Invasive Species Eradications on the Islands of Mexico: Achievements, Lessons Learned and Challenges

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Helping Islands Adapt

Auckland, New Zealand
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Outline

• What’s been accomplished, what's really working?
• Why do we do it?
• Who is involved?
• What have been the challenges?
• What lessons have we learned? What would we do differently, what advice would we give to others?
• What’s next?
Mexico’s northwest region: >600 islands
Temperate, desert and tropical islands
Value of Mexican Islands

- High biodiversity
- Key reproduction sites for seabirds and pinnipeds
- Strategic territories: sovereignty and EEZ
- High productivity, socio-economic benefits (artisanal fisheries)
- Highly threatened (invasive species)
- Conservation opportunities
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55 Eradications on 31 Mexican Islands to 2010

Pending eradication (2010)
51,195 ha restored
Eradiated species: number of islands and surfaces
Techniques

![Bar chart showing the contribution of eradication techniques to the restored insular surface (%). The chart compares traditional and high-tech methods across 25 islands and 6 islands.](image)
Traditional techniques...
Navy boat with platform, special bait, helicopter with DGPS and aerial bucket...
DGPS for rodent eradications
Isabel Island: Sooty tern started to nest again after many years...
Red-billed Tropicbird nests (*Phaethon aethereus*) at Farallón de San Ignacio.
Life quality improvements for local communities
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A radical change of perspective, a change of spirit. From greed...

“Know that on the right hand of the Indies there was an island named California, very close to Paradise on Earth inhabited only by black women, with no single male in there..., women rich in pearls and gold”.

Las Sergas de Espladián
Zaragoza, Spain 1490
Biodiversity
151 endemic vertebrates
115 endemic plants
  38 nesting seabirds
  45 terrestrial birds

Artisanal fisheries
Nature tourism

To the caring of biodiversity and natural resources
Endemic plants and vertebrates/100 Km²
It is a priority...
Guadalupe Storm-petrel
Oceanodroma macrodactyla

Anthony’s Woodrat
Neotoma anthonyi

77% of total extinctions in Mexico (17 of 22)
**17 extinct vertebrates in Mexican islands due to invasive species**

