SANTA ROSA ISLAND RESEARCH STATION BIOSECURITY COMMUNICATIONS PLAN

Written by:
Molly Beals (Student Intern, California State University, Channel Islands)
Russ Bradley (Director, Santa Rosa Island Research Station)
Robyn Shea (Senior Research Station Specialist, Santa Rosa Island Research Station)
Juli Matos (Biosecurity Manager, The Nature Conservancy)

Table of Contents

List of Tables & Figures

Purpose

The purpose of this document is to provide communication strategies that enable Santa Rosa Island Research Station (SRIRS) users to effectively address biosecurity. The SRIRS is home to researchers, educators, community members, and students; it is every visitor's responsibility to participate in preventing the introduction of nonnative species. This document will serve as a baseline for biosecurity measures taken by the SRIRS.

To ensure biosecurity measures are incorporated into all SRIRS work practices and visitor activities, the messages and strategies in this plan are aimed at communications related to prevention; issues related to detection and emergency response will be dealt with by the Channel Islands National Park Biosecurity Communications Plan (link here).

This document identifies communication objectives, audiences, strategies, key messages, and FAQs. It is intended to be used by the SRIRS staff to prevent biosecurity threats through improved orientation, education, outreach, and management.

To ensure the most up-to-date information is communicated to the various audiences, this plan should be reviewed on an annual basis and language should be updated as needed.

Definitions

Biosecurity: a set of actions that aim to prevent, detect, and respond to threats from nonnative invasive species

Invasive species: plants, animals, and microorganisms that are not native to an area. The term "invasive" refers to nonnative species that spread rapidly and can cause harm to native wildlife, habitats, human health, and the economy

Nonnative species: organisms that do not occur naturally in an area, but are introduced as the result of deliberate or accidental human activities

Boot brush stations: a tool, typically available at the Island Packers and National Park Service (NPS) boat docks, that enables visitors to remove any seeds and soil from their shoes before traveling to the islands

Biosecurity Survey Results

To determine the most prudent ways to update the biosecurity communications for the SRIRS, individuals who visited the station in the past year were sent a preliminary survey. The list of individuals was compiled using data collected by the SRIRS and consisted mostly of California State University Channel Islands (CSUCI) faculty. The purpose of the survey was to establish a preliminary understanding of how much SRIRS users are understanding and following biosecurity protocols, what steps they are taking to prevent the spread of nonnative species and identify what changes they would like to see. Their responses played an important role in determining what this communications plan would focus on. Although Santa Rosa Island is owned by the NPS, the public does not have access to the research station and was therefore not included in this survey.

The survey was sent out to 33 people, and 18 responses were gathered (see Appendix A: Biosecurity Survey Results for survey results). Using the results from the survey, 77.8% (14 out of 18) of people were familiar with the term biosecurity, and 22.2% (4 out of 18) had heard the term but did not remember what it meant. On average, 61.3% (11 out of 18) of people said that they received communications from SRIRS staff before, at the dock, and upon arrival to the research station

about biosecurity. In terms of making the information more digestible/easy to understand, 63.9% (12 out of 18) said either a video tutorial or more reminders at the docks prior to leaving would have helped them.

This data tracks, as most of the survey participants were professors who take classes of students out to the island and having more video tutorials or reminders would make communicating with students much simpler for them. Most participants claimed they engaged with the biosecurity checklist, left prohibited items at home, and cleaned their shoes and gear. The participants were given an opportunity to give suggestions at the end of the survey, and those results can be seen in the Communications Actions section and in
Appendix A: Biosecurity Survey Results.

Communications Objectives

Objective 1: Implement a communication strategy for the Santa Rosa Island Research Station to better inform research station users of biosecurity risks to prevent the introduction of nonnative species.

Objective 2: Provide consistent and coherent information and educate staff to ensure all operations and practices follow strict biosecurity protocols.

Objective 3: Enhance awareness and understanding of biosecurity issues through the development of a pre-trip orientation, briefings, media strategies, and resources at the station with pertinent information.

Objective 4: Enhance ease of integration of new protocols being implemented in the future for SRIRS biosecurity.

Objective 5: Collaborate with the Channel Islands Biosecurity Manager, through the creation and maintenance of a student internship with a biosecurity focus, to disseminate biosecurity information and carry out the actions outlined in this plan. Prepare all SRIRS student assistants to give debriefs and "elevator pitches" about biosecurity to incoming student trips on the island.

Communications Actions

By dividing the objectives above into categories based on priority, the information will be streamlined for easy action. There are high, medium, and low priorities, with high priority objectives being ones that are already in motion and are simple to implement. Medium priority objectives require more time and effort in disseminating information and outreach. Low priority objectives are still extremely important, but have a longer timeline, and more red tape to get through before being actionable.

