed and conducted interviews to local stakeholders to better understand the problem.

Type of citizen science project
Co-created project: Citizens participate in all stages of the scientific process.

Participating parties.
Chacabuco Research Team, Vivechacabuco.

Status. Finished.


Frequency of project execution. Uninterruptedly while the project was in progress.

Participation period. Sustained over time during the specified period but with participation at specific times on a case-by-case basis.

Scope of the initiative. Local (city, province).

Geographic scope. Chacabuco, Buenos Aires, Argentina.

Project development members. Entirely developed by participants without formal scientific training.

Number of participants. From 101 to 500.

Action/s involving citizen participation.
• Problem definition.
• Data collection.
• Data analysis.
• Solution planning.

Technological device/tool required.
• Computers.

Recruitment methods.
The initial recruitment of students and regular recruitment concerning a variety of topics (traffic, suicides, parks, etc.) were made through local print newspapers (Chacabuco and De Hoy) and the city’s emerging electronic media (Vivechacabuco, El Chacabuquero, Chacabuco website, among others).

Replicability.
Collection experiences were replicated in the same town.

Scalability.

Open access to data. The findings and proposals are available to the public on the project’s blog and were published in the following magazines and digital media: CAPBA 22 Magazine (Association of Architects of the Province of Buenos Aires), Vial Magazine and Plataforma Urbana website.

Feedback.
Findings were published on the project’s blog and in journals and digital media as the research progressed.

Linkage with state agency/government.
Findings and proposals were submitted to the National Road Safety Agency in 2015 and 2016 (File: 85.992/16).

Institutional funds. Project’s own funding sources.

Awards/distinctions.

Comments.

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Matematics
NATURAL AND EXACT SCIENCES / Other Natural and Exact Sciences

Leaders.
Sebastian Inacio, Chacabuco Research Team.

Contact information.
Email: sebastian_inacio@yahoo.com
Web: equipodeinvestigacion.blogspot.com/
Composting: Organics
Home and community composting in the City of Buenos Aires

Objectives
Overall goal:
- Collaboratively develop tools to make the process of composting easier for citizens.

Specific goals:
- Characterize the profile of the participants who decide to compost their organic waste, and how they carry out this process, and the profile of those who choose not to compost or have impediments to compost.
- Learn about the quality of the product composters consider their final product (compost) and, based on this, verify what the uses of this product are.

Description of citizen participation
Citizens answer a survey regarding the compost they produce, and then they are asked to bring samples of their finished compost for laboratory analysis. When the analyses are finished, they are invited to explain the findings, discuss them, and come up with solutions if there are any issues with the final product quality. This provides a foundation for sharing answers to common issues experienced by various urban composters.

Type of citizen science project
Collaborative project: Citizens participate in data collection and analysis.

Participating parties:
- School of Agricultural Studies at the University of Buenos Aires (FAUBA in Spanish), through members of the Citizen lab (teachers and students who have already graduated from FAUBA, and current students from that University).
- Neighbors from the Autonomous City of Buenos Aires.

Status. In progress.

Time frame. 08/01/2021 - N/A.

Frequency of project execution. According to the demands or approaches to the community/communities.

Participation period. Composting is a process that takes about 6 months. Proposals and data analysis are performed in 1-2 days (2 hours).

Scope of the initiative. Local (city, province).

Geographic scope. The Autonomous City of Buenos Aires.

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 1 to 50.

Action/s involving citizen participation:
- Data collection
- Data analysis
- Phenomenon monitoring
- Solution planning
- Solution deployment

Technological device/tool required.
- Composter bin or a place suitable for composting.

Recruitment methods. Promotion is done through social media. Recruitment is done first through surveys. A request is then issued to a smaller group of volunteers who exhibit specific traits (for instance, in accordance with the composting process issue they identified as the main problem) to provide a sample of their compost. Due to budget-related constraints, not all of the survey participants—there are currently more than 160—can analyze the compost they create. Those who send their sample will be contacted by email. If they do not reply or do not wish to participate, another volunteer will be contacted.

Replicability. -

Scalability. -

Open access to data. The survey’s most interesting data is posted on labciudadano.net.

Contact information.
Email: pierini@agro.uba.ar ; semmarti@agro.uba.ar
Web: www.labciudadano.net/composta-organicos/

Credit: Eduardo Paoloni.
Citizen Science
EXPERIMENTATION

Conservar Tiburones en Argentina [Shark Conservation in Argentina]
Management and conservation of coastal shark populations

Objectives
Promote recreational fishing with catch and release of coastal sharks, including conventional tagging.

Description of citizen participation
This Program involves anglers and local fishing communities that take part in scientific research by tagging sharks with the aim to collect key information for their conservation. Tagging consists in placing a yellow dart tag containing the data required for identification below the shark’s dorsal fin. This information allows researchers to determine the migration patterns, days of release, body size growth, post-release survival, and tagging site fidelity of recaptured sharks, among other data. It also enables the identification of significant areas, the number of female sharks and of specimens close to parturition, and their conservation category according to the International Union for Conservation of Nature (IUCN), among other aspects.

Type of citizen science project
Contributory project: It is designed by scientists, and citizens participate in data collection.

Feedback. The information on tagged individuals, recaptured specimens, and project findings is shared through social media.

Linkage with state agency/government.
• Argentinian Ministry of Natural Sciences (MACN, in Spanish) – National Scientific and Technical Research Council (CONICET, in Spanish).
• Natural Protected Areas System of the province of Santa Cruz.
• Office of the Superintendent of Marino Makenke Interjurisdictional Park (National Parks Administration).
• Secretariat of Fisheries and Aquaculture of the province of Santa Cruz, Argentine Ministry of Environment.
• National Ministry of the Environment.

Institutional funds. Project’s own funding sources. Financing granted as a result of international cooperation.

Awards/distinctions. –

Comments.
• During project execution, 150 anglers from four provinces (Buenos Aires, Río Negro, Chubut, and Santa Cruz) were trained and equipped with tagging instruments (dart tags, applicators and circle hooks). Until today, anglers have tagged 868 sharks of different species, mainly: bronze whalers, tope sharks, broadnose seven-gill sharks, sand tiger sharks, angular angel sharks, spiny dogfish, and hammerheads.
• This program is a relay of Dr. Gustavo E. Chiaramonte 2008 and 2013 project, “Assessment and Conservation of a Nursery Ground for Threatened Sharks in Argentina.”

Classification of knowledge areas (OECD).
NATURAL SCIENCES / Earth and related Environmental sciences
NATURAL SCIENCES / Biological sciences
SOCIAL SCIENCES / Educational sciences

Project leaders.
Juan Martín Cuevas, Conservation Society Argentina (WCS) and National University of La Plata (UNLP, in Spanish).

Contact information.
Email: cuvjasjuanmartin@gmail.com ; conservartiburonesarg@gmail.com
Facebook: facebook.com/conservartiburonesarg
Instagram: @instagram.com/conservar_tiburones_arg

Participating parties.
• National University of La Plata (UNLP, in Spanish)
• Wildlife Conservation Society Argentina (WCS)
• Anglers
• Shore/boat fishing guides
• Angling clubs

Status. In progress.

Time frame. 1/10/2010 – N/A

Number of participants. From 101 to 500.

Action/s involving citizen participation
• Data collection.
• Solution design.
• Solution implementation.
• Other/s: Dissemination, awareness raising, incentivization, and motivation of anglers so they become involved and take part in the initiative.

Technological device/tool required.
• Tags: to identify each shark
• Applicator: to place tags
• Photographic camera or cell phone: to take a photograph of the tagged individual
• Centimeter: to measure the tagged individual
• Circle hooks: to facilitate release without injuring the specimens caught

Recruitment methods. Through social media and communications within the fishing community.

Replicability. An initiative was carried out by some colleagues from the province of Chubut involving an angler in San Antonio Este, province of Río Negro, in the summer of 2021. The angler was spotted tagging and releasing the sharks captured.

Scalability. More participants are joining the initiative every year, on average 8 persons per year. It has been proven that the number of sharks tagged increases as the number of citizens involved rises.

Open access to data. Only partial and brief data are available.
Objectives

Overall goal

Record hailstorms, collect hailstones and produce severe hailstorm data for forecasting programs.

Specific goals

- To disseminate scientific information about severe storms in the region and the importance of scientific collaboration of citizens in the study of the phenomenon.
- In the app ‘Cosecheros de Granizos Córdoba’ (Hailstone Collectors from Córdoba, Argentina) citizens register the geolocation and time of hailstorms as accurately as possible. They can attach photographs and/or save hailstone samples at home, which will later be collected in an annual hailstone collection campaign. Hailstones should be stored in the freezer inside closed plastic bags with as little air as possible, at a temperature of -13 °C or lower.
- Open data: For the general public. (Please, request data from granizosca@gmail.com).

Description of citizen participation

In the app “Cosecheros de Granizos Córdoba” (Hailstone Collectors from Córdoba, Argentina) citizens register the geolocation and time of hailstorms as accurately as possible. They may attach photographs and/or save hailstone samples at home, which will later be collected in an annual hail collection campaign. Hailstones should be stored in the freezer in closed plastic bags with as little air as possible, at a temperature of -13°C or lower.

Type of citizen science project

Contributory project: It is designed by scientists, and citizens participate in data collection.
Cyano
Cyanobacteria and water bodies eutrophication

Objective
Overall goal: Address surface waterbodies eutrophication in relation to their catchment, different water uses and the Cianosemáforo (Cyanosignal), as a tool for preventing risks in recreational waters.

Specific goals:
• Systematize and share the knowledge gathered from applied research during the monitoring of water quality.
• Raise awareness in society on the impact of the issue of eutrophication, cyanobacteria and their consequences on health.
• Promote visual monitoring of waterbodies through citizen participation.
• Establish partnerships and create contact networks among stakeholders.

Description of citizen participation
The Cianosemáforo is the sharpest instrument for risk prevention at the reservoirs of the province. It was created by the Ministry of Health of Argentina and adapted for the visual identification of four water status levels, depending on the amount of cyanobacteria present. Citizen participation includes workshops, visual monitoring, data interpretation and communication. The Spanish acronym stands for the following:

- **Control**: Monitoring of cyanobacteria and other ELM water quality aspects, with systematized measures and adequate space-time resolution.
- **Y (and)**: The nexus involving citizens, research teaching staff, and students of FCEFyN-UNC.
- **Alerta (alert)**: After processing field data, supplemented with lab data, the risk levels associated to cyanobacteria exposure are informed to schools, decision-makers, and society.
- **Niveles (levels)**: A risk level is assigned, and recommendations are made for different water uses.
- **Observados (observed)**: Personnel from the Search and Rescue Group of Calamuchita and citizens perform visual monitoring at ELM.

Type of citizen science project
Co-created project: Citizens participate in all stages of the scientific process.
eBird Argentina
Monitoring bird biodiversity and population trends

Objectives
• Collect real-time bird sightings, photographs and sounds to be used in scientific studies.
• Contribute towards knowledge of distribution and abundance of different species and facilitate their care and conservation.

Description of citizen participation
It works as a reference database to quickly view how birds are distributed and in which seasons they may be found in Argentina, learn about their abundance, see photographs and listen to their sounds. It is the most complete database on bird distribution records of Argentina.

Bird sightings may be entered by any person on the website and/or app. The database harnesses the power of citizen sighting and photography, and each potential birdwatcher is encouraged to collect information on the presence or absence of species and their abundances (number of individuals identified in each sighting).

Type of citizen science project
Contributory project: It is designed by scientists, and citizens participate in data collection.

Participating parties.
Locally managed by Aves Argentinas (Argentine Birding Association), in association with The Cornell Lab of Ornithology. The following institutions collaborated with and supported this project:
• Ministry of Science, Technology and Innovation (MINCYT, in Spanish)
• National System of Biological Data (SNDB, in Spanish)
• A network of 80 Birding Clubs (COA, in Spanish)

Status. In progress.

Feedback. The platform works as a repository for users’ bird sightings, photographs and sound recordings. The information collected by participants may also be browsed using the web interface and the eBird Mobile app. This encompasses different data visualization tools, such as: a multimedia browser, a record browser, species range maps, checklists containing target species or species of interest for a certain region, checklists of regional species, birding rankings, etc. It also features a personal profile summarizing all data entered by the user, with an interactive visualization of their map of participation.

Linkage with state agency/government. It has been launched in collaboration with MINCYT.

Institutional funds. Funding requested by Aves Argentinas to MINCYT for the localization and launch of the web portal.

Awards/distinctions.

Comments. This is an online platform that was developed in the United States in 2002 by The Cornell Lab of Ornithology, which then expanded its scope to include local partners in different countries. In Argentina, eBird was launched in 2013 by Aves Argentinas at the XV Reunión Argentina de Ornitología (Ornithology Meeting in Argentina, 15th edition) (RAO, in Spanish).

Knowledge areas/disciplines (OECD)
NATURAL SCIENCES / Biological sciences

Project leaders.
Fabricio Gorleri, eBird Argentina.

Contact information.
Email: ebird@avesargentinas.org.ar
Email: fabriciogorleri@gmail.com
Web: www.ebird.org/argentina
Facebook: facebook.com/ebirdargentina
Instagram: instagram.com/ebird.arg
Twitter: twitter.com/ebirdarg
YouTube: youtube.com/c/eBirdArgentina
ECOFAM - Equipo Costero de Observadores de Fauna y Ambiente
[Coastal Team of Marine Fauna and Environment Observers]

Marine fauna monitoring

Objectives

Overall goal
Build quality scientific knowledge on Argentina’s coastal zone environmental health by collecting data using marine species as indicators.

Specific goals

• Train volunteers to identify turtles, birds, and marine mammals.
• Count, identify and record dead individuals on the beach, belonging to the aforementioned groups of marine fauna.
• Provide information to the local population on the characteristics, life history and conservation status of the species recorded.
• Use technology as an educational, communicational, and analytical tool.
• Evaluate the abundance and diversity of carcasses.
• Gather baseline information to detect space-time patterns over time and identify unusual mortality events.
• Produce scientific information available to the community.

Description of citizen participation

Citizens voluntarily participate in the project by periodically visiting the beach. During field trips, they count and identify turtle, bird, and marine mammal carcasses they find on the beach. In addition, they take photographs of the carcass and place a biodegradable mark to avoid double counting. Finally, they record their observations on the ArgentiNat platform (iNaturalist Argentina).

Type of citizen science project

Contributory project: It is designed by scientists, and citizens participate in data collection.

Participating parties.

• Aves Argentinas
• Hydrobiological Station, Quequén Port
• “Bernardino Rivadavia” Argentine Museum of Natural Sciences.

Status. In progress.

Time frame. 02/03/2020 - N/A

Frequency of project execution. Uninterruptedly.

Participation period. Volunteers spend a minimum of 4 hours per month, and ideally, they should be available for about 8 hours per month.

Scope of the initiative. Local (city, province).


Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 51 to 100.

Action/s involving citizen participation.

• Data collection.
• Phenomenon monitoring.

Technological device/tool required.

• Mobile phone to record observations on the ArgentiNat platform. During fieldwork, no Internet connection is required as the records are automatically uploaded when connected.

Recruitment methods. Through social media, press campaigns, during open talks held with the target audience, etcetera.

Replicability. A project that took place a few years ago in the area of Villa Gesell including several elements that resemble ECOFAM. This was after the first stage of the program (2007-2009).

Scalability. In these two years of work, the number of active volunteers has increased and new towns where the project is being carried out have joined.

Open access to data. Records are available at ArgentiNat. Main findings through social media and publications.

Feedback. Periodically, feedback is provided to citizens on the progress of the program, results, and new developments.


Institutional funds. National Geographic Society for conservation projects.

Awards/distinctions.

Comments. The first stage of ECOFAM took place between 2007 and 2009 as a result of the concern of local residents from Necochea and Quequén, who were worried about a large number of dead Magellanic penguins on the beach. The area covered by the volunteers included the coastal area between Miramar and Reta beach resort. During that period, 30 volunteers obtained almost 700 records corresponding to 28 species of turtles, birds, and marine mammals.


Knowledge areas/disciplines (OECD)

NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences

NATURAL AND EXACT SCIENCES / Biology

Leaders.

• Leandro L. Tamini, Aves Argentinas.
• Gustavo E. Chiaramonte, Hydrobiological Station, Quequén Port and “Bernardino Rivadavia” Argentine Museum of Natural Sciences.
• Leandro L. Tamini, Aves Argentinas.

Contact information.

Email: ecofam@avesargentinas.org.ar; tamini@avesargentinas.org.ar; gchiarame@retina.ar; dellacasa@avesargentinas.org.ar
Web: www.avesargentinas.org.ar/ecofam
Facebook: facebook.com/avesargentinasAOP
Twitter: twitter.com/AvesArgentinas
Instagram: instagram.com/avesargentinas/

YouTube: youtube.com/user/AvesArgentinasAOP
Facebook Estación Hidrobiológica de Puerto Quequén: facebook.com/EstatiónHidrobiológica-de-Puerto-Quequén-1678927482344758/

Web: www.avesargentinas.org.ar/estacion-hidrobiologica-de-puerto-quequen
EcoRegistros
Geographic record of living organisms

Objectives

Overall goals:
• Identify species.
• Create species datasheets.
• Disseminate the findings of scientific research.
• Perform a leisure activity.

Specific goals:
• Mapping and determining the geographic distribution of different species on the basis of the data recorded by the community, considering three options:
  – All records, including those which are not supported by evidence. This implies that more data will be displayed on datasheets and maps. This is very useful for easily identified species.
  – Only records supported by evidence. This means that datasheets and maps will contain more reliable data, which may be easily validated. This is very useful for species which are harder to identify.
  – Only such records containing reproduction information. This requires knowledge on species reproduction, and all geographic data which are not relevant to this topic will be discarded.
• Generate lists of species for each country, province and district.
• Record nature-related events.
• Generate personal statistics for each user regarding the species recorded, the number of records entered, and the areas visited.

Description of citizen participation
Citizens take part in recording species by providing accurate coordinates and dates, photographs, video or audio recordings.

Type of citizen science project
Collaborative project: Citizens participate in data collection and analysis.
El desafío del agua [The Challenge of Water]

Water quality monitoring

Objectives

Overall goal:
• Promote the knowledge of variables for water quality monitoring.
• Raise awareness on the importance of protecting this resource.

Specific goals:
• Learn about the water quality of bodies of water (sea and lakes) in the area of San Jorge Gulf in the province of Chubut.

Description of citizen participation

Young people from 12 to 21 years old participated in the project for 3 days.
• On the first day, they participated in online training sessions on the use of equipment and supplies provided by the project.
• On the second day, an in-person meeting was held, where material for measuring physicochemical water variables was given.
• On the last day, participants reflected in person about the collected results, the environmental issues impacting bodies of water, and the possibility to generate alternatives for improvement in water management.

Afterward, in a self-managed manner and together with a youth leader of the foundation, each participant uploaded the data to a section of the EarthEcho International’s website, where there are more than 1.5 million records from all over the world, to share with the whole community.

Moreover, participants collaborated later with data analysis, phenomenon monitoring, and solution planning in meetings with activity coordinators of the organization EarthEcho International and the Coastal Development Institute Dr. Héctor Zaixso (National University of Patagonia San Juan Bosco [UNPSJB]).

Type of citizen science project

Collaborative project: Citizens participate in data collection and analysis.
**Objectives**

**Overall goal**
- Build collective knowledge about consciousness based on the digital dynamics of users who participate in various interactive experiences and experiments.

**Specific goals**
- Study the possibilities offered by digital experimental dynamics when combined with online communities.

**Description of citizen participation**

Users participate in various interactive experiences and experiments from which large volumes of data are collected. This data is analyzed, and its results are published in both academic articles and research journals, specially designed to reach non-specialist audiences, thus those who participated can connect with the knowledge generated from that participation. People can also share some of the results among their contacts to promote the experiments and stimulate participation.

**Type of citizen science project**

**Contributory project:** It is designed by members of the scientific community, and citizens participate in data collection.

---

**El Gato y la Caja [The Cat and the Box]**

- **Participating parties.**
  - El Gato y la Caja (scientific dissemination project)
  - Consciousness, Culture and Complexity Lab/School of Exact and Natural Sciences/University of Buenos Aires (UBA)

- **Status.** In progress.

- **Time frame.** September 2015 - N/A.

- **Frequency of project execution.** According to the demands or approaches to the community/communities.

- **Participation period.** Sustained over time, with set periods of data collection.

- **Scope of the initiative.** International (two or more countries).

- **Geographic scope.** The experiments are designed on the Internet; they can be accessed from anywhere in the world. Argentina accounts for about 80% of the participation.

- **Project development members.** The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

- **Number of participants.** From 1001 onwards.

- **Action/s involving citizen participation**
  - Data collection

- **Technological device/tool required.**
  - Mobile phone with Internet connection

- **Recruitment methods.** Through the set of communication tools (social media, newsletters, and a website) to connect with the Gato Community, the main participant of these initiatives.

- **Replicability.** Many of the experiments have been replicated in various territories. The code is published to help other teams replicate the experiments.

- **Scalability.** The resources available in digital environments contribute to generating easily scalable designs, such as experiments of more than 160,000 unique participants.

- **Open access to data.** The complete databases are published together with scientific publications in journals of international visibility.

- **Feedback.** Public communication materials about science.

- **Linkage with state agency/government.**

- **Awards/distinctions.**

- **Knowledge areas/disciplines (OECD)**
  - NATURAL AND EXACT SCIENCES / Information and Computer Sciences
  - NATURAL AND EXACT SCIENCES / Other Natural and Exact Sciences
  - HEALTH AND MEDICAL SCIENCES / Health Sciences

- **Leaders.**
  - Pablo González, El Gato y la Caja
  - Laura González, El Gato y la Caja

- **Contact information.**
  - Email: pablo@elgatoylacaja.com; laura@elgatoylacaja.com
  - Website: [https://elgatoylacaja.com/investigacion](https://elgatoylacaja.com/investigacion)
El Veril del Banco de Afuera [Outer Bank Reef] Integrated monitoring for the evaluation of any potential changes related to ocean acidification in the coastal area of Mar del Plata

Objectives
Assess ocean acidification in the coastal area of Mar del Plata.

Description of citizen participation
The idea behind “El Veril” lies in the collaboration between INIDEP and CASE diving club in collecting information on the marine environment in order to coordinate an integrated monitoring effort towards the evaluation of possible changes linked to ocean acidification in the coastal site of Mar del Plata. CASE scuba divers collect seawater samples (for the analysis of pH levels and total alkalinity, salinity, dissolved oxygen, chlorophyll-a, phytoplankton and bacterioplankton abundance) during their recreational outings to “El Veril” (a coastal site visited by divers due to its good visibility and variety of marine species) on a monthly basis. They also record the metadata required at the sampling site (GPS coordinates, date and time, sampling depth, the dive computer temperature profiles, and sea conditions).

Type of citizen science project
Contributory project: It is designed by scientists, and citizens participate in data collection.

Participating parties.
- National Institute for Fisheries Research and Development (INIDEP, in Spanish).
- Centro de Actividades Submarinas Escualo (“Escualo” Underwater Activities Center, CASE in Spanish) (citizen scientists).
- NF-POGO Alumni Network for the Ocean (NANO) (international organization), as part of the international NANO-DOAP project (“A global study of coastal Deoxygenation, Ocean Acidification and Productivity at selected sites”), which provides a framework for the project within an international setting comprising 16 countries and financial support for the purchase of supplies and small equipment.
- Red Latinoamericana de Acidificación de los Océanos (Latin America Ocean Acidification Network) (LAOCA, in Spanish).

Status.
In progress.

Time frame.
12/18/2018 – N/A

Frequency of project execution.
Ideally, it is executed on a semi-monthly to monthly basis.

Participation period.
Sampling takes about an hour and is ideally performed on a semi-monthly basis.

Scope of the initiative.
Local (city, province).

Geographic scope.
Mar del Plata, Buenos Aires.

Project development members.
It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants.
From 1 to 50.

Action involving citizen participation.
- Data collection.
- Solution design.
- Solution implementation.

Technological device/tool required.
The following elements are used for sampling:
- Boats.
- Scuba diving equipment.
- Cell phones.
- Sampling bottles.
- Dive computers.
- GPS.

Sampling entails no risk for scuba divers but demands training for a proper execution.

Recruitment methods.
In 2018, several meetings were held, and an agreement was signed by INIDEP and CASE to perform the relevant activities. Then, scientists held several meetings with the citizen divers involved in the project to train them on sampling. Also, subsequent meetings are held every six months to assess improvements and present the scientific findings obtained.

Replicability.
It may be replicated in other sites with other scuba diving clubs.

Scalability.
Open access to data. Data are shared with the NANO-DOAP project and every 6 months dissemination activities are conducted (popular science articles and/or webinars).

Feedback.
In 2019, through a series of webinars sponsored by the Argentinean Federation of Underwater Activities (FAAS), the ongoing activities were openly presented to the community of Argentina and Latin America. Additionally, seminars are offered with members of the CASE club to assess the progress of the activities and the results of the project through discussion and an engaging visual design resource. In January 2020, scientists from INIDEP and citizen divers from the CASE club joined the international virtual event “Ocean Acidification Day of Action”, which was sponsored by the international organization “The Ocean Foundation”, through a brief documentary in which citizen divers from CASE, who collect ocean acidification samples in “El Veril”, provided details of their experience. The scientific team and CASE divers presented the project in the virtual academic and citizen science findings at the National Marine Science Conference (Jornadas Nacionales de Ciencias del Mar) held in Comodoro Rivadavia in March 2022. The scientific team and CASE divers presented their research findings at the international virtual event “Ocean Acidification Day of Action”, which was sponsored by the international organization “The Ocean Foundation”.

Linkage with state agency/government.
Do not know / do not answer.

Institutional funds.
- Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana (Grant to Support Projects from the National Citizen Science Program) / Argentine Ministry of Science, Technology, and Innovation
- INDEP (at a national level), NANO-NF-POGO (at an international level).

Awards/distinctions.
- Classification of knowledge areas (OECD).

NATURAL SCIENCES / Earth and related Environmental sciences

Project leaders.
- Carla J. Berghoff, National Institute for Fisheries Research and Development (INIDEP, in Spanish).

Contact information.
Email: berghoff@indep.edu.ar / lepheria@indep.edu.ar
**Objectives**

**Overall goal:**
- Contribute to the conservation of spiders and scorpions and provide information about health consequences for human beings through collaborative gathering of information and distribution of these species.

**Specific goals:**
- Promote citizen participation through the contribution of photographic records and complementary data regarding the findings of scorpions or spiders using a digital application.
- Propose prevention and control measures in the presence of species of health importance.
- Hold discussions, workshops, and training sessions for the community by providing information about the biology, habitats, and danger of arachnids to transform citizens into knowledge multipliers.

**Description of citizen participation**
The initiative requires information in the form of photographic records and complementary data related to the findings of scorpions and spiders carried out by participants. Citizens provide said photographic records and complementary data through an Android digital application that they download to their mobile phones.

**Type of citizen science project**
**Contributory project:** It is designed by scientists, and citizens participate in data collection.

**Participating parties.**
- Centre for Parasitological and Vector Studies (CEPAVE, by its Spanish acronym)/National Scientific and Technical Research Council (CONICET, by its Spanish acronym)-National University of La Plata (UNLP, by its Spanish acronym)
- Ministry of Infrastructure of the province of Buenos Aires
- Reserva Natural de Punta Lara (nature reserve)
- Parque Provincial Ernesto Tornquist (nature reserve)

**Status.** In progress.

**Time frame.** 12/21/2017 - N/A.

**Frequency of project execution.** Uninterruptedly.

**Participation period.** Sustained over time.

**Scope of the initiative.** National and international.

**Geographic scope.** Argentina and Spanish-speaking countries.

**Project development members.** Entirely developed by participants with formal scientific training.

**Number of participants.** From 1001 onwards.

**Action/s involving citizen participation**
- Data collection
- Other/s: photographic records

**Technological device/tool required.**
- Mobile phone with Android 4 or higher
- Digital application

**Recruitment methods.** By sharing information about the application ¿Es araña o Escorpión? [Is it a spider or a scorpion?] in mass media (radio, television, the institution’s social media, etc.) and events such as scientific fairs, visits to schools and public institutions, discussions, workshops, training sessions, etc.

