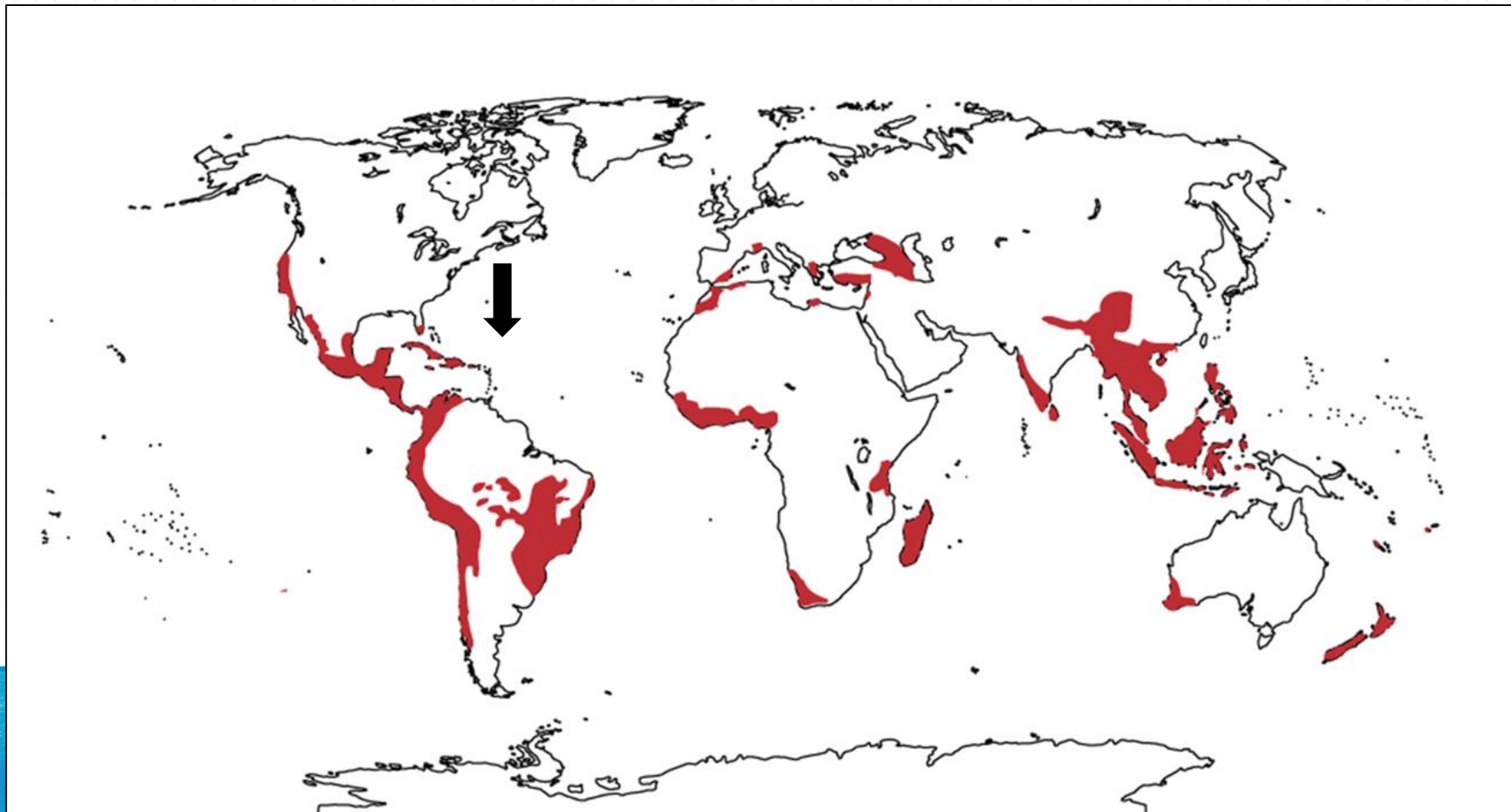


Citizen Science a tool for community engagement in parks with an urban dominating landscapes in Puerto Rico