***Table 1**: Communication objectives priority list, categorized by color and urgency.*

High	Medium	Low
Objective 1	Objective 3	Objective 4
Objective 2		
Objective 5		

***Table 2**: Table of actions to be taken and how to achieve them sorted by objectives, color coded.*

	Action to be Taken	How to Achieve
Objective 1	Implement a communication strategy for the SRIRS	• Annually review this plan and update as needed

Objective 2	Provide consistent and coherent information and educate staff on protocols	• Conduct annual biosecurity trainings for SRIRS staff, in coordination with the Channel Islands Biosecurity Manager • Hold debriefs with Biosecurity Manager and SRIRS director/staff in response to any current biosecurity threats or incidents • Contact the Biosecurity Manager for the biosecurity requirements and refer to the island's biosecurity plan and/or guidance documents • Enhance communications with NPS for on-island incursion response • Ensure all SRIRS staff are knowledgeable about threats and can utilize expertise in the field • Ensure budgets for all island-based projects include biosecurity expenses (e.g., inspection, cleaning, project delays) • Include biosecurity requirements in all contracts, agreements, permits, and projects by communicating with legal team at CSUCI to determine how to modify language
Objective 3	Enhance awareness and understanding of biosecurity issues	• Create a regularly scheduled orientation for visitors to the SRIRS • Create new biosecurity resource page on SRIRS website (see CSUCI SRIRS webpage for details) • Update research station binder to be inclusive of biosecurity checklists and protocols, along with visual aids for visitors to look at • Create biosecurity focused SRIRS merchandise like stickers, t-shirts, and other gear to spread the word
Objective 4	Integrate future protocols and measures seamlessly	• Make use of the updated biosecurity resource page • Increase social media presence (see Digital Strategy section for details) • Develop a video tutorial that shows how to prepare for a trip out to SRIRS, what to do if you find a nonnative species on you while on-island • Include biosecurity requirements in all contracts, agreements, permits, and projects

Objective 5	Collaborate with the Channel Islands Biosecurity Manager, through the creation and maintenance of a student internship with a biosecurity focus.	• Hired August 2022, working partnership between TNC (Juli Matos, Biosecurity Manager), NPS, and CSUCI SRIRS • Intern will be responsible for creating effective documentation strategies and SOPs for future interns • Integrate the use of SRIRS student assistants to lead biosecurity debriefs with class groups going out to the station about what the station looks like, what to expect, show video tutorials, get signatures, etc., prior to leaving • Broaden the scope to all student assistants of the SRIRS in the future by developing an "elevator pitch" for pre-trip and on-island orientations

Talking Points

These messages are meant for all those who visit or conduct work on the Channel Islands and therefore should be aware of the importance of biosecurity. The messages are designed to be used with the audience-specific messages identified further below. The bold statements are lead points, followed by bulleted supporting points.

Biosecurity actions aim to prevent, detect, and respond to threats from nonnative invasive species.

- Biosecurity reduces the risk of spreading nonnative invasive species.
- Prevention is the most effective approach.

Islands are vulnerable to impacts from harmful nonnative species.

- Island species are at risk of extinction due to their isolation, limited populations, and lack of genetic variability.
- Invasive species are implicated in 86% of extinctions that have occurred on islands.[v]
- Introduced rats have been responsible for an estimated 40-60% of all bird and reptile extinctions on islands.[i]
- Diseases, sometimes transmitted in soil, have the potential to decimate island species.[ii]
- Argentine ants and other nonnative insects can outcompete native insects.[iii]

Because of their vulnerability, island ecosystems can face significant negative impacts from everyday encounters and items.

- When traveling and exploring the outdoors, it is common to wear a comfortable pair of hiking boots, which have most likely been worn other places.
- If the boots are not properly cleaned of any soil or plant material prior to the trip you risk bringing nonnative or invasive species out to the island just in the treads of your shoes.
- Small, often unseen critters and plant material can live in the mud on your boots; a lone, small seed caught in the mesh of your pack may cause an explosion of nonnative species in a sensitive island ecosystem.
- Nonnative species can outcompete native ones, and thus the landscape of SRI will forever be changed just by a simple, human error.

The Channel Islands are recovering since the removal of numerous nonnative species.

- Harmful nonnative species have included feral pigs, sheep, cattle, goats, cats, deer, elk, and plants.
    - Because of these species, the canyons, mountainsides, and creek bottoms were denuded for many years, and have only begun to recover since their eradication in 2011.
    - There was no time for plants, especially native species, to recover, due to the constant eating by ungulates.
    - Smaller species like feral cats impacted the spread of seed by birds & mice through predation on them, which decreased the biodiversity of areas inhabited by the cats.
- Over 100 invasive plant species threaten the quality of native habitat on the Channel Islands.
- The northern Channel Islands fox populations have recovered after the removal of feral pigs and relocation of golden eagles.
    - Island fox populations are still being continually monitored to catch another predation event or an introduction/outbreak of an viruses and illnesses from privately owned animals like dogs.

Biosecurity is essential to protecting island ecosystems.