**Replicability.** -

**Scalability.** Citizen participation is continually increasing.

**Open access to data.** -

**Feedback.** Citizens receive feedback through the application and emails to the address with which they registered.

**Linkage with state agency/government.** Ministry of Infrastructure of the province of Buenos Aires.

**Institutional funds.** Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation

**Awards/distinctions.** Distinction given by the Argentine Ministry of Science, Technology, and Innovation (MINCYT, by its Spanish acronym) through the National Citizen Science Program.

**Classification of knowledge areas (OECD).**
- NATURAL SCIENCES / Biology.

**Project leaders.**
Alda González, Centre for Parasitological and Vector Studies (CEPAVE)/National Scientific and Technical Research Council (CONICET)-National University of La Plata (UNLP)

**Contact information.**
Email: asgonzalez@cepave.edu.ar
**Especies cripticas: el Pichiciego** [Cryptic species: the Pink Fairy Armadillo]

Monitoring of biodiversity and the distribution of the mammal pink fairy armadillo (*Chlamyphorus truncatus*)

**Objectives**

**Overall goal:**
Jointly characterize the geographical distribution of the mammal pink fairy armadillo (*Chlamyphorus truncatus*), endemic to Argentina, to contribute to its proper conservation.

**Specific goals:**
- Contribute to defining the conservation status of the pink fairy armadillo (*Chlamyphorus truncatus*).
- Create a potential distribution map by combining different participatory data collection methodologies.
- Develop dissemination and outreach materials about the species.

**Description of citizen participation**

Citizens send information through different social media platforms: photos, videos, date and place of the sighting, anatomical and behavioral characteristics, environmental data of the sighting place, etc. If the animals are found dead, citizens preserve the bodies using alcohol or store them in a freezer until the project team can collect them. The specimens are part of the mammalogy collections in the museums of La Pampa and La Plata, and their tissue samples are extracted to carry out genetic studies.

**Type of citizen science project**

**Contributory project:** It is designed by members of the scientific community, and citizens participate in data collection.

**Participating parties.**
- National Scientific and Technical Research Council (CONICET, by its Spanish acronym)
- Museum of La Plata/National University of La Plata (UNLP, by its Spanish acronym)
- Natural History Museum of La Pampa
- National University of Patagonia San Juan Bosco (UNPSJB, by its Spanish acronym)
- National Agency for the Promotion of Research, Technological Development and Innovation (Agencia I+D+i in Spanish)
- Teachers and students from Albergue de Jagüel del Monte and Arbol Solo schools in La Pampa
- Park rangers of La Pampa and Mendoza’s provincial reserves
- Biblioteca Popular de Victorica (community library) in La Pampa
- Livestock producers of the western region of La Pampa
- Directorate of Natural Resources of the Government of the province of La Pampa

**Status.** In progress.

**Time frame.** 8/1/2011 - N/A.

**Frequency of project execution.** Uninterruptedly.

**Participation period.** Sustained over time.

**Geographic scope.** La Pampa (center region and west region in its entirety), Mendoza (southern sector), Buenos Aires (southwest), San Luis (Chosmes), Córdoba, Catamarca, San Juan, Rio negro (northern sector) y Neuquén.

**Project development members.** The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

**Number of participants.** From 101 to 500.

**Action/s involving citizen participation**
- Problem definition
- Data collection
- Phenomenon monitoring

**Technological device/tool required.**
- Mobile phone for recording sightings and sending information through social media
- Dissection tools for taking biological samples

**Recruitment methods.** Through social media and field work visits where different locations are visited and publications and other outreach materials of the project are distributed.

**Replicability.** In the schools where the workshops are held, the work methodology has been replicated and other species have been investigated.

**Scalability.**
- Open access to data.

**Feedback.** Information is shared by personally delivering scientific outreach materials to residents. Copies are left in schools, provincial directorates (fauna, natural resources, and cadastres), municipal offices, etc.

**Linkage with state agency/government.** Directorate of Natural Resources and Cadastre of the Government of the province of La Pampa.

**Institutional funds.** National University of La Plata (UNLP). National Agency for the Promotion of Research, Technological Development and Innovation (Agencia I+D+i in Spanish).

**Awards/distinctions.**

**Comments.**

**Knowledge areas/disciplines (OECD)**
- NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences
- NATURAL AND EXACT SCIENCES / Biology

**Project leaders.**
- Esteban Soibelzon, Museum of La Plata/UNLP

**Contact information.**
- Email: esoibelzon@fcnym.unlp.edu.ar; project.pichiciego@gmail.com
- Instagram: instagram.com/observar
Experimento participativo de Monitoreo de Calidad del Aire

[Participatory Air Quality Monitoring Experiment]

Objectives

Overall goal: Assess air quality, humidity and temperature in different cities of Argentina.

Specific goals:
• Map the air pollution affecting the population and learn about the changes in pollution levels.
• Design corridors for climate change mitigation across urban areas, defining a strategy to understand the scope and limitations of measurements.
• Provide technical and educational evidence for citizens to access information that will allow them to know the quality of the air they breathe, and the relation between pollution, climate change and urban dynamics.

Description of citizen participation

It involves the development of low-cost sensors by students from public universities at workshops organized by MAyDS and UNDP. Each sensor weighs 500 grams and measures different variables, such as the levels of particles suspended in the air, humidity, and temperature.

Once assembled, the sensors are delivered and fixed to the bikes and backpacks of the volunteers selected by MAyDS and UNDP. Each sensor weighs 500 grams and measures different variables, such as the levels of particles suspended in the air, humidity, and temperature. Volunteer selection is based on frequency of circulation and daily commutes across urban and adjoining areas. After a certain number of weeks, sensor data are collected to create air pollution maps. Volunteers can see the level of pollution they are exposed to along their daily commutes, and they may provide solutions to reduce their own emissions.

Type of citizen science project

Collaborative project: Citizens participate in data collection and analysis.

Participating parties.
• The United Nations Development Programme (UNDP), within the framework of the Memorandum of Understanding in place with the Argentine Ministry of Environment and Sustainable Development (MAyDS, in Spanish).
• Open-seneca initiative of the University of Cambridge.
• Governments of different jurisdictions within Argentina.

Status. In progress.

Time frame. 04/29/2019 – N/A

Frequency of project execution.
Based on demand or community outreach. Uninterruptedly.

Participation period. 1-2 months.

Scope of the initiative. Argentina (two or more provinces).

Geographic scope. Autonomous City of Buenos Aires (CABA, in Spanish), Mendoza and Córdoba.

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 51 to 100.

Action/s involving citizen participation
• Data collection.
• Phenomenon monitoring.
• Solution design.

Technological device/tool required.
• Computer: to transfer data from the sensor to the data platform
• Temperature and humidity sensor
• Particulate matter sensor: PM2.5

Recruitment methods. Through social media, universities, and by direct contact among participants.

Replicability. Air quality sensing has been replicated at a national level in CABA (May 2019, June 2020), Mendoza (September 2019), and Córdoba (November 2020). Tucumán and Rosario will join soon. The open-seneca initiative from the University of Cambridge, whose purpose is to measure air quality powered by citizen science, operates worldwide and has replicated this approach in Nairobi, Kenya (May 2020), Lisbon, Portugal (May 2021), Stockholm, Sweden (May 2021) and Phnom Penh, Cambodia (May 2021).

Scalability. The number of cities using these sensors to monitor air quality has increased in Argentina.

Open access to data. Participating citizens have access to the data they collect along their daily commutes. Individual routes are not published so as to protect the privacy of participants. Data are anonymously entered at city level and publicly released. The purpose is to inform environmental policies, raise citizens’ awareness, and drive behavioral changes to reduce individual emissions.

Feedback. Citizens may view the air quality data gathered during data collection, and, once this process has been completed, they can access the data relevant to their city.

Linkage with state agency/government. It has been implemented in collaboration with MAyDS and local governments including CABA, Mendoza, Córdoba, and Tucumán.

Institutional funds. University of Cambridge through UK-Canada Post-doctoral funding. UK Research and Innovation (UKRI). Accelerator Lab, UNDP.

Awards/distinctions. In the United Kingdom, the open-seneca initiative won the Vice-Chancellor’s Award for the projects conducted in Argentina and Nairobi.

Comments. Air quality monitoring is one of the many experiences developed by the open-seneca team at the University of Cambridge in Argentina, Kenya, Cambodia, Portugal and Sweden, among other locations.

Knowledge areas/disciplines (OECD)
ENGINEERING AND TECHNOLOGY / Electrical engineering, Electronic engineering, Information engineering
ENGINEERING AND TECHNOLOGY / Environmental engineering
SOCIAL SCIENCES / Educational sciences

Project leaders.
• Maria Eugenia Di Paola, UNDP Accelerator Lab in Argentina.
• Lorena Górriz Daggiller, UNDP Accelerator Lab in Argentina.

Contact information.
Email: info@open-seneca.org ; maria.eugenia_di_paola@undp.org
Web: open-seneca.org

Web: open-seneca.org
Objectives

Overall goal:
Monitor odors from landfills and other polluting sources.

Specific goals:
• Develop a mobile application for reporting odor nuisance.
• Geolocate reports from citizens.
• Build up a long-term database.
• Study and analyze the reporting database cross-referenced with meteorological databases.

Description of citizen participation

Citizen participation consists of data collection. At this stage, upon identifying a disturbing odor, users can log in to the mobile application and report it by filling out a standardized form, where the probable source of the odor, basic descriptors and perceived intensity are recorded. The application will capture this data and record the mobile device’s location.

The data will be stored in an open database that can then be cross-referenced with meteorological databases. This helps to correlate citizen detection and warning of nuisance odors linked to wind, temperature, humidity, and pressure conditions, for subsequent analysis (source identification, frequency of disturbance occurrence among the population, etc.).

Type of citizen science project
Contributory project: It is designed by scientists, and citizens participate in data collection.

Alerta Buen Aire UNGS
[Fresh Air Alert, National University of General Sarmiento (UNGS)]

Participatory science for landfill odor monitoring and warning in the Great Buenos Aires Area - Birds - Short-eared Owl (Asio flammeus)

Participating parties.
• Researchers from the Institute of Sciences, National University of General Sarmiento (ICI-UNGS).
• Developers and technical staff from ICI-UNGS and the Information Systems and Technologies Program of the National University of General Sarmiento (PISyTI-UNGS).
• Environmental activists.

Status. Under design.

Time frame.
• Design start date. November 2021
• Probable application launch date. November 2022

Frequency. Uninterruptedly.

Participation period. Sustained over time.

Scope of the initiative. Local (city, province).

Geographic scope. Northwest of the Great Buenos Aires area (municipalities of Malvinas Argentinas, San Miguel, Moreno, Morón, Tres de Febrero, Hurlingham, José C. Paz, Ituzaingó, Merlo and San Martín).

Project development members.
It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 1 to 50.

Action/s involving citizen participation.
• Problem definition.
• Data collection.
• Phenomenon monitoring.

Technological device/tool required
• Mobile phone with Internet connection for the downloadable application, data upload and device geolocation.

Recruitment methods.
Through social media, instant messaging, and mailing lists (e-mail distribution lists and instant messaging lists).

Replicability. Don’t know/No answer.

Scalability.
Open access to data. Using Google maps and database.

Feedback. Application messaging and redirection to Google maps.

Linkage with state agency/government.

Institutional funds. National University of General Sarmiento (UNGS).

Comments. Initiative under design from the Institute of Sciences (ICI-UNGS) in collaboration with the General Department of Information Systems and Technology (DGSTI-UNGS).

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences

Project leaders.
Guillermo Jorge, Institute of Science / National University of General Sarmiento (UNGS).

Contact information.
Email: ajorge@campus.ungs.edu.ar
Facebook: facebook.com/Alerta-Buen-Aire-UNGS-104899632055411
Fortines, arqueología y patrimonio [Fortlets, archeology, and heritage]

Community building and sustainability of threatened archaeological heritage

Objectives

Overall goal
- Jointly build knowledge about the archaeological heritage linked to the process of expansion and configuration of national borders in relation to the indigenous societies in the Pampa and Patagonia regions during the 19th century in the district of Tres Arroyos (Buenos Aires).

Specific goals
- Build a map of local stakeholders focusing on interests, needs, perceptions, and issues related to the pillboxes.
- Collaboratively expand the information on the location, characterization, and state of conservation of the pillboxes.
- Contribute to the awareness-raising within local communities in relation to the importance and safeguarding of archaeological heritage sites as part of a sustainable environment to mitigate the damage and destruction of the pillboxes.
- Develop joint strategies for the conservation of the pillboxes, their monitoring, and promotion.

Description of citizen participation

Staff from museums, municipal institutions, neighbors, and detectorists from the Tres Arroyos district together with professional scientists participate jointly and actively in the different stages of research. During the diagnostic and presentation stage, discussion meetings and interviews are held to record interests, knowledge, and issues related to the pillboxes, and training workshops on archaeology and its activities are carried out. Then, participants take part in the hypothesis statement and the search for cartographic, historical, and bibliographical sources related to the local pillboxes in the 19th century from the Mulazzi and Aníbal Paz museums. In turn, they work on finding and managing access to private fields where the sites and lodgings are located; conducting archaeological and geophysical surveys in pillboxes through the use of detectors and collecting materials through excavations; classifying and analyzing archaeological materials recovered through the fieldwork and from public and private archaeological collections; and assessing the hypotheses proposed collaboratively, participatory result analysis and interpretations in various task groups according to the institutions and places they belong to. Finally, meetings and workshops on archeology and heritage are held to promote the identification, awareness, and enhancement of historical sites and to contribute to the care of local heritage.

Type of citizen science project

Co-created project: Citizens participate in all stages of the scientific process.

Participating parties.
- National Scientific and Technical Research Council (CONICET, by its Spanish acronym)
- Advanced anthropology undergraduate students/School of Philosophy and Language/University of Buenos Aires
- Municipality of Tres Arroyos
- “José A. Mulazzi” Archaeology Museum
- “Aníbal Paz” Regional Museum (Claromecó, Buenos Aires)
- “Comarca del Quequén Saladó” neighbors association
- Owners of rural establishments where the fortlets are located
- Detectorists from the district of Tres Arroyos
- “Félix de Azara” Natural History Foundation

Status. In progress.

Time frame. 02/01/2018 - N/A.

Frequency of project execution. Uninterruptedly.

Participation period. Throughout the development of the project.

Scope of the initiative. Local (city, province).

Geographic scope. Cities of Tres Arroyos and Claromecó, among others, in the district of Tres Arroyos, province of Buenos Aires, Argentina.

Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

Number of participants. From 51 to 100.

Action/s involving citizen participation
- Problem definition
- Data collection
- Data analysis
- Phenomenon monitoring
- Solution planning
- Solution deployment
- Citizens participate in all stages of the process.

Technological device/tool required.
- Mobile phones
- Camera
- Computers
- Audio recorder
- GPS
- Optical level
- Lightbox
- Stereo microscope
- Projector
- Mobile application

Recruitment methods.

Replicability. -

Scalability. This initiative was extended, due to local demand, to towns near the Quequén Saladó River.

Open access to data. -

Feedback. Through informal meetings and workshops in museums, local press, social media, and scientific publications.

Linkage with state agency/government. Municipality of Tres Arroyos.

Institutional funds.
- National Scientific and Technical Research Council (CONICET)
- National Agency for the Promotion of Scientific Research, Technological Development and Innovation (Agencia I+D+i, in Spanish)
- “Félix de Azara” Natural History Foundation
- Municipality of Tres Arroyos
- Local cooperation

Awards/distinctions.

Comments.

Knowledge areas/disciplines (OECD) HUMANITIES / History and Archeology

Leaders.
- Dr. Vanesa Natalia Bagaloni, Associate Researcher (CONICET) and Project Director, Centro de Ciencias Naturales, Ambientales y Antropológicas [Center for Natural, Environmental, and Anthropological Sciences]: Universidad Maimonides (Maimonides University) and Azara Foundation
- Noemí Rivas, Director of Culture and Education - Tres Arroyos
- Mariano Martín Regueiro, President of the Commission of the “Aníbal Paz” Regional Museum in Claromecó
- Marcos Martínez, Manager of the “José A. Mulazzi” Archeology Museum
- Nicanor Keller, “Comarca del Quequén Saladó” neighbors association

Contact information.
Emails: bagaloni.vanesa@maimonides.edu; museo.claromeco@gmail.com; museomulazzi@tresarroyos.gov.ar; cultura@tresarroyos.gov.ar
Objectives

Overall goal:
- Study how melting glaciers affect phytoplankton communities in the west of the Antarctic Peninsula.

Specific goals:
- Analyze phytoplankton biodiversity and dynamics in coastal areas, which are not so broadly studied in the west of the Antarctic Peninsula.
- Raise awareness among visitors as regards the importance of microalgae communities in Antarctic ecosystems.

Description of citizen participation

Participants with no formal training arrive at the points of interest by tourist ships and disembark in Zodiac-type boats together with a polar guide, who was previously trained by the researchers of the project. They take different water samples (tap, bottle, and meltwater samples), make environmental measurements (conductivity, temperature, and depth measures [CTD], and the Secchi disk) with tools provided by the project team, and duly record data in spreadsheets. At the end of the season, data and samples are collected and sent to the researchers in order to be analyzed.

Type of citizen science project

Contributory project: It is designed by scientists, and citizens participate in data collection.

Linkage with state agency/government.
- Awards/distinctions. -
- Comments. The methodology proposed worldwide by conservation charity JUST ONE OCEAN is used to make the results internationally comparable.
- The information is compiled in https://microplasticsurvey.org/results.

Knowledge areas/disciplines (OECD)
- NATURAL AND EXACT SCIENCES / Biology

Leaders
- Maria Vernet, Scripps Institution of Oceanography/Universidad de California en San Diego (UCSD)
- Allison Cusick, Scripps Institution of Oceanography/UCSD
- Martina Mascioni, Department of Phycology, Natural Science School and Museum (UNLP)/National University of La Plata (UNLP)
- Rick Reynolds, Scripps Institution of Oceanography/UCSD
- Gastón O. Almandoz, Department of Phycology/FCNYM/UNLP

Contact information
- Email: fjordphyto@gmail.com
- Website: www.fjordphyto.org
- Facebook: facebook.com/fjordphyto
- Instagram: instagram.com/fjordphyto
- Twitter: mobile.twitter.com/FjordPhyto
- YouTube: youtube.com/fjordphyto
Gaviota Cangrejera [Olrog’s Gull]
Monitoring of the marine-coastal ecosystem from the crab gull

Citizens participate in data collection and analysis. Contributory project: Citizens participate in data collection and analysis.

Objectives

Overall goals: Contribute to the conservation and management of Olrog’s Gulls (Larus atlanticus) considering their habitats and their behavioral flexibility in the event of any potential changes in the conditions of the area they inhabit. The ultimate goal of this project is to contribute to the implementation of ecosystem policies in the management of the marine and coastal environment.

Specific goals:

• Determine the migration movements of Olrog’s Gull specimens using citizens’ reports on ringed birds.

Description of citizen participation

During field research, Olrog’s Gull specimens are caught for ringing. As part of the monitoring process, individuals are ringed and samples of blood are taken. Additionally, behavioral tests are conducted to determine their personality traits and flexibility. The information gathered may be compared with the reports on ringed birds found in different coastal areas in the south of the continent. Citizens record ringed birds and report the number on their ring by sending a photo and the location of the bird (georeferencing).

Type of citizen science project

Contributory project: Citizens participate in data collection and analysis.

Scalability. Between 2019 and 2022, the number of records per year increased. During these years, almost 50 people were registered, who reported hundreds of tagged individuals visiting the areas of Bahía San Blas, Bahía Blanca, Mar del Plata, Necochea, Santa Clara del Mar, La Caleta, Mar de Cobo, Mar Chiquita, Laguna José Ignacio, Rocha Uruguay, etc.

Open access to data. The data collected will be presented at scientific meetings and will be reported in a document available to the relevant communities.

Feedback. Immediately after reporting a ringed bird, the citizen receives details on such bird in particular. The details shared include sex, ringing date, age (if known) and any other interesting data.

Scope of the initiative. International (two or more countries).

Geographic scope. The initiative conducts field research in Reserva de Biosfera Parque Atlántico Mar Chiquito (Parque Atlántico Mar Chiquito Biosphere Reserve), on the coast of Mar del Plata and its surroundings. Also, the residents of coastal areas in Argentina and Uruguay are requested to report sightings of ringed birds.

Project development members. It has been entirely developed by people with formal scientific training.

Number of participants. From 1 to 50.

Action/s involving citizen participation.

• Data collection.
• Data analysis.

Technological device/tool required.

The data to be recorded may be seen with the naked eye. However, as a general rule, the following instruments are used:

• Binoculars
• Photographic cameras

Recruitment methods. Through social media (Instagram, Twitter and Facebook groups). Also, a flyer is sent every year in April by email: garciagerman@conicet.gov.ar

Contact information.

Email: garciagerman@conicet.gov.ar
Instagram: avesmarinas.ilmyc
Twitter: twitter.com/MdqSeabirds
Facebook: facebook.com/mdq.seabird

Awards/distinctions. Do not know/do not answer

Classification of knowledge areas (OECD).

NATURAL SCIENCES / Earth and related Environmental sciences
NATURAL SCIENCES / Biological sciences
SOCIAL SCIENCES / Sociology

Project leaders.


Legal status. In progress.
Geckos Forasteros en tu Casa, ¿Estás Seguro?
[Non-native Geckos at Home, Are you Sure?]
Monitoring exotic species of geckos existing in Argentina

Objectives
- Assess the current knowledge of the exotic gecko invasion occurring in Argentine soil.
- Establish the geographic distribution of each species within Argentina.
- Raise awareness on the study of invasive species and the importance of citizen involvement for their conservation and research.

Description of citizen participation
Citizens provide data on some species of exotic geckos present in their own homes. To this end, they must fill out an online form or contact project members directly through social media or via e-mail.

Type of citizen science project
Contributory project: It is designed by scientists, and citizens participate in data collection.

Participating parties.
- Research team of the National Scientific and Technical Research Council (CONICET, in Spanish) of Argentina
- Foreign researchers
- Postgraduate students pursuing a doctorate from the National University of Córdoba (UNC, in Spanish)
- Undergraduates about to receive a university degree (in Biology) from UNC
- Biology professors
- Science communicators

Status. In progress.

Time frame.

Frequency of project execution. Only once.

Participation period. 1 year.

Scope of the initiative. Argentina (two or more provinces).

Geographic scope. Argentina.

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 101 to 500.

Action/s involving citizen participation
- Data collection.
- Phenomenon monitoring.

Technological device/tool required. Cell phone to record the observation (on a photograph or on video) and internet access to send the information through an online form.

Recruitment methods. Through social media, the press, websites, and face-to-face to direct contacts.

Replicability.

Scalability.

Open access to data. Preliminary findings are shared through social media and on the project website. Final findings will be published on scientific journals and science magazines.

Feedback. All participants receive feedback on the species identification, its biological traits, the significance of the record within the context of biological invasions, and the measures to be adopted (and avoided) in each case. It is sent in the form of personal text messages through social media.

Linkage with state agency/government.

Institutional funds. Project’s own funding sources.

Awards/distinctions.

Classification of knowledge areas (OECD).
NATURAL SCIENCES / Biological Sciences

Project leaders.
Nicolás Pelegrin, Institute of Animal Diversity and Ecology (IDEA)/National Scientific and Technical Research Council (CONICET)-National University of Córdoba (UNC).

Contact information.
Email: pelegrin.nicolas@gmail.com
Web: pelegrinlab.wixsite.com/lecoherp/gecks-forasteros
Facebook: facebook.com/proyecto.geckos.forasteros
Instagram: instagram.com/geckosforasteros

Geckos Forasteros en tu Casa, ¿Estás Seguro?
Monitoring exotic species of geckos existing in Argentina

Participating parties.
- Research team of the National Scientific and Technical Research Council (CONICET, in Spanish) of Argentina
- Foreign researchers
- Postgraduate students pursuing a doctorate from the National University of Córdoba (UNC, in Spanish)
- Undergraduates about to receive a university degree (in Biology) from UNC
- Biology professors
- Science communicators

Status. In progress.

Time frame.

Frequency of project execution. Only once.

Participation period. 1 year.

Scope of the initiative. Argentina (two or more provinces).

Geographic scope. Argentina.

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 101 to 500.

Action/s involving citizen participation
- Data collection.
- Phenomenon monitoring.

Technological device/tool required. Cell phone to record the observation (on a photograph or on video) and internet access to send the information through an online form.

Recruitment methods. Through social media, the press, websites, and face-to-face to direct contacts.

Replicability.

Scalability.

Open access to data. Preliminary findings are shared through social media and on the project website. Final findings will be published on scientific journals and science magazines.

Feedback. All participants receive feedback on the species identification, its biological traits, the significance of the record within the context of biological invasions, and the measures to be adopted (and avoided) in each case. It is sent in the form of personal text messages through social media.

Linkage with state agency/government.

Institutional funds. Project’s own funding sources.

Awards/distinctions.

Classification of knowledge areas (OECD).
NATURAL SCIENCES / Biological Sciences

Project leaders.
Nicolás Pelegrin, Institute of Animal Diversity and Ecology (IDEA)/National Scientific and Technical Research Council (CONICET)-National University of Córdoba (UNC).

Contact information.
Email: pelegrin.nicolas@gmail.com
Web: pelegrinlab.wixsite.com/lecoherp/gecks-forasteros
Facebook: facebook.com/proyecto.geckos.forasteros
Instagram: instagram.com/geckosforasteros

Geckos Forasteros en tu Casa, ¿Estás Seguro?
Monitoring exotic species of geckos existing in Argentina

Participating parties.
- Research team of the National Scientific and Technical Research Council (CONICET, in Spanish) of Argentina
- Foreign researchers
- Postgraduate students pursuing a doctorate from the National University of Córdoba (UNC, in Spanish)
- Undergraduates about to receive a university degree (in Biology) from UNC
- Biology professors
- Science communicators

Status. In progress.

Time frame.

Frequency of project execution. Only once.

Participation period. 1 year.

Scope of the initiative. Argentina (two or more provinces).

Geographic scope. Argentina.

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 101 to 500.

Action/s involving citizen participation
- Data collection.
- Phenomenon monitoring.

Technological device/tool required. Cell phone to record the observation (on a photograph or on video) and internet access to send the information through an online form.

Recruitment methods. Through social media, the press, websites, and face-to-face to direct contacts.

Replicability.

Scalability.

Open access to data. Preliminary findings are shared through social media and on the project website. Final findings will be published on scientific journals and science magazines.

Feedback. All participants receive feedback on the species identification, its biological traits, the significance of the record within the context of biological invasions, and the measures to be adopted (and avoided) in each case. It is sent in the form of personal text messages through social media.

Linkage with state agency/government.

Institutional funds. Project’s own funding sources.

Awards/distinctions.

Classification of knowledge areas (OECD).
NATURAL SCIENCES / Biological Sciences

Project leaders.
Nicolás Pelegrin, Institute of Animal Diversity and Ecology (IDEA)/National Scientific and Technical Research Council (CONICET)-National University of Córdoba (UNC).

Contact information.
Email: pelegrin.nicolas@gmail.com
Web: pelegrinlab.wixsite.com/lecoherp/gecks-forasteros
Facebook: facebook.com/proyecto.geckos.forasteros
Instagram: instagram.com/geckosforasteros

Geckos Forasteros en tu Casa, ¿Estás Seguro?
Monitoring exotic species of geckos existing in Argentina

Participating parties.
- Research team of the National Scientific and Technical Research Council (CONICET, in Spanish) of Argentina
- Foreign researchers
- Postgraduate students pursuing a doctorate from the National University of Córdoba (UNC, in Spanish)
- Undergraduates about to receive a university degree (in Biology) from UNC
- Biology professors
- Science communicators

Status. In progress.

Time frame.

Frequency of project execution. Only once.

Participation period. 1 year.

Scope of the initiative. Argentina (two or more provinces).

Geographic scope. Argentina.

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 101 to 500.

Action/s involving citizen participation
- Data collection.
- Phenomenon monitoring.

Technological device/tool required. Cell phone to record the observation (on a photograph or on video) and internet access to send the information through an online form.

Recruitment methods. Through social media, the press, websites, and face-to-face to direct contacts.

Replicability.

Scalability.

Open access to data. Preliminary findings are shared through social media and on the project website. Final findings will be published on scientific journals and science magazines.

Feedback. All participants receive feedback on the species identification, its biological traits, the significance of the record within the context of biological invasions, and the measures to be adopted (and avoided) in each case. It is sent in the form of personal text messages through social media.

Linkage with state agency/government.

Institutional funds. Project’s own funding sources.

Awards/distinctions.

