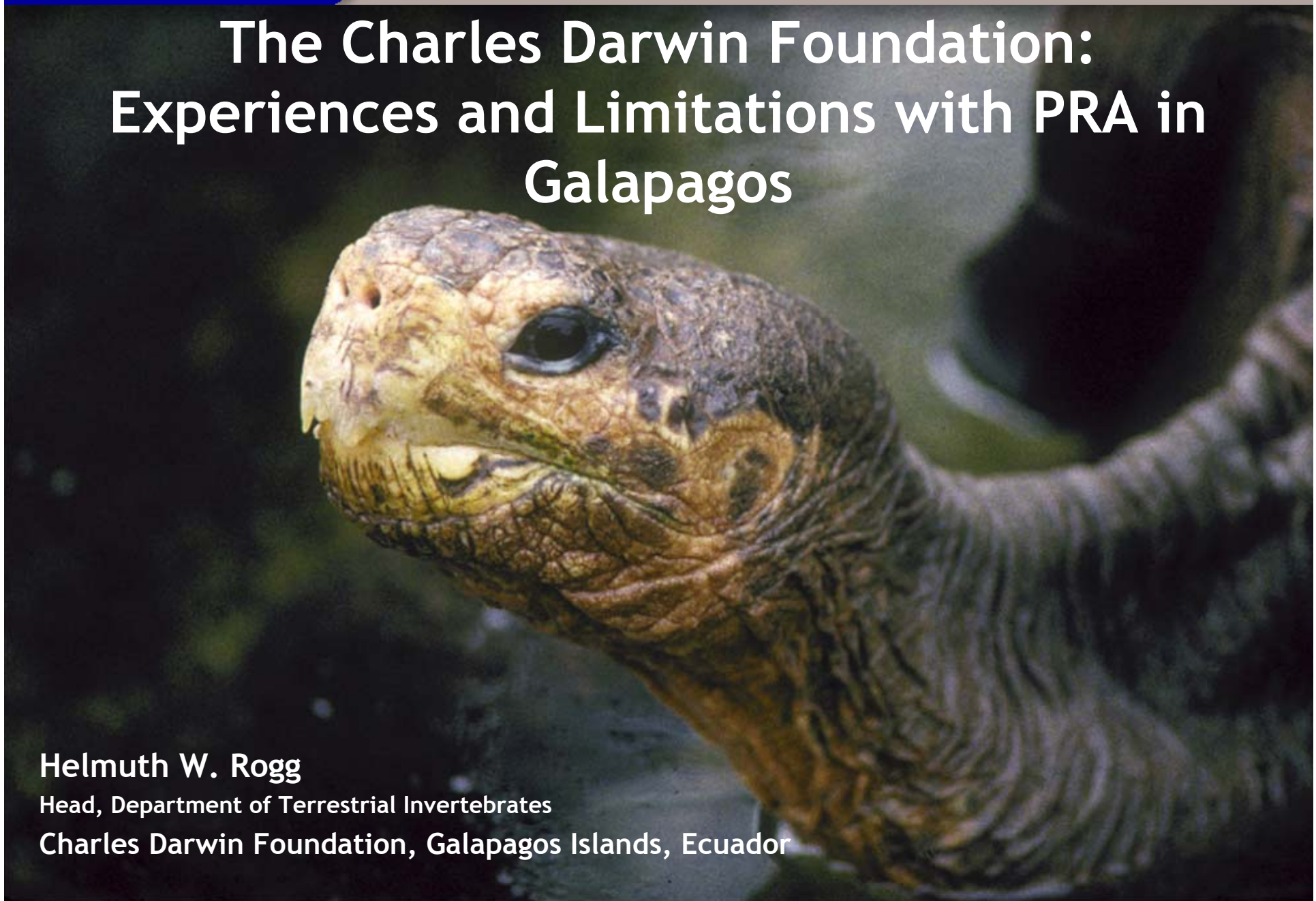
The Charles Darwin Foundation: Experiences and Limitations with PRA in Galapagos



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The Charles Darwin Foundation: Experiences and limitations with PRA in Galapagos

Helmuth Rogg, Chris Buddenhagen, Charlotte Causton

- Part 1- Importance of Galapagos
- Part 2- Invasive Species
- Part 3- Quarantine and Inspection System
- Part 4- PRA in Galapagos
- Perspective

Part 1: Importance of Galapagos

- 1000 km due west of Ecuadorian coastline on the equator
- 3,600 km due south of New Orleans

