



A. ANNUAL REPORT OF THE UCSB NATURAL RESERVE SYSTEM
TO THE UCSB OFFICE OF RESEARCH
FY2020-2021

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C. Mission Statement

The mission of the University of California Natural Reserve System (UC NRS) is to contribute to the understanding and wise stewardship of the Earth and its natural systems by supporting university-level teaching, research, and public service at protected natural areas throughout California.

D. Overview

In 1965, the UC Board of Regents established the UC NRS to provide protected environments representing California’s natural habitats for research, education and public service. In the over 50 years since its formation, the UC NRS has grown from seven to 41 Reserves that encompass over 850,000 acres. The UC NRS protects California’s natural heritage for the public trust and provides protected natural areas for research and teaching to contribute to the understanding and wise management of the Earth and its natural systems. The ecosystems and facilities offered by the 41 Reserves are available to scientists, humanists, educators, students, and the public from throughout the world. The Reserves also serve as a gateway to more than a million acres of public lands. The UC NRS is a UC-wide program that serves the overall UC Academic Affairs. The UC-wide UC NRS, based in the UC Office of the President, supports core initiatives across campuses, such as the California Heartbeat Initiative, the Climate Monitoring Network, the California Ecology and Conservation Course, and a UC President’s Catalyst Initiative on climate change (Institute for the Study of Ecology & Evolutionary Climate Impacts, or ISEECI). Each Reserve is assigned to one of nine UC campuses for administration.

UC Santa Barbara (UCSB) manages seven of the 41 UC NRS Reserves. The seven sites within the UCSB NRS offer a unique assemblage of protected wildlands throughout Central and Eastern California. UCSB’s Reserves encompass many of the State’s major ecosystems preserved in as undisturbed a condition as possible to support University-level research and teaching programs. The ecosystems and facilities offered by each Reserve are available to faculty, researchers and students from all UC campuses, and to users from other institutions, public or private, throughout the world. In FY20-21 across all seven of UCSB’s Reserves, there were 1,449 users and 16,516 user days, with use distributed across multiple types including research, university level classes and public service (Figure 1). Relative to FY18-19 (the last fiscal year prior to the onset of the pandemic, this represents an 88% decrease in the number of unique users and 59% decrease in the number of user days. This dramatic decrease in use is attributed to the significant impacts of the COVID-19 pandemic, with the UCSB campus shutdown, on Reserve use.

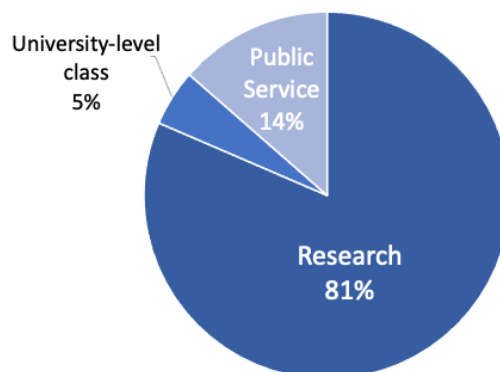


Figure 1. FY 2020-2021 Use of all UCSB Natural Reserve System sites. The categories represented include: (1) Research (Research), (2) Classes (University-Level Classes), (3) Public Service (which includes administrative, government or agency, and other use types; Volunteers (people who support reserve operations and programs); K-12 (Students and instructors), and others.

Most UCSB Reserve sites are managed by a dedicated Reserve Director and associated support staff. An exception is the Valentine Eastern Sierra Reserve, whose Reserve Director with staff manage 2 sites: the Sierra Nevada Aquatic Research Laboratory (SNARL) and the Valentine Camp Reserve. The Reserve Directors live onsite (with the exception of the Carpinteria Salt Marsh, which has no overnight accommodations or residential facilities) and manage the day-to-day operations, to facilitate research, University-level coursework and public service goals of the UC NRS. The tasks of the Reserve Directors are wide ranging, and include but are not limited to: grant writing, fundraising, land management, budget management, employee supervision, database management, restoration, outreach and education, vehicle maintenance, interacting with and facilitating researchers and research use of the facilities, and stakeholder engagement. The Reserve Directors are supported centrally by the UCSB NRS administrative office, located in the Marine Science Research Building on the UCSB campus.