Classification of knowledge areas (OECD).
NATURAL SCIENCES / Biological Sciences

Project leaders.
Nicolás Pelegrin, Institute of Animal Diversity and Ecology (IDEA)/National Scientific and Technical Research Council (CONICET)-National University of Córdoba (UNC).

Contact information.
Email: pelegrin.nicolas@gmail.com
Web: pelegrinlab.wixsite.com/lecoherp/gecks-forasteros
Facebook: facebook.com/proyecto.geckos.forasteros
Instagram: instagram.com/geckosforasteros
**GeoVin**

**Study of vector-borne diseases (disease-transmitting animals)**

**Objectives**
- Provide interactive, educational, playful, and free tools to non-specialized people, to contribute to the data collection related to kissing bugs throughout the country.
- Promote awareness about the problem of Chagas, involving citizens in monitoring the vector.

**Description of citizen participation**

Through the digital, educational, and free application, or the project’s social media, citizens are encouraged to participate in the monitoring of all the species of kissing bugs in the country linked to Chagas disease. By means of the application, citizen scientists can inform the presence of possible kissing bugs by sending photographs and reporting the location obtained through the mobile device. A review panel of specialists helps people determine if it is the potential vector of Chagas and identify the species. Then, the leader of the province in question is reached out. With the photographs provided by the citizen scientists, the project seeks to develop a neural network to automatically identify the kissing bugs from photos captured with mobile devices.

**Type of citizen science project**

**Contributory project:** It is designed by scientists, and citizens participate in data collection.
Objectives
Overall goal
• Describe and analyze the meanings and practices of menstrual health management of young menstruating women aged 10 to 19 years in the province of Santa Fe.
Collaboratively design possible territorial intervention strategies to be applied across institutions within the province.

Specific goals
• Describe and analyze the material, cultural, and infrastructural aspects of the meanings and practices of menstrual health management of young menstruating women in Santa Fe.
• Identify and describe the main myths and taboos they have about menstruation.
• Systematize the main obstacles that young menstruating people identify to improve their menstrual management possibilities and devise initiatives for each of the identified areas.

Description of citizen participation
Citizens (young menstruating people, social institutions, feminist and sexual dissident organizations) participate in data collection (surveyed through a form), analysis, and the design and implementation of solutions. During the first stage, work on co-management is carried out together with teachers, health professionals, and young people during workshops in the institutions where they work. Thus, the topic is introduced and interest in the issue is sought to be awakened so that young people become promoters of the survey. Afterward, meetings are held with the youth who participated in the survey (and the general public) to analyze the main results. These meetings will include an analysis phase and a phase aimed at the development of ideas for solutions.

Type of citizen science project
Collaborative project: Citizens participate in data collection and analysis.
Citizen Science

Monitoring of the Argentine horned frog (Ceratophrys ornata)

Citizens participate by sharing records on the Argentine horned frog. There are four ways of participation:

1) By filling in a Google form available on the project's social media. There, participants can upload a photo and add a GPS coordinate, date, time, and weather, and environmental data associated with the record.

2) By downloading the Escuerzo: Gigante de las Pampas App available for Android on the Google Play Store. Through the app, the user can sign up and, by just taking a photo, the record is sent with the associated information.

3) Through in-person surveys at locations where Internet connectivity is low or is not available. For this purpose, the Gigante de las Pampas team visits towns and conducts surveys in person. Records can be current or from several years back, but in all cases, they should include a photo or go through a validation process.

4) If participants spot a frog in a risky situation, for example, on busy roads, trapped inside buildings, or in highly urbanized areas, it is important to reach out immediately through the contact channels and report it to the project’s members. This way flogs will be relocated and released in predetermined areas by the project.

Type of citizen science project

Contributory project: It is designed by scientists, and citizens participate in data collection.

Description of citizen participation

Citizen participate by sharing records on the Argentine horned frog. There are four ways of participation:

1) By filling in a Google form available on the project’s social media. There, participants can upload a photo and add a GPS coordinate, date, time, and weather, and environmental data associated with the record.

2) By downloading the Escuerzo: Gigante de las Pampas App available for Android on the Google Play Store. Through the app, the user can sign up and, by just taking a photo, the record is sent with the associated information.

3) Through in-person surveys at locations where Internet connectivity is low or is not available. For this purpose, the Gigante de las Pampas team visits towns and conducts surveys in person. Records can be current or from several years back, but in all cases, they should include a photo or go through a validation process.

4) If participants spot a frog in a risky situation, for example, on busy roads, trapped inside buildings, or in highly urbanized areas, it is important to reach out immediately through the contact channels and report it to the project’s members. This way flogs will be relocated and released in predetermined areas by the project.

Objectives

Overall goal
Learn about the current and historical geographic distribution of the Argentine horned frog (Ceratophrys ornata) in Argentina, Uruguay, and Brazil, and encourage the participation of local communities in its conservation.

Specific goals
• Monitor the species collectively to detect it in real time and use this information to guide actions for conservation and handling.
• Disseminate the conservation issues of the Argentine horned frog in particular and amphibians in general.
• Promote the Argentine Horned Frog Relocation and Rescue Plan by encouraging the participation of citizens in the identification and notification of frogs at risk.

Description of citizen participation

Citizens participate by sharing records on the Argentine horned frog. There are four ways of participation:

1) By filling in a Google form available on the project’s social media. There, participants can upload a photo and add a GPS coordinate, date, time, and weather, and environmental data associated with the record.

2) By downloading the Escuerzo: Gigante de las Pampas App available for Android on the Google Play Store. Through the app, the user can sign up and, by just taking a photo, the record is sent with the associated information.

3) Through in-person surveys at locations where Internet connectivity is low or is not available. For this purpose, the Gigante de las Pampas team visits towns and conducts surveys in person. Records can be current or from several years back, but in all cases, they should include a photo or go through a validation process.

4) If participants spot a frog in a risky situation, for example, on busy roads, trapped inside buildings, or in highly urbanized areas, it is important to reach out immediately through the contact channels and report it to the project’s members. This way flogs will be relocated and released in predetermined areas by the project.

Type of citizen science project

Contributory project: It is designed by scientists, and citizens participate in data collection.

Participating parties.
• Conservación de Anfibios en Argentina (COANA) [Amphibian Conservation in Argentina] Initiative
• Institute of Ecology, Genetics, and Evolution of Buenos Aires (IEGEBa) in Spanish] University of Buenos Aires (UBA) National Scientific and Technical Research Council (CONICET in Spanish)
• Gabriela Agostini, Researcher, CONICET
• Camila Deutsch, PhD Scholarship Recipient, CONICET
• David Bilanca, Researcher, CONICET and Faculty of Exact and Natural Sciences (FCEN in Spanish)/UBA

Status. In progress.

Time frame. 09/15/2015 - N/A.

Frequency of project execution. Uninterrupted.

Participation period. Sustained over time.

Scope of the initiative. International (two or more countries).

Geographic scope. Argentina (Provinces of Buenos Aires, La Pampa, Córdo- ba, and Santa Fe), Uruguay, and Brazil.

Project development members. It has been developed with the collabora- tion of both scientists and participants without formal training.

Number of participants. Over 1001.

Action/s involving citizen participation.
• Data collection.
• Field management plan.

Technological device/tool required.
• Device for taking photos (mobile phone or camera).
• Internet connection (not essential).
• Mobile phone and/or phone (not essential).

Recruitment methods. Flyers are posted on the initiative’s social media to invite people to participate, especially in spring and summer. Through edu- cational activities at schools, regional parties, science fairs, and conferences.

Replicability. In Brazil and Uruguay from 2018 until the present.

Scalability. The development of the mobile app was an advance, allowing the addition of more participants to the initiative. Moreover, the project adopted a communication strategy, used on social media, developed currently by spe- cialists in science communication. This strategy considerably improved the ex- change with the citizen science program participants and increased to a great extent the number of received records.

Open access to data. All publications and products obtained from the initiati- ve are available to the public on the web.

Feedback. Each participant is contacted personally. Moreover, audiovisual material and multimedia content is produced for social media.

Linkage with state agency/government. The project is implemented at the municipal level, organizing environmental education activities and collabora- tion with educational institutions.

Institutional funds.
• They have been obtained from the project’s own funding sources.
• National Scientific and Technical Research Council (CONICET)
• Scientific and Technological Research Projects (PICT, by its Spanish acronym)
• Neotropical Grassland Conservancy
• The Rufford Foundation
• National Geographic Society
• Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Pro- gram/Argentine Ministry of Science, Technology, and Innovation
• Amphibian Survival Alliance
• Amphibian Ark
• Idea Wild
• Conservation Nation

Awards/distinctions. Rufford Small Grant, National Geographic Grant, Am- phibian Survival Alliance’s 2023 Future Leaders of Amphibian Conservation Award, Conservation Nation Award (awards that provide funding).

Comments. Gigante de las Pampas is within the framework of the COANA [Amphibian Conservation in Argentina] initiative gathering amphibian conser- vation projects in different regions of Argentina.

This initiative’s launch promoted the creation of other citizen science projects, such as Geckos Forasteros en la Casa [Non-native Geckos at Home] which is also part of the mapping.

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Biology

Leaders.
• Gabriela Agostini, Institute of Ecology, Genetics, and Evolution of Buenos Aires (IEGEBa) University of Buenos Aires (UBA) National Scientific and Technical Research Council (CONICET) and the Amphibian Conservation in Argentina (COANA) Initiative
• Camila Deutsch, IEGEBa/UBA-CONICET and COANA Initiative

Contact information.
Email: gabrielaagostini18@gmail.com - deucamila@gmail.com
Website: www.coana.com.ar
Facebook: facebook.com/coanaarg
Instagram: Instagram.com/coana_arg
Twitter: twitter.com/coana_arg
YouTube channel: https://www.youtube.com/coANA_Argentina
**Grupo CoSensores – Sensores Comunitarios** [CoSensores Group - Community Sensors]

Development and application of accessible tools for social and environmental assessments to be made by the community

---

**Objectives**

Develop technologies that allow organized community groups to perform social and environmental assessments in a simple and affordable way, and therefore contribute to the implementation of restoration procedures or actions leading to material improvements in their quality of life.

**Description of citizen participation**

CoSensores is an interdisciplinary group which works horizontally with community groups organized around social and environmental issues, by jointly posing and answering questions that will contribute to their resolution. Collaboration results from the specific knowledge and possibilities of academia and territory, by making consensual decisions and undertaking tasks and responsibilities collectively. The intervention strategy chosen is based on the concept of Participatory Action Research for knowledge co-production. The work methodology used consists in holding two workshops. In the first workshop, the issue is collectively identified, and the relevant trials are conducted. In the second one, the results, advantages and limitations of the methods used are shared, as well as any potential strategies for solving the specific issues detected.

**Type of citizen science project**

**Co-created project:** Citizens participate in all stages of the scientific process.

---

**Participating parties.**

- Grupo CoSensores.
- Community-based organizations (comprising students, teaching staff, researchers and holders of fellowships at national universities).

**Status.** In progress.

**Time frame.** 01/02/2013 – N/A

**Frequency of project execution.** Based on demand or community outreach.

**Participation period.** It may take days or months, depending on the project.

**Scope of the initiative.** Argentina (two or more provinces).

**Geographic scope.** Argentina.

**Project development members.** It has been developed with the collaboration of both scientists and participants without formal training.

**Number of participants.** Over 1001.

**Action/s involving citizen participation**

- Problem identification.
- Data collection.
- Data analysis.
- Phenomenon monitoring.
- Solution design.
- Solution implementation.

Citizens are involved in the entire process.

**Technological device/tool required.**

- Cell phones
- Lab and mapping techniques
- Measurement devices using Arduino sensors, among others

**Recruitment methods.** Through social media and at gatherings organized with the communities involved.

**Replicability.** It has been replicated with different organizations and in different locations and settings, e.g., in Santiago del Estero, from 2013 to 2016, and in Delta del Tigre (Buenos Aires) from 2016 to date.

**Scalability.** It has been upscaled in a diverse and non-centralized way.

**Open access to data.** The means to access information was decided collectively with the community involved in collecting data. In some cases, such data was made available to the public through social networks, community media and/or academic presentations.

---

**Feedback.** Each activity includes a stage where information is shared.

**Linkage with state agency/government.** Actions are coordinated with public educational institutions at different levels.

**Institutional funds.**

- Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation
- Funding for university research, development and extension

**Awards/distinctions.**

- Classification of knowledge areas (OECD).
  - NATURAL SCIENCES / Computer and information sciences
  - NATURAL SCIENCES / Earth and related Environmental sciences
  - SOCIAL SCIENCES / Educational sciences

**Project leaders.**

No project leaders, horizontal research group.

**Contact information.**

Email: cosensores.pvd@gmail.com
Web: tap.bio/@cosensores
Facebook: facebook.com/CoSensores
Instagram: Instagram.com/Cosensores

---

**Grupo CoSensores – Sensores Comunitarios** [CoSensores Group - Community Sensors]
Citizen Science
DECEMBER 2023
EXPLORATION
SOLUTIONS MAPPING
EXPERIMENTATION

Habitar con Salud [Living with Health]
Vector-borne diseases (disease-transmitting animals)

Objectives

Overall goal:
- Examine the distribution of mosquitoes involved in vector transmission of pathogens.
- Promote healthy practices producing a positive change in urban habitats and human habits by eliminating locations where disease-transmitting arthropod vectors (mosquitoes) complete their life cycles.
- Provide tools that contribute to constructing new subjectivities of the project’s participants and, through their involvement, of the community.

Specific goals:
- Collectively design and implement a method for quantitative monitoring of mosquito populations involved in vector transmission of pathogens by placing biological sensors.
- Follow up the monitoring of biological sensors and data records to establish a diagnosis of the neighborhood’s environmental health.
- Encourage eco-friendly habits that contribute to the community’s well-being to avoid the proliferation of breeding sites and thus prevent vector-borne diseases.

Description of citizen participation

Citizens make very simple devices, called biological sensors (BS), made of glass jars, tongue spatulas, and metal clips (to hold the wooden sticks on the rim of the jar) that are placed at homes according to the behavior of the Aedes aegypti, that is, places with shadows and, if possible, vegetation around (yards, parks, gardens, balconies, flowerbeds, etc.). The information of every BS is recorded on forms including different informative columns to carry out an in-depth analysis in situ. All the wooden sticks are stored in sample bags and duly labeled for future revision through a magnifier or microscope. In-person tool demonstration and training workshops, work groups are formed to exchange information using WhatsApp groups throughout the experience. Participants share photos, videos, and form notes weekly. At the end of the experience, a workshop is organized to look at all the wooden sticks collected from the biological sensors under a stereo microscope and discuss the observation. If there is a large quantity of data, a session is held to quantitatively assess the collected information.

Type of citizen science project

Collaborative project: Citizens participate in data collection and analysis.

Participating parties.
- National University of Quilmes (UNQ, by its Spanish acronym)
- National Scientific and Technical Research Council (CONICET, by its Spanish acronym)
- Institute of Virology Dr. José María Vanella (InViV, by its Spanish acronym)/National University of Córdoba (UNC, by its Spanish acronym)
- School of Exact and Natural Sciences (FCEN, by its Spanish acronym)/University of Buenos Aires (UBA)
- National University of Avellaneda (UNDAV, by its Spanish acronym)
- Escuela Secundaria de Educación Técnica [High School of Technical Education] (ESET, by its Spanish acronym)/UNQ
- Municipality of Quilmes
- Members of the Women’s Committee of Quilmes, Berazategui, and Varela (Buenos Aires).

Status. In progress.

Time frame. 1/3/2020 - N/A.

Frequency of project execution. Seasonal (time of year).

Participation period. During the months of highest mosquito activity (from September to April).

Scope of the initiative. Local (city, province).

Geographic scope. Quilmes, Berazategui, and Florencio Varela.

Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

Number of participants. From 51 to 100.

Action/s involving citizen participation.
- Data collection
- Data analysis
- Phenomenon monitoring

Technological device/tool required.
- Stereo or binocular microscope
- Mobile phone
- Biological sensors
- Forms to upload data

Recruitment methods. Social media and scheduled activities as part of the program and other outreach projects.

Replacability. The project has been replicated in The Autonomous City of Buenos Aires and the municipality of La Costa.

Scalability. -

Open access to data. -

Feedback. When the follow-up period ends, a closing session is held to share a mapping of results and, along with the participants, discuss the characteristics of the territories where the Aedes aegypti’s eggs were detected.

Linkage with state agency/government. From October to December 2022, the activity was carried out at the Municipal School of Gardening of the municipality of Quilmes.

Institutional funds. Subsidies from the Outreach Office/UNQ.

Awards/distinctions. -

Comments. -

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences
NATURAL AND EXACT SCIENCES / Biology
HEALTH AND MEDICAL SCIENCES / Health Sciences

Leaders.
- Sandra Elizabeth Goñi, National University of Quilmes (UNQ)
- Members of the Women’s Committee of Quilmes, Berazategui, and Varela (Buenos Aires).

Contact information.
Email: sandra.goni@unq.edu.ar, valeria.cappa@unq.edu.ar
Instagram: instagram.com/habitarconsalud
Web: dcyt.unq.edu.ar/?page_id=887

SECTOR: HEALTH AND MEDICAL SCIENCES / Biology
KNOWLEDGE AREAS: NATURE AND THE ENVIRONMENT
REGION: Latin America and the Caribbean
COUNTRY: Argentina
PROVINCE: Buenos Aires
MUNICIPALITY: Quilmes
EDUCATION LEVEL: Secondary School of Technical Education (ESET, by its Spanish acronym)/University of Buenos Aires (UBA)
INSTITUTIONS: Escuela Secundaria de Educación Técnica [High School of Technical Education] (ESET, by its Spanish acronym)/National University of Córdoba (UNC, by its Spanish acronym)
NATIONAL UNIVERSITY: National University of Quilmes (UNQ, by its Spanish acronym)
Hábitat Claypole [Claypole Habitat]
Ecological restoration of urban streams and green spaces

Objectives
Overall goal:
• Collaboratively design, implement and assess tools for the ecological restoration of urban streams and green spaces close to the bed of the Arroyo San Francisco (Claypole, Almirante Brown, province of Buenos Aires).

Specific goals:
• Evaluate techniques for the reintroduction of native aquatic and riparian plants and their survival in the environment.
• Evaluate the effect of the reintroduction of aquatic and riparian plants on ecosystem biodiversity and water quality.
• Develop water treatment devices or ecological management strategies to mitigate pollutants in the stream that enter through the domestic stormwater system.

Description of citizen participation
In regular meetings, through participatory techniques, participants jointly establish a diagnosis of local issues and share updates about them. They also discuss the design and implementation of solutions and plan the activities included in the project and each actor/participant’s responsibilities. Citizen engagement in the design and implementation is reflected in the construction and installation of devices for the treatment of effluents entering the stream, the procurement of the necessary materials, and the cultivation and reproduction of aquatic and riparian plants for the interventions on the stream bed. Citizens also participate in the monitoring of these plants, which includes data collection (taking photographs to assess plant survival and other treatment devices and using field forms to analyze the state of the stream and vegetation), the water sample collection to assess the effects of actions taken related to the stream, and the use of technologies to analyze certain water parameters (pH, temperature, conductivity, nitrates, phosphates, etc.). The participatory analysis of data is carried out in workshops where participants discuss sampling results, treatment device efficiency, the right choices and errors of the actions developed and the next steps to be taken.

Type of citizen science project
Co-created project: Citizens participate in all stages of the scientific process.

Participating parties.
• Linneology Laboratory/School of Exact and Natural Sciences/University of Buenos Aires (UBA, by its Spanish acronym)
• Instituto de Ecología, Genética y Evolución of Buenos Aires (IEGEBA, by its Spanish acronym) /Institute of Ecology, Genetics and Evolution of Buenos Aires (National Scientific and Technical Research Council (CONICET, by its Spanish acronym)
• Centro de Tecnologías del Uso del Agua [Center for Water Use Technologies]/ National Water Institute (INA, by its Spanish acronym)
• Assemblies of the Centro Cultural Hermanas Mirabal (museum), Department of Habitat and Environment, Galpón Cultural de Claypole (community center), and Club Social y Deportivo Hermanas Mirabal (sports club), part of Frente de Organizaciones en Lucha (POL, by its Spanish acronym) /Social Movement Organizations Coalition

Status. In progress.

Time Frame. 10/20/2018 - N/A.

Frequency of project execution. Uninterrupted.

Participation period. Sustained over time.

Scope of the initiative. Local (city, province).

Geographic scope. Claypole, municipality of Almirante Brown, province of Buenos Aires.

Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

Number of participants. From 51 to 100.

Actions involving citizen participation.
• Problem definition
• Data collection
• Data analysis
• Phenomenon monitoring
• Solution planning
• Solution deployment

Technological device/tool required.
• Field sensors to determine water parameters (pH meter, conductivity meter, oximeter, etc.)
• Field colorimeters for chemical analyses
• Mobiles and computers
• Point shovels, wide shovels, wheelbarrows, and hoes to work along the stream
• Mobiles and computers
• Point shovels, wide shovels, wheelbarrows, and hoes to work along the stream

Feedback.
Meetings to analyze results and discussions about improvements and new designs.

Linkage with state agency/government.
• Municipality of Almirante Brown
• Maintenance Office and Water Monitoring Office of the Subsecretariat of Water Resources of the Ministry of Infrastructure and Public Services of the province of Buenos Aires

Institutional funds.
• Programa Nacional de Tecnología e Innovación Social (National Program of Technology and Social Innovation)/Argentine Ministry of Science, Technology, and Innovation (MINCYT, by its Spanish acronym)
• Secretariat of University Policies/Argentine Ministry of Education
• National Agency for the Promotion of Research, Technological Development and Innovation (Agencia I+D+i in Spanish)
• University of Buenos Aires
• Programa de Gestión de la Inclusión y Acción Económica/Consejo de Desarrollo de la Ciudad de Buenos Aires
• PGP (Program of Social and Productive Inclusion Plan of the City of Buenos Aires)/Argentine Ministry of Social Development
• Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana (Grant to Support Projects from the National Citizen Science Program)/Argentine Ministry of Science, Technology, and Innovation

Awards/distinctions.

Comments.

Knowledge areas/disciplines (OECD)
• Natural and exact sciences / Earth and Environmental Sciences
• Environmental engineering and technology

Leaders.
• Martín Graziano, School of Exact and Natural Sciences/University of Buenos Aires (UBA) and National Scientific and Technical Research Council (CONICET)

Contact information.
Email: martinymartin@gmail.com
Instagram (Twitter, etc.): @ProyectoHabitatClaypole
Facebook: facebook.com/ProyectoHabitatClaypole

Scalability. The number of participants, as well as the local geographic scope, has been steadily increasing.

Open access to data. -

Feedback. Meetings to analyze results and discussions about improvements and new designs.
Objectives

**Overall goal**
Collect and analyze observations of ovenbird nests (Furnarius rufus) from southern South America with a mobile application to learn more about this typical bird.

**Specific goals**
- Explain the asymmetries in the nests of southern South American ovenbirds.
- Explain nest building behaviors and nest structures among southern South American ovenbirds.

Description of citizen participation

Using a mobile application, citizens are asked to report the observed nests, their location and some of their characteristics; in addition, they are asked to share photos. Data collection is simple and dynamic. Data can be uploaded in urban, rural, or natural areas.

Type of citizen science project

**Contributory project:** It is designed by scientists, and citizens participate in data collection.

Participating parties

- Max Planck Institute for Ornithology
- Instituto de Investigación de Zonas Áridas (IDIZA)/Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET)-Universidad Nacional de Cuyo (UNCu)

Status

* Finished.

Time frame

* 10/24/2019 - 10/24/2020

Frequency of project execution

* Uninterruptedly.

Participation period

* 3 minutes per record.

Scope of the initiative

* International (two or more countries).

Geographic scope

* Argentina, Uruguay, Brazil, Bolivia, and Paraguay.

Project development members

It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants

* From 1001 onwards.

Action/s involving citizen participation

- Data collection.

Technological device/tool required

- Mobile phone.

Recruitment methods

* Through social media.

Replicability

* It has not been replicated yet.

Scalability

* More and more people became involved in the project. More than 13,000 people contributed data.

Open access to data

* The data are in open databases uploaded to Mendeley Data with a 1-year embargo (https://data.mendeley.com/datasets/9745v8tj9h/1).
* Publications.

Feedback

Participants are informed about the progress and results through social media feeds and emails to the accounts with which they registered in the mobile application.

Linkage with state agency/government

- 

Institutional funds

- Project’s own funding sources. International sources (Max Planck Institute).
- Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana (Grant to Support Projects from the National Citizen Science Program)/Argentine Ministry of Science, Technology, and Innovation

Awards/distinctions

- Comments

Knowledge areas/disciplines (OECD)

* NATURAL AND EXACT SCIENCES / Biology
* AGRICULTURAL SCIENCES / Agricultural biotechnology
* SOCIAL SCIENCES / Communication and media

Leaders

- Lucia Mentesana, Max Planck Institute for Ornithology-Conicet
- Nicolas Adreani, University of Vienna & Max Planck Institute for Ornithology-IDIZA/CONICET-UNCu

Contact information

E-mail: nidohorneros@gmail.com; luciamentesana@gmail.com; mn.adreani@gmail.com
Facebook: facebook.com/nidohorneros
Twitter: twitter.com/nidohorneros
Instagram: instagram.com/nidohorneros
**Huellas Digitales de la Memoria** [Memory Digital Footprints]

**Geolocation of victim stories. State terrorism**

**Objective**

**Overall goal:**

Jointly reconstruct, make visible, and geolocate in the digital space the life stories of victims (people were disappeared and/or murdered) by State terrorism (1966-1983) in La Plata, Berisso, and Ensenada (Buenos Aires).

**Specific goals:**

- Jointly assemble a digital archive based on a database of victims of State terrorism and a repository of documents and images about the issue.
- Reconstruct the stories of missing persons through materials that incorporate aspects of their lives (work, studies, profession, cause they supported, repressive detention, legal situation, etc.).
- Description of citizen participation

The work team is made up of people from different fields of work and with different roles and levels of participation and activism in human rights causes (historians, lawyers, anthropologists, archive workers, and students). For the reconstruction of the stories, the biographies are sent to the victims’ relatives so that they can verify the information; then, they are invited to add any other data, photographs, or text about their life stories. In addition, citizens can contact each other by e-mail, which gives them the opportunity to learn new stories and even get in contact with family members living abroad. While editing the stories, meetings are held with local human rights organizations and other bodies for validation.

**Type of citizen science project**

**Collaborative project:** Citizens participate in data collection and analysis.

**Participating parties.**

- Hijos por la Identidad y la Justicia contra el Olvido y el Silencio [Sons and Daughters for Identity and Justice against Oblivion and Silence] (H.I.J.O.S., by its Spanish acronym), regional office La Plata.
- Familiares de Detenidos Desaparecidos Presos por Razones Políticas [Relatives of Disappeared Detained Persons Imprisoned for Political Reasons], La Plata (Buenos Aires).
- Atuertas de Plaza de Mayo (Human rights association).
- Dirección de Políticas de Memoria y Reparación [Office of Memory and Redress Policies] and School of Humanities and Educational Sciences (FAHCE, by its Spanish acronym), National University of La Plata (UNLP, by its Spanish acronym).
- Diario Digital 0221 (digital newspaper).
- Espacio para la Memoria ex Comisaría 5ta (site of memory in a former clandestine detention center).
- Subsecretariat of Human Rights (Ministry of Justice and Human Rights).
- Subsecretariat of Human Rights and Mesa de Familiares de Víctimas del Terrorismo de Estado [Roundtable of Relatives of Victims of State Terrorism] (Municipality of Ensenada (Buenos Aires)).
- Mujeres por la Memoria [Women for Memory].
- Redress Policies and School of Humanities and Educational Sciences (FAHCE, by its Spanish acronym) - National University of La Plata (UNLP).

**Status.**

1st stage completed (758 stories). 2nd stage in progress (180 stories).

**Time frame.**

02/01/2019 - N/A.

**Frequency of project execution.**

Uninterruptedly.

**Participation period.**

The iteration and reconstruction process for each of the stories takes an average of 8 hours of revision, but there are life stories that may require more time to search and gather information.

**Scope of the initiative.**

Local, (city, province).

**Geographic scope.**

La Plata, Berisso, and Ensenada (Buenos Aires).

**Project development members.**

The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

**Number of participants.**

From 101 to 500.

**Action(s) involving citizen participation.**

- Data collection.
- Data analysis.
- Other(s): Contributions of materials by the victims’ families, who also restate their relatives’ stories. Promotion of the proposal. Meetings in schools and conferences.

