An introduction to biosecurity in California's Channel Islands: history, progress and challenges

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Image courtesy of Morgan Ball

The USA has a remarkable island geography

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<2%

Islands represent **<2%** total land area in the USA

~25%

NATIONAL WILDLIFE REFUGE SYSTEM

25% of National Wildlife Refuges have islands

~50%

50% an estimated 50% of ESA species are found on US Islands

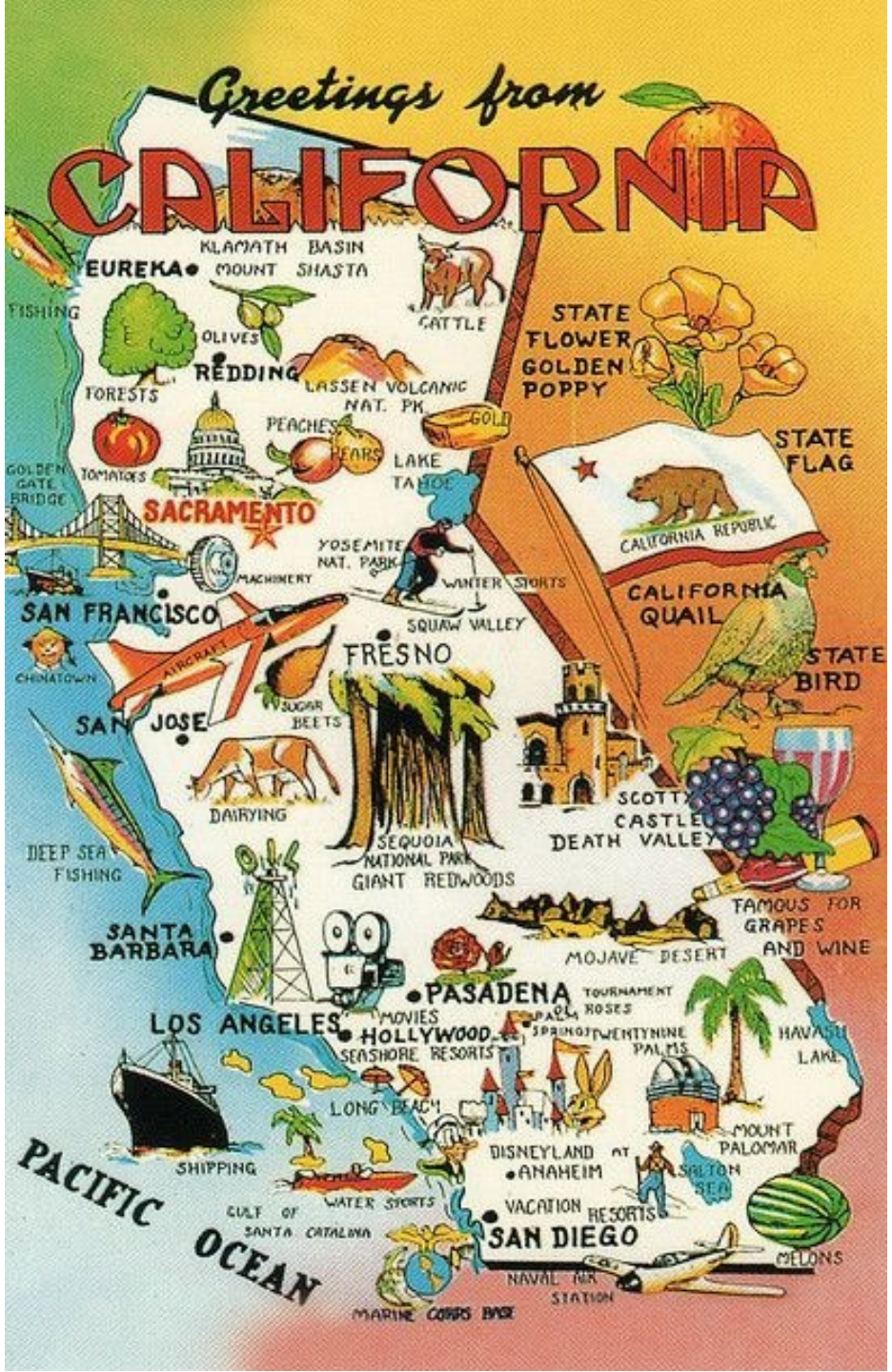
~60%

60% an estimated 60% of MBTA species rely on US Islands

Sayre et al. (in submission)

California Context

- Largest economy in the USA, 4th in the world
- Population of 39.5M
- Most biodiverse part of the USA
- State has the most national parks (9) in the USA
- US Federal, California State and local county legal environments