- A proactive approach is vital to prevent, detect, and respond to threats.
- Efforts to remove nonnative invasive species continues to be costly.
    - It may not be possible to remove some invasive species from islands, so prevention is key.

You can help prevent the introduction of nonnative species.

- **Don't pack a pest.**
    - Inspect and clean your gear as you pack -- check and clean your shoes, backpacks, sleeping bags/pads, and other gear.
    - Don’t bring firewood, cardboard boxes, wooden hiking sticks, flowers, live plants, seeds, or soil.
    - Store your food in tightly sealed, closed containers to protect from pests.
    - Gear that has been stored for a long time may be harboring pests.
- **Before boarding the boat, please:**
    - Inspect and clean your shoes, socks, and clothing (including but not limited to duffels, sleeping bags, totes, coolers, backpacks, any soft/mesh pockets on gear) by making sure there is no plant material, critters, or other visible hitchhikers, and removing them if necessary
    - Use boot brushes to remove seeds, soil, and other hitchhikers from your shoes-- be especially careful to check the treads, tongues, and laces.
    - Search for and remove small weed seeds.
    - Clean off soil and dirt that can carry plant diseases.
- **While on the island, please:**
    - Stay on designated trails, if required.
    - Pack out all trash including food scraps such as apple cores, tomato seeds, etc.

Staff, Researchers, and Volunteer Messages

In our work, we pose one of the greatest biosecurity threats to the islands.

- There is more potential for us to transport biosecurity threats than the average visitor.
- We access the islands on a regular basis, go off trail, and often access sites that most people don’t go, thus increasing the likelihood of introducing possible biosecurity threats.

- As we travel between sites on an island or between islands, we can spread existing introduced species.
- We transport materials, tools, and equipment between sites. All of these can serve as vectors to transporting biosecurity threats.

We must be vigilant to incorporate biosecurity in our practices.

- Be a leader – you're responsible for ensuring that all your group follows the biosecurity requirements.
- Increase your awareness of biosecurity risks and speak up if you have concerns.
- We are the first line of defense in preventing introductions.

Clean and inspect your gear and equipment:

1) **Before departing from the mainland.**
2) **Before moving between work sites on an island.**
3) **Especially when traveling between islands.**

- You could potentially transport a harmful species (weeds, insects) or disease (soil-borne pathogens, parasites) when you drive or hike between sites.
- Remove any attached plant material, insects, and soil.
- Pay special attention to tools that may contain soil or plant residues on them, such as: pruning tools, handsaws, shovels, Pulaski's, chainsaws, string trimmers, mowing equipment, and road grading equipment.
- Any materials that have not been properly cleaned of all soil/mud/dirt, plant material (seeds, leaves), insects, and animal presence will not be allowed for transport.
- If you find a new invasive species:
    - Plant/weed: take a photo, record the GPS coordinates, and send the information to the SRIRS Senior Research Station Specialist. DO NOT COLLECT A SAMPLE.
    - Insect: collect a sample, take a photo, record the GPS coordinates, and send the information to the SRIRS Senior Research Station Specialist.
    - Animal: take a photo/video and report immediately to the SRIRS Senior Research Station Specialist. Only collect the animal if it is safe to do so.

Extra precautions should be taken when working in areas with sensitive habitats, rare species, or weed infestations.

- Examples of problematic weeds you should be aware of include mustards, fennel, dandelion, prickly golden fleece, prickly lettuce, smilo grass, Harding grass, licorice plant, carnation spurge, salsify, false brome, yellow star thistle, and Russian thistle.
- Biosecurity requirements must be included in all contracts, agreements, permits, and projects.
- Contact the Biosecurity Manager for the biosecurity requirements and refer to the island's biosecurity plan and/or guidance documents.
- Plan your project budget to include biosecurity expenses (inspection lodging and transportation, cleaning, and project delays).

Digital Strategy

To facilitate the sharing of biosecurity messages via digital communications, updates should be made to the SRIRS social media sites, like Instagram. Updates should also be made to the CSUCI website for the SRIRS, by adding video tutorials and a biosecurity resource page.

***Table 3**: Digital strategies, sorted by type, and how to achieve them.*

Social Media Updates
Linktree in bio section of Instagram page - See Appendix D: Digital Media Strategy Resources for examples and outline
Schedule for regular posting (2x a month) about biosecurity-focused messages - Implement fun pictures, short captions - Checklists, interactive, and easy to understand
Biosecurity story highlight on the SRIRS Instagram account bio - Utilizes modern media, makes an easy way to store posts from the stories on IG (normally delete after 24 hours) - This along with regular postings will increase the overall presence of biosecurity on the SRIRS Instagram page without overpowering or overshadowing other parts
Examples of Instagram story posts - Story 1: how to pack, utilize NPS and SRIRS packing lists, include visuals, not just words - Story 2: How to clean your boots, show boot brush stations at IPCO, where they are and how to use, how to do it at home - Story 3: how to travel between islands safely
CSUCI Website Updates
Update biosecurity video from hyperlink to thumbnail on page to draw reader's attention
Include biosecurity resource page both as a link and as a section on website, so people can easily find it
Biosecurity Resource Page added to website - Available in Appendix B: Biosecurity Resource Page - Includes NPS, TNC, and SRIRS resources regarding biosecurity, all in one spot - Will be added as a tab on homepage, easy to access
Video tutorial - Will cover how to prepare for a trip out to the islands - What to do if you accidentally bring a nonnative species over - How to safely travel between islands and back home

Frequently Asked Questions

What is biosecurity?
Biosecurity is a set of actions that aim to prevent, detect, and respond to threats from nonnative invasive species.