**Technological device/tool required.**

- Mobile phone.
- Computers (laptop or desktop computer).

**Recruitment methods.**

Meetings with human rights organizations, participation in academic conferences, talks in schools, and promotion through social media with explanatory videos of the site.

**Replicability.**

Yes. It is possible to adapt the methodology and the technological components to similar cases.

**Scalability.**

Yes. The initiative can be replicated in other cities, provinces, and countries.

**Feedback.**

The initiative has a website with a map with access to microsites on each of the reconstructed life stories, but does not have open-source data in reusable formats.

**Contact information.**

E-mail: aleesponda@gmail.com ; guadalupegodoy@gmail.com ; huellasdelamemoria@gmail.com

Web: huellasdelamemoria.com.ar
Inundaciones: ¿qué podemos hacer? [Floods: What Can We Do?] Collaborative Technologies in Risk Management

Flood and waterlogging risk management

Objectives

Overall goal
Enhance social stakeholders’ knowledge in southwestern Buenos Aires, Argentina, with respect to the risk of heavy rains, overflows, and floods, and encourage their participation in flood risk management processes.

Specific goals
• Determine the population’s perception and knowledge of flood and waterlogging hazards.
• Jointly produce data, information, and actions for flood risk management together with citizens and with the collaboration of different stakeholders.
• Raise flood hazard awareness by stressing the importance of knowledge and information regarding risks and their management.

Description of citizen participation
Citizens participate mainly in:
1) Defining scenarios and building knowledge related to flood and waterlogging risks in the area, through two phases of participatory workshops: institutional (including specific activities aimed at some of the stakeholders in relation to their risk management role) and inter-institutional (aimed at members of all participating organizations with different risk management roles, which favors experience sharing). Activities are planned in two phases, in agreement with disaster risk management. The first stage involves knowledge and awareness of flood issues. The second stage consists of implementing techniques with a Participatory Action Research approach.

2) Producing data and phenomenon monitoring using mobile phones and tablets. Thus, citizens can record hydro-meteorological events and affected elements in their immediate surroundings (for collaborative mapping purposes), through text and photographs.

Type of citizen science project
Collaborative project: Citizens participate in data collection and analysis.
**Jorobadas del Beagle** [Humpbacks of the Beagle Channel]

Photographic identification of humpback whales (Megaptera novaeangliae)

**Objectives**

**Overall goal:**
- Collaboratively identify and analyze ecological aspects of humpback whales that enter the Beagle Channel in Tierra del Fuego, Argentina.

**Specific goals:**
- Determine the number, size, life cycle characteristics, and population trends of humpback whales entering the Beagle Channel.
- Analyze the habitat use, migratory patterns, site fidelity, and length of stay of animals in the area.
- Identify if the Beagle humpback whales come from the Pacific Ocean or the Atlantic Ocean or if they enter from both populations.

**Description of citizen participation**

This initiative combines systematic surveys during regular boat outings organized by the team with records obtained by the crews and passengers of local tourist boats. Citizens, by email and social media, photograph and film records collected with the date on which they were obtained. Through these records, different specimens can be differentiated, mainly based on the color pattern of the ventral side of their caudal fin.

**Type of citizen science project**

**Contributory project:** It is designed by members of the scientific community, and citizens participate in data collection.

**Participating parties.**
- National Scientific and Technical Research Council (CONICET, by its Spanish acronym)
- National University of Tierra del Fuego, Antarctica and South Atlantic Islands (UNTDF, by its Spanish acronym)
- Comité de Seguimiento del Compromiso Onashaga (Onashaga Commitment Monitoring Committee)
- Wildlife Conservation Society Argentina (WCS)
- Proyecto IMMA (IMMA project) (research group on southern marine mammals)

**Status:** In progress.

**Time frame:** 12/4/2013 - N/A.

**Frequency of project execution:** Seasonal (time of year).

**Participation period:** Sustained over time.

**Scope of the initiative:** Local (city, province).

**Geographic scope:** Ushuaia, Tierra del Fuego.

**Project development members:** The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

**Number of participants:** From 101 to 500.

**Action/s involving citizen participation.**
- Data collection

**Technological device/tool required.**

**Recruitment methods.** By the initiative’s email, promotion through social media, training sessions, and delivery of photo-identification catalogs.

**Replicability.**

**Scalability.** Since 2018, we have seen an increase in citizen engagement which has maintained a growing trend since then.

**Open access to data.**

**Feedback.** As part of Compromiso Onashaga, every year, before the summer season, refresher sessions are organized for both tour operators and the general public. In addition, the catalog is sent to each participant every time it is updated.

**Linkage with state agency/government.**

**Institutional funds.**
- WCS for systematic surveys and catalog printing
- Ushuaia Bureau for catalog printing
- Support from tour operators organizing outings in the Beagle Channel that allow those who participate in the project to travel for free on their boats and take records

**Awards/distinctions.**

**Comments.** The initiative began in 2013 as a pilot project because it was increasingly common to see humpback whales in the Beagle Channel, and the animals stayed in the area for a time. However, it was not until 2018 that there were a good number of animals identified to make a catalog. As of the beginning of 2023, there have been 130 whales identified, and more than 65% of those animals were identified thanks to the contribution of the community. The initiative seeks to create a mobile application through which updated information or news would be shared.

**Knowledge areas/disciplines (OECD)**

NATURAL AND EXACT SCIENCES / Biology

**Leaders.**
- Mónica A. Torres, Southern Center for Scientific Research (CADIC, by its Spanish acronym)/National Scientific and Technical Research Council (CONICET)
- Agustina Dellabianca, National University of Tierra del Fuego, Antarctica and South Atlantic Islands (UNTDF)
- Natalia Dellabianca, CADIC/CONICET

**Contact information.**
- Email: jorobadasdelbeagle@gmail.com
- Instagram: https://www.instagram.com/proyecto.imma/
- Facebook: https://www.facebook.com/MamiferosMarinosDefinidumundolocales_LA

**Web:**
- https://www.instagram.com/compromisoonashaga/
- https://www.facebook.com/CompromisoOnashaga/
- Email: jorobadasdelbeagle@gmail.com

**Institutional funds.**
- WCS for systematic surveys and catalog printing
- Ushuaia Bureau for catalog printing

**Feedback.** As part of Compromiso Onashaga, every year, before the summer season, refresher sessions are organized for both tour operators and the general public. In addition, the catalog is sent to each participant every time it is updated.
Collaborative and urban environmental monitoring of public green spaces

**Laboratorio Abierto de Espacios Públicos Verdes [Open Laboratory of Public Green Spaces]**

**Objectives**

**Overall goal:**
- Characterize, from an open laboratory, citizen engagement and the condition of public green spaces (PGS) in the city of Rosario and Gran Rosario, and the quantifiable relationship between these spaces and the environmental and social needs of the community, and determine minimal conditions and optimal indicators.

**Specific goals:**
- Compile a georeferenced inventory of characteristics and features of selected spaces including size, access, coverage, maintenance level, artificial elements, tree quality, and different cultural, sports, and landscaping elements, and create maps to this end.
- Classify PGS according to their deficiencies and potentialities.
- Analyze the types of community use, behavioral aspects, environmental profile, and perception of PGS.
- Encourage the participation of citizens, civil society organizations, and government bodies in the exploration and consideration of PGS and the development of a useful survey and monitoring methodology.
- Co-design a set of verifiable protocols for the assessment of PGS based on the parameters of territorial sciences and public opinion.
- Raise awareness of the environmental importance, care, and ownership of PGS.

**Description of citizen participation**

Meetings and training are held to address PGS issues and combine collective and individual methods of recording data. Individual mapping notebooks are used to collect data on the relationship between proximity to green spaces and personal satisfaction, and the condition of public green spaces. Group records are also carried out to survey information, such as plant species, the different uses of the public green spaces, etc. Both types of records include aspects, such as gender perspective, accessibility, and inclusion. In addition, the collected data is evaluated, analyzing the following categories: furniture, trees, amenities, design, issues, maintenance, and accessibility.

**Type of citizen science project**

**Collaborative project:** Citizens participate in data collection and analysis.
Laboratorio Agroecológico Abierto

Soil quality monitoring. Soil biodiversity. Environmental monitoring in agricultural environments

Objectives

Overall goal:
• Co-produce knowledge and systematize lessons learned from the agroecological transition of the Cuyo region, with special emphasis on soil management and changes in agricultural practices, based on discussions among different stakeholders.

Specific goals:
• Co-design an open technological infrastructure to systematize, share, and visualize relevant information for different agroecology stakeholders in the Cuyo region.
• Monitor soil health indicators with open laboratory tools and instruments.
• Gather information in a participatory manner about productive spaces and agricultural practices to assess their impact on soil health.
• Develop public communication strategies that make open data available, make information visible, and tell local stories about the agroecological transition.

Description of citizen participation

During in-person workshops, free and low-cost technologies are used to address different aspects related to soil health, as a way to channel discussions and promote a knowledge exchange among farmers. The goal is to “reanimate” soils through community, scientific, and artistic practices that trigger new ideas for the renewed soil. The tools developed are focused on visible dimensions of the soil, such as its inherent complexity, microbiological diversity and activity, and its relationship with organic matter. In each workshop, some aspect of soil health is addressed and a basic guide is produced for citizens to analyze their samples, share their soil stories, and discuss their governance considering that they are common goods produced jointly, and that the community must discuss and decide how, with whom, and why to share them, recognizing their sensitivity in the context of a political and socio-environmental dispute around the food production system in which agroecology is developed in Mendoza and Argentina.

Feedback. The participants have been given feedback through in-person meetings where the results are discussed.

Linkage with state agency/government. Collaborations with INTA and the National University of Cuyo (UNCuyo).

Open access to data. There is no defined protocol for data sharing. We will discuss their governance considering that they are common goods produced jointly, and that the community must discuss and decide how, with whom, and why to share them, recognizing their sensitivity in the context of a political and socio-environmental dispute around the food production system in which agroecology is developed in Mendoza and Argentina.

Contact information:
Email: luisfcrastro@gmail.com, marialauracostella@gmail.com, ferhcastro@gmail.com
Website: regosh.libres.cc/proyectos/lab-agroeco-abierto/

Participating parties.
• Cooperativa de Trabajo Ayllu Ltda [Worker Cooperative Ayllu Ltda] (Maipú, Mendoza)
• Centro de Formación e Investigación Campesina [Rural Training and Research Center] (CEFIC, by its Spanish acronym) - Unión de Trabajadores Rurales Sin Tierra - Somos Tierra [Union of Landless Rural Workers - We Are Land] (UST, by its Spanish acronym) (locally, Mendoza)
• Asociación de productores Crece desde el Pie [agricultural producers association] (San Carlos, Mendoza)
• reGOSH [Red de tecnologías libres para ciencia y educación (network of free and open source technologies for science and education)]
• Cooperativa Ayllu
• Centro de Formación e Investigación Campesina (CEFIC)
• National Institute of Agricultural Technology (INTA)
• National Scientific and Technical Research Council (CONICET)
• School of Agricultural Sciences and School of Exact and Natural Sciences, National University of Cuyo (UNCuyo)

Status. In progress.

Time frame. 6/12/2019 - N/A.

Frequency of project execution. According to the demands or approaches to the community/communities.

Participation period. 1 week per season, per participant (farmers, citizens).

Scope of the initiative. Local (city, province).

Geographic scope. Administrative areas of Maipú, Lavaile, and San Carlos in the province of Mendoza.

Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

Number of participants. From 51 to 100.

Action/s involving citizen participation.
• Problem definition
• Data collection
• Data analysis
• Phenomenon monitoring
• Solution planning
• Solution deployment

Technological device/tool required.
• Microscopes for soil microbiology
• Laboratory equipment for circular chromatographies
• CO2 sensors for soil respiration
• Conductivity and pH sensors
• Colorimeters

Recruitment methods.
• Solution planning
• Phenomenon monitoring
• Problem definition
• Data collection

Scalability. The number of participants has increased over time. In 2019, the project started with small workshops and, during 2022, a meeting with more than 100 people was organized.

Replicability.

Open access to data. There is no defined protocol for data sharing. We will discuss their governance considering that they are common goods produced jointly, and that the community must discuss and decide how, with whom, and why to share them, recognizing their sensitivity in the context of a political and socio-environmental dispute around the food production system in which agroecology is developed in Mendoza and Argentina.

Contact information:
Email: luisfcrastro@gmail.com, marialauracostella@gmail.com, ferhcastro@gmail.com
Website: regosh.libres.cc/proyectos/lab-agroeco-abierto/
**Los anfibios de la Ciudad Autónoma de Buenos Aires**

**[The Amphibians of the Autonomous City of Buenos Aires]**

Amphibian monitoring and biological research

---

**Objectives**

**Overall goal**

Make a record and inventory of the amphibian species living in the Autonomous City of Buenos Aires through citizen participation, helping the community get close to nature and becoming a potential management tool for environments identified as important sites for amphibians.

**Specific goals**

- Promote citizen participation in research projects to enhance the value of the amphibian fauna in the Autonomous City of Buenos Aires and surrounding areas.
- Identify the important sites for amphibian conservation in the City of Buenos Aires.
- Promote and combine the inventory-making and monitoring of amphibians at the important sites previously identified.

**Description of citizen participation**

Anyone can upload records (photo or audio) which will be validated by the project’s technical team and other users from the community, using a user profile in the iNaturalist (Argentinat) citizen science platform. The project leaders will upload these records when the citizens cannot do it on their own. Citizens should send them to the SAVE THE FROGS! Buenos Aires email. Through these records, contact is established with local citizens at places where a systematic field survey is needed, encouraging the rest of the citizens to monitor records and observe phenomena of interest (disappearance of water bodies or green spaces, etc.) as well as provide training in the territory to enhance and increase the number of records in the platform. Moreover, upon request of the relevant permissions, the photos or audio recordings sent to the project will be used to share educational content through the project’s social media, thus creating feedback.

**Type of citizen science project**

**Contributory project:** It is designed by scientists, and citizens participate in data collection.
Mapeando las tramas del agua [Mapping Water Weaves]
Environmental monitoring. Collaborative mapping of hydrosocial territories. Water justice

Objectives
Overall goal:
• Learn about and characterize routes, weaves, and memories of water in different hydrosocial territories of Córdoba.
Specific goals:
• Identify and record the biophysical processes, associated technologies and infrastructure, and the socio-cultural dimension in relation to water.
• Establish connections among the water routes, production of scarcity, and water quality.
• Collectively design water sampling and analysis strategies in territories, promoting a potential interaction with scientific-academic, management, or community-based institutions or projects that address water quality studies.

Description of citizen participation
Citizens co-participate throughout the process. Firstly, they participate in the identification of hydrosocial territories affected by water scarcity and quality issues. The communities themselves and the spaces of socio-environmental struggle initially identify the local issues. Secondly, they co-create mapping workshops in the territory with scientists, scholars, and citizens. Thirdly, they collaborate in the collective mapping of the hydrosocial territory, developed in the area affected by the issue, with the active involvement of citizen scientists participating in the project and the community at large. Fourth, they participate in the design of a water sampling strategy and the generated data record. These strategies represent one of the main products of collective mapping. Finally, they are involved in the analysis and sharing of findings with the community at large, as well as in the development of collaborative strategies with state administration bodies and academic institutions. The analysis of mapping activity records and the integration between this analysis and academic knowledge are carried out jointly through work meetings or collective work on digital platforms. Throughout the process, academic knowledge and environmental knowledge/knowledge of inhabiting interact horizontally.

Type of citizen science project
Co-created project: Citizens participate in all stages of the scientific process.

Participating parties.
• Research Center on Earth Sciences (CITERRA, by its Spanish acronym)/National Scientific and Technical Research Council (CONICET, by its Spanish acronym)-National University of Córdoba (UNC, by its Spanish acronym)
• Faculty of Philosophy and Humanities (FFYH, by its Spanish acronym)/UNC
• Organization Socioambiental Almaverde (socio-environmental organization)

Status. In progress.
Time frame. 6/1/2022 - N/A.
Frequency of project execution. According to the demands or approaches to the community/communities.
Participation period. Sustained over time.
Scope of the initiative. Local (city, province).
Geographic scope. Province of Córdoba.
Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.
Number of participants. From 1 to 50.
Action/s involving citizen participation.
• Problem definition
• Data collection
• Data analysis
• Phenomenon monitoring
• Solution planning
• Solution deployment

Technological device/tool required.
• Analog and digital tools for mappings and records

Recruitment methods.
Recruitment is organized for participation in a collective mapping and sharing of findings. In the initiative at Almafaúente, recruitment was managed by the Outreach Office of the Faculty of Philosophy and Humanities/UNC.

Replicability. -
Scalability. -

Open access to data. The plan is to collectively develop strategies for the open access of the information produced along with the open digital repositories of the UNC.

Feedback. Citizens have access to the co-produced information and findings in real time. Moreover, generated (partial and final) reports are disseminated and shared with members from the participating communities through findings presentation meetings in the territory or academic spaces.

Linkage with state agency/government. -
Institutional funds.
• They have been obtained from the project’s own funding sources
• Institutional funds from the Outreach Office/Faculty of Philosophy and Humanities (FFYH)/National University of Córdoba (UNC)

Awards/distinctions. -
Comments. -
Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences SOCIAL SCIENCES / Economic and Social Geography

Leaders.
• Gilda Collo, Research Center on Earth Sciences (CITERRA)/National Scientific and Technical Research Council (CONICET)-National University of Córdoba (UNC) and the Faculty of Philosophy and Humanities (FFYH)/UNC
• Janet Juri, Organización Socioambiental Almaverde (UNAHUR, by its Spanish acronym)

Contact information.
tramadesalguas@ffyh.unc.edu.ar
Mapeo de biodiversidad urbana [Urban biodiversity mapping]
Santa Fe urban biodiversity

Objectives
Collaboratively map and monitor the urban biodiversity of the city of Santa Fe to develop policies and tools for the care and prevention of its deterioration.

Description of citizen participation
Citizens participate by providing data and information to the mapping of plant and animal species present in the green spaces of the city of Santa Fe through the ArgentiNat platform. This platform helps participants upload photographic and sound records of flora and fauna species observed in a specific location and cooperate by identifying species uploaded by other observers. As part of the project, observation tours for groups and seasonal safaris are organized in Reserva Natural Urbana del Oeste (a nature reserve) as well as outings in municipal parks and squares. In addition, upon institutions’ requests, tours are carried out in green spaces near the requesting institution.

Type of citizen science project
Collaborative project: Citizens participate in data collection and analysis.

Participating parties.
- Secretariat of Environment and Climate Change/Municipality of the city of Santa Fe.
- Observatorio Ambiental Urbano [Urban Environmental Observatory].
- School of Humanities and Sciences/National University of the Litoral (UNL, by its Spanish acronym).
- Custodios del Territorio [Custodians of the Territory] (environmental conservation organization).
- Club de Observadores de Aves (CDA Celestino, Santo Tomé in Spanish) [Bird Watchers Club].
- Proyecto Anfibios de Santa Fe [Santa Fe Amphibian Project].

Status. In progress.

Time frame. 1/1/2020 - N/A.

Frequency. According to the demands or approaches to the community/communities.

Participation period. 50-minute tours and then data uploading time.

Scope of the initiative. Local (city, province).

Geographic scope. City of Santa Fe, province of Santa Fe.

Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

Number of participants. From 1 to 50.

Action/s involving citizen participation.
- Data collection
- Data analysis
- Phenomenon monitoring

Technological device/tool required.
- Mobile phone, camera, or tablet
- Internet connection
- Binoculars
- Magnifying glasses
- Local bird/species guides

Recruitment method. Municipality’s social media, dissemination through mass media (television and newspapers).

Replicability. We have shared the experience with the local governments of the city of Santo Tomé, the city of Esperanza, and the city of Sauce Viejo of the province of Santa Fe which have organized similar outings.

Scalability. In each call, participation and questions about outings have been increasing.

Open access to data.

Feedback.
Linkage with state agency/government. Municipality of Santa Fe.

Institutional funds. Municipality of Santa Fe.

Awards/distinctions.
- Knowledge areas/disciplines (OECD)
  NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences.
  NATURAL AND EXACT SCIENCES / Biology.

Project leaders.
- Luciana Manelli, Observatorio Ambiental Urbano/Secretariat of Environment and Climate Change/Municipality of Santa Fe

Contact information
Email: l.manelli@santafeciudad.gov.ar; lucymanelli@gmail.com
Website: https://santafeciudad.gov.ar/secretaria-de-ambiente-y-climatico/observatorio-ambiental-urbano/

Mapping of the different species recorded in the city’s green spaces:
https://www.argentinat.org/projects/spacios-verdes-de-la-ciudad-de-santa-fe
**Mapeo de juveniles de peces** [Mapping of juvenile fish]
Survey of juvenile freshwater fish used for commercial/recreational fishing

**Objectives**

**Overall goal**
Map the presence, abundance, and distribution of juvenile fish used for commercial fishing in lotic and lentic environments of the Paraná River within Argentinian territories.

**Specific goals**
- Learn more about fish use patterns (fry and juveniles, mainly use patterns of fish species of commercial/recreational significance) in the great spatial heterogeneity of the Paraná river. This is done according to the hydro-geomorphological characteristics of the system, in lotic/lentic environments, and in relation to connectivity.
- Monitor the reproductive success of commercial fish species based on the recording of fry/juvenile specimens in the Paraná river (within Argentinian territory), during and after cases of extraordinary low tide.

**Description of citizen participation**
Citizens send photographic records of identified juvenile fish with data on species, size, location, and estimated quantity through different media (Instagram, email, WhatsApp), which helps to determine the updated distribution of juvenile specimens in the Paraná river.

**Type of citizen science project**

**Contributory project:** It is designed by members of the scientific community, and citizens participate in data collection and monitoring.

**Participating parties.**
- National Scientific and Technical Research Council (CONICET): Luis A. Espinola and Martin CM Blättler (Laboratory Directors), Ana Pia Rabuffetti (in charge of this project), Elie Abrial, and Nicolás Garello.
- Gabriel Ducasse, recreational fisher, Ríos Sanos Foundation.
- Asociación de Pescadores Deportivos del Litoral (APDL in Spanish) [Coastal Recreational Fishermen’s Association], active promotion and participation of its members.
- Ríos Sanos Foundation, active promotion and participation of its members.

**Status.** In progress.

**Time frame.** 09/01/2022 - N/A.

**Frequency.** Seasonal (time of year).

**Participation period.** Each data log takes less than 10 minutes. Many people participate on a regular basis, others only occasionally.

**Scope of the initiative.** National (two or more provinces).

**Geographic scope.** Argentine Litoral, provinces near the Paraná and Río de la Plata rivers, but the records are varied and come from different areas.

**Project development members.** Collaboratively developed by members of the scientific community and participants without formal training.

**Number of participants.** From 51 to 100.

**Action/s involving citizen participation.**
- Data collection
- Phenomenon monitoring

**Technological device/tool required.**
- Mobile phone with a camera
- Ruler or measuring tape
- GPS

**Recruitment methods.**

**Replicability.**

**Scalability.**

The promotion of the project (through local media, radio interviews, digital magazines, and Instagram live broadcasts) has increased citizen participation.

**Open access to data.** Submitted data logs are shared daily through the project’s Instagram account.

**Feedback.** Direct communication is maintained with each person who submits their data logs. They are then tagged on the project’s Instagram when sharing their information.

**Linkage with state agency/government.**

**Institutional funds.** Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation

**Awards/distinctions.**

**Knowledge areas/disciplines (OECD)**
- NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences.
- NATURAL AND EXACT SCIENCES / Biology.

**Project leaders.**
- Pia Rabuffetti, National Scientific and Technical Research Council (CONICET).
- Gabriel Ducasse, Ríos Sanos Foundation.

**Contact information**
Email: pia.rabuffetti@conicet.gov.ar, gabiﬁshing16@gmail.com
Instagram: instagram.com/map.peces.parana
Form for uploading information: https://docs.google.com/forms/d/e/1FAIpQLS5lgdpc-0ECRdDHy5SZhsac7e7X8Iz6FDcUsuOcD1-NfP58brM4w/viewform
Objective
Overall goal
Make progress in the spatial and temporal characterization of sediment transport dynamics in bodies of water in the province of Córdoba.

Specific goals:
• Determine quantity, quality and size of sediments transported in bodies of water.
• Characterize spatial and temporal variation in the size of bottom sediment transported in bodies of water.
• Estimate the rate of bottom sediment transport and suspension in the study area.
• Transfer the information obtained and the tools developed to sand mine representatives to improve their commercial activities and optimize aggregates extraction.
• Transfer the information obtained and the tools developed to management agencies to adopt measures to mitigate the impacts of erosion and/or sedimentation generated by inadequate sediment management.

Description of citizen participation
The project’s participants are operators of mechanical sand mines installed on the Río Cuarto riverbed, operators of manual sand mines working in Río de Los Sauces, and secondary students and teachers of Cristo Rey School of Río Cuarto.

The work methodology is defined during a co-creative process, which includes all stakeholders (representatives of the community, management agencies, and academic and research institutions).

Furthermore, sand mine operators, with extensive experience in the system under study, make significant technical and scientific contributions related to the evolution over time of the different processes to be studied (hydrology, hydraulics, sediment transport, etc.). More specifically, every month, sand mine operators, with extensive experience in the system under study, make significant technical and scientific contributions related to the evolution over time of the different processes to be studied (hydrology, hydraulics, sediment transport, etc.). More specifically, every month, sand mine operators, with extensive experience in the system under study, make significant technical and scientific contributions related to the evolution over time of the different processes to be studied (hydrology, hydraulics, sediment transport, etc.). More specifically, every month, sand mine operators, with extensive experience in the system under study, make significant technical and scientific contributions related to the evolution over time of the different processes to be studied (hydrology, hydraulics, sediment transport, etc.).

Representatives of academic and research institutions process the samples. The results are then transferred to the community and management agencies for analysis, and to jointly define and evaluate public policies.

Type of citizen science project
Co-created project: Citizens participate in all stages of the scientific process.

Feedback. Sand mine operators receive detailed information on the quality of the sediment they obtain and its spatial and temporal variability. This information will enable them to improve their commercial and extractive activities.

Linkage with state agency/government. Institutional support is provided by:
• Ministry of Public Services of the Government of the Province of Córdoba
• APRHi.

The data generated in this project are transferred directly to the management agencies in charge of monitoring water resources in the province of Córdoba.

Institutional funds.
• UNC Outreach Office
• Ministry of Public Services of the Government of the Province of Córdoba

• APRHi.
• CONICET
• Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program] [Argentina Ministry of Science, Technology, and Innovation]

Awards/distinctions.
Comments. In the upcoming stages, the project will include non-mechanical sand mines of Río Cuarto, which employ low technology but involve a large number of participants and have a significant social impact. Additionally, educational institutions of the Río de Los Sauces basin will be added. Therefore, the number of participants as well as the project’s spatial coverage are expected to increase annually.

Knowledge areas/disciplines (OCED)
NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences.
ENGINEERING AND TECHNOLOGY / Civil Engineering.

Project leaders.
• Carlos Marcelo García Rodríguez, School of Exact, Physical and Natural Sciences (FCEyN), National University of Córdoba (UNC) and the National Scientific and Technical Research Council (CONICET) in Argentina.
• Rocío Bianchi, Institute of Advanced Studies in Engineering and Technology (IDIT), CONICET.

Contact information
Email: masareproyecto@gmail.com / carlos.marcelo.garcia@unc.edu.ar / rian@idit.gov.ar
Web: sites.google.com/view/proyectomasare/
Twitter: twitter.com/ProyectoMasare
MATTEO Monitoreo Automático del Tiempo en la Tropósfera en Escuelas y Organismos del país
[Automatic Monitoring of Weather in Troposphere in Schools and Organizations of the country]

Educational linkage, interinstitutional integration, and environmental monitoring

Objectives

Overall goals
- Highlight the importance of community involvement in recording valuable information for optimal water resource management.
- Promote interinstitutional and intraintitutional work, by encouraging the partaking of students at different educational levels.
- Promote citizen participation in scientific projects.
- Foster the involvement of public and private schools of any level and specialization.
- Plan the participation of residents in recording hydrometeorological data.

Specific goals
- Record and analyze weather data to characterize particular physical phenomena (for example, floods, droughts, fire risk, etc.) occurring in different regions. The community also contributes to the definition of methodological aspects and instrumentation creation.
- Establish ties at every educational level between public and private educational establishments.
- Jointly co-create knowledge with the community to mitigate the effects of environmental hazards (floods, droughts, wildfires, pollution, etc.).