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Darwin's finches

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Reptiles: the animals that gave Galapagos their name

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Plant[illegible]basis of all life

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Invertebrates: The “little things that run the world”

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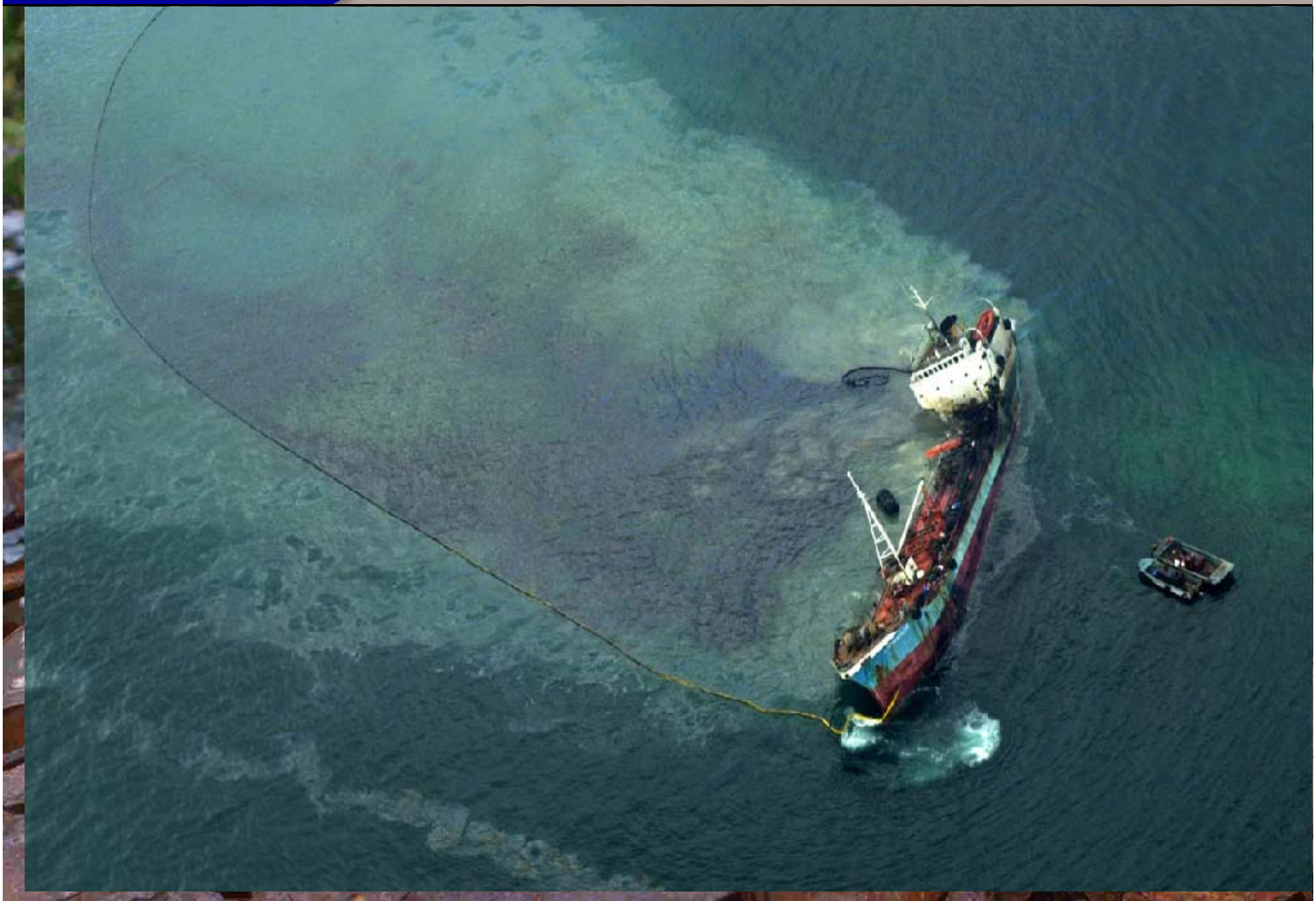