<table>
<thead>
<tr>
<th>Species</th>
<th>Common name</th>
<th>Island</th>
<th>Year of last record</th>
<th>Year of last field search</th>
<th>Invasive species implicated and status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Birds</strong></td>
<td></td>
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<tr>
<td><em>Oceanodroma macrodactyla</em></td>
<td>Guadalupe storm-petrel</td>
<td>Guadalupe</td>
<td>1912 A</td>
<td>2000 A</td>
<td><em>Felis catus</em> (SP) <em>Capra hircus</em> (ER) 1</td>
</tr>
<tr>
<td><em>Caracara lutosa</em></td>
<td>Guadalupe Caracara</td>
<td>Guadalupe</td>
<td>1900 B</td>
<td>2003 A</td>
<td><em>Felis catus</em> (SP) <em>Capra hircus</em> (ER) 1</td>
</tr>
<tr>
<td><em>Zenaida graysoni</em> *</td>
<td>Socorro Dove</td>
<td>Socorro</td>
<td>1972 O</td>
<td>1981 C</td>
<td><em>Felis catus</em> (SP) <em>Ovis aries</em> (SP) 1</td>
</tr>
<tr>
<td><em>Micrathene whitneyi graysoni</em></td>
<td>Elf Owl</td>
<td>Socorro</td>
<td>1932 D</td>
<td>1981 D</td>
<td><em>Felis catus</em> (SP) <em>Ovis aries</em> (SP) 1</td>
</tr>
<tr>
<td><em>Colaptes auratus rufipileus</em></td>
<td>Northern Flicker</td>
<td>Guadalupe</td>
<td>1906 B</td>
<td>2003 A</td>
<td><em>Felis catus</em> (SP) <em>Capra hircus</em> (ER) 1</td>
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<tr>
<td><em>Thryomanes bewickii brevicauda</em></td>
<td>Bewick's Wren</td>
<td>Guadalupe</td>
<td>1892 B</td>
<td>2003 A</td>
<td><em>Felis catus</em> (SP) <em>Capra hircus</em> (ER) 1</td>
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<tr>
<td><em>Regulus calendula obscurus</em></td>
<td>Ruby-crowned Kinglet</td>
<td>Guadalupe</td>
<td>1953 B</td>
<td>2003 A</td>
<td><em>Felis catus</em> (SP) <em>Capra hircus</em> (ER) 1</td>
</tr>
<tr>
<td><em>Pipilo maculatus consobrinus</em></td>
<td>Spotted Towhee</td>
<td>Guadalupe</td>
<td>1897 B</td>
<td>2003 A</td>
<td><em>Felis catus</em> (SP) <em>Capra hircus</em> (ER) 1</td>
</tr>
<tr>
<td><em>Aimophila ruficeps sanctorum</em></td>
<td>Rufous-crowned Sparrow</td>
<td>Todos Santos</td>
<td>1927 N</td>
<td>2005 L</td>
<td><em>Felis catus</em> (ER) 2</td>
</tr>
<tr>
<td><strong>Mammals</strong></td>
<td></td>
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<tr>
<td><em>Chaetodipus baileyi fornicatus</em></td>
<td>Bailey's Pocket Mouse</td>
<td>Monserrat</td>
<td>1975 E</td>
<td>2003 K</td>
<td><em>Felis catus</em> (ER) 2</td>
</tr>
<tr>
<td><em>Neotoma anthonyi</em></td>
<td>Anthony's Woodrat</td>
<td>Todos Santos</td>
<td>1950's H</td>
<td>2005 L</td>
<td><em>Felis catus</em> (ER) 2</td>
</tr>
<tr>
<td><em>Neotoma martiniensis</em></td>
<td>San Martín Island Woodrat</td>
<td>San Martín</td>
<td>1925 I</td>
<td>2006 L</td>
<td><em>Felis catus</em> (ER) 2</td>
</tr>
<tr>
<td><em>Oryzomys nelsoni</em></td>
<td>Nelson's Rice Rat</td>
<td>María Madre</td>
<td>1898 J</td>
<td>2002 J</td>
<td><em>Felis catus</em> (SP) <em>Rattus rattus</em> (SP) 4</td>
</tr>
<tr>
<td><em>Peromyscus guardia harbisoni</em></td>
<td>Angel de la Guarda Deer Mouse</td>
<td>Granito</td>
<td>1973 G</td>
<td>1999 G</td>
<td><em>Rattus rattus</em> (SP) 5</td>
</tr>
<tr>
<td><em>Peromyscus guardia mejiae</em></td>
<td>Angel de la Guarda Deer Mouse</td>
<td>Mejía</td>
<td>1973 G</td>
<td>1999 G</td>
<td><em>Felis catus</em> (ER) 2</td>
</tr>
<tr>
<td><em>Peromyscus maniculatus cineritus</em></td>
<td>Deer Mouse</td>
<td>San Roque</td>
<td>1960's F</td>
<td>2009 M</td>
<td><em>Felis catus</em> (ER) <em>Rattus rattus</em> (ER) 3</td>
</tr>
</tbody>
</table>
Achievements are tangible...
EEZ: 3'179,920 km² (13th worldwide)
Sustainable development
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A private non-profit organization
Networking / Professionalization
Federal government agencies staffs
Federal Government Agencies:

- Ministry of the Interior (Segob): Constitutional mandate
- Fish and Wildlife - Environment Ministry (Semarnat)
- Public Security Ministry (Islas Marías)
- National Institute of Ecology (INE)
- Biodiversity Commission (Conabio)
- Natural Protected Areas Commission (Conanp)
Donors and finances:

- US private foundations
- Mexican Fund for the Conservation of Nature (FMCN)
- Natural Protected Areas Commission (Conanp)
- National Institute of Ecology (INE)
- USFWS
- Mexican Navy (in-kind)
Encuentro Nacional para la Conservación y el Desarrollo Sustentable de las Islas de México

Ensenada, B.C.
23 a 26 de junio de 2009

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3 main challenges
- Finances: Private
- Finances: Public
- Finances: International

Other challenges
- Personnel retention
- Legal framework
- Animal defenders
- Techniques
Origin of resources: US, Mexico and UNESCO
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Lessons learned:
• Keep the focus (on eradication)
• Professional approach
• Follow priorities
• Attend social and political contexts
• Public relations
• Policy work
• International collaboration (and strong local roots)

What would we do differently?
• Do more divulgation and diffusion
• Do more research
• Procure more national and international resources
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What’s next?

>36 islands, larger and more complex

Strategic goal to 2025
What’s next?

• A strategic plan to 2025

• A Centre for Research, Conservation and Sustainable Development of the Mexican Islands…
Ad hoc facilities: warehouse, vehicles, equipment, workshop, offices...
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THANK YOU