E. Executive Summary

UCSB manages seven of the 41 UC-wide NRS Reserves under the UCSB Office of Research. The administration of the seven Reserves is the responsibility of the UCSB NRS campus administration office. Since 1970, when Coal Oil Point Reserve (COPR), located on UCSB's West Campus, became the first of 7 Reserves managed by UCSB, the UCSB NRS has continued to excel in providing top tier researchers, university level classes and other public and private users a means by which to access California's environmental resources, and utilize facilities and other assets available at Reserve sites. Here, Reserve use for FY20-21 will largely be compared to FY18-19, the last fiscal year completed prior to the onset of the COVID-19 pandemic.

1. Accomplishments and Impacts

RESERVE USE

- **Number of Users:** Each year, thousands of users from around the world conduct field research in the protected landscapes of UCSB's Reserves. Over the period FY20-21, the 7 sites of the UCSB NRS totaled 1,449 users, which was 88% less than FY18-19, owing to Reserve closures and restrictions associated with the COVID-19 pandemic.
- **Number of User days:** User days, defined as the sum of the number of days spent on Reserves across all users, is another metric of Reserve use that is reported by the UC NRS to UCOP. During FY20-21 the UCSB NRS totaled 16,516 user days, 59% less than FY18-19.
- **Faculty Use:** In FY20-21, faculty use at UCSB Reserves totaled 113 unique individuals over 1,546 user days. Individual faculty members utilizing UCSB Reserves have originated from multiple institutions, including UCSB (n=29), and non-UCSB UC campuses (n=45), as well as from California State University, Community Colleges, other California university level institutions, and U.S. or international University Level institutions outside of California.
- **Research Projects:** The UCSB NRS Reserves host a wide variety of research projects carried out by individuals originating from a variety of global regions, i.e. ranging from UCSB to international institutions. In FY20-21 there were 97 research projects carried out at UCSB NRS Reserves. Of those

projects, 53 projects were considered active and 44 were considered inactive (e.g., no visitation or use of Reserves occurred on the inactive projects during the year).

- **Publications:** Each year, a number of publications are based on use or access amenities and natural resources associated with UCSB Reserves. In 2020 there were a total of 162 publications and in 2021, there were a total of 114 publications¹. The represented disciplines included: biology, ecology, physiology, evolution, hydrology, anthropology, archeology, atmospheric science, toxicology, geology, geography, geophysics, endocrinology, microbiology, history, earth science and others.

University Level Instruction: In 2020-2021 University Level Instruction (class) use of the 7 UCSB Reserves included 183 Users over 822 User Days. This represents a 93% decrease in users and 89% decrease in user days compared to AY2018-2019. This significant decrease in instructional use is attributed to the COVID-19 pandemic starting in Spring 2020. Undergraduates comprised the majority of the use with 133 undergraduate users or 73%, and 631 User days or 77%, of the total University-Level Instruction Class Use. The majority of university level class use of UCSB Reserves was by UCSB and UC students and instructors, with UCSB use comprising 79 Users and 87 User Days, and (non-UCSB) UC with 69 Users and 599 User Days. The majority of UC user days sources from the UC NRS Systemwide Course, “California Ecology and Conservation.” There was a total of 13 courses (graduate and undergraduate) utilizing the UCSB Reserves in AY2020-2021— a decrease of 85% from 87 courses in hosted by the UCSB NRS in AY 18-19. The UCSB Reserves also service: other UC Campuses, California State Universities, Community Colleges, other California Colleges/Universities, international Universities or Colleges, and NGO/Non-Profit Entities and Governmental Agencies in support of University Level Teaching.