Description of citizen participation

Children, young people, and their families carry out hydrometeorological and hydrological measurements and build their own low-cost instruments. These instruments are validated by comparison with official instruments (e.g., the instruments are installed in the National Weather Service educational experimental fields). Additionally, the students are promoters of what they have learned, applying it to their daily environment. Private residents have been incorporated to collaborate with data recording, giving rise to MATTEO R., where the R in the last name (Ravagli) refers to Residents. Today, schools from the MATTEO project are currently participating in international scientific projects such as the PREVENIR project, funded by the Science Agency of Japan.

Type of citizen science project

Co-created project: Citizens participate in all stages of the scientific process.

Participating parties.
- Faculty of Exact, Physical and Natural Sciences (FCEFyN, in Spanish) of the National University of Córdoba (UNC, in Spanish).
- National Scientific and Technical Research Council (CONICET, in Spanish) of Argentina with the support of allied institutions.

Status. In progress.

Time frame. 01/02/2018 - N/A

Frequency of project execution. Uninterruptedly.

Participation period. On a sustained basis.

Scope of the initiative. National.

Geographic scope. Province of Córdoba, Autonomous City of Buenos Aires, and provinces of Buenos Aires, Chubut, Salta, San Luis, Santa Fe, Tucumán, Tierra del Fuego, Antarctica and South Atlantic Islands.

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. Over 1001.

Action/s involving citizen participation


Technological device/tool required.
- Low-cost automated commercial weather stations (worth around USD 100)
- Low-cost temperature and humidity sensors
- Beaufort scale
- Commercial rain gauges and eco-rain gauges (built with recyclable material)
- Other low-cost weather instruments built by the students, faculty, and families in each educational community
- Fire danger signs

In all cases, a data record folder is created.

Recruitment methods.
- Educational institutions joined the initiative as a result of the interests of both students and the teaching staff.
- Specific collaboration agreements have been signed with several educational institutions.
- Agreements have been also signed with the Ministry of Education of the Autonomous City of Buenos Aires (Escuela Abierta – Actividades Científicas Infantiles y Juveniles program).
- In all cases, a data record folder is created.

Awards/distinctions.
- It has been declared a project of legislative interest at a local level in the city of Villa Carlos Paz (Declaration No. D35/2019-202) and by the Municipality of Sicuá (Ordinance No. 118/2021).

Classification of knowledge areas (OCE)
- NATURAL SCIENCES / Earth and related Environmental sciences
- ENGINEERING AND TECHNOLOGY / Civil Engineering
- AGRICULTURAL SCIENCES / Other agricultural sciences

Project leaders.
- Director: Carlos Marcelo García Rodríguez, FCEFyN - UNC, CONICET
- Co-director: José Manuel Diaz Lozada, FCEFyN - UNC, INIA-CIRSA - CONICET
- Other project leaders: Rocío Bianchi (FCEFyN-UNC, CONICET); Joaquín Segura Ellis (FCEFyN-UNC, CONICET)

Contact information.
- Emails: projetomatteo.matteo@gmail.com; jmdiazlozada@unc.edu.ar;
- Facebook: Facebook.com/proyectomatteo
- Twitter: twitter.com/matteo_adopto

Linkage with state agency/government.
- Ministry of Public Services of the Province of Córdoba
- Provincial Administration of Water Resources (APRHI, by its Spanish acronym) of Córdoba
- Ministry of Education of the Province of Córdoba
- National Water Service (SNP, by its Spanish acronym)
- Subregional Semiarid Region Center of the National Water Institute (INA-CIRSA, by its Spanish acronym)
- Ministry of Education of the Autonomous City of Buenos Aires (Escuela Abierta – Actividades Científicas Infantiles y Juveniles program)

Institutional funds.
- They have been obtained from the extension secretariats of the universities leading this initiative. Besides, financial support and donations were provided by the following entities: the Ministry of Public Services of the Province of Córdoba; the Provincial Administration of Water Resources of Córdoba, the Department of Atmospheric Sciences of the University of Illinois at Urbana-Champaign; the Semi-arid Region Deputy Management of the National Water Institute, the Municipality of Villa Carlos Paz, and CONICET.

Proyecto liderado por: Carlos Marcelo García Rodríguez, FCEFyN-UNC, CONICET

Co-dirigido por: José Manuel Díaz Lozada, FCEFyN-UNC, INIA-CIRSA-CONICET

Otras lideres: Rocío Bianchi (FCEFyN-UNC, CONICET), Joaquín Segura Ellis (FCEFyN-UNC, CONICET)

Contacto:
- Correo electrónico: projetomatteo.matteo@gmail.com; jmdiazlozada@unc.edu.ar
- Facebook: Facebook.com/proyectomatteo
- Twitter: twitter.com/matteo_adopto

Fuentes institucionales:
- Ministerio de Servicios Públicos de la Provincia de Córdoba
- Administración Provincial de Recursos Hídricos (APRHI, por su acrónimo) de Córdoba
- Ministerio de Educación de la Provincia de Córdoba
- Servicio Nacional de Aguas (SNP, por su acrónimo)
- Centro Subregional de la Región Semiárid de la Administración Nacional de los Recursos Hídricos (INA-CIRSA, por su acrónimo)
- Ministerio de Educación de la Ciudad Autónoma de Buenos Aires (Escuela Abierta – Actividades Científicas Infantiles y Juveniles program)

Fondos institucionales:
- Los han obtenido de las secretarías de extensión de las universidades que lideran este proyecto. Además, se han obtenido algunos fondos y donaciones con el apoyo del siguiente entes: el Ministerio de Servicios Públicos de la Provincia de Córdoba; la Administración Provincial de Recursos Hídricos de Córdoba, el Departamento de Ciencias Atmosféricas de la Universidad de Illinois at Urbana-Champaign; el Centro Regional Semiárido Dependencia Administrativa del Instituto Nacional de los Recursos Hídricos, la Municipalidad de Villa Carlos Paz, y CONICET.

Proyecto liderado por: Carlos Marcelo García Rodríguez, FCEFyN-UNC, CONICET

Co-dirigido por: José Manuel Díaz Lozada, FCEFyN-UNC, INIA-CIRSA-CONICET

Otras lideres: Rocío Bianchi (FCEFyN-UNC, CONICET), Joaquín Segura Ellis (FCEFyN-UNC, CONICET)

Contacto:
- Correo electrónico: projetomatteo.matteo@gmail.com; jmdiazlozada@unc.edu.ar
- Facebook: Facebook.com/proyectomatteo
- Twitter: twitter.com/matteo_adopto
**Medición del campo geomagnético en Argentina**

**Measurement of the Earth’s magnetism**

**Objectives**

**Overall goal**
- Jointly analyze the spatial and temporal variation of the Earth’s magnetic field through measurements carried out in secondary schools in different parts of the country.

**Specific goals**
- Characterize the Earth’s magnetism and the factors contributing to its spatial and temporal variability in Argentina.
- Promote the participation of students in the collection of experimental data that can be shared with those collected by students from different places in the country.

**Description of citizen participation**

Measurements are obtained in work groups with the guidance of a teacher and are performed in areas free from magnetic interference within the educational institution. The project organizes training sessions where details and instructions are provided to carry out the measurements. To participate, students use their mobile phones to perform measurements and learn the concept of “magnetic dipole.” Finally, the students compare the measurements taken in the same place at different times.

**Type of citizen science project**

Contributory project: It is designed by members of the scientific community, and citizens participate in data collection.

**Participating parties.**
- Department of Physics/School of Exact and Natural Sciences/University of Buenos Aires (UBA, by its Spanish acronym)
- Enlace Ciencias (Science Link) Program /General Office for Educational Planning (DGPIEDU, by its Spanish acronym)/Ministry of Education of the Autonomous City of Buenos Aires
- Secondary schools of public and private management of the Autonomous City of Buenos Aires
- United Nations Development Program (UNDP)
- Group of students from the Magnetics Society of the Institute of Electrical and Electronics Engineers (IEEE), the International Union of Pure and Applied Physics (IUPAP), the International Union of Geodesy and Geophysics (IUGG), and the Uruguayan Society of Physics

**Status.** In progress.

**Time frame.** 9/10/2022 - N/A.

**Frequency of project execution.** At least twice in a year during the school year.

**Participation period.** 1 year of training, measurement collection, and data analysis.

**Scope of the initiative.** International (two or more countries).

**Geographic scope.** Argentina.

**Project development members.** Entirely developed by participants with formal scientific training.

**Number of participants.** From 51 to 100.

**Action/s involving citizen participation**
- Data collection
- Phenomenon monitoring
- Training on measurement processes and understanding of associated uncertainties

**Technological device/tool required.**
- Mobile phones with a magnetometer or compass. The Phyphox (University of Delft, Netherlands) and CrowdMag (National Oceanic and Atmospheric Administration, United States) applications are required. Measurements can be carried out with or without an Internet connection.

**Recruitment methods.** Implementation is achieved in schools.

**Replicability.** -

**Scalability.** -

**Open access to data.** -

**Feedback.** -

**Linkage with state agency/government.** Ministry of Education of the Autonomous City of Buenos Aires.

**Institutional funds.** -

**Awards/distinctions.** -

**Comments.** The Earth’s magnetic field is generated from the movement of liquid metals inside our planet. Roughly speaking, this field can be considered dipolar, that is, it can be similar to that of a bar magnet. Due to the range of latitudes in our country, the field is expected to vary significantly from one extreme to the other. This contributes to the discussion of students from different parts of our country regarding the factors behind the differences in their measurements and their understanding of the concept of magnetic dipole. On the other hand, the variation in measurements taken in the same place at different times helps participants discuss changes within the Earth, variations in the magnetosphere, or magnetosphere-ionosphere coupling. Understanding how the magnetic field works is essential to comprehend natural phenomena (bird migrations), aspects of daily life (global positioning systems), and technological aspects (deterioration of satellites, oil pipelines, etc.).

**Knowledge areas/disciplines (OECD).**
- **NATURAL AND EXACT SCIENCES / Physics**
- **NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences**

**Leaders.**
- Silvia Blaustein, Government of the Autonomous City of Buenos Aires (GCBA, by its Spanish acronym)
- César Bertucci, UBA-CONICET
- Silvina Ponce Dawson, UBA-National Scientific and Technical Research Council (CONICET, by its Spanish acronym)

**Contact information.**
- E-mail: silvina@df.uba.ar; cbertucci@df.uba.ar; silvia.blaustein@gmail.com
- Website: [https://wp.df.uba.ar/campogeomagnetico/](https://wp.df.uba.ar/campogeomagnetico/)
**Objectives**

**Overall goal**
- Research, in a participatory way, about the elaboration of identity, the knowledge of personal history, and the re-establishment of social, family, and affectional bonds among people (grandsons and granddaughters) who were kidnapped by State terrorism in their childhood and who were searched for and found by Abuelas de Plaza de Mayo (human rights association).

**Specific goals**
- Study the delivery of the “boxes” of the Family Biographical Archive (the only one of its kind) created by Abuelas de Plaza de Mayo to be given to the granddaughters and grandsons found in order to know and understand the uses and meanings they are given in the process of reconstructing their identities and reassembling their histories and their family and social bonds and political ties.

**Description of citizen participation**
Activists, workers, grandsons, and granddaughters participate in the elaboration of the project and will be part of each stage of the research.

**Type of citizen science project**
**Co-created project:** Citizens participate in all stages of the scientific process.

**Participating parties.**
- National Scientific and Technical Research Council (CONICET, by its Spanish acronym)
- Interdisciplinary School of Higher Social Studies/National University of San Martín (UNSAM, by its Spanish acronym)
- Institute of Anthropological Sciences/School of Philosophy and Language/University of Buenos Aires (UBA)
- Abuelas de Plaza de Mayo (human rights association)

**Status.** In progress.

**Time frame.** 11/01/2023 - N/A.

**Frequency of project execution.** One-time only.

**Participation period.** Two years.

**Geographic scope.** The Autonomous City of Buenos Aires, Santa Fe, Córdoba, and Tucumán.

**Project development members.** The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

**Number of participants.** From 1 to 50.

**Action/s involving citizen participation**
- Across the project
- Video cameras

**Technological device/tool required.**

**Recruitment methods.** N/A.

**Replicability.** -

**Scalability.** -

**Open access to data.** -

**Feedback.** N/A.

**Linkage with state agency/government.** -

**Institutional funds.**
- Subsidio de Promoción a Proyectos de Ciencia Ciudadana [Grant to Promote Citizen Science Projects]/Argentine Ministry of Science, Technology, and Innovation

**Awards/distinctions.** -

**Comments.** -

**Leaders.**
- Isabella Cosse, CONICET and Interdisciplinary School of Higher Social Studies/National University of San Martín (UNSAM), isabella.cosse@gmail.com
- Carla Villalta, CONICET and Institute of Anthropological Sciences/School of Philosophy and Language/University of Buenos Aires (UBA), carlavillalta@gmail.com
- Iván Fina, Abuelas de Plaza de Mayo, ivanfina@hotmail.com

**Contact information.**
Email: isabella.cosse@gmail.com, carlavillalta@gmail.com, ivanfina@hotmail.com.
Memorias performativas de los juicios de lesa humanidad
[Performatave memories of trials for crimes against humanity]

Human Rights and memories

Objectives

Overall goal
• Strengthen the construction of performative memories of trials for crimes against humanity using the field of study of performing arts, through the tracking, study, and design of performative devices promoting the participation of citizens to co-build awareness of human rights together with artists, activists, and community associations.

Specific goals
• Survey testimonial experiences in a court incorporating stage or performative, stage or theatrical elements using figures, motifs, or procedures inherent to those trials.
• Co-construct performative memories of the legal process with artists, activists, and community associations employing performing arts tools based on an intersectional perspective on human rights to revive archives, recover testimonies, and share these experiences in citizen spheres.
• Build an audiovisual archive linked to the project that will be part of a subcollection of performative memories of trials for crimes against humanity in Fondo Documental Teatro y Política en América Latina (TyPAL, by its Spanish acronym) [Documentary Collection of Theatre and Politics in Latin America], located in the Audiovisual Archive of the Gino Germani Research Institute (IIGG, by its Spanish acronym).

Description of citizen participation

The research group of the Gino Germani Institute and the Centre for Legal and Social Studies (CELS, by its Spanish acronym) develop initiatives such as a mapping of actions, experiences, productions, and plays; the collection, classification, and organization of materials to reconstruct these actions and their analysis; the design of semi-structured interviews with people who have given testimony, such as judicial officers, playwrights, cultural producers, actors, and artists; the construction of a device for artistic-citizen intervention together with other groups of civil society; and the design of the intervention through workshops with professionals of the performing arts with experience in the subject. The last initiatives will also include the organizations Memoria Palermo and Comisión de Familiares y Compañeros de Detenidos-Desaparecidos de Tres de Febrero [Commission of Relatives and Friends of Disappeared Detained Persons of Tres de Febrero].

Type of citizen science project
Co-created project: Citizens participate in all stages of the scientific process.

Participating parties.
• Study Group on Contemporary Theatre, Politics, and Society in Latin America/Gino Germani Research Institute (IIGG)/School of Social Sciences (FSOC, by its Spanish acronym)/University of Buenos Aires (UBA)
• Centre for Legal and Social Studies (CELS)
• Asociación Civil Memoria Palermo (nonprofit organization)
• Comisión de Familiares y Compañeros de Detenidos-Desaparecidos de Tres de Febrero/Asociación Civil por los Derechos Humanos de Tres de Febrero (Nonprofit Organization for Human Rights of Tres de Febrero)

Status. In progress.

Time frame. 1/14/23 - present.

Frequency of project execution. For the first time.

Participation period. During the whole project, that is, two years.

Scope of the initiative. National (two or more provinces).

Geographic scope. The Autonomous City of Buenos Aires, Caseros, Trelew, Rosario, Córdoba, and other towns and cities.

Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

Number of participants. From 1 to 50.

Action/s involving citizen participation
• Problem definition
• Data collection
• Data analysis
• Phenomenon monitoring
• Solution planning
• Solution deployment

Technological device/tool required.
• Equipment for visual and audiovisual recording and playback, such as a video and photographic camera, projectors, screens, and speakers.

Recruitment methods.

Replicability.

Scalability.

Open access to data.

Feedback.

Linkage with state agency/government.
Meteo Impacto Comunitario [Weather Community Impact]
Weather phenomena and their effects

Objectives
Overall goal:
- Collaboratively characterize the temporal and spatial distribution of extreme weather phenomena and their social and economic effects in Argentina, Brazil, Uruguay, Chile, and Paraguay.

Specific goals:
- Create a database for the validation and calibration of operational diagnostic and forecasting systems aimed at the early detection of potential weather events with high social impact.
- Develop tools the community can use for the prevention of weather events with high social impact to increase their level of awareness about these events and improve their response capacity.

Description of citizen participation
Primary and secondary school students and the general public, weather enthusiasts, contribute by observing and reporting extreme weather phenomena through various platforms (social media, groups, forums, web interface, among others). The initiative plans to develop a chatbot to help communities submit continuous reports through their mobile phones.

Type of citizen science project
Contributory project: It is designed by members of the scientific community, and citizens participate in data collection.
Mi Hábitat: observando con lupa mi barrio
[My Habitat: observing my neighborhood through a magnifying glass]
Sanitation and waste management; vector-borne diseases (transmitted by animals)

Objectives
• Raise awareness among young people and families on the health risks posed to their communities by dumping sites, rodents and parasites.
• Together with the education community, encourage the most vulnerable neighborhoods (due to this type of pollution) to trigger actions that will improve their quality of life.

Description of citizen participation
Workshops were conducted to identify potential sanitation issues existing in participants' neighborhoods. Based on such issues, an app was adapted, and possible preventive measures were discussed. At said workshops, the following main issues were identified:
• Dumping sites
• Reuse of certain materials
• Compost made from organic waste
Within 15 days, young people grouped in work teams sent—the app—images showing areas of their neighborhood, mostly photos of dumping sites and rodents, which pose potential health risks to their communities. Once neighborhood mapping was completed by the work teams, workshops were conducted to discuss findings and possible management actions.

Type of citizen science project
Collaborative project: Citizens participate in data collection and analysis.

Participating parties.
Research team of the National Scientific and Technical Research Council (CONICET, in Spanish).

Status. Completed.
Time frame. 03/01/2017 – 10/30/2017

Frequency of project execution. Based on demand or community outreach.

Participation period. –
Scope of the initiative. Local (city, province).
Geographic scope. Barrio El Carmen, La Plata, Buenos Aires.

Project development members. It was developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 51 to 100.

Action/s involving citizen participation
• Problem identification.
• Data collection.
• Data analysis.

Technological device/tool required.
• Cell phone.
• App.

Recruitment methods. Through visits to two educational facilities.

Reproducibility. -
Scalability. -

Open access to data. After the project was completed, the data collected by participants was removed due to lack of funding for the website.

Feedback. Students and teachers contributed towards the development of this project, and several workshops were conducted during its execution.

Linkage with state agency/government. –
Institutional funds. Project’s own funding sources.

Awards/distinctions. –

Knowledge areas/disciplines (OECD)
NATURAL SCIENCES / Earth and related Environmental sciences
MEDICAL AND HEALTH SCIENCES / Basic medicine
Mi Reloj Interno [My Internal Clock]
Circadian rhythms. Rest

Objectives

Overall goal:
• Analyze habits related to the running of the internal clock controlling daily (circadian) rhythms in the Argentine population through its interaction with an app called Mi Reloj Interno [My Internal Clock].
• Generate an algorithm to provide personalized recommendations to optimize rest.

Specific goals:
• Develop and implement the Mi Reloj Interno app for mobile devices as an educational and interactive tool on the status and evolution of the participating citizens’ internal clocks.
• Analyze the effect of age, self-perceived gender, and geographic location of the app users on the improvements resulting from the follow-up of the recommendations given.

Description of citizen participation

The role of the citizens includes data collection and analysis, as well as the design of solutions, although these roles vary according to the stages of the project. Citizens were involved from the beginning of the project in the collection of data used to design the algorithm for the Mi Reloj Interno app, in which more than 4,000 people from all over the country participated. Once the app was developed, users kept contributing to data collection through the use of the tool. So far, more than 10,000 people from all over the country have participated in this stage. A group of citizens will be trained to take part in the analysis and interpretation of data from a set of people “of which they are in charge”. In addition, citizens will collaborate directly with the design of future improvements of the app through suggestions (such as the wording of prompts, feedback format, inclusion of notifications, and aspects related to local or regional characteristics).

Type of citizen science project

Collaborative project: Citizens participate in data collection and analysis.

Participating parties:
• Civil association Expedición Ciencia (ExpC, by its Spanish acronym)
• National Scientific and Technical Research Council (CONICET, by its Spanish acronym)

Status. In progress.

Time frame. 5/21/2020 - N/A.
Frequency of project execution. 5/21/2020 - N/A.
Participation period. Argentina.
Scope of the initiative. Buenos Aires.
Geographic scope. Argentina.
Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.
Number of participants. From 1001 onwards.

Action/s involving citizen participation.
• Data collection
• Data analysis
• Solution planning

Technological device/tool required.
• Mobile electronic device with a screen and Android or iOS operating system to download the Mi Reloj Interno mobile app.

Recruitment methods.
Social media, meetings, conferences, workshops, and media articles.

Replicability.

Scalability. The number of participants has increased.
Open access to data.

Feedback. Each person who shares their information through the app receives a summary of the current status of their internal clock and personalized recommendations on what habits they can modify and how to do it to optimize their clock. The recommendations are different for each person because they depend on our algorithm’s evaluation based on the combination of their habits, age, and gender.

Linkage with state agency/government.


Awards/distinctions. 2022 INNOVAR National Innovation Competition, in the category of applied research.
Monitoreo de ardillas exóticas invasoras en Argentina
[Monitoring of invasive alien squirrels in Argentina]

Study on the distribution of an invasive alien mammal

Objectives

Overall goal
Monitor the presence of an invasive alien species (IAS) in Argentina, the red-bellied squirrel (Callosciurus erythraeus).

Specific goals
• Update this species distribution and compare it with previous studies to evaluate its expansion.
• Understand the invasion process of an IAS.
• Identify priority areas to provide environmental education, and implement prevention measures, or other handling techniques for the species.
• Popularize the importance of citizen responsibility and engagement in the knowledge, information dissemination, and prevention of biological invasions, its relation to the ownership of exotic pets, and the illegal trade of introduced wild species.

Description of citizen participation
Citizens participate in reporting squirrel sightings, indicating their location as precisely as possible, and, optionally, sharing photos of squirrels or any evidence showing they are at a site (nests, eaten fruit, or bark stripping). Records must be uploaded to the digital platform ArgentiNat from a computer or to the app iNaturalist using a mobile phone.

Type of citizen science project
Contributory project: It is designed by scientists, and citizens participate in data collection.

Participating parties.
• Grupo de Ecología de Mamíferos Introducidos [Introduced Mammal Ecology Group] (EMI in Spanish)/Institute of Ecology and Sustainable Development (INEDES in Spanish)/National University of Luján (UNLu in Spanish)-National Scientific and Technical Research Council (CONICET In Spanish).
• Aves Argentinas (through Bird Watchers' Clubs [COA in Spanish]).
• ArgentiNat.

Status. In progress.

Time frame. 10/13/2021 - N/A.

Frequency of project execution. Uninterruptedly.

Participation period. Participants can cooperate on a daily, occasional, or scheduled basis.

Scope of the initiative. National (two or more provinces).

Geographic scope. The initiative is available throughout the country, but is most widely implemented in places with a greater presence of squirrels, such as the provinces of Buenos Aires, Santa Fe, Córdoba, Mendoza, and the Autonomous City of Buenos Aires.

Project development members. It has been developed with the collaboration of both scientists and participants with formal training and without it.

Number of participants. From 51 to 100.

Action/s involving citizen participation
• Data collection
• Phenomenon monitoring
• Other/s. A future planned action will be contacting participants to share their conclusions and propose future actions.

Technological device/tool required.
• Mobile phone, tablet, or computer with an Internet connection to view the project information online, interact with participants, and upload data (squirrel records).
• Platform ArgentiNat.

Recruitment methods.

Replicability.

Scalability. The platform ArgentiNat is increasingly used throughout the country, and the different ways of promoting this particular initiative encourage people to visit the website and participate in uploading their records.

Open access to data. The ArgentiNat project settings enable users to view all uploaded squirrel sightings.

Feedback. Every person who submitted a squirrel record is individually contacted.

Linkage with state agency/government. The project works collaboratively with municipal, provincial, and national organizations addressing environmental, conservation, and wildlife management issues, among which is the National Strategy on Invasive Alien Species (ENEEI in Spanish) coordinated by the Ministry of the Environment and Sustainable Development of Argentina.

Institutional funds. National University of Luján (UNLu).

Awards/distinctions. -

Comments. This initiative can be promoted from different contexts (educational institutions, NGOs, protected areas, municipalities, etc.) and trigger new similar projects including the monitoring of other introduced species of interest.

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Biology

Project leaders.
• Mariela Borgnia, Grupo de Ecología de Mamíferos Introducidos (EMI)/Institute of Ecology and Sustainable Development (INEDES)/National University of Luján (UNLu)-Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET).

Contact information.
Email: mariborgnia@gmail.com
Website: www.emi.unlu.edu.ar
Plataform ArgentiNat to upload records: argentinat.org/projects/monitoreo-ardillas-introducidas-unlu
Monitoreo de Colonias de abejas [Bee colony monitoring]

Environmental monitoring

Objectives

Overall goal
Monitor the loss of bee colonies in Argentina.

Specific goals
Measure the mortality rate of honey and stingless bee colonies in Argentina and understand the causes behind it to help to reverse the situation or alleviate this problem.

Description of citizen participation

A national survey only of beekeepers and meliponiculturists is conducted in person or online (website, email, social media, press media, and beekeeping magazines) to record bee colony losses. This survey is based on internationally standardized methods involving voluntary participation, a national network of beekeepers, a questionnaire, and diverse promotion strategies. Estimates and statistical analyses of colony losses depend on the participation of producers, without which it is not possible to study the mortality causes, nor to provide recommendations for reducing mortality that can inform decision-making for the sector.

1) Bee handling (number of beehives, type of honey harvesting, bee genetics, etc.)
2) Presence of bio-aggressors (disease symptoms and identification, etc.)
3) Colony loss rate (winter and summer colony losses).

Type of citizen science project

Contributory project: It is designed by scientists, and citizens participate in data collection.

Participating parties.

- Sociedad Latinoamericana de Investigación en Abejas [Latin American Bee Research Association] (SOLATINA in Spanish)
- Sociedad Argentina de Apicultores [Argentine Society of Beekeepers] (SADA in Spanish)
- National University of Río Cuarto (UNRC in Spanish)
- National University of Comahue (UNCOMA in Spanish)

Status. In progress.

Time frame. 04/01/2016 - N/A.

Frequency of project execution. Seasonal (from October to December).

Participation period. 1 day per year.

Scope of the initiative. International (two or more countries).

Geographic scope. 17 Latin American countries (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Honduras, Mexico, Panama, Paraguay, Peru, Puerto Rico, Dominican Republic, Uruguay, and Venezuela).

Project development members. It has been developed with the collaboration of both scientists and participants with formal training and without it.

Number of participants. Over 1001.

Action/s involving citizen participation.

- Problem definition
- Data collection
- Phenomenon monitoring
- Solution deployment.

Technological device/tool required.

- Mobiles and computers with an Internet connection to respond to the surveys.

Recruitment methods.

The survey of beekeepers and meliponiculturists is promoted annually using multiple strategies:

- Website
- Email
- Social media, press media, and beekeeping magazines (Campo y Abejas, La Gaceta del Colmenar, Espacio Apícola, Apicultura sin Fronteras)
- Face-to-face interviews with citizens who do not have an Internet connection.

Replicability. The initiative has been replicated in Latin America by the Bee Colony Loss Monitoring Group of Sociedad Latinoamericana de Investigación en Abejas (SOLATINA).

Scalability. In 2016, the survey began exclusively for Argentina and, today, it has reached 17 Latin American countries.

Open access to data. -

Feedback. Website, press release, and flyer with results.


Institutional funds. -

Awards/distinctions. -

Comments. -

Knowledge areas/disciplines (OECD)

NATURAL AND EXACT SCIENCES / Biology
AGRICULTURAL SCIENCES / Dairy and animal production

Leaders.