What are invasive species?
Invasive species are plants, animals, and microorganisms that are not native to an area. The term "invasive" refers to nonnative species that spread rapidly and can cause harm to native wildlife, habitats, human health, and the economy.

How are invasive species introduced into the environment?
We can spread invasive species unintentionally over long distances on our shoes, gear, and vehicles. Invasive species can be spread over short distances by the wind, animals (especially birds), or through water or soil.

Why are invasive species a problem?
Native species often lack the natural defenses to protect themselves against invasive species. Invasive species alter and degrade native habitats. They also compete with native wildlife for food, water, shelter, and space.

What are some examples of invasive species on Santa Rosa Island?
Because of its history as a ranch, and as a hunting ground, many of the introduced mammal species were sizeable in population and presence for well over a century. Both sheep and cattle were introduced in 1844. Most of the sheep ranching took place in the 19th century, and subsequently there were massive impacts on island vegetation along with soil erosion during this period. Managed cattle grazing spanning much of the island was conducted for nearly the entire 20th century. Other grazing mammals were introduced for hunting between the mid to late 19th century, including goats, feral pigs, deer, and elk. Most of these species were present on Santa Rosa for over a century and had large impacts on native vegetation.

In addition, introductions of invasive plants such as nonnative European grasses, fennel, and mustard had strong negative impacts on native plant communities. The establishment of new island predators like golden eagles – due to contaminant impacts displacing bald eagles – also increased predation on local, small, terrestrial mammals like island foxes.

What are some examples of post-removal success stories on Santa Rosa Island?
After the removal of nonnative species like sheep, cattle, feral pigs, elk, and deer, several native species have been able to regain a footing on the island. Examples include the diverse vegetation in Lobo Canyon and the expansion of Torrey Pines on the mountainside of the island, as well as an explosion in the growth of toyon along the bluffs near the research station, with some reaching upwards of 6 feet tall. Prior to the removal of ungulates in 2011, this was not possible.

What invasive species are of highest concern?
Invasive plants such as fennel and yellow star thistle are also of concern because their seeds are easily spread by clinging to clothing and gear. Animals like feral cats and rats, along with small insects like Argentine ants, continue to be a high concern. The New Zealand mudsnail, a tiny aquatic snail, is a threat to freshwater systems on the islands. It reproduces through cloning, so just one single juvenile introduced unintentionally could permanently alter the freshwater communities, such as those accessed year-round by backcountry campers on Santa Rosa.

How can we reduce the introduction and spread of invasive species?
Prevention is the most effective way to reduce the introduction and spread of invasive species and your actions make a difference. Early detection is the next best approach – if you see something, say something!

What can you do to prevent introducing invasive species?
Before leaving home, inspect and clean your shoes, backpacks, sleeping bags/pads, tents, and other gear. Use boot brushes to remove seeds, soil, and other hitchhikers from your shoes – be especially careful to check the treads, tongues, and laces.

Don’t bring banned items such as firewood, cardboard boxes, wooden hiking sticks, flowers, or live plants, as these may harbor insects. Store your food in tightly sealed, closed containers to protect from

pests. While on the island, please stay on designated trails, if required, and pack out all trash including food scraps.

If you have visited freshwater streams on the mainland recently, you can prevent the potential spread of New Zealand mudsnails by thoroughly scrubbing your gear with a stiff-bristled brush to remove all organisms and allowing it to dry for at least 48 hours before using it on the islands.

Appendix A: Biosecurity Survey Results

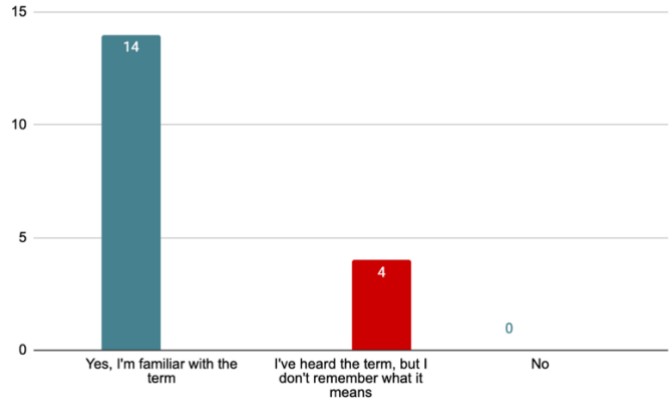


Figure 1: *Results of biosecurity survey of Santa Rosa Island Research Station group leaders conducted in October 2022 when asked if they knew what biosecurity was.*