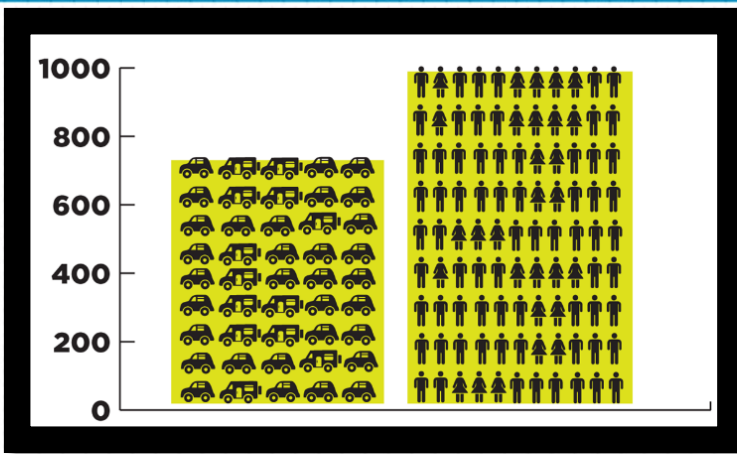
- **Yogani Govender¹**, Sandra Faría², Astrid Maldonado², Jean Manuel Sandoval², Carlos Báez Torres² and Rubén Estremera-Jiménez³