- Fabrice Requier, Institut de Recherche pour le Développement (French National Research Institute for Sustainable Development).
- Florencia Riafrecha.

Contact information.

Email: requierf@gmail.com
Web: solatina.org/temas-de-estudio/monitoreo/
Facebook of Sociedad Latinoamericana de Investigación en Abejas (SOLATINA): facebook.com/SolLatInA2017
Monitoreo de contaminación por plásticos en costas de agua dulce
[Monitoring of Plastic Pollution in Freshwater Coasts]

Environmental monitoring. Plastic pollution. Awareness about pollution

Objectives

Overall goal:
Identify and analyze the presence of plastic pollutants in freshwater coasts (lakes and rivers) of different cities
in Río Negro through collaborative environmental monitoring with high school students.

Specific goals:
• Collaboratively determine plastic pollution levels in freshwater coasts of the province’s different areas.
• Quantify and classify pollutants found in field trips.
• Design proposals and materials to work with educational communities, institutions, and the public sector
to reduce the use of plastics, look for accessible alternatives and maximize their recycling potential.

Description of citizen participation

The students who participate in the initiative sample and collect plastics on the freshwater coasts of their cities,
record the number of plastics found, and classify them. The study works with two hypotheses: 1) the level of pol-
ilution is related to the population density of a city and 2) the types of pollutants found on freshwater beaches
are not different from those found in marine coastal areas. In class, an analysis of field-collected data is carried
out. Before a beach field trip, students participate in a short educational talk about waste with a focus on plastic
pollution issues and discuss the correct way to collect data on the beach and analyze it in the classroom, taking
into account that this data could be used for a scientific study. This exchange of opinions contributes to iden-
tifying the most common type of plastic waste found, sharing thoughts on alternatives to reduce the amount
of waste on beaches and in other environments, suggesting new locations for cleanups, and promoting waste
sorting at their school or home, etc. Lastly, all data collected by students is recorded on a database to charac-
terize pollution at different sample locations. A spreadsheet with the data is sent to the teachers of every class
in Río Negro through collaborative environmental monitoring with high school students.

Type of citizen science project

Collaborative project: Citizens participate in data collection and analysis.

Participating parties.
• National Scientific and Technical Research Council (CONICET, by its Spanish acronym)
• Colegio Integral Vuriloche (school)
• Colegio Qmark (school)

Status. In progress.

Time frame. 11/1/2021 - N/A.

Frequency of project execution. According to the demands or approa-
ches to the community/communities.

Participation period. Sustained over time. Regularly, talks are held
and samplings are conducted upon teachers’ request.

Scope of the initiative. Local (city, province).

Geographic scope. Initially, the project is being conducted in the province
of Río Negro, but it could potentially expand to other areas in the future.

Project development members. The initiative was developed with the co-
laboration of both members of the scientific community and participants
without formal training.

Number of participants. From 101 to 500.

Action/s involving citizen participation.
• Data collection
• Data analysis
• Phenomenon monitoring
• Solution planning

Technological device/tool required.
• Camera or mobile phone
• Buckets
• Shovel
• Tape
• Measuring tape

Recruitment methods.

Repliability.

Scalability. The number of participating schools has increased.

Open access to data. Data has not yet been published in open-access for-
mats.

Feedback. A talk is held with the students, where the collected data is
analyzed. In other words, a space for discussion and exchange of ideas or
opinions is created.

Linkage with state agency/government.

Institutional funds. They have been obtained from the project’s own
funding sources.
Monitoreo de la calidad del aire en escuelas porteñas
[Air quality Monitoring in Buenos Aires schools]

Environmental monitoring

Objectives
Jointly monitor the air quality with students and teachers from Buenos Aires primary and secondary schools in the Autonomous City of Buenos Aires and analyze the differences between the communes of Buenos Aires.

Description of citizen participation
Students and teachers from Buenos Aires primary and secondary schools measure the concentration of nitrogen dioxide (NO2) in the air using diffusion tubes installed in schools. The participants observe the same protocol, and the teachers were trained by the professionals of Instituto de Química, Física de los Materiales, Medio Ambiente y Energía (INQUIMAE) - University of Buenos Aires (UBA) and Enlace Ciencias [Science Link] Program /General Office for Educational Planning (DGPLEDU) - Ministry of Education of the Autonomous City of Buenos Aires. The primary and secondary schools of public and private management of the Autonomous City of Buenos Aires will be involved. United Nations Development Program (UNDP)

Status. In progress.

Time frame. 3/3/2023 - N/A

Frequency of project execution. 1 campaign per season of the year.

Participation period. Sustained over time.

Scope of the initiative. Local (city, province).

Geographic scope. The Autonomous City of Buenos Aires (Buenos Aires).

Project development members. Entirely developed by participants with formal scientific training.

Number of participants. From 501 to 1000.

Action/s involving citizen participation.
- Problem definition
- Data collection
- Data analysis at schools and production of results reports on the concentration of nitrogen dioxide in the air for the community
- Interpretive discussion of the results with families, and escalation of the results to the reference communes for their consideration

Technological device/tool required.
- Pollutant absorption devices (diffusion tubes). These are containers with an airtight lid, which must be removed at the time of starting the measurement. They are placed with the opening facing downwards so that the test strip of the tube is in contact with the air, but is protected from rain. The test strip is embedded in a substance used to fix atmospheric NO2

Recruitment methods.
- Open access to data.


Institutional funds. United Nations Development Program (UNDP)

Comments.
- Knowledge areas/disciplines (OECD)
  Natural and Exact Sciences / Chemistry

Leaders.
- Horacio Bogo, INQUIMAE/CONICET-UBA
- Silvia Blaustein, GCBA

Contact information.
Email: bogo@qi.fcen.uba.ar, juann.romero18@gmail.com, silvia.blaustein@gmail.com
Monitoreo nacional de microplásticos costeros
[National monitoring of coastal microplastics]

Environmental monitoring of microplastics, reduction of plastic use

Objectives

Overall goal
Conduct a collaborative study across Argentina, on the coasts of the sea, rivers and lakes, to analyze the presence, amount and composition of microplastics through a systematic and massive survey.

Specific goals
• Study plastic items between 1 mm and 25 mm in size and disclose the results to society as a whole in order to provide crucial information that serves to measure the issue and find solutions.
• Compare data with the rest of the world using The Big Microplastic Survey project undertaken by conservation charity JUST ONE OCEAN. The purpose of this study is to gather global information on the most frequent microplastics found in the coastal sites of seas, lakes and rivers, to promote comprehensive conservation on the planet.

Description of citizen participation

Students or anyone interested can participate in the project, and after receiving information or with the coordination of a sampling supervisor, they are in charge of recording the data and analyzing the samples. Following a simple and systematic scientific sampling protocol, they collect information from those plastic items ranging in size from 1 mm to 25 mm found in coastal sites of seas, lakes and rivers, and report the results. Citizens are responsible for classifying samples into primary and secondary microplastics, type and size of plastics, amount and presence of other components (e.g., cigarette butts) in the samples, if any.

Samples are collected along the shoreline, parallel to the water. The position (GPS coordinates) of part of the sample, which is recorded as the position, should be captured.

Type of citizen science project

Collaborative Project: Citizens participate in data collection and analysis.

Participating parties.
• Whale Conservation Institute in Argentina (ICB).
• Beach cleanup initiatives suggested as part of the activities in the Patagonia Eco Film Fest (PEFF).
• Science Club and summer camps in the city of Puerto Madryn.
• Researcher at the National Scientific and Technical Research Council (CONICET) in Argentina.
• Students of all educational levels from schools in Puerto Madryn, Comodoro Rivadavia and Río Grande.
• Global Penguin Society.

Status. In progress.

Time frame. 01/11/2019 - N/A

Frequency of project execution. According to the demands or approaches to the community/communities.

Scope of the initiative. National (two or more provinces).

Geographic scope. Samples taken—or intended to be taken—in the Argentinian provinces of Tierra del Fuego, Santa Cruz, Chubut, Río Negro, Córdoba, Buenos Aires and Misiones (with headquarters in Chubut).

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 51 to 100.

Action/s involving citizen participation.
• Data collection.
• Data analysis.
• Phenomenon monitoring.

Technological device/tool required.
• A mobile phone with GPS to record the latitude and longitude of the sampling site, and to capture images of the results and of the sampling process (the latter is optional).
• A 4 m rope, 4 stakes (or similar).
• A 1 mm mesh sieve or strainer (common kitchen sieve).
• A mobile phone with GPS to record the latitude and longitude of the sampling site, and to capture images of the results and of the sampling process (the latter is optional).

Participants must then classify their results according to the microplastics tables downloaded from the web and submit the results.

Recruitment methods. Through social media, teachers from local schools (Puerto Madryn) or from other regions (e.g., Río Grande) who get in touch to include the issue in the curriculum or as a free proposal, and students who take their concerns to the classrooms.

Replicability.

Scalability. The program is scalable in terms of increased activity and sites to be evaluated/sampled. It is expected that by the end of 2022 the program will be active throughout the country.

Open access to data. Online, accessible, but the Spanish website is still under construction (currently in English).

Feedback. Within "permanent" sites (from one to three monthly samplings for at least one year). A meeting is to be organized with the coordinators to brief them on the results.

The general documents and partial results of all the samples will be disseminated through social media and the Foundation’s website. In addition, they are openly online (in English) on the project’s global site.

Linkage with state agency/government. -


Awards/distinctions. -

Comments. The methodology proposed worldwide by conservation charity JUST ONE OCEAN is used to make the results internationally comparable.

The information is compiled in https://microplasticsurvey.org/results.

Knowledge areas/disciplines (OECD)
Natural and Exact Sciences / Earth and Environmental Sciences
Natural and Exact Sciences / Biology

Leaders.
• Martín Brogger, Institute of Marine Organisms Biology (IBIOMAR)/Patagonian National Research Center (CENTAP)/National Scientific and Technical Research Council (CONICET) in Argentina and ProyectoSub Foundation.
• María Florencia Ríos, Institute of Marine Systems Biology (IBIOMAR)/Patagonian National Research Center (CENTAP)/National Scientific and Technical Research Council (CONICET) in Argentina and ProyectoSub Foundation.
• Melisa Gatti, ProyectoSub Foundation.

Contact information. E-mail: info@proyectosub.org
Web: www.proyectosub.org.ar/microplasticos-costeros
Objectives

Overall goal

• Monitor the biodiversity in a participatory manner within the territories of the communities of the Santiago del Estero province and the association of small-scale farmers “Unión de Pequeños Productores del Salado Norte”.

Specific goals

• Inquire about the value of wildlife biodiversity through participatory methodologies.
• Produce information that contributes to the management of the territories and the public’s awareness in relation to the conservation of forests.

Description of citizen participation

The participation of the small-scale farmers association “Unión de Pequeños Productores del Salado Norte” consisted in learning about and validating the proposal for monitoring through camera traps and selecting the sampling community. Delegates from the community of Campo Grande (Santiago del Estero) participated in the design and installation of the monitoring module, and they also received training related to the installation of camera traps and the discussion of results.

Type of citizen science project

Collaborative project: Citizens participate in data collection and analysis.
**Mucho más que testigos del genocidio** [Much more than witnesses of genocide]

**Children and adolescents in the Atlético-Banco-Olimpo (ABO) repressive circuit**

**Objectives**

**Overall goal:**
- Collaboratively reconstruct, analyze, and make visible the experiences of child victims of the genocidal process within the framework of the repressive practices deployed on children and adolescents (NNyA, by its Spanish acronym) in the Atlético-Banco-Olimpo (ABO) circuit between 1977 and 1979.

**Specific goals:**
- Reconstruct the repressive practices perpetrated on NNyA within the ABO repressive circuit.
- Build a public archive of interviews with survivors of repressive experiences in their childhood.
- Participate in legal proceedings by providing evidence about NNyA who were victims of repressive practices within the framework of the ABO circuit.

**Description of citizen participation**

The construction of scientific knowledge about the genocidal process and its consequences requires the active participation of different sectors of society that contribute, each from their own particularity, their knowledge and practices. Together, a heterogeneous group of child victims, workers from the memory sites of the ABO circuit, judicial officers, and research teams from the University of Buenos Aires and the National University of Tres de Febrero carry out the different stages of the research project, from the drafting and construction of the general and specific goals and the survey instruments to the fieldwork.

**Type of citizen science project**

**Co-created project:** Citizens participate in all stages of the scientific process.
Nodos [Nodes]
Collaborative platform of Performing Arts

Objectives
Overall goal:
• Promote, create, and preserve a thorough collaborative knowledge base of performing acts, artists, cultural groups and spaces, plays, seasons, and festivals, among other events in the province of Buenos Aires.

Specific goals:
• Build thorough and dynamic knowledge of artists, cultural groups and spaces, plays, seasons, and festivals in the province of Buenos Aires, among other events. This knowledge is created by the input of the platform users.
• Contribute to the Intangible Cultural Heritage of the Province of Buenos Aires, allowing to obtain firsthand and fully updated information not available in other resources.

Description of citizen participation
Through their own productions, people involved in the Performing Arts scene write posts, upload information, and edit collaboratively articles on plays, performers, actors, dancers, groups of artists, and all kinds of information relating to the Performing Arts.

Type of citizen science project
Collaborative project: Citizens participate in data collection and analysis.

Participating parties.
• Cientópolis/Laboratorio de Investigación y Formación en Informática Avanzada [Advanced Information Technology Research and Training Laboratory] (LIFIA in Spanish)/National University of La Plata (UNLP)/Scientific Research Commission of the Province of Buenos Aires (CIC in Spanish).

Status. In progress.
Time frame. 02/2016 - N/A.
Frequency of project execution. Uninterruptedly.
Participation period. Uploading information requires only a few minutes of dedication.
Scope of the initiative. Local (city, province).
Geographic scope. Buenos Aires.
Project development members. It has been developed with the collaboration of both scientists and participants without formal training.
Number of participants. From 501 to 1000.
Action/s involving citizen participation.
• Data collection.
• Phenomenon monitoring.
Technological device/tool required.
• Mobile phone and Internet connection to upload photos to the online platform.
Recruitment methods.
• Social media, meetings, workshops, uploading sessions.

Contact information.
Email: registro.nodos@gmail.com; marianadelmarmol@gmail.com; marianasaezsaez@gmail.com; dtorres@lifia.info.unlp.edu.ar; florriafrech@gmail.com
Web: Plataforma NODOS
Instagram: instagram.com/plataformanodos
Facebook: facebook.com/PlataformaNODOS

Institutional funds. Project’s own funding sources. Institutional funds:
• 2022: Subsidies from the Provincial Council of Independent Theater (CPTI in Spanish).
• 2019: Subsidies from the Provincial Council of Independent Theater (CPTI).

Knowledge areas/disciplines (OECD)
Humanities / Language and Literature
Humanities / Art

Leaders.
• Mariana del Mármol, Institute for Research in Humanities and Social Sciences (IdIHCS)/National University of La Plata (UNLP)/National Scientific and Technical Research Council (CONICET).
• Mariana Sáez, Escuela de Teatro de La Plata [La Plata School of Theater] (ETLP in Spanish).
• Diego Torres, Advanced Information Technology Research and Training Laboratory (LIFIA)/National University of La Plata (UNLP).
• Florencia Riafrecha.

Awards/distinctions.

Comments.

Leaders.
• Mariana del Mármol, Institute for Research in Humanities and Social Sciences (IdIHCS)/National University of La Plata (UNLP)/National Scientific and Technical Research Council (CONICET).
• Mariana Sáez, Escuela de Teatro de La Plata [La Plata School of Theater] (ETLP in Spanish).
• Diego Torres, Advanced Information Technology Research and Training Laboratory (LIFIA)/National University of La Plata (UNLP).
• Florencia Riafrecha.

Contact information.
Email: registro.nodos@gmail.com; marianadelmarmol@gmail.com; marianasaezsaez@gmail.com; dtorres@lifia.info.unlp.edu.ar; florriafrech@gmail.com
Web: Plataforma NODOS
Instagram: instagram.com/plataformanodos
Facebook: facebook.com/PlataformaNODOS
Environmental monitoring of marine-coastal environments

Objectives

Overall goal:
• Detect the presence of marine-coastal invasive species through participatory monitoring to analyze their expansion throughout the Argentinian coast.

Specific goals:
• Encourage different stakeholders from the Argentinian marine-coastal region to participate in the design and validation of a monitoring network of invasive species.
• Create a database using the invasive species records gathered through the monitoring network.
• Raise community awareness about how the issue of biological invasions is one of the main threats to biodiversity.

Description of citizen participation

Activities include amateur and professional divers, who have a close connection with marine-coastal environments, have valuable knowledge, and are capable of detecting changes over time. In specific workshops, participants discuss interests and motivations to collaborate with the early detection of invasive species, and co-design strategies and tools to report these species. The project has now a virtual platform for photo and video records including the respective observation date and the location of the invasive species. The platform also provides an instructional guide for observations. There is also a mobile app, currently in the co-design phase, which will make the interaction with citizens smoother.

Type of citizen science project

Contributory project: It is designed by members of the scientific community, and citizens participate in data collection.

Participating parties.
• National Scientific and Technical Research Council (CONICET, by its Spanish acronym)

Status. In progress.

Time frame. 7/1/2022 - N/A.

Frequency of project execution. Uninterruptedly.

Participation period. Sustained over time.

Scope of the initiative. Local (city, province).

Geographic scope. Puerto Madryn, Chubut, Argentina.

Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

Number of participants. From 1 to 50.

Action/s involving citizen participation.
• Data collection
• Phenomenon monitoring
• Solution planning

Technological device/tool required.
• Camera to record observations
• Online app to upload observations

Recruitment methods.

Feedback.
A customized tab for each watcher is being designed to gather all their observations and to which results and news related to the project can be sent quarterly.

Linkage with state agency/government.

Institutional funds.
• Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation

Awards/distinctions.

Contact information.
Email: nicolasbattini@gmail.com; claragia88@gmail.com; obsermar@gmail.com
Web: obsermar.com.ar
Instagram: Instagram.com/obsermar

While ObserMar has only one active project at present (focused on marine-coastal exotic species), the initiative is intended to be a platform for the development of other future projects.

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Biology

Leaders.
• Nicolás Battini, Institute of Marine Organisms Biology (IBIOMAR, by its Spanish acronym)/National Scientific and Technical Research Council (CONICET)
• Clara B. Giachetti, Institute of Marine Organisms Biology/CONICET

Contact information.
Email: nicolasbattini@gmail.com; claragia88@gmail.com; obsermar@gmail.com
Web: obsermar.com.ar
Instagram: Instagram.com/obsermar

a platform for the development of other future projects.
**Observe-Residuos [Waste Watch]**

Urban solid waste / household waste

**Objectives**
- Determine the amount and composition of household waste generated by CABA residents, engaging citizens in such process.
- Learn about current waste management habits of households and their willingness to change.
- Have useful and necessary evidence available to design proposals for waste management improvement in the city.
- Engage citizens so that, by having in-depth knowledge of the amount of waste generated by them, they may take better-informed decisions about consumption and waste management.

**Description of citizen participation**
CABA residents are invited to participate in sorting and weighing daily-generated household waste. Participants receive a scale to weigh the waste generated over one week, to be sorted into:
- Paper and cardboard (including Tetra Brik packages)
- Plastics
- Other recyclables (glass, metals and fabrics)
- Organic materials
- Others (e.g., diapers, cat litter, dirty packaging, boxes or other containers which may not be cleaned)

Waste in the first three categories must be clean, dry, and weighed at the end of the week, while waste in the remaining categories may be weighed once a week or more often before its disposal. The activity is completed once participants have entered the data and answered a brief survey through a web app on the platform of Lab Ciudadano. Arrangements are then made for scale pickup.

**Type of citizen science project**
Contributory project: It is designed by scientists, and citizens participate in data collection.

---

Participating parties,
- Lab Ciudadano (Citizen Lab)
- School of Agriculture, University of Buenos Aires (UBA)

Status. In progress.

Time frame, 03/16/2019 – N/A

Frequency of project execution. Uninterruptedly.

Participation period. Weighing takes 7 days.

Scope of the initiative. Local (city, province).

Geographic scope. Autonomous City of Buenos Aires (CABA, in Spanish)

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. Over 1001.

Action/s involving citizen participation
- Data collection.

Technological device/tool required.
- Scale provided by the Lab Ciudadano team: to weigh waste
- Device with Internet connection: to sign up, enter data, make inquiries to the Lab Ciudadano team, and request scale pickup.

Recruitment methods. By making direct contact with citizens at their workplaces, networking at fairs, parks or community events, through social media, by word of mouth, projects at schools and other institutions.

Replicability. Replicated in the municipality of Quilmes, province of Buenos Aires.

Scalability. The project then scaled to another city, but the data are not yet publicly available, though it is currently being developed.

Feedback. Once participants have completed data entry, two graphs are displayed to them on the web app. One graph compares the amount of daily waste generation per capita by residents throughout the City until then with the waste generated by the volunteer household. The other graph shows such household’s waste composition.

Open access to data. General conclusions are shared on the website for consultation by the public at large. The complete database is not yet publicly available, though it is currently being developed.

Awards/distinctions. –

Classification of knowledge areas (OECD).
NATURAL SCIENCES / Earth and related Environmental sciences
SOCIAL SCIENCES / Educational sciences

Project leaders.
- María Semmartin, School of Agriculture, UBA
- Verónica Pierini, School of Agriculture, UBA

Contact information.
Email: semmartin@agro.uba.ar; pierini@agro.uba.ar; observatorio.muestreo@gmail.com
Web: www.labciudadano.net

---

A scientific article titled Waste generation and pro-environmental behaviors at household level: A citizen science study in Buenos Aires (Argentina) was published on Resources, Conservation & Recycling sharing the findings and tools with the entire scientific community, at a local, regional and global level.

**Linkage with state agency/government.** This project was created under the linkage agreement signed by the School of Agriculture (UBA) and the Ministry of Public Space and Urban Hygiene of CABA. All data and analyses have been referred to the institution to be used in different public policies.

**Institutional funds.** They have been obtained from the Urban Hygiene Observatory of the City under the agreement signed by the School of Agriculture (UBA) and the Ministry of Public Space and Urban Hygiene of CABA.

---

**Awards/distinctions.** –

Classification of knowledge areas (OECD).
NATURAL SCIENCES / Earth and related Environmental sciences
SOCIAL SCIENCES / Educational sciences

**Project leaders.**
- María Semmartin, School of Agriculture, UBA
- Verónica Pierini, School of Agriculture, UBA

**Contact information.**
Email: semmartin@agro.uba.ar; pierini@agro.uba.ar; observatorio.muestreo@gmail.com
Web: www.labciudadano.net
Objetivos

Overall goal
• Participar colaborativamente en el cuestionamiento de diferencias y en la promoción de derechos de personas con discapacidad y salud mental en Chubut, con un enfoque de género.

Specific goals
• Participar en el cuestionamiento y promoción de derechos de personas con discapacidad y salud mental en Chubut, con un enfoque de género.
• Participar en el cuestionamiento y promoción de derechos de personas con discapacidad y salud mental en Chubut, con un enfoque de género.

Description of citizen participation
Relatives of people with mental health issues and activists in the field of disability are part of the research team. This initiative carries out participatory workshops for the promotion of rights, from the perspective of community communication and the collective production of content.

Type of citizen science project
Collaborative project: Citizens participate in data collection and analysis.
Citizen Science

Patrimonio cultural en riesgo [Cultural heritage at risk]
Workers victims of State terrorism. Trade union archives. Tucumán

Objectives

Overall goal:
Jointly reconstruct the stories of workers in Tucumán during the years of State terrorism, by safeguarding the documentary collection of the Federación Obrera Tucumana de la Industria Azucarera [the Tucumán Workers Federation of the Sugar Industry] (FOTIA, by its Spanish acronym).

Specific goals:
• Identify workers who were victims of State terrorism in Tucumán and contextualize their individual stories as part of the provincial sugar industry culture, the FOTIA, and trade union organizations.
• Recover, order, classify, describe, and safeguard the FOTIA’s documenting material, as well as documents, photographs, and objects from private and union archives related to the victims.

Description of citizen participation

This project was initiated as a result of a demand from the citizens for the preservation of FOTIA’s documentation and the reconstruction of the stories of workers of the sugar industry, presented by workers from the FOTIA, which operates from the union’s headquarters, while workers of the Archivo Nacional de la Memoria [National Memory Archive] [CIEA, by its Spanish acronym]/University of Buenos Aires (UBA) and UBA.

Specific goals:
• Recover, order, classify, describe, and safeguard the FOTIA’s documenting material, as well as documents, photographs, and objects from private and union archives related to the victims.

Type of citizen science project

Co-created project: Citizens participate in all stages of the scientific process.

Participating parties.
• FOTIA
• Instituto de Investigaciones Históricas Dr. Ramón Leoni Pinto [Dr. Ramón Leoni Pinto Historical Research Institute] (INHLEP, by its Spanish acronym) and School of Psychology - National University of Tucumán (UNT)
• Instituto de Investigaciones Territoriales y Tecnológicas para la Producción del Hábitat [Territorial and Technological Research Institute for Habitat Development] (INTEPH, by its Spanish acronym)/National Scientific and Technical Research Council (CONICET)-National University of Tucumán (UNT)
• Latin American School of Social Sciences (FLACSO Argentina)

Specific goals:
• Recover, order, classify, describe, and safeguard the FOTIA’s documenting material, as well as documents, photographs, and objects from private and union archives related to the victims.

Description of citizen participation

This project was initiated as a result of a demand from the citizens for the preservation of FOTIA’s documentation and the reconstruction of the stories of workers of the sugar industry, presented by workers from the FOTIA, which operates from the union’s headquarters, while workers of the Archivo Nacional de la Memoria [National Memory Archive] [CIEA, by its Spanish acronym]/University of Buenos Aires (UBA) and UBA.

Specific goals:
• Recover, order, classify, describe, and safeguard the FOTIA’s documenting material, as well as documents, photographs, and objects from private and union archives related to the victims.

Type of citizen science project

Co-created project: Citizens participate in all stages of the scientific process.
Citizen Science

DECEMBER 2023

EXPLORATION

SOLUTIONS MAPPING

EXPERIMENTATION

Peces de la Puna Argentina [Fish of the Argentine Puna]

Invasive exotic fish and native aquatic fauna

Objectives

Overall goal
- Learn more about fish and water quality in the Puna, thanks to the knowledge and experiences of the Indigenous Peoples, nearby schools, and other participants.
- Develop and disseminate natural history biological approaches on each species present in the Puna and on aquatic ecosystems.

Specific goals
- Monitor the invasion of exotic fish in the Puna.
- Assess the social and economic importance of fish for local communities and Indigenous Peoples in the Puna.
- Morphologically characterize fish based on the local communities and Indigenous Peoples’ anatomical knowledge and emphasize what needs to be observed as indicators of altered environments in specimens.
- Share knowledge about Puna fish through the perspective of Indigenous Communities in the city centers of Catamarca.
- Create a dictionary with ethnozoological terms used by the Diaguita Communities in the Puna Catamarqueña (kakán del sur language).

Description of citizen participation

Citizens are responsible for:
1- Surveying in the field various natural pools and geothermal springs with the toponyms provided by local citizens and translated into geo-referenced data.
2- Categorizing these sites according to water usage (agricultural-livestock, domestic, etc.) and the local communities’ knowledge of surface water and groundwater cycle.
3- Identifying springs with and without fish using illustrated species guides, including other aquatic vertebrates associated with both surface water and groundwater cycle.
4- Loading the information into a database using different fields, such as town, coordinates, fish species and density, date and time, environmental characteristics, and water usage. In this way, the local population will help to gain a real understanding of the distribution and natural history of the exotic fish in the Puna and other aquatic vertebrates. This knowledge will not only be a valuable scientific contribution from a different perspective but will also be a tool for the people of the Puna to argue in the future, based on this knowledge, what needs to be observed as indicators of altered environments in specimens.

Type of citizen science project

Contributory project: It is designed by scientists, and citizens participate in data collection.

Participating parties.
- Andean Ichthyological Center (CIA, by its Spanish acronym)/School of Exact and Natural Sciences (FACEN, by its Spanish acronym)/National University of Catamarca (UNCA, by its Spanish acronym)
- National Scientific and Technical Research Council (CONICET, by its Spanish acronym)

Status. Ongoing.

Time frame. 07/08/2016 - N/A

Frequency of project execution. Uninterruptedly.

Participation period. Sustained over time.

Scope of the initiative. National (two or more provinces).