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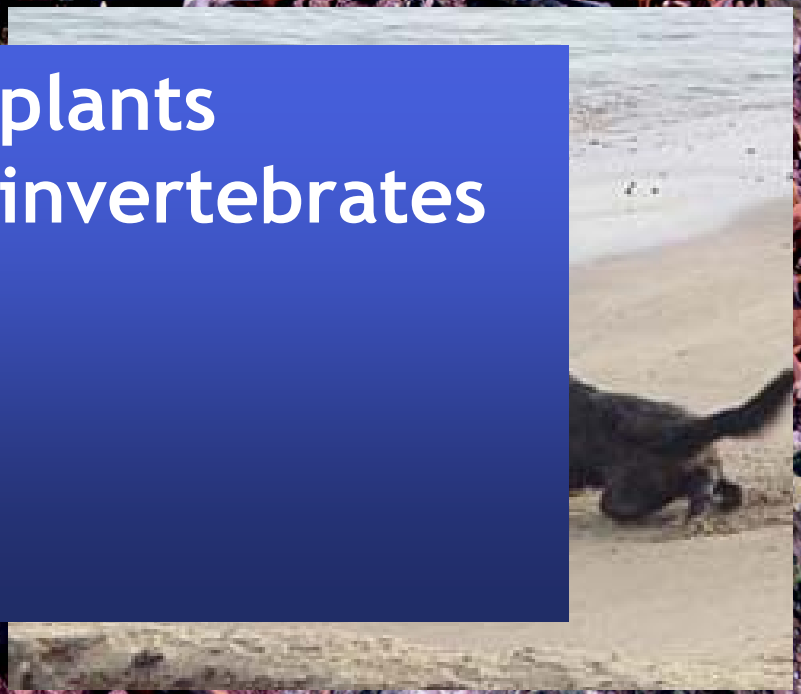
Part 2 - Invasive Alien Species

500 introduced plants
500 introduced invertebrates
1 Amphibian
3 Birds
10 Mammals
3 Reptiles



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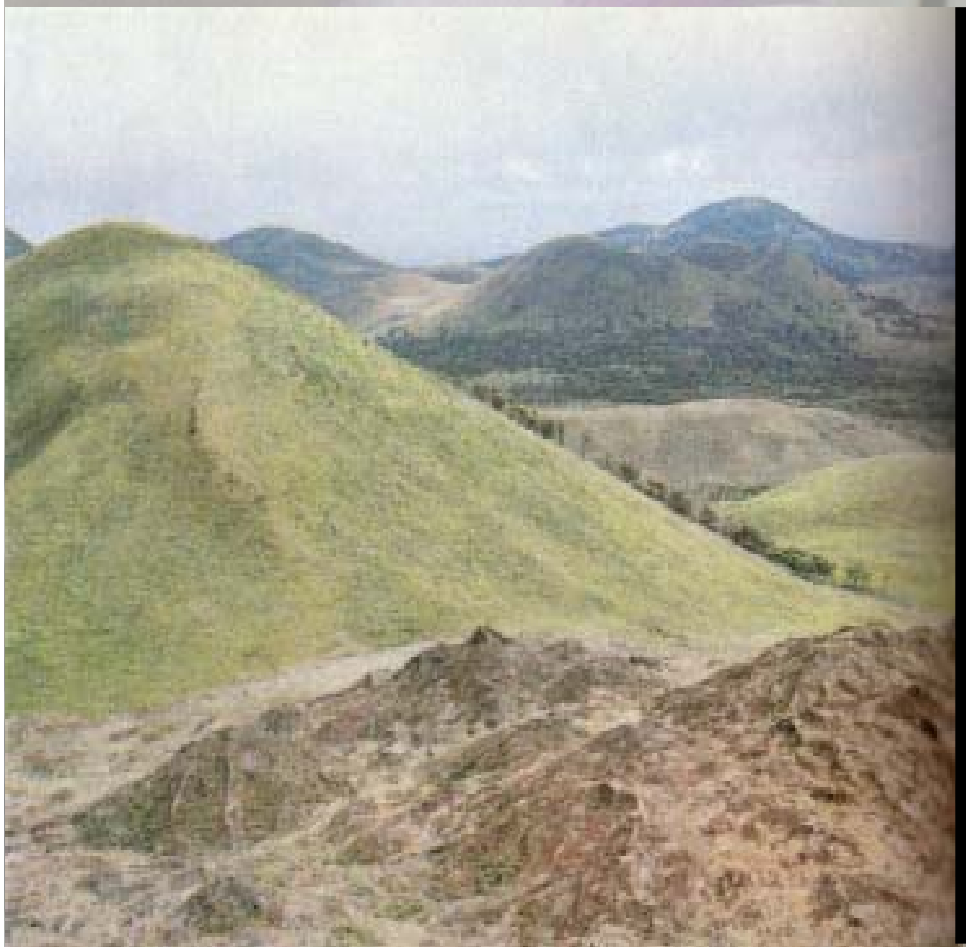
Quinine invasion