FACILITIES AND CAPITAL IMPROVEMENTS

- In FY2020-2021 there were a number of ongoing or new capital projects occurring on behalf of UCSB Natural Reserve facilities and infrastructure. These additions were funded through a combination of UCSB NRS donor support, California State Bond Measure funds (Proposition 68 and Proposition 84). The following is a list of UCSB NRS Capital Projects in FY20-21:
 - Carpinteria Salt Marsh Reserve Road and Infrastructure Improvements (Proposition 84, UCSB NRS funded)
 - Coal Oil Point Reserve – Maintenance of Western Snowy Plover fencing (UCSB NRS funded)
 - Coal Oil Point Reserve – Maintenance and repair of various vandalized fencing, signage (ongoing, UCSB NRS funded)
 - Rancho Marino Reserve – Restoration of roads and buildings after significant winter storm and associated damages in January 2021. Included various infrastructure repairs, mold abatement and other water damage on Director residence, and classroom and overnight accommodations (UCSB NRS funded)
 - Santa Cruz Island Reserve Infrastructure project – Planning stages (Proposition 68 and UCSB NRS donor funded)
 - Sedgwick Reserve Office Space, Overnight Accommodation, Outdoor Patio and Road Improvement Projects (Proposition 84 and Private Donor Funded)

¹ Publication data for 2021 through 11/1/21

- Sierra Nevada Aquatic Research Laboratory – New steward’s accommodations (Donor Funded)
- Sierra Nevada Aquatic Research Laboratory – Aspen House ADA improvements (Proposition 68, UCSB ACCA Committee, UCOP, and Donor Funded)
- Sierra Nevada Aquatic Research Laboratory – Building clean energy and electric transportation infrastructure (UCSB TGIF Funded)
- Valentine Camp Reserve Fuels Reduction and Forest Thinning/Management Project (California Department of Fire and Forestry Funded)

FUNDING

- **Grants** are a major and necessary source of funding for capital improvements, maintenance, land management and programmatic needs at the UCSB Reserves. Typically, each Reserve Director leads an effort to identify and apply for grant funding from external or UCSB sources in order to support the operations and programs at Reserves. Reserve Directors work with the UCSB NRS Executive Director and Director to write and submit grant applications. In FY2020-2021 the UCSB NRS has successfully utilized or newly acquired \$3,592,175 in grant funding from the California Wildlife Conservation Board (Prop 84 and 68), California Department of Forestry, National Science Foundation, and UCSB TGIF and UCSB Associated Students Coastal Fund to carry out strategic planning efforts, educational programming, and to add research and educational infrastructure to Reserve sites, manage forests and vegetation, and improve energy efficiency and sustainability at two Reserve sites.

- **Gifts and Donor Support:** In FY2020-2021 the UCSB NRS received a total of 155 gifts resulting in \$624,988 in donor support as new gifts. Through an analysis provided by the UCSB Development department, while the amount of donations decreased by approximately 50% during FY20-21, the number of gifts only decreased by 10, relative to FY19-20 indicating a positive outlook for the NRS’ ability to retain its donor base. Included in this is a gift of \$250,000 to support prescribed fire related research at Sedgwick Reserve. Also of note is that the final pledge payment for the La Kretz Center for Research at Sedgwick Reserve was paid in FY20-21, concluding the contribution to the \$5M endowment that supports the Center.

2. Impact of Research Shut Down on the Natural Reserve System

The COVID-19 research shut down has significantly impacted the UCSB Natural Reserve System to achieve the goals of the UC NRS mission in FY19-20. The following bullet points provide a brief summary of this impact:

- The UCSB Natural Reserve System closed officially to academic and public use, in response to California Governor Newsom’s issue of a statewide stay at home order, on March 20, 2020 and reopened only to critical and/or time-sensitive research activities on June 24, 2020. University-level class use was permitted at UCSB NRS sites approximately one year after the initial shut-down on March 28, 2021.
- Working with its control point, the UCSB Office of Research, the UCSB NRS developed its own protocols and policies for permitting Reserve use during the UCSB Research Ramp Down and other UC initiatives occurring during the pandemic.
- Relative to FY18-19, **Reserve use** (in terms of number of users and number of user days) dropped significantly (Figure 1). The number of individual users in FY19-20 and FY20-21 decreased by 37% and 88%, respectively, relative to FY18-19. User days (or the number of days each individual user spends at a Reserve) decreased by 27% and 59% in FY19-20 and FY20-21, relative to FY18-19.
- Subsequently, **recharge income** sourced from Reserve use has also decreased significantly. Relative to FY18-19 (pre-COVID-19 pandemic) FY19-20 revenues were decreased by 11%, and FY20-21 revenues were decreased by 49%. Note that dates of recharge payment from users often have a lag in payment relative to actual Reserve use dates.
- **Philanthropic fundraising** has also decreased due to the pandemic. According to analyses provided by the UCSB Development department, the number of gifts to the UCSB NRS have decreased from 214 in FY18-19 to 165 and 155, respectively in FY19-20 and FY20-21 (Figure 2). The overall income to the UCSB NRS from philanthropic giving was \$625K in FY20-21 compared to \$1.56M in FY18-19.