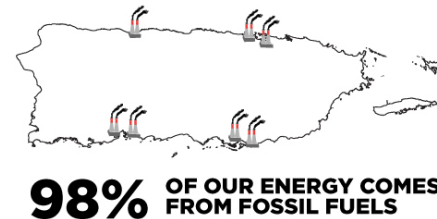
BIODIVERSITY HOTSPOT

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Naturaleza

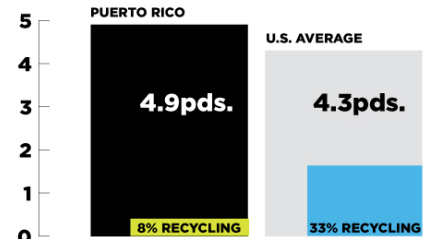
1970



- Population
- Houses
- Cars



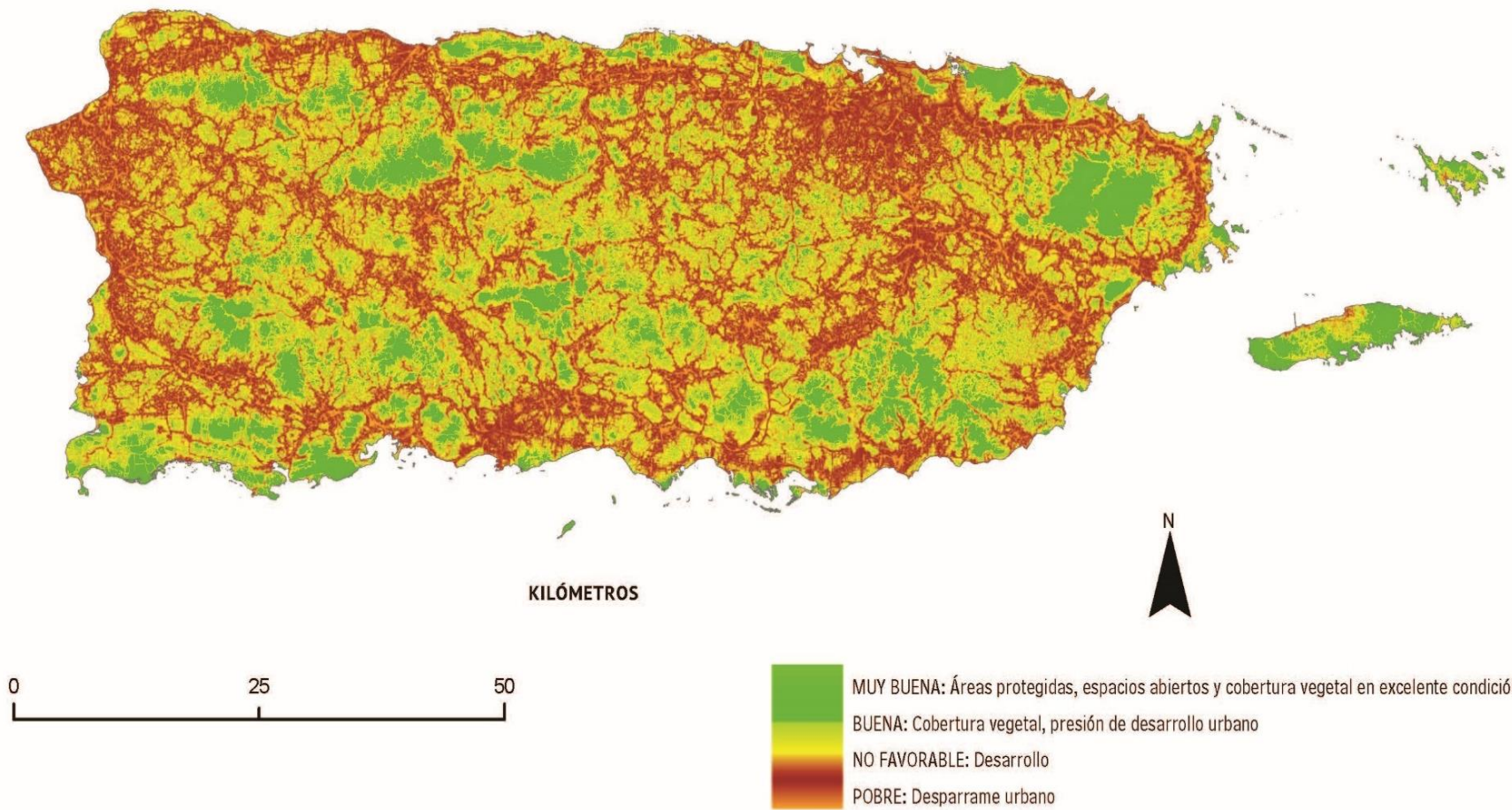
ENERGY



GARBAGE

Challenges

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Naturaleza



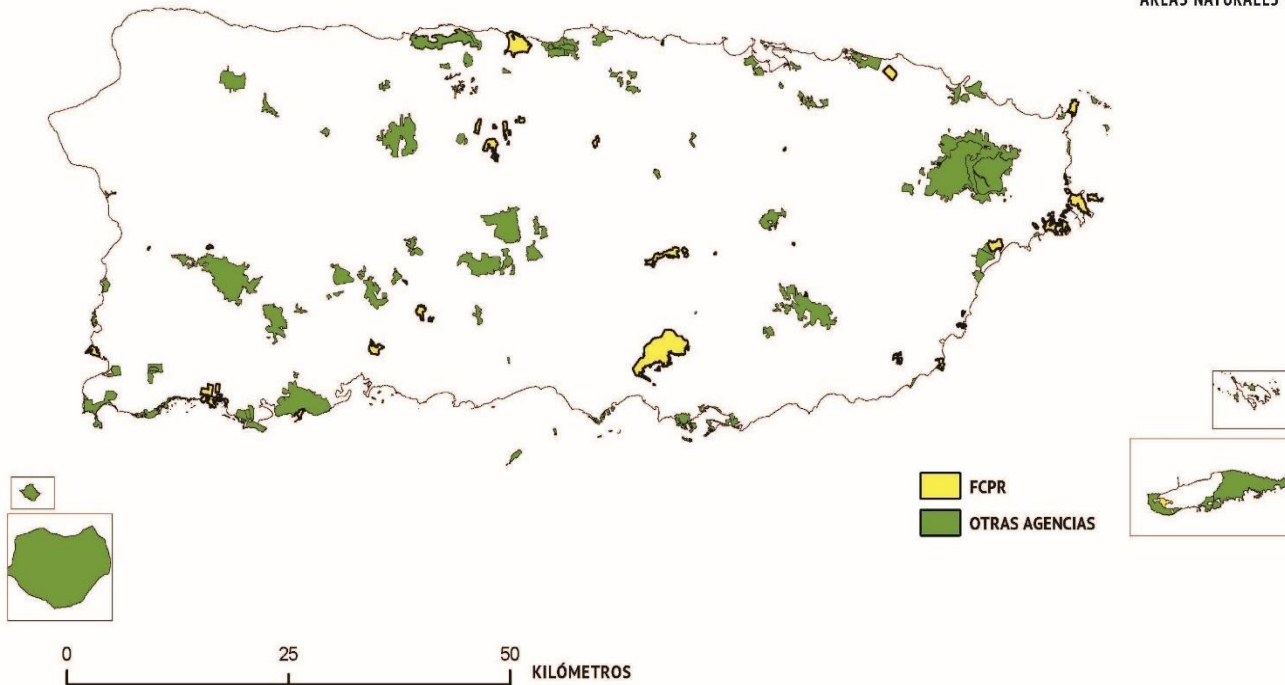
