

2019-20 ANNUAL REPORT

SANTA ROSA ISLAND
RESEARCH STATION



Channel Islands
CALIFORNIA STATE UNIVERSITY

Santa Rosa Island Research Station (SRIRS): 2019-20 Annual Report

A. SRIRS User Days & Partners

1. 2019-20 User Days

User Group	User Days	Lost User days due to COVID-19	Combined user days
CSUCI Students	927	868	1,795
CSUCI Faculty/Staff	264	188	452
Non-CSUCI Students	209	960	1,169
Outside Researchers	123	366	489
Other Partners	136	173	309
Total	1,659	2,555	4,214

2. **CSUCI Academic Programs (21):** Anthropology, Applied Physics, Biology, Astronomy, Chicana Studies, Chicano Studies, Communications, Computer Science, Early Childhood Studies, ESRM, Health Sciences, Information Technology Services, Mathematics, Nursing, Performing Arts, Political Science, Project OLAS, School of Education, Student Academic Success & Equity Initiatives, Studio Arts, Freshman SURF. (comprised 72% of user days fulfilled and 53% of total expected user days)

3. Outside Organizations:

- a. **Academic (6):** CSU Northridge, Los Angeles Unified School District – Reseda Charter High School, Oxnard Unified School District – Channel Islands High School, Santa Barbara Unified High School District, Ventura Unified School District - Buena High School, UC San Diego.
- b. **Other (9):** Channel Islands National Marine Sanctuary, Channel Islands Naturalist Corp, CSUCI Office of the President, Island Packers, Mainstreet Architects, Santa Barbara Museum of Natural History, Santa Barbara Botanic Garden, United States Fish and Wildlife Service, and United States Geological Survey.

4. Cancelled trips due to COVID-19 Pandemic:

- a. **CSUCI Academic Programs (7):** Biology, Chemistry, ESRM, ESRM Field Studies, Marine Biology, Presidential Scholars, Sociology.
- b. **Outside Organizations:**
 - i. **Academic (21):** Auburn University, California Lutheran University, California Sea Grant Fellowship Program, Cal Poly San Luis Obispo, Cate School, Cornell University, CSU Northridge, CSU STAR Program, Los Angeles Unified SD - Reseda Charter High School, Oxnard Unified SD - Channel Islands High School, Santa Barbara Unified SD - San Marcos High School, Santa Paula Unified SD - Isbell Middle School, Seattle Central College, Thomas Jefferson University, UCLA, UC Riverside, UC Santa Barbara, UCSB - Cheadle Center for Biodiversity and Ecological Restoration, University of Colorado - School of Medicine, Ventura Unified SD - Foothill Technology High School, Westmont College.
 - ii. **Other (17):** 4 Points Expeditions, American Museum of Natural History, California Institute of Environmental Studies, California Native Plant Society, California Ocean Protection Council, Catalina Island Conservancy, Channel Islands National Park, Channel Islands Restoration, Comisión Nacional de áreas Naturales Protegidas (CONANP), Druid Networks - Sporadic E-Frequency Observations, Grupo de Ecología y Conservación de Islas, Hawaii's Plant Extinction Prevention Program, Santa Barbara Botanic Garden, Smithsonian Institution, The Nature Conservancy, United States Department of Defense – US Navy, and Wildlands Conservation Science.

B. SRIRS Student Research

1. Student Capstone/Independent Research Projects

a. Biology (5 Students):

- **Intertidal Ecology:** Continued long term monitoring of intertidal species and ocean conditions at Becher's Bay and Skunk Point Sites. This work supplements and expands upon the Channel Islands National Park long-term monitoring program (*CI Faculty Mentor: Geoff Dilly; NPS Collaborator: Steve Whittaker*).

- b. **ESRM (10 Students):**
 - **Big Tree Demography (4 Students):** Bishop Pines (*Pinus muricata*) demography and production following removal of non-native deer and elk. (CI Faculty Mentors: Dan Reineman, Clare Steele; USGS Collaborator: Kathryn McEachern; SRIRS Staff: Russ Bradley).
 - **Micro-plastics (1 Student):** Micro-plastic in phytoplankton - a comparison between collections from mainland and SRI (CI Faculty Mentor: Clare Steele; SRIRS Staff: Russ Bradley)
 - **Production of Field Guides to Common Plant species (2 Students): Story Map and Field guide to common plant species along trails and throughout the Ranch Complex of SRI** (CI Faculty Mentors: Kiki Patsch, Dan Reineman, Don Rodriguez; SRIRS Staff: Russ Bradley, Robyn Shea; USGS Collaborator: Kathryn McEachern).
 - **Raven Population Monitoring - (3 Students):** Assessing Common Raven populations, seasonality, and habitat associations throughout the Ranch Complex of SRI (CI Faculty Mentor: Clare Steele; SRIRS Staff: Russ Bradley).
- c. **Art–Interpretations of Santa Rosa Island (3 Students):** Interpretive Representation of Island Landscape and Cultural Resources. (CI Faculty Mentors: Marianne McGrath; SRIRS Staff: Russ Bradley, Robyn Shea, Aspen Coty).
- d. **Computer Science - Research Station Sustainability Platform Upgrades –(1 Student):** Tracking research station research use through remote sensors, enabling real-time monitoring (CI Faculty Mentor: Greg Wood; CI Staff: Ricky Medrano; SRIRS Staff: Russ Bradley, Robyn Shea, Aspen Coty).
- e. **Communications (1 Student):** Utilizing Social Media Platforms to increase engagement of students and Community members. (CI Faculty Mentor: Tracylee Clarke; SRIRS Staff: Russ Bradley, Robyn Shea, Aspen Coty).
- f. **Math (2 Students):** Acoustic Surveys of Microbats of Santa Rosa Island (CI Faculty Mentor: Jason Miller; SRIRS Staff: Russ Bradley, Robyn Shea).