California Channel Islands

- Major landowners: National Park Service, The Nature Conservancy, U.S. Navy, Catalina Island Conservancy
- Park islands surrounded by Channel Islands National Marine Sanctuary for 6 nautical miles
- Major activities (protection, recreation, military, commercial)
- Value of partnerships
  - TNC and NPS in particular as co-owners of SCI
  - Strong partnerships on California Islands that collaborate on a variety of conservation activities, including invasive species

Conservation Values

- Channel Islands known as "Galapagos of North America"
- High endemism (150 species)
- Ecologically, Islands of the Californias extend into Baja California, Mexico
- Exceptional natural and cultural resources, including regionally significant populations of seabirds


Image courtesy of John Stuelpnagel


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Image courtesy of Calypso Gragorik


Image courtesy of John Knapp

Conservation History

- Long history of human occupation
  - Chumash
  - European explorers
  - Chinese abalone fishers
  - Military
  - Ranching

- Channel Islands National Park was established in 1980 to protect the nationally significant natural, scenic, wildlife, marine, ecological, historical, archeological, cultural, and scientific values of the Channel Islands

Conservation Challenges

- Starting in 1800s, ranching had widespread and significant ecological impacts to vegetation communities

- History of invasive mammal eradications over several decades
  - Sheep, rats, cats, deer, pigs, etc.
  - Grazer free since 2013

- Focus now on ecological restoration and protecting investments to date

- Weeds, invasive ants, and biosecurity as new challenges in the past 10-15 years

Risk of Invasive Introductions

- 300,000+ visitors annually
- Off the coast of Los Angeles County (10M)
- Large number of private and commercial boaters
- Active shipping lanes
- Research
- Primary threats: rats, invasive ants & plants

What biosecurity means to us:

PREVENTION- $

Inspections
Prohibit certain materials
Contract language
Education & outreach

DETECTION-$$

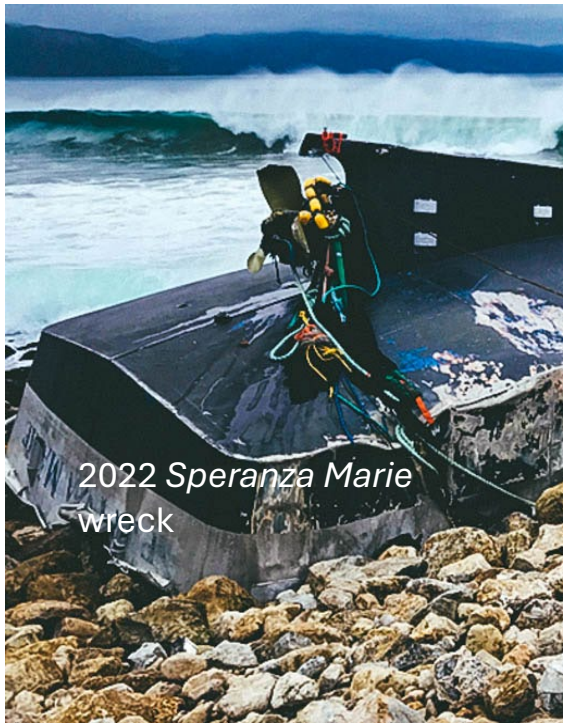
Camera monitoring
Observations
Reporting
Routine surveys

RESPONSE-$$$

SOPs and BMPs
Preparedness
Rat Spill Kits

COORDINATION

Joint planning
Regular meetings
Established roles & responsibilities



Building biosecurity culture and community

- Informal collaboration between most islands since 2013
- Biosecurity Program Manager 2015-2023
- Quarterly educational meetings, symposia
- Website to share learnings and provide consistency

An Island Biosecurity Planning Toolkit

- Publicly available at www.californiaislands.net
- A collection of programmatic, operational, and educational materials that can be adapted by Island Protected Area managers
- Not a step-by-step guide but rather a set of building blocks
- Examples and templates from around the world

2024 Island Biosecurity Audit

- External evaluation of Island Biosecurity: where are opportunities to improve?
- Worked with international experts
- Freely Available at [2024 Biosecurity Audit and Case Studies — California Islands]

Key Audit Takeaways

- Biosecurity is everyone's responsibility!
- Clearly defined roles are valuable, including leadership
- Formal agreements are necessary for accountability
- Dedicated resources and staffing underpin biosecurity
- Need to strengthen clarity of biosecurity language (e.g., what's allowed and not allowed.)

Key Audit Takeaways

- 12 Case studies from Australia and New Zealand
- From compliance, to dogs to risk assessments.
- Thank you to the many contributors here!
- Freely available at
- 2024 Biosecurity Audit and Case Studies — California Islands

Conclusion

- High priority investment because prevention is better than the cure
- Biosecurity as a culture – everyone has a role to play
- Partnership is key to success