ECOLOGICAL INTEGRITY OF PARKS

para la
Naturaleza

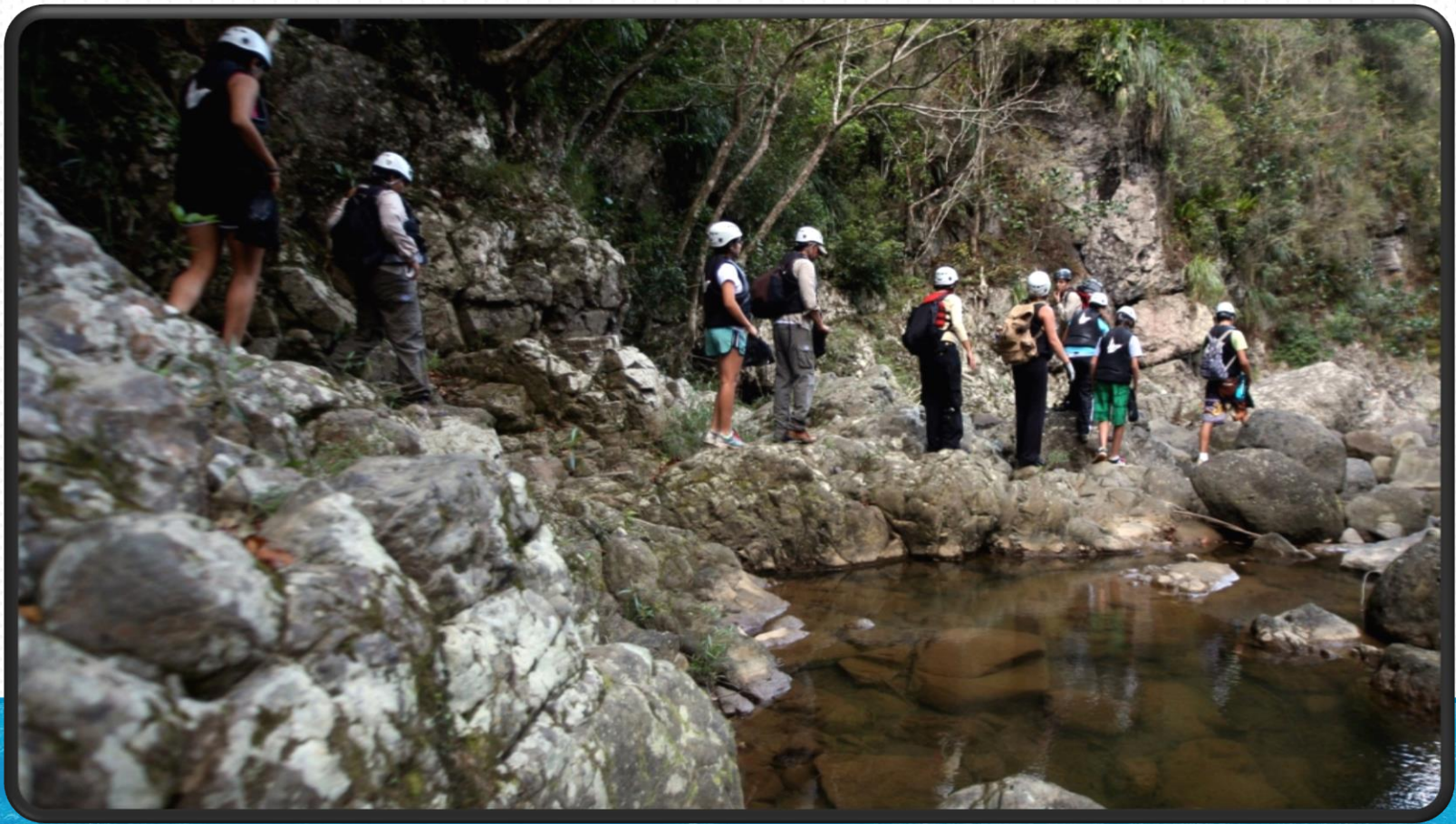
CONSERVED LANDS

8%

ÁREAS NATURALES PROTEGIDAS



para la
Naturaleza



**60,000 PEOPLE environmental
education, tours, teacher
workshops and summer camps**

**para la
Naturaleza**



CITIZEN SCIENCE

para la
Naturaleza

Informal Science Education(ISE)