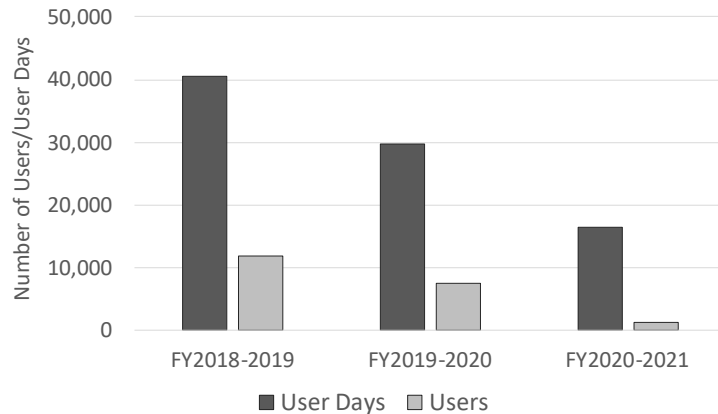


Figure 2. UC Santa Barbara Reserve Use Totals, FY2018-2019 to FY2020-2021

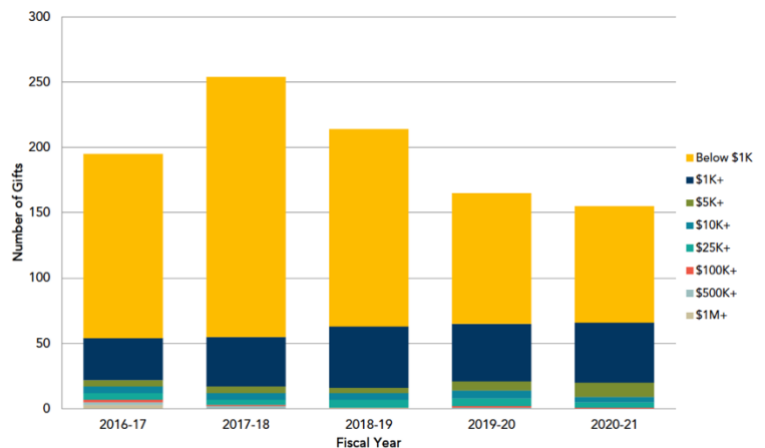


Figure 3. UCSB Natural Reserve System, Philanthropic Gift Range by Number of Gifts, FY2016-17 to FY2020-21

However, there usually is quite a bit of variability in philanthropic gift totals by fiscal year, due to one-time large gifts, which occur with some irregularity.

- **Realized expenses** related to COVID-19 in FY19-20 were \$10,080 and represented new COVID-19 related facilities and cleaning costs and remote work conversion expenses.
- The UCSB NRS lost critical salary support for the Coal Oil Point Reserve Director from the UCSB College of Letters & Science and the Executive Vice Chancellor's office owing to budget uncertainties associated with COVID-19.
- The hiring freeze implemented in April 2020 stopped an ongoing recruitment for steward support at Santa Cruz Island Reserve. Other than the Reserve Director and skilled trades mechanic, all other staff are limited employees and only able to work at reduced workload.

Despite the losses described above, the UCSB NRS pivoted to produce its first-ever, UCSB NRS seminar series, which was virtually hosted in Fall 2020. This seminar reached a wide number of audience participants, was widely popular, and was the first of its kind in the UC NRS, systemwide. The series has continued, and the second UCSB Natural Reserve System Virtual Seminar Series has begun on October 5, 2021. For this season, there is an average of 325 registrants across the 7 seminar presentation evenings.