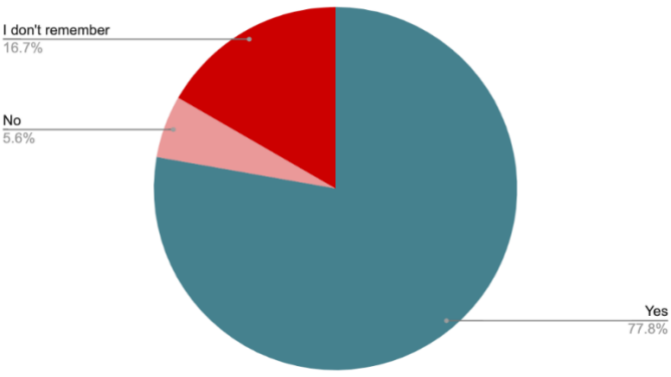


Figure 2: *Results of biosecurity survey of Santa Rosa Island Research Station group leaders conducted in October 2022 when asked if they were provided with any information on biosecurity when communicating with SRIRS staff.*

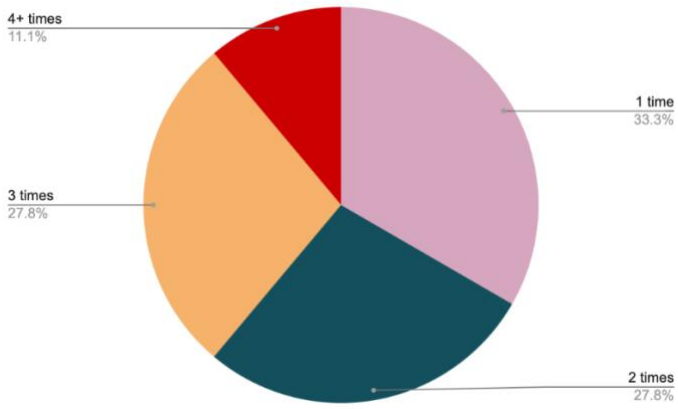


Figure 3: *Results of biosecurity survey of Santa Rosa Island Research Station group leaders conducted in October 2022 when asked how many times information focused on biosecurity was shared with them prior to arrival at the harbor.*

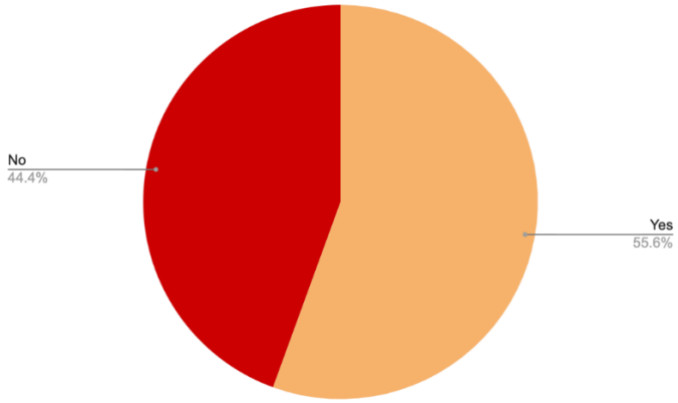


Figure 4: *Results of biosecurity survey of Santa Rosa Island Research Station group leaders conducted in October 2022 when asked if there was any more communication at the harbor prior to leaving regarding biosecurity, (e.g., invasive species to look for, how to clean your gear, other preventative measures to take).*

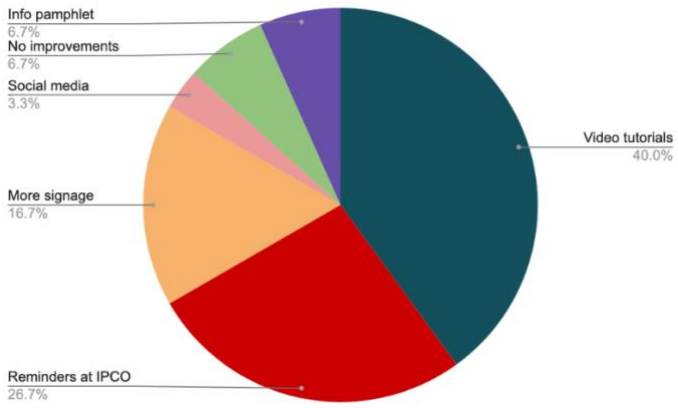


Figure 5: *Results of biosecurity survey of Santa Rosa Island Research Station group leaders conducted in October 2022 when asked how the information given could've been made more digestible/easy to understand. Participants were given several choices, of which they could choose any or all, or suggest another idea.*