A CAISE Inquiry Group Report July 2009

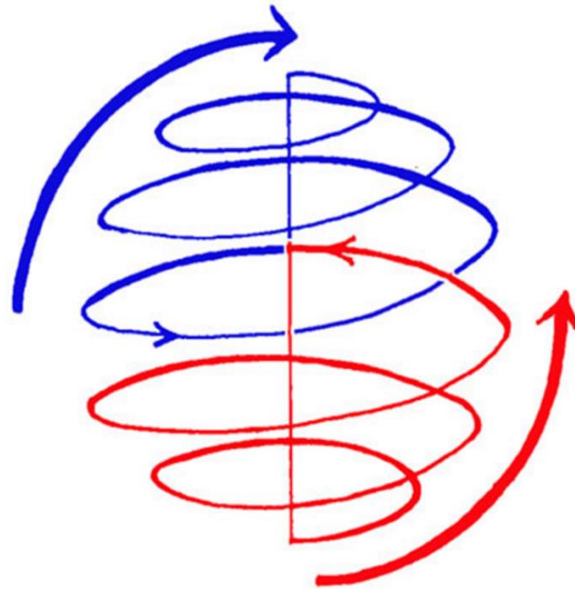
Co-creator



Collaborator



Participatory



Phase 3:
Opportunities to
develop own scientific
project

Phase 2 -
Opportunities to be
collaborators

Phase 1-
Recruitment and
Exposure to scientific
methodology



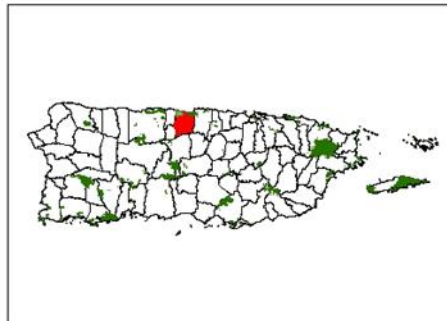
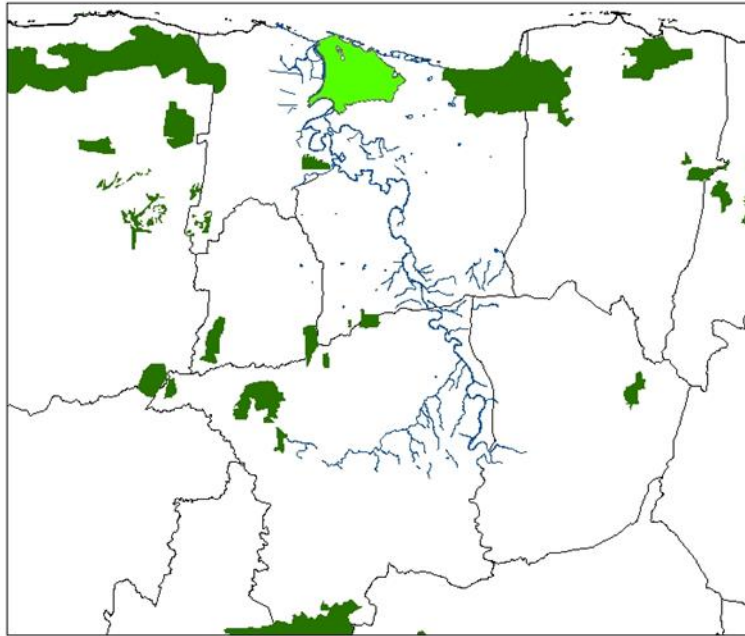
para la
Naturaleza