C. Faculty Research Projects

1. Biology

- a. **Geoff Dilly:** Investigating the impacts of climate change (i.e. sea level rise, ocean acidification, etc.) on the intertidal and sub-tidal habitats of Becher’s Bay, Santa Rosa Island (NPS Collaborator: Steve Whittaker).

2. Early Childhood Studies

- a. **Annie White:** Creating and Supporting Reciprocal Family and Community Networks – 4-year study. (CI Faculty Collaborators: Heather Castillo, Jasmine Delgado, Bonnie Lavin, Marianne McGrath).

3. Math

- a. **Jason Miller:** Preliminary Acoustic Survey of the Microbats of Santa Rosa Island.

CI. Student Internships

1. Alisa Lopez (Biology) – San Clemente Island Insect Inventory
2. Jennifer Jones (Communications) – SRIRS Social Media Library Construction

CII. Additional Research Supported by SRIRS

1. **Westmont College:** Examining the herpetology ecology & evolution on Santa Rosa Island.
2. Cornell/Smithsonian Song Sparrow song variation – *Cornell University*.
3. **Santa Barbara Botanical Garden:** Ecological Network Collaboration – Santa Rosa Island; Native plant identification and seed preservation/collection; Terrestrial Invertebrate Survey on San Clemente Island.
4. **USGS:** Big Tree Demography (*Bishop pines*); Conducting a monitoring project within an ecological interaction network framework to guide the ecosystem recovery process on Santa Rosa Island (NPS Collaborator: Ken Convery; USGS Collaborator: Kathryn McEachern).
5. **USGS and CSU STEM Education Program:** STEM Teacher and Researcher Program (STAR), Summer Research Opportunities for early career STEM Educators (USGS Collaborator: Kathryn McEachern).
6. **Coastal Marine Biolabs:** Obtaining the unique DNA sequences of island arthropods and publishing the results within an international DNA Barcode database. (Collaborative with Reseda Charter High School and Foothill Technology High School).
7. **National Park Service - Inventory & Monitoring Program, Mediterranean Coast Network:** Historic Photo-Point Monitoring; Sandy Beach Monitoring; Vegetation Monitoring; Lagoon Monitoring – established new sensor array and monitoring protocol for assessing changes in size, water chemistry, and depth of East

End Lagoons.

8. **NOAA, Channel Islands National Park, The Nature Conservancy, Island Packers Company, University of California Natural Reserve System:** Marine debris removal on the California Channel Islands: improving critical habitats.
9. **NOAA:** Crossing the Channel: Natural Systems & Stewardship (BWET Logic Model). – *Santa Paula School District.*
10. **UCSD:** Examining the phenotypic and genetic difference of ant species across the California Channel Islands.
11. **University of Colorado:** Wilderness First Responder training for Pre-Med Students.
12. **Islands of the California’s Botanical Collaborative** Workshop: Re-introductions and Translocations – Santa Rosa Island, Planned for April 21-25, 2020. Will be re-scheduled due to COVID-19 likely in Spring 2022

D. Photo Collage (on next page, All Photos were taken Pre-COVID 19 pandemic):

A: Bishop Pines Demography capstone students working in the pines Fall 2019

B: Micro-plastics capstone student sampling on Bechers Bay pier Spring 2020 (pre-COVID-19)

C: New staff member Joe Forrest sporting SRIRS gear at a BWET event at the CI Boating Center Spring 2020 (pre-COVID-19)

D: Physics students testing out a new telescope donated to the SRIRS by the Physics department Spring 2020 (pre-COVID-19)

E: GIS students congratulate teammates during the Orienteering “Amazing Race” Fall 2019

F: Isbell Frank Middle School teacher Chris Rini discusses the intertidal zone with students during a BWET event at Carpinteria State Beach Spring 2020 (pre-COVID-19)