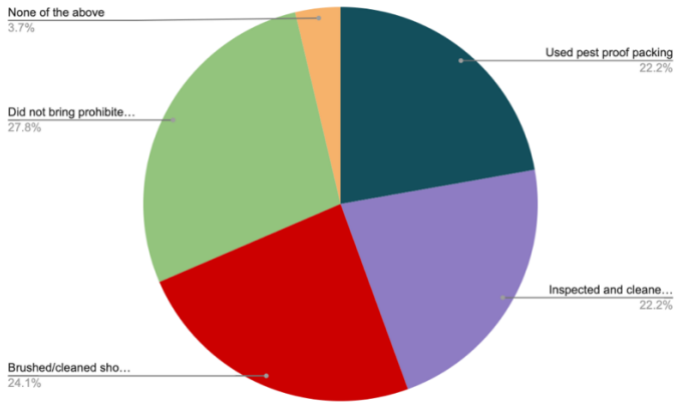


Figure 6: *Results of biosecurity survey of Santa Rosa Island Research Station group leaders conducted in October 2022 when asked what biosecurity measure(s) they took before their last trip. Participants were given the option to select all that applied.*

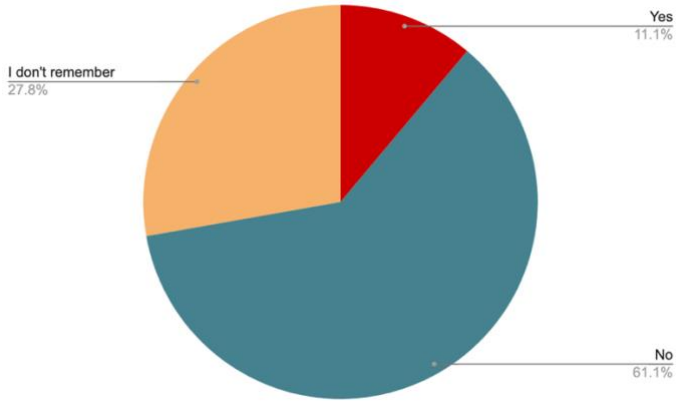


Figure 7: *Results of biosecurity survey of Santa Rosa Island Research Station group leaders conducted in October 2022 when asked if they were provided with any information about biosecurity by NPS staff. Most of the time, upon arrival, the SRIRS visitors are split off from everyone else and given a separate orientation.*

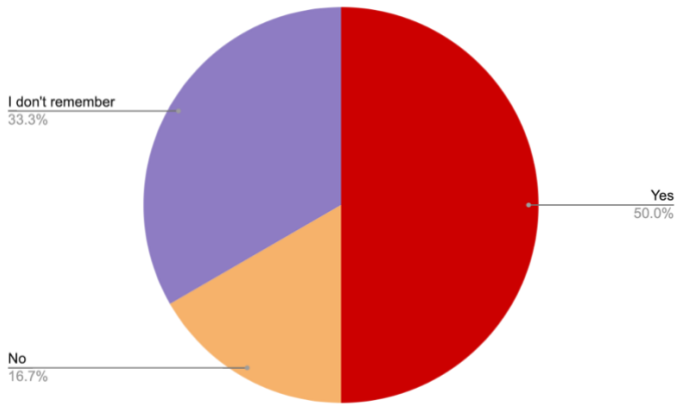


Figure 8: *Results of biosecurity survey of Santa Rosa Island Research Station group leaders conducted in October 2022 when asked if they were provided any biosecurity information by the SRIRS staff.*

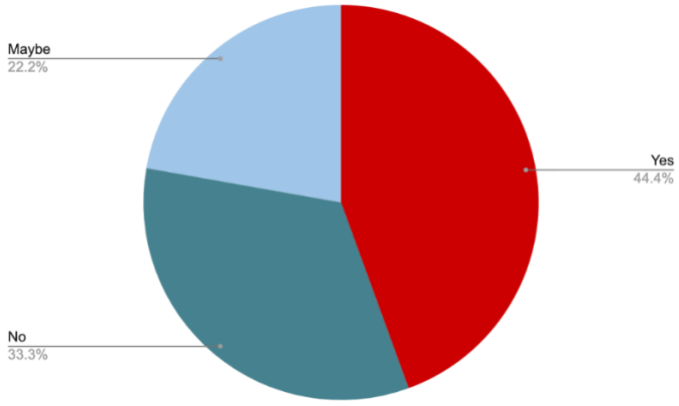


Figure 9: *Results of biosecurity survey of Santa Rosa Island Research Station leaders conducted in October 2022 when asked if they would have taken more steps to implement biosecurity measures.*