CITIZEN SCIENCE 1

para la
Naturaleza

Biodiversity Assessments



Legend

- HLE
- Conservation Areas
- Manatí River
- Municipalities



0 1.75 3.5 7 Kilometers

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Naturaleza



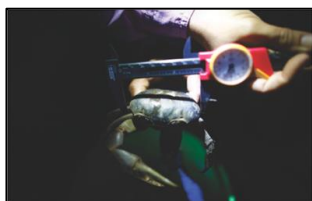
Archaeology



Botany



Birds



Crabs



Bats

- Activities: 600
- Participants: 2,322
- Recurrent participants: 1,106 (48%)
- One-time & recurrent participations: 5,781
- Volunteer hours: 25,000
- Bilingual tool kits
- **55** volunteers had double digit repeat participation
 - Ranging between 10 and 88 participations; one volunteer had **115**

CITIZEN SCIENCE & INVESTIGATIONS

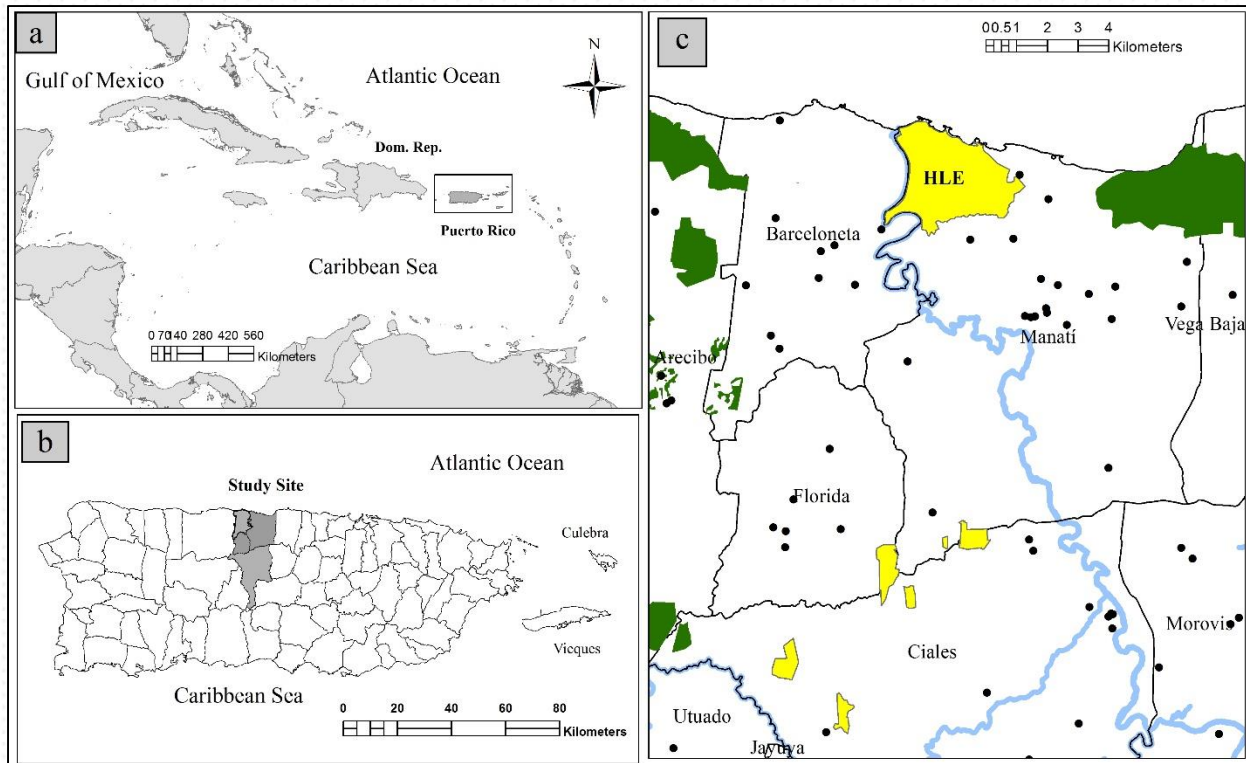


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CITIZEN SCIENCE 2



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Naturaleza



IMPACT OF URBAN DEVELOPMENT ON BIODIVERSITY ALONG RIO MANATI

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Research in Educational Process