1970



2000

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The Charles Darwin Research Station

Parque Nacional GALÁPAGOS

fundación Charles Darwin foundation

Mission Statement: *"To provide the knowledge and support to ensure the conservation of the environment and bio-diversity of the archipelago of Galapagos, through scientific research and complementary actions."*

... unidos por la Conservación

... *partners in Conservation*

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Fundamental scientific investigation

- *Provide technical advice to Galapagos National Park Service*
- *Basic terrestrial and marine science*
- *Community participation and education*

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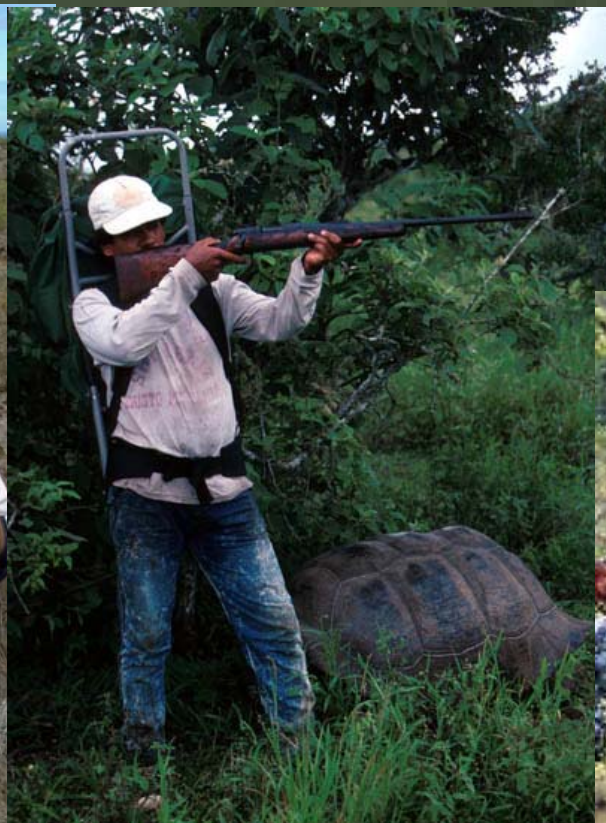
Conservation via restoration

- Eradicating and controlling invasive species
- Recuperating populations
- Restoring natural communities



Part 3 - Galapagos Inspection and Quarantine System (SICGAL)

- Since 1991, Development of Quarantine System
- 1994: Special Galapagos Quarantine Regulations
- 1998: Special Law for Conservation of Galapagos
- 2001: SESA responsible for SICGAL
- 2003: New Regulation of Total Control of Invasive Species

SICGAL
SISTEMA DE INSPECCION Y CUARENTENA PARA GALAPAGOS

SERVICIO ECUATORIANO DE SANIDAD AGROPECUARIA
SESA
GALAPAGOS

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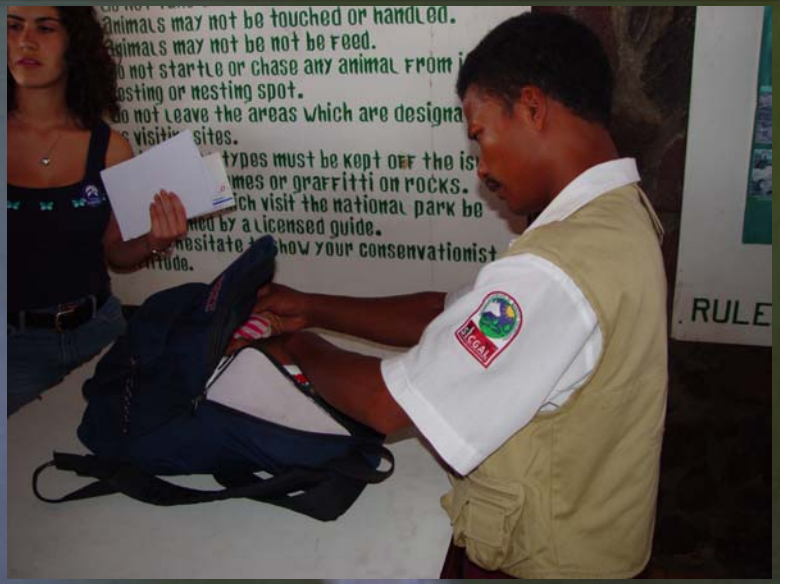
Achievements