Geographic scope. Departments of Antofagasta Sierra, Belén, Tinogasta, Los Andes, Vinchina, Famatina, Susques, Rincónada, Santa Catalina.

Project development members. Entirely developed by participants with formal scientific training.

Number of participants. From 1 to 50.

Action/s involving citizen participation.
- Data collection.
- Phenomenon monitoring.
- Solution deployment.

Technological device/tool required.
- Mobile phone (optional to record the stream to be sampled and monitored).

Recruitment methods. Meetings at locations near monitoring sites.

Replicability. -

Scalability. -

Open access to data. The information obtained is shared on site with the local population. Schools and cooperatives of the Puna are meeting places where information can be exchanged, workshops can be scheduled and dissemination activities can be carried out using brochures and videos, a well as social media.

Feedback. By visits to the study sites and meetings with communities that provide information.

Linkage with state agency/government. -

Institutional funds. Project’s own funding sources.

Awards/distinctions. -

Comments. -

Knowledge areas/disciplines (OECD)
- NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences
- NATURAL AND EXACT SCIENCES / Biology
- NATURAL AND EXACT SCIENCES / Other Natural and Exact Sciences

Leaders.
- Guadalupe Contreras, CIA UNCA.
- Dr. Julieta Andreoli, CIA-UNCA, professor of the Course on Vertebrates and CONICET postdoctoral fellowship recipient.
- Dr. Luis Fernández, CONICET and CIA-UNCA

Contact information.
Email: guadytsx@gmail.com
https://www.youtube.com/watch?v=QcYwyZRs0O8 (English)
https://www.youtube.com/watch?v=4dXiMH9mqnc (Spanish)

NATURAL AND EXACT SCIENCES
NATURAL AND EXACT SCIENCES
NATURAL AND EXACT SCIENCES
NATURAL AND EXACT SCIENCES
NATURAL AND EXACT SCIENCES

Participating parties.
- National Scientific and Technical Research Council (CONICET, by its Spanish acronym)
- National University of Catamarca (UNCA, by its Spanish acronym)
- Andean Ichthyological Center (CIA, by its Spanish acronym)/School of Exact and Natural Sciences (FACEN, by its Spanish acronym)

Leaders.
- Guadalupe Contreras, CIA UNCA.
- Dr. Julieta Andreoli, CIA-UNCA, professor of the Course on Vertebrates and CONICET postdoctoral fellowship recipient.
- Dr. Luis Fernández, CONICET and CIA-UNCA

Contact information.
Email: guadytsx@gmail.com
https://www.youtube.com/watch?v=QcYwyZRs0O8 (English)
https://www.youtube.com/watch?v=4dXiMH9mqnc (Spanish)
PISCIS: Platform for Interactive Search and Citizen Science
Classification of astronomical object characteristics

Objectives

Overall goal:
- Classify collaboratively visual information about astronomical objects and phenomena.

Specific goals:
- Conduct and validate surveys on the classification of astronomical objects and phenomena to promote citizen engagement in scientific research in the field of astronomy.
- Develop training strategies for the general public to participate in a collaborative classification of astronomical objects and phenomena.

Description of citizen participation

PISCIS helps engage the general public in ongoing scientific research projects in astronomy through a website. For each project, there is a survey in which participants have to visually classify an image with options. The interactions of participating citizens are stored in a database linked to a website, which allows for the collection of a large amount of data. To classify astronomical objects and phenomena, members of the project use different training approaches for citizens, such as including relevant scientific information and classification examples on the page of each research, holding guided discussions in computer labs installed in cultural venues, and organizing workshops with professional researchers.

Type of citizen science project

Collaborative project: Citizens participate in data collection and analysis.

Participating parties.
- National Scientific and Technical Research Council (CONICET, by its Spanish acronym)
- Faculty of Mathematics, Astronomy, Physics, and Computer Science (FAMAF, by its Spanish acronym) and Astronomical Observatory of Córdoba (OAC, by its Spanish acronym)/National University of Córdoba (UNC, by its Spanish acronym)
- Institute for Theoretical and Experimental Astronomy (IATE, by its Spanish acronym)/National University of Córdoba (UNC-CONICET)

Status. In progress.

Time frame. 9/19/2019 - N/A.

Frequency of project execution. Uninterruptedly.

Participation period. The classification takes a few minutes and is done by viewing an image with options.

Scope of the initiative. National (two or more provinces).

Geographic scope. Global, with in-person activities in the provinces of Córdoba and Buenos Aires.

Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants without formal training.

Number of participants. From 101 to 500.

Action/s involving citizen participation.
- Data collection
- Data analysis

Technological device/tool required.
- Computers
- Mobile phones
- Tablet
- Internet
- Servers to access the interactive web platform compiling data.

Recruitment methods.

- Contact information.
  Email: facundo.rodriguez@unc.edu.ar; vanessa.daza@unc.edu.ar; german.alfaro@unc.edu.ar; eugenia.diaz@unc.edu.ar
  Web: paresdegalaxias.iate.conicet.unc.edu.ar
  Github: https://github.com/vanedaza/piscis

Institutional funds.
- Institute for Theoretical and Experimental Astronomy (IATE)/National University of Córdoba (UNC-CONICET)

Awards/distinctions.

Comments. The images used for the research are available at https://github.com/vanedaza/piscis. Documentation to use PISCIS in your research is available at https://piscis.readthedocs.io/en/latest/
Citizen Science

Playas Sostenibles de Mar del Plata [Sustainable Beaches in Mar del Plata]

Beach monitoring

Objectives

Overall goals:
- Develop a set of reliable indicators for monitoring and evaluating environmental conditions in coastal areas.
- Create a manual that will enable reliable and systematic data collection to contribute to the formulation of a sustainable beach management plan for both public and private recreational beaches in Mar del Plata, with the aim to obtain an environmental certification.

Specific goals:
- Conduct an assessment of the characteristics of the coastal area on different scales for beach use classification.
- Develop an instrument suitable for the monitoring and evaluation of public and private recreational beaches.
- Train students, managers, and the personnel employed at beach facilities on how to implement procedures for recording the data to be collected at beach sites.
- Select, develop, and put into practice the most adequate indicators.
- Create an appropriate quality index.
- Monitor the environmental quality of beach sites over a year, for the purposes of field index calibration and technical data collection for decision-makers.
- Devise a management plan enabling the application of the most adequate environmental strategies for each type of beach site, based on its natural characteristics and use.
- Generate dissemination material and recreational strategies to communicate risk management measures in order to raise awareness among visitors on the natural characteristics and conservation of beach sites.
- Collaborate with the formulation of a management plan for the short, medium, and long term enabling the implementation of a consensual development strategy for the seashore of Mar del Plata.
- Create a procedural manual for devising a management plan and recording data to determine beach environmental quality indicators associated to risk maps.

Description of citizen participation

Citizens participate in the identification of the problem, data collection, and they might contribute to their dissemination.

Type of citizen science project

Contributory project: It is designed by scientists, and citizens participate in data collection.

Participating parties.

Red Mar del Plata Entre Todos (Mar del Plata Collaborative Network) (MdPET, in Spanish) serves as a means to coordinate the participation of the members comprising the following institutions:
- The research team of the National University of Mar del Plata (UNMdP, in Spanish) and the Mar del Plata Regional School of the National Technological University (UTN, in Spanish).
- Cámara de Empresarios de Balnearios, Restaurantes y Afines (Association of Owners of Beach Facilities, Restaurants and Similar Businesses) (CEBRA, in Spanish).
- Red Iberoamericana Proplayas (Beach Management and Certification Network of Ibero-America)
- Citizens

Status. In progress.

Time frame. 01/09/2019 – 01/08/2021

Frequency of project execution. Once, to be continued.

Participation period. Data were collected from December 15, 2019 to March 15, 2020. Other forms of involvement have not been assessed yet.

Scope of the initiative. Local (city, province).

Geographic scope: Mar del Plata, Buenos Aires.

Project development members. It has been developed with the collaboration of both scientists and participants with “formal training.”

Number of participants. From 51 to 100.

Action/s involving citizen participation. Problem identification. Data collection. Solution design

Technological device/tool required. Cameras, thermometers, cell phones, photographs and measurements of environmental variables.

Recruitment methods. Through the participating universities.

Replicability. -

Scalability. -

Open access to data. Data will be available for consultation by the public at large through the participating institutions.

Feedback. Project findings are included in a publication that will be available for all citizens free of charge.

Linkage with state agency/government. -

Institutional funds.
- Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program] (Argentina Ministry of Science, Technology, and Innovation)
- National University of Mar del Plata (UNMdP, in Spanish) and the Secretariat of University Policies (VT42-UMDP11687 - Playas de Mar del Plata [Mar del Plata Beach Sites]), Universidades Agregando Valor 2018 (2018 Universities Adding Value) program, CEBRA and MdPET.

Awards/distinctions. -

Classification of knowledge areas (OECD). NATURAL SCIENCES / Earth and related Environmental sciences

Project leaders.
Eduardo Vallarino, Faculty of Exact and Natural Sciences (FCEyN, in Spanish) of the National University of Mar del Plata (UNMdP, in Spanish).

Contact information.
E-mail: vallarinoeduardo@gmail.com

The final document will be available in a digital format at MdPET’s website and the digital repositories of participating universities. It will also be published by the publishing house of the National University of Mar del Plata (EUDEM, in Spanish).

Web: www.mardelplatarentetodos.org
PreserVamos [WePreserve]
Environmental monitoring of inland aquatic ecosystems

Objectives

Overall goal
• Monitor habitat quality of inland aquatic ecosystems with citizen participation.

Specific goals
• Generate a mapping of the habitat state of inland aquatic ecosystems.
• Recognize the environmental factors that positively and negatively impact freshwater ecosystems.
• Generate new monitoring tools for these ecosystems.
• Calibrate existing tools to evaluate them.

Description of citizen participation

Citizen scientists analyze the state of the habitat in aquatic environments, through the digital app for Android devices or the project website. The data and information collected are sent and centralized in the PreserVamos online database and are then used to generate a real-time, open-access map of the state of the aquatic habitat. In addition, citizen scientists can learn about the flora and fauna described near their location, thanks to the linking of the digital app with the ArgentiNat project database (iNaturalist), and learn about the environmental public policies of the municipality to which they belong.

In turn, the municipalities that wish to participate in the project can request open access for their environmental areas to manage and visualize the data sent by the citizens of their territory. They can also request the project team to add specific environmental indicators to the app that they believe are relevant for the citizens of their environments and download and use project advertising material for events in their territory.

Type of citizen science project
Contributory project: It is designed by scientists, and citizens participate in data collection.

During 2023, instruments will be incorporated to measure water physicochemical variables and thus contrast the results obtained through citizens using the digital app with environmental variables.

Open access to data. Open access on the website.

Feedback. An annual report was generated for the participating municipalities.

Linkage with state agency/government. Environmental areas of the municipalities of San Antonio de Areco, Mercedes, and Balcarce.

Institutional funds.
• United Nations Development Program (UNDP).
• Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation

Awards/distinctions.

Comments. PreserVamos is a project derived from the AppEAR initiative, with a greater emphasis on the participation of the environmental areas of the municipalities.

Knowledge areas/disciplines (OECD)
Natural and Exact Sciences / Earth and Environmental Sciences

Leaders.
• Alejandro Bonifacio, CONICET.
• Joaquín Cochero, CONICET.
• Agostina Pecile, CONICET.

Contact information.
E-mail: alejo.bonifacio@unc.edu.ar; jcochero@ilpla.edu.ar; apecile@ilpla.edu.ar
Website: www.preservamos.ar

Participating parties.
• AppEAR citizen science project.
• United Nations Development Program (UNDP).
• Researchers at the National Scientific and Technical Research Council (CONICET, by its Spanish acronym) and the National University of La Plata (UNLP, by its Spanish acronym).
• Researchers at the National Scientific and Technical Research Council (CONICET) and the National University of Córdoba (UNC, by its Spanish acronym).

Status. Ongoing.

Time frame. 08/01/2021 - N/A.

Frequency of project execution. Uninterruptedly.

Participation period. 5 minutes.

Scope of the initiative. National (two or more provinces).

Geographic scope. San Antonio de Areco, Mercedes, and Balcarce (province of Buenos Aires); La Granja (province of Córdoba).

Project development members. It has been developed with the collaboration of both scientists and participants with formal training and without it.

Number of participants. From 51 to 100.

Action/s involving citizen participation.
• Data collection.
• Phenomenon monitoring.

Technological device/tool required.
• Mobile phone or tablet.
• Internet access.
• Android app.

Recruitment methods.

Replicability. The project began in the municipalities of San Antonio de Areco, Balcarce, and Mercedes and was co-designed together with their environmental representatives. As of February 2023, work is underway to add the municipality of La Granja, which also involves adding content to the digital app, including a specific habitat quality index for the hills in that province.

During 2023, there is a plan to incorporate environments from at least three more provinces (yungas in Tucumán, wetlands in Santa Fe, and water reservoirs in San Luis) by linking the project with Fundación Bunge y Born.

Scalability. The project started with 3 researchers from the coordinating team. As of February 2023, its core team in La Plata and Córdoba is made up of 15 researchers and scholarship holders.
Objectives
Build open and participatory knowledge about amphibians and their environments in different sites in Argentina, based on a Network of Amphibian Observers (ROA, by its Spanish acronym), in order to promote their conservation.

Description of citizen participation
Citizens sign up to participate in the Network’s activities and receive theoretical and practical training through educational material to go on a field trip and record the local amphibian fauna (alive/dead). People upload their observations (photographic/audio recordings) to the iNaturalist platform (ArgentiNat), under licenses that allow their free use. Then, they are invited to upload their records during other self-organized outings, either individually or collectively in local observation groups (subprojects). The aim is to help people receive training and strengthen connections between the local community and the entities that manage these spaces (nature reserves, parks, etc.).

Type of citizen science project
Contributory project: It is designed by members of the scientific community, and citizens participate in data collection.

Programa ROA: Red de Observadores de Anfibios
[ROA Program: Amphibian Observer Network]
Amphibian monitoring. Biological Research

Participating parties:
• SAVE THE FROGS! Buenos Aires
• Red de Observadores de Anfibios (ROA) [Amphibian Observer Network]

Status. In progress.

Time frame. 07/14/2021 - N/A.

Frequency of project execution. Seasonal (spring/summer) and according to the demands or approaches to the community/comunities.

Participation period. 4 hours of training and field trip. Uploading the records to the platform takes no more than a few minutes.

Scope of the initiative. National (two or more provinces).

Geographic scope. The initiative started in sites closer to its place of origin and then expanded throughout the country. Each year, new sites are visited.

Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

Number of participants. From 101 to 500.

Action/s involving citizen participation
• Data collection

Phenomenon monitoring

Technological device/tool required.
• Camera
• Mobile phones
• PC

Recruitment methods. Project’s social media. Internal communications through the citizen science platform. Training sessions, and invitations to go on outings and do volunteer work.

Replicability. It has been replicated using the same platform and adapting the methodology to different audiences and contexts.

Scalability. -

Open access to data. The data are published on Wikimedia, GBIF, and iNaturalist.

Feedback. Feedback is provided through closing sessions, via email, and social media and networks.


Institutional funds.
• Asociación Civil Wikimedia Argentina

Awards/distinctions. -

Comments. The data provided is used for the promotion of educational content through the initiative’s social media and networks. The initiative also plans to make various contributions (freely accessible data) to Wikimedia projects such as Wikipedia, Wikimedia Commons, Wikispecies, and Wikidata.

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences
NATURAL AND EXACT SCIENCES / Biology
NATURAL AND EXACT SCIENCES / Other Natural and Exact Sciences

Leaders.
• Natalia Maruscak, SAVE THE FROGS! Buenos Aires
• Lucila Trussi, SAVE THE FROGS! Buenos Aires
• Rocío Rudak, SAVE THE FROGS! Buenos Aires

Contact information.
Email: buenosaires@savethefrogs.com; savethefrogs.bsas@gmail.com
Website: linktr.ee/buenosairesstf; stfbuenosaires.blogspot.com
Instagram: instagram.com/buenosairesstf;
Facebook: facebook.com/buenosairesstf

Agencia Municipal del Ambiente SVM [San Vicente Municipal Office of Environment], Reserva Natural Urbana “El Corredor” [“El Corredor” Urban Nature Reserve], Municipality of San Miguel.
Objectives

Overall goal:
Collect information to know the general biology of the species in Argentina and adopt measures for its conservation.

Specific goals:
• Learn about the current status of the species and its conservation problems.
• Understand the distribution, habitat and threats to the species by province.
• Prepare an annual report based on the information obtained from the observers’ records.

Description of citizen participation

In some cases, citizens participate by raising conservation issues for certain populations. In addition, they are responsible for collecting data from species observations, posting the records in a Facebook group. Participants are requested to upload photographs and include geographic location, coordinates, description of the environment, possible disturbances and number of birds. In the case of a nesting record, the number of eggs or chicks and their description should be added.

If the recordings are conducted in areas that could become potential protected areas, citizens will coordinate future conservation efforts involving the project and the landowner.

Type of citizen science project

Co-created project: Citizens participate in all stages of the scientific process.
Proyecto de vinculación y transferencia tecnológica para la producción solidaria de medidores de CO₂ [Bonding and technology transfer project for solidarity-based production of CO₂ meters]

Participating parties.
- Teaching and research staff from the Universidad Nacional de Hurlingham (National University of Hurlingham, UNAHUR by its Spanish acronym)
- High school and technical school teaching staff
- Parent auxiliaries

Status. In progress.

Time frame. 12/26/2020 - N/A

Frequency of project execution. Uninterruptedly.

Participation period. As long as citizens adopt the use of CO₂ meters, their usage will be maintained over time.

Scope of the initiative. Argentina (two or more provinces).

Geographic scope. Argentina.

Specific subject: Indoor ventilation monitoring by measuring carbon dioxide (CO₂).

Project development members. Entirely developed by participants with formal scientific training.

Number of participants. From 1001 onwards.

Actions involving citizen participation.
- Data collection.
- Phenomenon monitoring.
- Solution implementation.

Technological device/tool required.
- CO₂ meter for ventilation monitoring. While versions of CO₂ meters that transfer data to mobile phones can be developed, it is not required.

Recruitment methods.
- Related activities and initiatives.
- Social media.
-阻力.

Feedback. Questions, doubts and queries are answered through social media and/or Whatsapp.

Linkage with state agency/government. The Province of Buenos Aires and several Municipal Governments across the country decided to supply these meters in schools.

Institutional funds.
- Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana (Grant to Support Projects from the National Citizen Science Program)/Argentine Ministry of Science, Technology, and Innovation
- Project’s own funding sources. (For the two initial prototypes, the components of which were purchased over the Internet at a cost of approximately ARS $650.00 each).

Open access to data. Free and open source code in jorgealiaga.com.ar/?page_id=2864

Contact information.
Email: jorge.aliaga@unahur.edu.ar

Awards/distinctions.

Classification of knowledge areas (OECD).
- NATURAL AND EXACT SCIENCES / Physics
- NATURAL AND EXACT SCIENCES / Earth and Environmental Sciences
- HEALTH AND MEDICAL SCIENCES / Health Sciences

Project leaders.
Jorge Aliaga, National University of Hurlingham (UNAHUR, in Spanish), University of Buenos Aires (UBA by its Spanish acronym) and National Scientific and Technical Research Council (CONICET, in Spanish).

Contact Information.
Email: jorge.aliaga@unahur.edu.ar
Web: www.jorgealiaga.com.ar/?page_id=2864

Objectives

Overall:
- Provide a low-cost device for indoor ventilation monitoring by measuring carbon dioxide (CO₂).
- Reduce the probability of contracting airborne diseases, such as COVID-19, among others.
- Contribute to enhance performance of people sharing indoor spaces by monitoring ventilation.

Specific:
- Research CO₂ meter designs, select those that use components available in Argentina, build a working prototype and make the circuit and microcontroller programming code freely and publicly available.

Description of citizen participation
Citizens are provided with a CO₂ meter, equivalent to a “thermometer”, and receive basic training. They learn that the optimal outdoor ventilation rate is about 400 parts per million (PPM), while the indoor ventilation rate can easily reach 2500 PPM. Therefore, if during monitoring, the value is less than 800 PPM, citizens will record that ventilation is adequate and they can remain indoors with a low risk, as long as they keep at least a one (1) meter distance and wear a mask (in the context of the COVID-19 pandemic). On the other hand, if the value rises, citizens know that they will have to increase ventilation or, otherwise, leave the room until the air is renewed.

Type of citizen science project
Collaborative project: Citizens participate in data collection and analysis.
Citizen Science

Proyecto Vaquitas [Lady Beetles]

Monitoring the diversity and distribution of Lady Beetles (Coleoptera, Coccinellidae)

Objectives

Overall goal: Identify species of Lady Beetles existing in Argentina, determine their geographical distribution, and assess the potential impact of an invasive species, specifically the Asian Lady Beetle (Harmonia axyridis) and eventually of any other exotic species on native ones.

Specific goals:
• Monitor the spread of the Asian Lady Beetle across Argentina.
• Assess the degree of spatial coexistence of said invasive species with other conspicuous native species (i.e., obvious to the eye) of the same family, in order to identify the most threatened species.

Description of citizen participation

Citizens send photos indicating the date and the geographic location where said insects have been observed. At the same time, they work in two specific roles: on the one hand, systematic monitoring and, on the other, the local promotion and dissemination of the project. Citizens engaged in systematic monitoring will carry out systematic sampling in their cities by using sweep nets and searching manually at locations they will select based on their local knowledge. They will be trained in species identification, and then report and discuss their findings with the entire team. Citizens who participate in local dissemination will act as local coordinators for the promotion and dissemination of the project in their provinces. Therefore, the project includes three types of citizen participation: citizens who send "occasional" records, citizens who carry out systematic monitoring, and citizens who cooperate with the dissemination and promotion of the project. The same person may fulfill one or more of these roles simultaneously.

Type of citizen science project

Collaborative project: Citizens participate in data collection and analysis.

Participating parties.

• Research teams, researchers, fellowship holders, and support staff of the National Scientific and Technical Research Council (CONICET, by its Spanish acronym)

Status. In progress.

Time frame. 7/12/2019 – N/A

Frequency of project execution. Uninterruptedly.

Participation period. Regularly.

Scope of the initiative. Argentina (two or more provinces).

Geographic scope. Argentina.

Project development members. It has been entirely developed by people with formal scientific training.

Number of participants. Over 1001.

Action/s involving citizen participation

• Data collection
• Species identification
• Local promotion and dissemination

Technological device/tool required.

• Mobile phone with Internet access
• Camera
• Sweep nets and material for entomological collection (only some citizens)

Recruitment methods. Through institutions, social media and the press.

Replicability. The project has been replicated on a small scale in various schools in the country, where the topic was addressed from different disciplines and at different educational levels.

Scalability. The project’s number of participants is gradually increasing.

Open access to data. Part of the initiative is developed through ArgentinNat, where the data recorded are shared automatically. In addition, the records can be accessed through the project web page (https://proyectovaquitas.com.ar/).

Feedback. Species identification and detailed information are provided, and all queries made by citizens are answered. In addition, through the project’s website and social media, diverse information is provided related to the biodiversity of Lady Beetles, their role in ecosystems, the importance of biodiversity conservation, and the issue of biological invasions. The progress of the project is also shared.

Linkage with state agency/government. The project has collaborated with state educational institutions, various National Parks in the country, and the National Institute of Agricultural Technology (INTA, by its Spanish acronym) for the dissemination and implementation of the project.

Institutional funds. Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation

Awards/distinctions.

Comments. Starting from late 2023, the project will include non-scientific citizens, from different provinces of Argentina, to collaborate with the design of standardized sampling and as active participants in the local dissemination of the project.

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Biology

Leaders.

• Victoria Werenkraut, CONICET Researcher

Contact information.

Email: werenkraut@comahue-conicet.gob.ar; vaquita@comahue-conicet.gob.ar
WhatsApp: +549 294 4239168
Website: https://proyectovaquitas.com.ar/
Instagram: https://www.instagram.com/proyectovaquitas/
Twitter: @vaquitas

Starting from late 2023, the project will include non-scientific citizens, from different provinces of Argentina, to collaborate with the design of standardized sampling and as active participants in the local dissemination of the project.
**Participating parties.**
- Environment and Natural Resources Foundation (FARN, in Spanish).
- Fundación Ciudad (Ciudad Foundation).
- Foro de Periodismo Argentino (Forum for Argentine Journalism) (FOPEA, in Spanish).

**Status.** Completed.

**Time frame.** 1/10/2011 – 2015

**Frequency of project execution.** Uninterruptedly.

**Participation period.** On a sustained basis.

**Scope of the initiative.** Local (city, province).

**Geographic scope.** Matanza–Riachuelo basin. Autonomous City of Buenos Aires (CABA, in Spanish)

**Project development members.** It has been developed with the collaboration of both scientists and participants without formal training.

**Number of participants.** From 101 to 500.

**Action/s involving citizen participation**
- Data collection.
- Phenomenon monitoring.

**Technological device/tool required.** Digital platform.

**Recruitment methods.** By visiting communities.

**Replicability.** The platform that is being co-designed within the sphere of CoAct, a project that is also part of this mapping, will be a relaunch of QPR.

**Scalability.** Monitoring functions were added to the second version launched in 2012. Tools were designed to boost the involvement of neighborhood groups through the granting of Response Funds to be directly applied to such activities, which were reported to the platform. Also, the documentary titled “La vuelta al Rio” (“Back to the River”) was made, as part of the process for promoting citizen involvement.

**Open access to data.** Data were downloadable in CSV format.

**Feedback.**

**Linkage with state agency/government.** Mainly with the Matanza – Riachuelo Basin Authority (ACUMAR, in Spanish).

**Institutional funds.** European Union.

**Awards/distinctions.**

---

**Objectives**

**Overall goals:**
- Promote informed citizen participation.
- Contribute towards the supervision and monitoring of the Riachuelo Sanitation Plan.
- Enhance the level of protection of natural areas with significant ecosystemic value.
- Modify economic activities with a high negative impact.
- Improve the quality of life of people living in the Matanza-Riachuelo basin, especially of vulnerable inhabitants.

**Specific goals:**
- Strengthen social monitoring capabilities and the resulting influence of citizens on the public policies implemented in the territory.
- Improve the speed and effectiveness of the complaint mechanisms available to people living in the basin to enable mainstreaming issues into the solutions required for each case.

**Description of citizen participation**

It involved a virtual space constituted by a network of civil society organizations. As an environmental platform, it promoted online monitoring by way of citizen supervision and reporting, classified into 4 thematic areas:
- Industries with legal and environmental risk rates
- Open dumping sites
- Slums and settlements
- Territorial alerts

A photojournalism contest for hobbyists was held in 2013. To participate, neighborhood groups and residents living in the basin had to send images showing its condition, considering the Sanitation Plan established by the Supreme Court of Justice.

**Type of citizen science project**

**Collaborative project:** Citizens participate in data collection and analysis.
Red Argentina de Monitoreo de Fauna Atropellada
[Argentine Wildlife Roadkill Monitoring Network]

Wildlife mortality on roads

Objectives

Overall goal:
- Collaboratively map and analyze the impact of wildlife roadkill on Argentina’s roads through an application for mobile devices, to put the issue on the agenda and promote both species conservation and road safety.

Specific goals:
- Identify, through collaborative mapping, vulnerable species and areas of the country with a concentration of roadkill (hotspots).
- Understand the impact of roads on wildlife and build knowledge aimed at improving road planning and promoting the implementation of effective mitigation measures (wildlife crossings, culvert improvement, speed bumps, and enforcement).

Description of citizen participation

Citizens participate in the collection of data on roadkill through an application for mobile devices that systematizes records using photographs and GPS location. The collected data is curated and published on a publicly accessible website. The initiative responds to specific requests, filters, exports, and sends data to decision-makers (both public and private) for the implementation of solutions or mitigation measures. The target audience of the initiative is public or private agents involved in the management of natural areas or wildlife (park rangers, wildlife rangers, officials of the National Parks Administration of Argentina and provincial wildlife offices) or the administration of roads and highways (provincial road technicians, National Highway Administration of Argentina, road concessionaires, etc.).

Type of citizen science project

Contributory project: It is designed by members of the scientific community, and citizens participate in data collection.