Rivers

Coasts

Bats

Archeology

Birds

Internal and
external evaluations

Regular Participants

Core Participants

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- 1,337 participants
- 440 activities associated to research
- 49 municipalities
- 27 Partner Organizations and 79 outreach activities
- 12 different methods of evaluations



ACHIEVEMENTS

Recurrent range	Participants
1 time	335
2 – 10 times	265
11-15 times	8
16-20 times	9
21-25 times	2
26 plus	16



ACHIEVEMENTS

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Age (Years)	Volunteers N = 1125	
	f	%
1 a 13	51	5
14 a 18	178	16
19 a 23	322	29
24 a 28	129	11
29 a 33	62	6
34 a 38	64	6
39 a 43	77	7
> 44	242	22

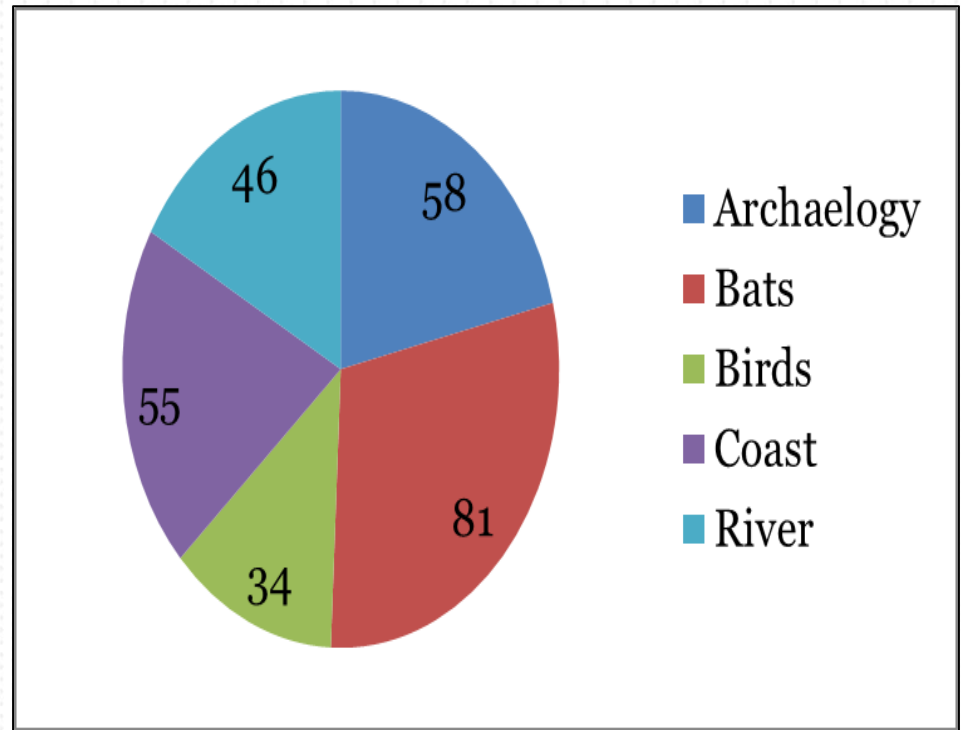
**58 %
MALE**



DEMOGRAPHICS

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Naturaleza**

12 projects created with
19 co-creators within
the communities
around PR, 7 within the
watershed of Manatí
and 5 in other
municipalities around
the island