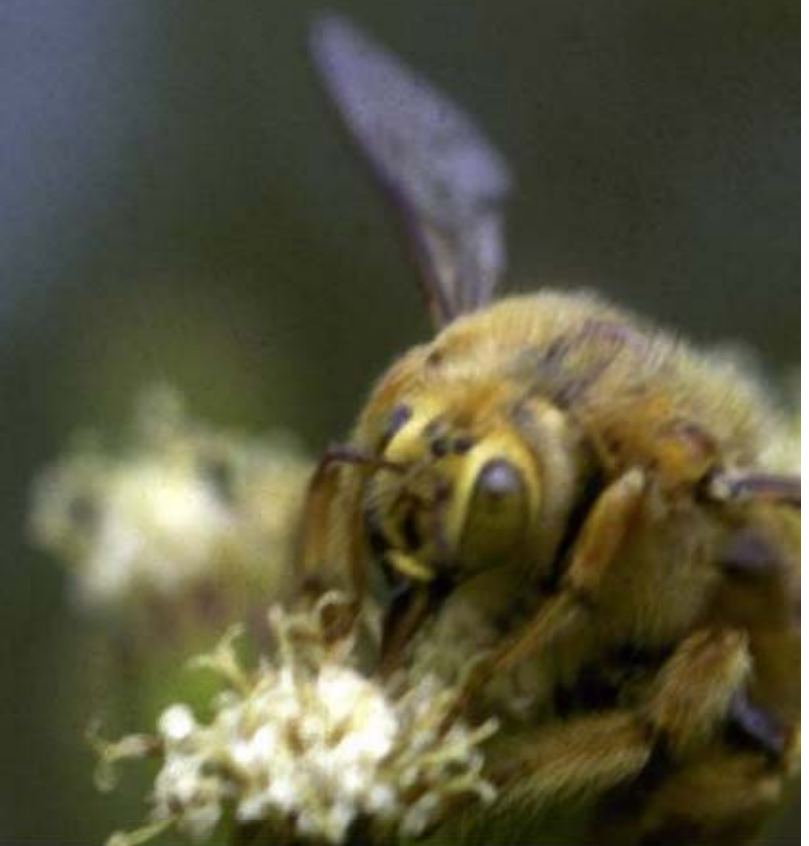
- Inspection and quarantine system implemented
- Inspectors trained
- PRA manual
- Surveillance system manual



Part 4 – PRA Experiences

Evaluation of import products

- Importance of product to consumer
- Invasiveness
- Known to carry pests
- Exists in Galapagos
- Internal demand
- Control program
- Treatment feasible or economical