Appendix B: Biosecurity Resource Page

Biosecurity Resources Page

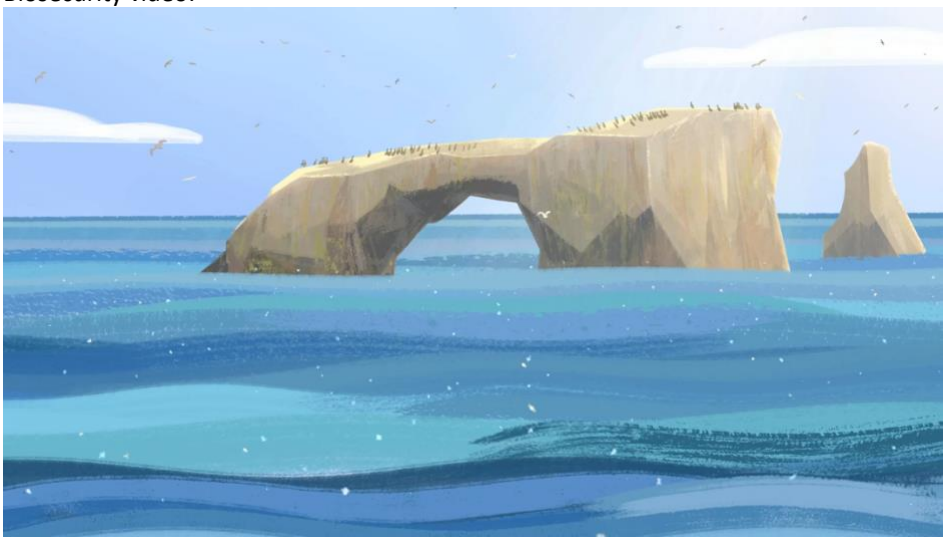
The information below should be converted into a webpage within the CSUCI SRIRS website, and distributed to visitors to the station, prior to their trip date.

What is biosecurity?
Biosecurity is a set of actions that aim to prevent, detect, and respond to threats from nonnative invasive species.

Why do we care?
As visitors to the research station, and stewards of the public lands, it is our responsibility to care for and help prevent the introduction of nonnative species. As a university, CSUCI is dedicated to getting students and community members out to the island—it is your responsibility to treat it with respect. By preparing for your trip with biosecurity in mind, you are actively helping to protect the unique island species from potential biosecurity threats on Santa Rosa Island.
This page provides a one stop shop for pertinent biosecurity documents and resources you may need when preparing for your trip. Please take the time to go over it with your students/staff while discussing your plans.

For SRIRS policies and regulations, please refer to the CSUCI SRIRS website.

National Parks Service
Biosecurity homepage: NPS biosecurity resources available here, checklists, invasive/nonnatives to look for
Biosecurity video:



California Islands
Pre trip planning: Use this list while you prepare for your trip
Biosecurity Plans and regulations: CHIS documents, good resource for learning more specifics
Biosecurity Checklist for CHIS: Complete this checklist while you prepare for your trip

CSUCI Santa Rosa Island Research Station
Rules and Regulations: SRIRS and CSUCI specific rules and regulations
What to bring: Use this list to pack so you are ready for anything
Island Packers: Transportation out to the research station website

Contacts
Russell Bradley, *Director, Santa Rosa Island Research Station,* russell.bradley@csuci.edu
Robyn Shea, *Assistant Director, Santa Rosa Island Research Station,* robyn.shea@csuci.edu

Appendix C: SRIRS Day Trip Report

During the development of this communications plan, Molly Beals, the biosecurity student intern at the time, was tasked with visiting the SRIRS to take note of what biosecurity messaging was provided to visitors. The report below outlines the outcomes of that.

Santa Rosa Island Day Trip Report
Report written by Molly Beals

Purpose

On Friday, November 4th, 2022, I went out to Santa Rosa Island to visit the research station. The purpose of my visit was to gain insight into what an average visitor encounters in terms of biosecurity while visiting the island. Using Island Packers as transport, the SRIRS brings out a diverse group of students, teachers, and volunteers to learn about the island and its habitat.

Findings

Prior to Departure

Upon arrival at IPCO, at the Ventura Harbor, one must check in and then load their gear onto the dock. There was no mention of biosecurity by any of IPCO's staff to me, or to anyone else that I heard, and although they said there were boot brush stations, I didn't see anyone use them.

Upon Arrival

Three groups were visiting the station that day: an ESRM100 class led by Dr. Reineman and anthropology professor Jaime Matera, a sociology capstone group with a new faculty member who had never been to the island, and an ESRM capstone group. Of the three, the ESRM100 students had the best understanding of what biosecurity was and what steps could be taken to prevent bringing species over. The ESRM capstone students were also relatively comfortable with the term and inspected their gear and shoes in front of me. The sociology group had not heard the term biosecurity before and did not appear to have watched the video provided in IPCO's reservation email.

Robyn provided a final pre-trip biosecurity briefing at the harbor and did a very good job of covering the basics and talking the students through how to best prepare. Once at the station, both Joe and Robyn gave an orientation to the groups of students. This orientation was brief and covered a lot of information.