EMPOWERING COMMUNITIES

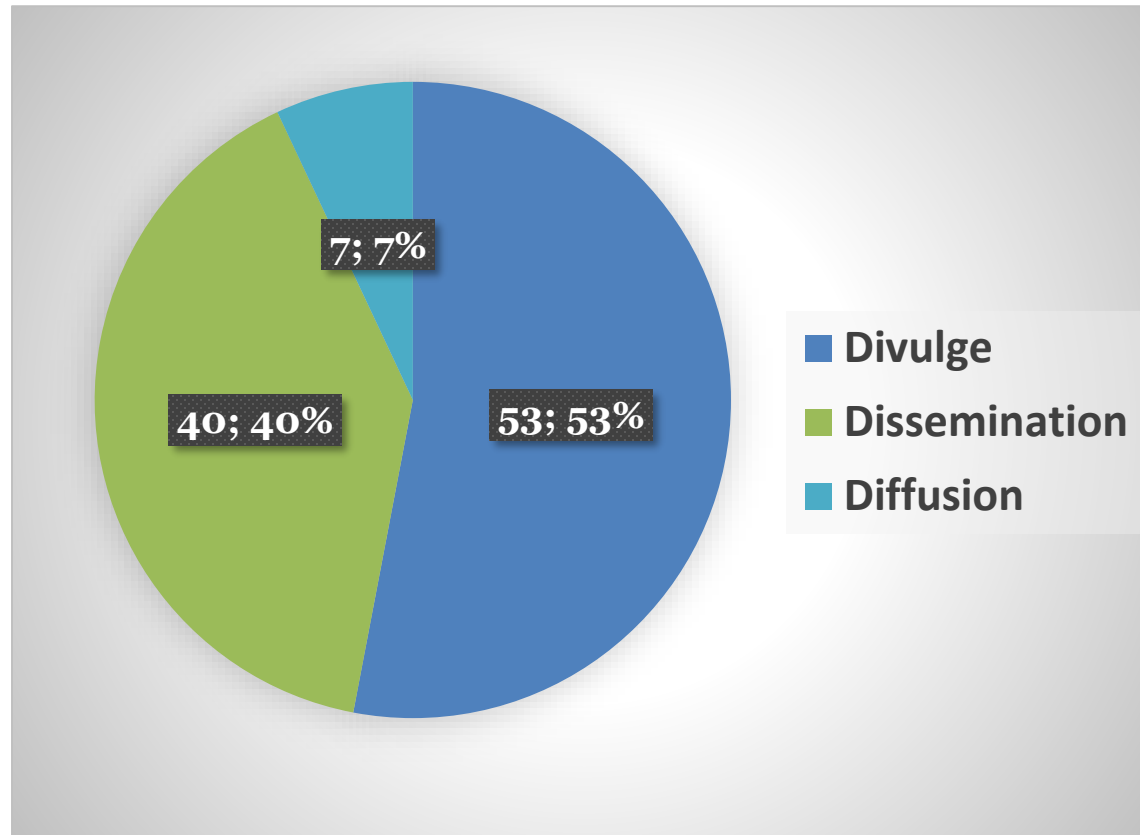
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COMMUNITY CITIZEN SCIENCE PROJECTS 1900

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KNOWLEDGE, SKILLS, ATTITUDES AND BEHAVIOR



EFFECTIVE COMMUNICATION BY CITIZEN SCIENTISTS

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- Collect lot of scientific data
- Understand long-term patterns and trends
- Engage citizens
- Empower citizens to make informed decision
- Change public policy
- Reform educational processes of teaching and learning



ENGAGEMENT VERSUS TRANSFORMATIONS

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More information

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<http://ciudadanocientifico.org/>

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