Product list

- **Prohibited products**

  Blackberries
  Passionfruits

- **Restricted products**

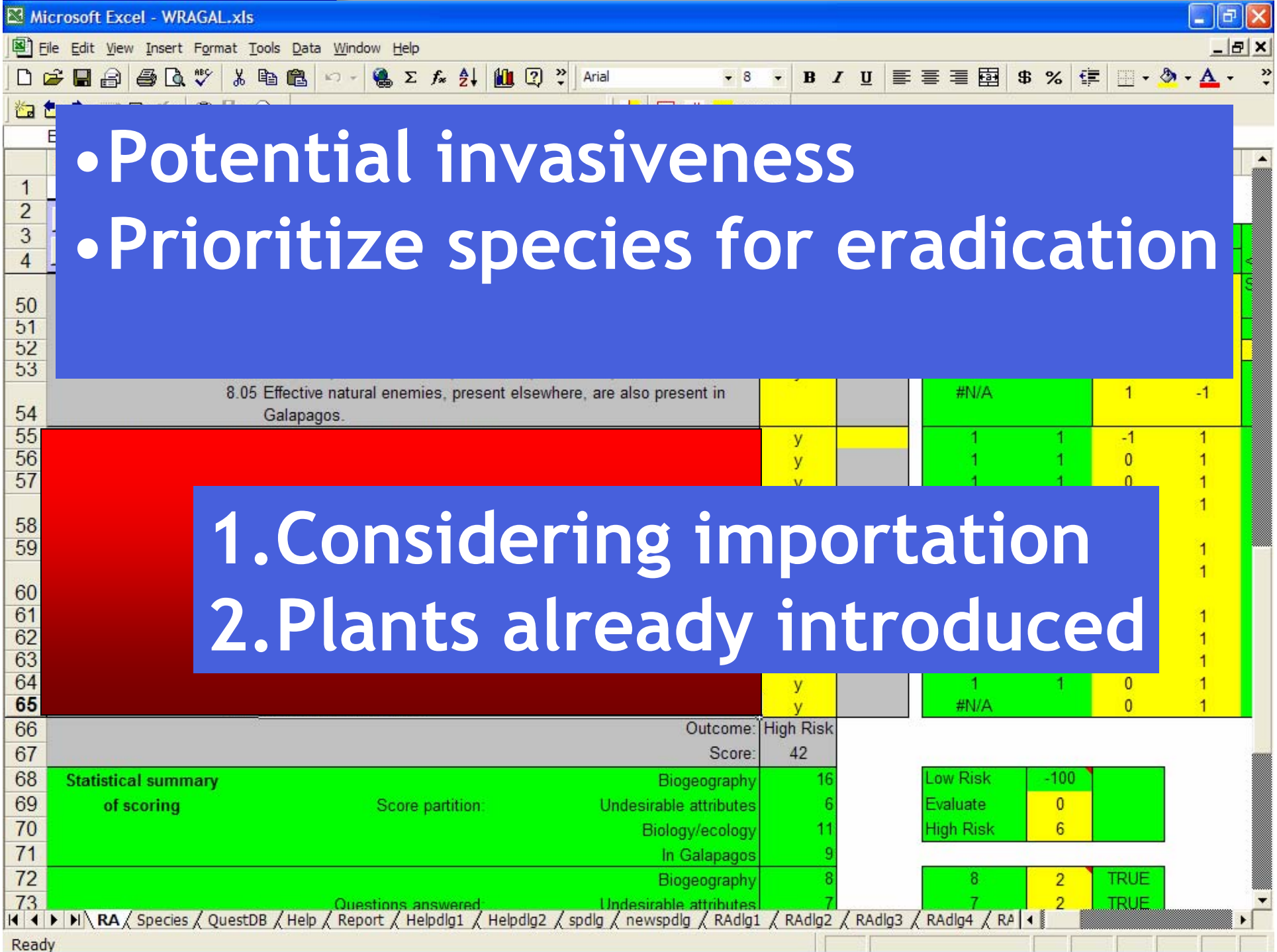
  Potatoes
  Citrus fruits

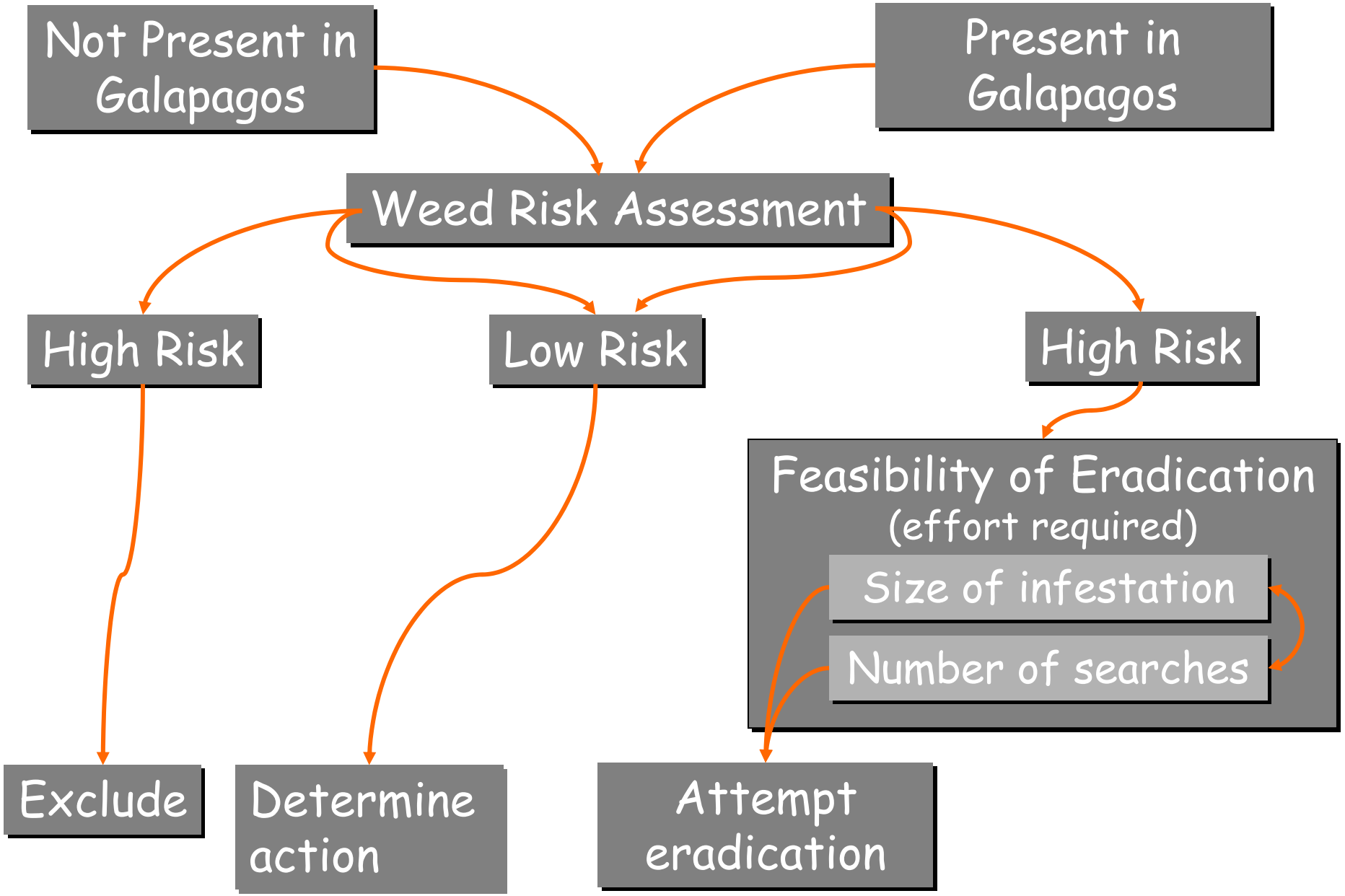
- **Permitted products**

  Vegetables
  Grain

Limitations

- Invasiveness not adequately addressed
- Lack of information on products (associated pests)
- Biodiversity issues


Microsoft Excel - WRAGAL.xls
File Edit View Insert Format Tools Data Window Help
Arial 8
• Potential invasiveness
• Prioritize species for eradication
1. Considering importation
2. Plants already introduced
8.05 Effective natural enemies, present elsewhere, are also present in Galapagos.
#N/A
Outcome: High Risk
Score: 42
Statistical summary of scoring
Score partition:
Biogeography 16
Undesirable attributes 6
Biology/ecology 11
In Galapagos 9
Questions answered:
Biogeography 8
Undesirable attributes 7
Low Risk -100
Evaluate 0
High Risk 6
RA Species QuestDB Help Report Helpdlg1 Helpdlg2 spdlg newspdlg RAdlg1 RAdlg2 RAdlg3 RAdlg4
Ready


Not Present in Galapagos
Present in Galapagos
Weed Risk Assessment
High Risk
Low Risk
High Risk
Feasibility of Eradication
(effort required)
Size of infestation
Number of searches
Exclude
Determine action
Attempt eradication

Limitations

- Discrepancies between model and reality
- Thresholds to be evaluated
- Risk of importation pathways

Galapagos 500

500 potential quarantine species

- **Probability of introduction**
  - Pathways
  - Volume
  - Frequency
  - Detection
- **Probability of establishment**
  - Host range
  - Distribution range
  - Presence
  - Bionomics
- **Potential impact**
  - Biodiversity
  - Agriculture
  - Public Health

Limitations

- Prioritization model for introduced species
- Lack of information on invertebrates (invasiveness)
- Shared data bases
- Country lists of quarantine pests
- Emphasis on economics rather than conservation

Perspective: The way forward

- Key challenges
  - Invasive species
  - Stemming migration
  - Achieving community 'buy in'
  - Securing and restoring key habitats
- Where the answers lie
  - On-going and increased commitment from stake holders at all levels
  - Efficient implementation of Quarantine System
  - Appropriate PRA models

What's at stake?

- One of the last remaining intact island ecosystems in the world
- First World Natural Heritage Site
- Scientific research mecca
- Our home

Come see for yourself!