Participating parties.
- Centro de Investigaciones del Bosque Atlántico (CEIBA, by its Spanish acronym) (civil wildlife protection and scientific advancement association)
- Instituto de Biología Subtropical (IBS, by its Spanish acronym) [Institute of Subtropical Biology]; National Scientific and Technical Research Council (CONICET, by its Spanish acronym)-National University of Misiones (UNaM)-by its Spanish acronym)
- Fundación Vida Silvestre Argentina (civil wildlife protection association)

Status. In progress.

Frequency of project execution. Uninterruptedly.

Technological device/tool required.
- Mobile phone with offline application. Data is shared when Internet access is available
- Camera
- GPS

Recruitment methods. The initiative is communicated and participants are invited through social media, mass media, a website, scientific meetings, and specific workshops with key stakeholders.

Replicability. Similar initiatives have emerged in other Latin American countries. Currently, the team is part of the specialist group on biodiversity and transport of the International Union for Conservation of Nature in Latin America.

Scalability. Since its inception in 2019, the number of provinces, institutions, collectors, and data collected has grown.

Open access to data. The records, maps, and statistics are openly accessed by citizens and organizations. Information is shared on the website and records by province or route are sent upon request.

Feedback. Through the website, Facebook, and email.

Linkage with state agency/government. National Parks Administration of Argentina, National Highway Administration of Argentina, and Provincial Highway Office of Misiones and, upon request, different provincial agencies and researchers.

Institutional funds.
- CEIBA (web hosting)
- Fundación Vida Silvestre Argentina (materials and promotion)
- Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation

Awards/distinctions. -

Comments. -

Knowledge areas/disciplines (OECD)
- NATURAL AND EXACT SCIENCES / Biology
- ENGINEERING AND TECHNOLOGY / Civil Engineering

Leaders.
- Diego Varela, Asociación Civil Centro de Investigaciones del Bosque Atlántico (CEIBA) and Instituto de Biología Subtropical (IBS)/National Scientific and Technical Research Council (CONICET)-National University of Misiones (UNaM)
- Ignacio Minoli, IBS/CONICET-UNAM
- Sebastián Cirignoli, CEIBA and National Parks Administration of Argentina
- Bernardo Lartigau, Fundación Vida Silvestre Argentina

Contact information.
Email: red.arg.fauna.atropellada@gmail.com; vareladieg@gmail.com; minolicnp@gmail.com
Web: www.fauna-atropellada.org.ar
Facebook: facebook.com/RedArgentinaMonitoreoFaunaAtropellada

Argentina.

Argentina.
Citizen Science
DECEMBER 2023
EXPLORATION SOLUTIONS MAPPING EXPERIMENTATION

Restaura [Restore]
Native forest ecological restoration

Objectives
Overall goal
• Create collaborative networks and connect different knowledge sources to promote the restoration of native forests.
• Study the phenology and standardization of Celtis tala employing collaborative tools within an open science framework.

Specific goals
• Learn about the different life cycles of the Tala (flowering, fructification, etc.) to plan when to collect seeds needed for the restoration projects.
• Determine the optimal planting date of Tala by conducting a collaborative experiment throughout its distribution in Argentina to locally adjust restoration strategies.
• Create collaborative tools for the restoration of native forests in different ecoregions through the replication of these activities with other species.
• Define the weak points of invasive exotic species in order to control them.

Description of citizen participation
In the first part of the project, to learn about the different stages of the Tala’s life cycle, the participants follow the same tree through its different stages of development, and report their results through a web app. In the second part, in order to determine the optimal planting date for the Tala, citizens simultaneously carry out a collaborative germination experiment in their homes or nurseries. In this context, monthly meetings are held to share the preliminary results with the participants. Open access to information is expected in the future.

Type of citizen science project
Collaborative project: Citizens participate in data collection and analysis.

Participating parties.
• Mariela Lacoretz, Biologist, Postdoctoral Fellowship Recipient of the National Scientific and Technical Research Council (CONICET), Professor at the Faculty of Exact and Natural Sciences (FCEN) in Spanish/University of Buenos Aires (UBA).
• Pedro Tognetti, Agronomist, CONICET Researcher, Professor at the School of Agriculture (FA in Spanish)/UBA.
• Mariano Fresco, Sociologist, CONICET Researcher, Research Center for Transformation, (CENIT in Spanish)/National University of San Martín (UNSAM in Spanish).
• Natalia Rodríguez, Environmental Scientist, CONICET PhD Scholarship Recipient, Professor at FA/UBA.
• Débora Chamorro, Agronomist, Professor at National University of Rosario (UNR in Spanish).
• Cristian Malavert, Agronomist, CONICET Postdoctoral Fellowship Recipient, Professor at FA/UBA.
• Evelyn Schibber, Biologist and Programmer, Member of the Support Staff for Research and Development Career (CPA in Spanish)/Agricultural Physiology and Ecology Research Institute (IFEVA in Spanish)/UBA-CONICET.
• Cecilia Moliná, Environmental Scientist, Professor at FA/UBA and the Provincial University of Ezeiza.
• Rocío Contestin, Biological Sciences student at UBA.

Status. In progress.

Time frame. 02/26/2021 - N/A.

Frequency of project execution. Uninterrupted.

Participation period. From a few hours to several months, according to the participant.

Scope of the initiative. National (two or more provinces).

Geographic scope. Provinces of Buenos Aires, Entre Ríos, Santa Fe, Córdoba, San Luis, La Rioja, Tucumán, Salta.

Project development members. It has been developed with the collaboration of scientists and participants both with formal training and without it.

Number of participants. From 51 to 100.

Action/s involving citizen participation.
• Problem definition.
• Data collection.
• Data analysis.
• Phenomenon monitoring.
• Solution planning.

Technological device/tool required.
• Mobile phone for georeferencing and taking photos.
• Internet connection to upload data on the web app.
• Pots and gardening tools for germination.

Recruitment methods. Through social media, mainly Facebook and Instagram, using specific flyers. Recruitment was made so far to conduct collaborative germination experiments, report photos of the Tala’s different phenological stages, and inform of meetings about results and protocols.
Objectives

Overall goal
• Build accessible knowledge about the air quality of Villa Inflamable along with the community for the promotion of policies and programs for sustainable environmental co-management of the territory with a focus on the reduction and mitigation of health risks.

Specific goals
• Co-design and scale up air quality monitoring devices.
• Identify the protective measures carried out by the community of Villa Inflamable regarding odors, gases, and smoke to which it is exposed.
• Create collaborative management tools for air quality facilitating the participation of the community, local government, and university.

Description of citizen participation
Air quality control devices were co-created with the community of Villa Inflamable to jointly carry out measurements. Citizens view the data on the device displays. Based on the data collected, workshops are held with the community where graphics and visualizations are shared to facilitate the process of interpreting measurement results, with the help of academic researchers and the acquisition of scientific-technical skills.

Type of citizen science project
Co-created project: Citizens participate in all stages of the scientific process.
Servicio socio-habitacional: mejoras bioclimáticas en viviendas populares
(Social and housing service: bioclimatic improvements in low-income houses)

Participatory housing and urban improvement

Objectives

Overall goal
• Collaboratively identify the housing and urban conditions with which the communities of low-income settlements in Córdoba live to jointly build improvement solutions following sustainability parameters.

Specific goals
• Carry out precise and comprehensive urban housing analyses to learn about the housing, urban, and environmental conditions present in the low-income settlements of the city of Córdoba and the zone of influence.
• Collaboratively propose improvement solutions for these conditions and the implementation of bioclimatic design and energy efficiency strategies, based on the perceptions, knowledge, resources, and abilities of the community present in the territories.
• Develop awareness, training, and appropriate technical support strategies to promote community consolidation and the improvement of environmental quality and life in settlements.
• Identify guidelines that can be used in the design and management of housing integration policies.

Description of citizen participation

The communities of the low-income neighborhoods actively participate in the entire process along with students, teachers, and researchers involved. Participants work together in planning activities to be implemented per semester in the survey and analysis of the existing socio-urban, environmental, and housing conditions. They also work in the subsequent instances of reflection on the findings and possible solutions, the activities for the monitoring and assessment of the agreed work plans, and the processes of self-construction and social production of the habitat to carry out the improvements and presentation of results. At the same time, citizens have influence over different community activities, such as training workshops, technological training, and design/improvement. Finally, they provide their own (economic, material, organizational, human, etc.) resources to achieve the agreed tasks.

Type of citizen science project

Co-created project: Citizens participate in all stages of the scientific process.
Objectives
Map sleep and wake habits in Argentina by jointly collecting anonymous data on mobile phone use, analyzing individual and community variables affecting sleep (demographics, geographical location, etc.), and producing a set of recommendations, based on this evidence, about adequate circadian rhythm and sleep regimens.

Description of citizen participation
Citizens collect data through a report on the use of their mobile phones and behaviors in relation to sleep and wakefulness. They also participate in public dissemination campaigns of the initiative and the production of recommendations to formulate future public policies based on gathered evidence.

Type of citizen science project
Contributory project: It is designed by members of the scientific community, and citizens participate in data collection.

Sueño ciudadano [The sleep of citizens]

Sleep parameters and quality of life
Tenencia responsable de mascotas para conservar la fauna nativa
[Responsible pet ownership to conserve native fauna]
Predation of native fauna by domestic dogs and cats

Objectives

Overall goal
• Collaboratively contribute to knowledge building related to responsible pet ownership to conserve wildlife and improve the health of the population.

Specific goals
• Calculate and characterize the predation of native fauna by domestic dogs and cats, with or without owners, in the province of Buenos Aires.
• Provide training to citizens on responsible ownership of dogs and cats.

Description of citizen participation
Workshops are held in schools for students and teachers to reconstruct their knowledge based on problematic situations and theoretical content provided by the teachers in charge. During this training, participants are invited to upload information to the platform ArgentiNat regarding the predation events of native fauna by dogs and cats to get involved in the study of the issue.

Type of citizen science project
Contributory project: It is designed by members of the scientific community, and citizens participate in data collection.

Open access to data. The data is freely accessible on the ArgentiNat platform.

Feedback. The preliminary results are shared on the project's social media.

Linkage with state agency/government. -

Institutional funds. FCEN/UBA.

Awards/distinctions. Second in the merit order of the "Exactas con la Sociedad 7" call, FCEN/UBA. The project was declared of municipal interest by the Municipality of Escobar.

Comments. -

Knowledge areas/disciplines (OECD)
NATURAL AND EXACT SCIENCES / Biology
NATURAL AND EXACT SCIENCES / Other Natural and Exact Sciences

Leaders.
• María Gabriela Corral, Department of Ecology, Genetics and Evolution (DEGE, by its Spanish acronym)/FCEN/UBA
• Leonardo Galli, Centro de Formación e Investigación en Enseñanza de las Ciencias (CEFIEC, by its Spanish acronym) [Research Institute Center for Training and Research in Science Teaching]/FCEN/UBA
• Andrés Gabriel Palmerio, DEGE/FCEN/UBA

Contact information.
Email: gabicorral@gmail.com; leomgalli@gmail.com; apalmerio@gmail.com; trm.conservar@gmail.com
Web: argentinat.org/projects/tenencia-responsable-mascotas
Facebook: facebook.com/trm.conservar
Instagram: instagram.com/trm.conservar/?hl=es

Participating parties.
• School of Exact and Natural Sciences (FCEN, by its Spanish acronym)/University of Buenos Aires (UBA)
• Escobar Zoonoses Center/Municipality of Escobar
• Educational institutions and Granja Educativa Don Benito (educational farm)
• Reserva Natural Educativa Ingeniero Maschwitz (nature reserve)
• Parque Nacional Cíevo de los Pantanos (national park)
• Asociación para la Conservación y el Estudio de la Naturaleza (ACEN, by its Spanish acronym) [Association for the Conservation and Study of Nature]
• Centro Cultural "El Bondi" (cultural center)
• AYUDA Ingeniero Maschwitz (non-governmental organization)
• Fundación Vida Silvestre Argentina (FVSA, by its Spanish acronym) [civil wildlife protection association]
• Aves Argentinas (NGO)

Status. In progress.

Time frame. 3/11/2019 - N/A.

Frequency of project execution. Uninterrupted.

Participation period. Participation involves sightings of predation events and data upload to the digital platform; it requires only a few minutes of dedication.

Scope of the initiative. Local (city, province).

Geographic scope. Escobar, Campana, and Pilar (province of Buenos Aires).

Project development members. The initiative was developed with the collaboration of both members of the scientific community and participants with and without formal training.

Number of participants. From 101 onwards.

Action/s involving citizen participation.
• Data collection.
• Phenomenon monitoring.

Technological device/tool required.
• Mobile phones for taking photos and georeferencing predation events.
• ArgentiNat platform and Internet connection to upload the information.

Recruitment methods. Workshops in schools near private, municipal, provincial, or national protected areas.

Repliability. -

Scalability. -
Objectives

Overall goal
- Highlight the participation of civil society organizations in the social development of the different territories in Argentina by means of a collaborative process of building public and open knowledge.

Specific goals
- Create and maintain a web platform of the project, which collects and disseminates information about the actions carried out by the Argentine civil society organizations.
- Elaborate an interactive MAP and DATABASE at a national level to be permanently updated with the participation of the organizations in knowledge building as regards their actions throughout the country.
- Systematize and analyze the collected data and share the results publicly, openly and through user-friendly formats.
- Foster the development of discussions on the role of the Argentine civil society by generating environments of exchange between activists and experts.

Description of citizen participation

Citizens can participate in the project in two ways: a) voluntary contribution of the civil society organizations (CSO) as regards information about their actions in the territory by completing a form; b) participation of CSO members or experts on the topic in discussions, talks, reporting based on the analysis of the results, and other activities to disseminate their initiatives or by means of the different networks which are part of the mapping.

Type of citizen science project

Collaborative project: Citizens participate in data collection and analysis.

Territorios en acción

Collaborative mapping of social organizations in Argentina

Nuestro mapeo es una construcción colaborativa, participativa y abierta. Un proceso de creación de conocimiento social en red.

Participating parties.
- Great Buenos Aires area Observatory of the National University of General Sarmiento (UNGS, by its Spanish acronym)
- CSO Program/Latin American Faculty of Social Sciences (FLACSO, by its Spanish acronym)
- Urban and Regional Studies Center (CEUR, by its Spanish acronym)/National Scientific and Technical Research Council (CONICET, by its Spanish acronym)

Status. In progress.

Time frame. 02/05/2020 - N/A

Frequency of project execution. Uninterruptedly.

Participation period. The participation of the citizens is permanent as collaborative mapping, document production based on analyzed results and the scheduling of discussions are fundamental activities for the project, which last over time.

Scope of the initiative. Argentina (two or more provinces).

Geographic scope. All provinces in Argentina.

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. Over 1001.

Action(s) involving citizen participation.
- Data collection.
- Data analysis

Technological device/tool required.
- Geolocation and mapping software used by the Project Technical Team to upload data
- Web platform for data publication

Recruitment methods. Through CSO participatory settings: organizations’ social media, participatory state-run programs, etc, and through social media and graphic and audiovisual media (TV Pública, Radio 750, Página12, Tercer Sector magazine, Télam, Futurock, Agencia Paco Urondo, and more).

Replicability.
- Scalability. The project aims to significantly increase its coverage in order to include a greater number of Argentine CSOs. To this effect, different communication strategies will be used with the CSOs, social media and other institutions related to this field.

Open access to data. The collaborative and interactive mapping and the database are published on the web and are open-source.

Feedback. Regular newsletters including the results and progress of the research are sent.

Linkage with state agency/government. Office of Social Information of the Argentine Ministry of Social Development

Institutional funds.
- Initial subsidies from the UNDP Argentina Accelerator Lab. Subsidies of the Argentine Ministry of Social Development in 2021 - 2022. Institutional contributions from the FLACSO.

Awards/distinctions.

Comments. -

Knowledge areas/disciplines (OECD)
Social Sciences / Sociology
Social Sciences / Political science
Social Sciences / Economic and Social Geography

Leaders.
- Agustina Gradin, FLACSO Argentina.
- Paula Rosa, Urban and Regional Studies Center (CEUR)/National Scientific and Technical Research Council (CONICET).
- Adriana Rofman, National University of General Sarmiento (UNGS).

Contact information.
Email: territoriosenaccion@gmail.com; aggradin@flacso.org.ar; paula_rosa00@yahoo.com.ar; arofman@campus.ungs.edu.ar
Web: xn--territoriosenaccion-61b.org/
Twitter: twitter.com/terrenaccion
Facebook: facebook.com/territoriosenaccion
Citizen Science
DECEMBER 2023
EXPLORATION
SOLUTIONS MAPPING
EXPERIMENTATION

Tucanes en mi Jujuy [Toucans in my Jujuy]
Monitoring presence, use of habitat and ecology of Toco Toucans (Ramphastos toco) in urban environments

Objectives
Overall: Use Toco Toucans as flagship species to raise public awareness about biodiversity conservation in SSJ and contribute to environmentally sustainable urban planning.

Specific:
- Understand habitat use and selection patterns, seasonal migration, diet composition and reproductive habits of Toco Toucans in the city of SSJ;
- Determine the link between toucan populations and different urban structural features;
- Engage society in reporting the presence of toucans in different parts of the city and monitoring nest boxes, as a way of raising awareness about the value and protection of this bird and biodiversity in general;
- Offer talks and workshops in academic institutions aimed at students and faculty to promote environmental education;
- Prepare a diagnosis of the current situation of Toco Toucans in SSJ, identifying actual and potential threats affecting them, as well as beneficial actions and urban features for these species.

Description of citizen participation
Anyone can participate by reporting toucan sightings in different parts of the city, through social media, website and/or mobile app. Although submitting photos and videos is not mandatory, these contributions are also encouraged.

In addition, citizens also participate in placing and monitoring nest boxes to assess whether toucans are breeding in the city.

Type of citizen science project
Contributory project: It is designed by scientists, and citizens participate in data collection.

Participating parties.
- Andean Ecoregion Institute (INECOA);
- National University of Jujuy, School of Agricultural Sciences (UNJu);
- Department of Environmental Promotion at the Municipality of San Salvador de Jujuy.

Status. In progress.

Time frame. 05/03/2021 - N/A

Frequency of project execution. Uninterruptedly.

Participation period. Uninterruptedly throughout the year, reporting sightings that take no more than 3 minutes each.

Scope of the initiative. Local (city, province).

Geographic scope. San Salvador de Jujuy (SSJ), province of Jujuy

Project development members. It has been developed with the collaboration of both scientists and participants without formal training.

Number of participants. From 101 to 500.

Action/s involving citizen participation.
- Data collection.
- Phenomenon monitoring.
- Solution implementation.

Technological device/tool required.
- Mobile phone with Internet access to report date, time, location, number of individuals, whether they are adults or young, and the activity of the animals when sighted.
- Nest boxes made of PVC pipes placed at a height of no less than 7 m, using climbing equipment. They are then monitored using telescopic poles to which wireless cameras with viewfinders are attached.
- Binoculars to complement reports with standardized sampling.

Recruitment methods. No specific approach was implemented; anyone who is interested can participate.

Replicability.
- Scalability.
- Comments: As the project grows in popularity, more citizen contributions are being incorporated into the project. Additionally, more local media are interested in learning about the details.

Open access to data. All the knowledge acquired is disseminated through social media, local media, presentations for academic institutions, workshops and congresses.

Feedback. Project findings are included in a publication that will be available for all citizens free of charge.

Linkage with state agency/government. Agreement with the Municipality of SSJ, Department of Environmental Management. This department is responsible for issuing and applying fines to those who capture, damage, kill or trade Toucans. It also helps to disseminate the project on social media and to design material such as brochures and banners.

Comments: Toco Toucans have the potential to become "umbrella species", since preserving certain features of the urban landscape necessary for them to be present, indirectly helps to protect several other species in their surroundings. For example, parrot species currently under conservation threat: Blue-fronted parrot (Amazona aestiva) and Alder Parrot (Amazona tucumana).

Institutional funds.
- Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation.

Project’s own funding sources. INECOA.

Awards/distinctions.

Classification of knowledge areas (OECD).
- NATURAL AND EXACT SCIENCES/ Earth and Environmental Sciences.
- NATURAL AND EXACT SCIENCES/ Biology.

Project leaders.
- Román Ruggera, National Scientific and Technical Research Council (CONICET, in Spanish) and National University of Jujuy (UNJu, in Spanish)
- Alejandro Schaaf, CONICET
- Noelia Gonzalez, CONICET
- Agustina Yapura, UNJu
- Natalia Chocobar, UNJu

Contact information.
Emails: raruggera@fca.unju.edu.ar ; schaaf.alejandro@gmail.com ; novi.arg31@gmail.com ; yapura.09@live.com ; tucanesenmijujuyaggregate@gmail.com
Facebook: facebook.com/tucanesenmijujuy
Instagram: instogram.com/tucanesenmijujuy

Comments:
- Toco Toucans have the potential to become "umbrella species", since preserving certain features of the urban landscape necessary for them to be present, indirectly helps to protect several other species in their surroundings. For example, parrot species currently under conservation threat: Blue-fronted parrot (Amazona aestiva) and Alder Parrot (Amazona tucumana).

Institutional funds.
- Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation.

Project leaders.
- Román Ruggera, National Scientific and Technical Research Council (CONICET, in Spanish) and National University of Jujuy (UNJu, in Spanish)
- Alejandro Schaaf, CONICET
- Noelia Gonzalez, CONICET
- Agustina Yapura, UNJu
- Natalia Chocobar, UNJu

Contact information.
Emails: raruggera@fca.unju.edu.ar ; schaaf.alejandro@gmail.com ; novi.arg31@gmail.com ; yapura.09@live.com ; tucanesenmijujuy aggregate@gmail.com
Facebook: facebook.com/tucanesenmijujuy
Instagram: instogram.com/tucanesenmijujuy

Comments:
- Toco Toucans have the potential to become "umbrella species", since preserving certain features of the urban landscape necessary for them to be present, indirectly helps to protect several other species in their surroundings. For example, parrot species currently under conservation threat: Blue-fronted parrot (Amazona aestiva) and Alder Parrot (Amazona tucumana).
Vi un abejorro [I saw a bumblebee]
Monitoring and conservation of native and exotic bumblebees

Objectives
Overall goal
• Contribute to knowledge through citizen monitoring of the population status of the 8 native species of bumblebees in Argentina.
• Study the advance of two invasive species in Argentina.

Specific goals
• Study the population status of the species B. dahlbomii (endangered) and record abundance, associated flowers, and occurrence of different bumblebee species in Argentina.
• Raise awareness among citizens about the issues linked to biological invasions.

Description of citizen participation
Participants take and send photos of the bumblebees they observed through the project’s social media. They include the date and geographic coordinates of the sighting, amount of bumblebees observed when taking the photo, and, ideally, the name of the flower on which the bumblebee(s) was/were seen.

Type of citizen science project
Contributory project: It is designed by scientists, and citizens participate in data collection.

Participating parties.
Pollination Ecology Group from the Biodiversity and Environment Research Institute (INIBIOMA, by its Spanish acronym)/National Scientific and Technical Research Council (CONICET, by its Spanish acronym) - National University of Comahue (UNCo, by its Spanish acronym).

Status. In progress.

Time frame. 05/20/2021 - N/A

Frequency of project execution. Uninterrupted.

Participation period. Timely participation (taking and sending the picture) does not take more than a few minutes. However, citizens’ participation tends to be steady over time.

Scope of the initiative. Argentina (two or more provinces).

Geographic scope. All provinces in Argentina.

Project development members. Entirely developed by participants with formal scientific training.

Number of participants. Over 1001.

Action/s involving citizen participation.
• Data collection.
• Phenomenon monitoring.

Technological device/tool required.
• Cell phones or cameras.
• Computers for data analysis.

Recruitment methods.
Informative talks, both virtual and in person, are held in different facilities of the National Parks Administration of Argentina and educational institutions.

Replicability.
Scalability. The number of records obtained throughout the year has been steadily increasing, as have the mapped geographic areas.

Open access to data. Publication in social media of the images sent by the participants. Public interactive maps with the data are currently under development and are expected to be completed by the end of 2022.

Feedback. The progress of the project is repeatedly published on social media, using photos sent by citizens and details of species or places that were recorded for the first time. In addition, the exchange with the participants takes place in a personal way, answering all kinds of doubts/curiosities.


Institutional funds.
• Subsidio de Fortalecimiento a Proyectos del Programa Nacional de Ciencia Ciudadana [Grant to Support Projects from the National Citizen Science Program]/Argentine Ministry of Science, Technology, and Innovation
• Project’s own funding sources. International project SURPASS2. International grant awarded by Mohamed bin Zayed Species Conservation Fund.

Awards/distinctions.

Knowledge areas/disciplines (OECD)
Natural and Exact Sciences / Earth and Environmental Sciences
Natural and Exact Sciences / Biology

Leaders.
• Victoria Campopiano Robinson (National University of Comahue)
• Eduardo Zattara (INIBIOMA-CONICET, National University of Comahue)
• Marina Arbetman (INIBIOMA-CONICET, National University of Comahue)
• Carolina Morales (INIBIOMA-CONICET, National University of Comahue)

Contact information.
Email: vickycampopiano@gmail.com; ezattara@comahue-conicet.gob.ar; marbetman@comahue-conicet.gob.ar; moralesc@comahue-conicet.gob.ar
Website: www.abejorros.ar
Instagram, Twitter, and Facebook: @VIUnAbejorro
Citizen Science

**Vuela [Fly]**

Open science with drones

---

**Objectives**

Develop scientific tools that can be useful for groups or communities tackling local and locally-defined problems, and therefore promote their participation in science.

**Description of citizen participation**

A toolkit for open science with drones has been collaboratively prototyped to be equally accessible to marginal communities, activists or researchers. It is useful for studies or measurements for which this technology is already used but is dominated by closed-source tools.

**Type of citizen science project**

Co-created project: Citizens participate in all stages of the scientific process.

---

**Participating parties.**

- Hobbyists, civil society activists, researchers, neighbors, students and developers.
- Gathering for Open Science Hardware (GOSH).
- Knowledge/Culture/Ecologics Conference, 2017 edition (Santiago, Chile).
- Mozilla Foundation.
- Shuttleworth Foundation.
- Cooperative Programme for the Technological Development of Agriculture in the Southern Cone (PROCISUR, in Spanish).

**Status.** In progress.

**Time frame.** 2017 – N/A

**Frequency of project execution.** Based on demand or community outreach.

**Participation period.** On a sustained basis.

**Geographic scope.** Global; in-person activities carried out in Argentina, Brazil, Chile, Paraguay, and Uruguay.

**Project development members.** It has been developed with the collaboration of both scientists and participants without formal training.

**Number of participants.** From 51 to 100.

**Action/s involving citizen participation**

- Problem identification.
- Data collection.
- Data analysis.
- Phenomenon monitoring.
- Solution design.
- Solution implementation.
- Citizens are involved in the entire process.

**Technological device/tool required.**

The main tool is the OVLI drone, which was made, modified and adapted by participants. The following basic items and tools are required for drone assembly:

- Screwdriver
- Wood glue
- Tin welding machine
- Voltage meter
- The following instruments are required for drone configuration and operation:
  - Laptop
  - Battery charger
  - Drone camera, etc.

The full list of components and tools can be found in the OVLI Assembly Guide (Manual de Construcción/fabricación del OVLI) available at: www.vuela.cc

**Recruitment methods.** By contacting community-based organizations, community leaders, persons responsible for community organization, and placing posters in key locations of neighborhoods or institutions (for instance, at the National Institute of Agricultural Technology, INTA, in Spanish). Workshop attendees were informed of new workshops via WhatsApp.

**Replicability.** -

**Scalability.** -

**Open access to data.** All project information is available at vuela.cc, in English and Spanish only. The information is not available for visually impaired users.

**Feedback.** N/A

**Linkage with state agency/government.** In the final stage of the project, actions were coordinated with INTA from Argentina and with similar institutions from neighboring countries (through PROCISUR).

**Institutional funds.** Mozilla, PROCISUR, the Knowledge/Culture/Ecologics Conference (Santiago, 2017 edition) and Shuttleworth Foundation. No funding is available at present.

**Awards/distinctions.** N/A

**Classification of knowledge areas (OECD).**

ENGINEERING AND TECHNOLOGY / Other engineering and technologies

AGRICULTURAL SCIENCES / Agriculture, Forestry, and Fisheries

SOCIAL SCIENCES / Other social sciences: science and technology

**Project leaders.**

- Paz Bernaldo.
- Gustavo Pereyra Irujo, National Institute of Agricultural Technology (INTA in Spanish), National Scientific and Technical Research Council (CONICET, in Spanish)

**Contact information.**

Email: vuelaezdrone@gmail.com
Web: vuela.cc