Future Actions

While the SRIRS staff do a fantastic job of providing people with the resources necessary to learn about biosecurity, I believe the following changes could improve the actions taken by visitors

- Pre-trip Resources
    - Outreach Materials
        - Include NPS video about biosecurity as a thumbnail (rather than hyperlink) so it draws attention
        - Update CSUCI website (if resources allow)
        - Communicate with group leaders to make sure that they tell students to use the boot brush station at the dock

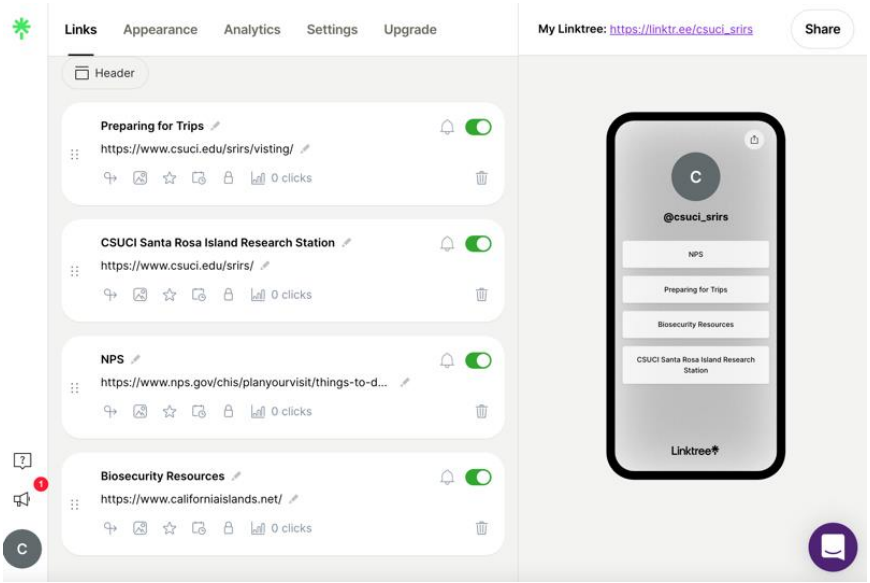
        - Ensure that all students, regardless of background, have a solid understanding of biosecurity by communicating with professors about what is a REQUIREMENT to come out, just like not using drugs, etc
- On-Island Resources
    - Outreach Materials
        - Make a one-pager about biosecurity basics, nonnative species specific to SRI
    - Edit orientation sheet to include a separate section of biosecurity so it stands out more
        - Create a separate check box on orientation acknowledgement for biosecurity to make it more tangible for students and researchers
        - Change format to bullet points to make it more digestible

Appendix D: Digital Media Strategy Resources

Linktree account

- Provides an organized and user-friendly interface for students and people on Instagram to easily find different resources on the SRIRS page

Username: csuci_srirs
Password: Isl@ndFox2024$

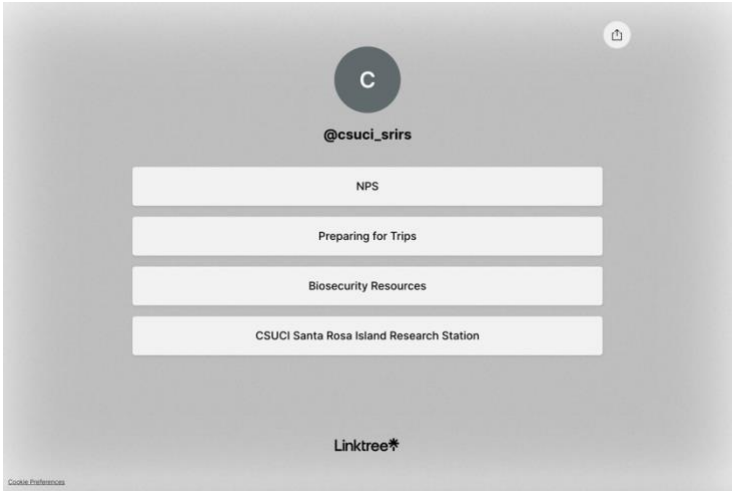


QR Code for Linktree

- Scan for the table of contents
- Able to add link to Instagram bio

What people will see:

- When people click the link in the Instagram bio, they will be taken to this page, which can be updated and edited as needed



References

[i] Atkinson, I. 1985. The spread of commensal species of Rattus to oceanic islands and their effects on island avifaunas. pp. 35-81 In: P. J. Moors, ed. *Conservation of island birds: Case studies for the management of threatened island species*. Cambridge: International Council for Bird Preservation.

[ii] Wilkelski, M., J. Foufopoulos, H. Vargas, and H. Snell. 2004. Gala´pagos birds and diseases: invasive pathogens as threats for island species. Ecol. Soc. 9: 5.

[iii] Boser, C.L., Hanna, C., Faulkner, K.R., Cory, C., Randall, J.M., Morrison, S.A., 2014. Argentine ant management in conservation areas: results of a pilot study. Monogr. West. N. Am. Nat. 7, 518–530.

[iv] C. Bellard, P. Cassey, T. M. Blackburn, Alien species as a driver of recent extinctions. Biol. Lett. 12, 20150623 (2016).