3. 5-Year Projection of Natural Reserve System Plans

The 5-year vision for the UCSB Natural Reserve System is to improve infrastructure and staffing in order to achieve adequate data and network support to facilitate world-class research and university level teaching, and to broaden the impact and utility of the UCSB NRS sites.

Over the next five years there are a number of plans specific to Reserves and also to the unit overall. The following provides a brief description:

- The UCSB Natural Reserve System can achieve its mission with full and permanent funding for critical staff. At present, only one, mostly privately funded Reserve, Rancho Marino Reserve, has satisfied this goal. The UCSB NRS would like to work with the Office of Research to develop a plan for permanent funding for UCSB NRS critical staff.
- Philanthropic fundraising provides over 60% of the UCSB NRS operating budget. The UCSB NRS cannot operate at its current level without donor support. Fundraising activities will continue to be a major activity of the UCSB NRS over the next five years, including achievement of the following goals: (1) working to build the Sedgwick Operating endowment to \$7.5M, (2) increase Valentine Eastern Sierra Reserve Endowments, (3) gain programmatic support for COPR, (4) acquire research Support for CSMR, (5) gain major infrastructure, operations, research and education support for Santa Cruz Island Reserve (\$16M).
- Improvement of information technology and network and data resources. Technical infrastructure and the expertise to support this is sparse and inadequate for the UCSB NRS. The UCSB NRS seeks to improve this asset over the next five years.
- With its proximity to campus and also the Santa Barbara Community, Coal Oil Point Reserve is the local representation of the UCSB NRS to the UCSB campus and also to the public. Coal Oil Point Reserve is currently under duress of issues typical of highly urbanized zones – trespassing, theft,

property damage, environmental stressors and other unwanted impacts of human pressure. Over the next 5 years, the NRS plans to develop and implement increased protections for COPR.

- The Valentine Eastern Sierra Reserves, SNARL and Valentine Camp, represent the UCSB NRS' two sites with the greatest amount of infrastructure (a total of 26,421 sq ft. and 10,666 sq ft., respectively), K-12 programming, and User Day/User ratios (indicating heavy and impactful use of facilities and staff time), relative to any other UCSB Reserve. Further, the high elevation and extreme snow conditions increases costs and staff time to maintain these facilities and programs. Increased staff support is significantly needed at VESR and fundraising and recruitments to support these needs will be a major objective around those Reserves.
- The Santa Cruz Island Reserve has been identified as the major recipient of the Proposition 68, Wildlife Conservation Board administered infrastructure funding. Facilities improvements, including, two-new staff housing units, will be built at the island with these funds. Funds have been received on campus, and initial planning stages have been completed, working with UCSB Design and Construction Services and Budget & Planning.

F. Organization Chart

The UC NRS Systemwide has operated, including during most of this reporting period, under the general leadership of its Director, Dr. Peggy Fiedler, located at the UC Office of the President in Oakland. Dr. Fiedler retired on June 30th, 2021. As of November 4, 2021, Dr. Steven Monfort is appointed as the Executive Director of the UC NRS. The UCSB NRS is led by the UCSB NRS Director, Dr. Patricia Holden. The Executive Director, Dr. Marion Wittmann, is responsible for the day-to-day operation and management of the 7 Reserves. The UCSB NRS is managed under the supervision of the UCSB Office of Research (Figure 2).

The UCSB NRS Campus Office is responsible for the management of the financial resources of the UCSB NRS and assists Reserves with administrative functions. The Office acts as the link between the remote reserves and UCSB campus departments. In addition to the UCSB NRS Director, the Office staff includes the Executive Director, Business Officer, and Financial Analyst. The UCSB Office of Development's Directorship of Ecological and Environmental Sciences includes the NRS in its portfolio. The UCSB NRS administrative office is located in the Marine Science Research Building.

UCSB Natural Reserve System Organizational Chart 2020-2021

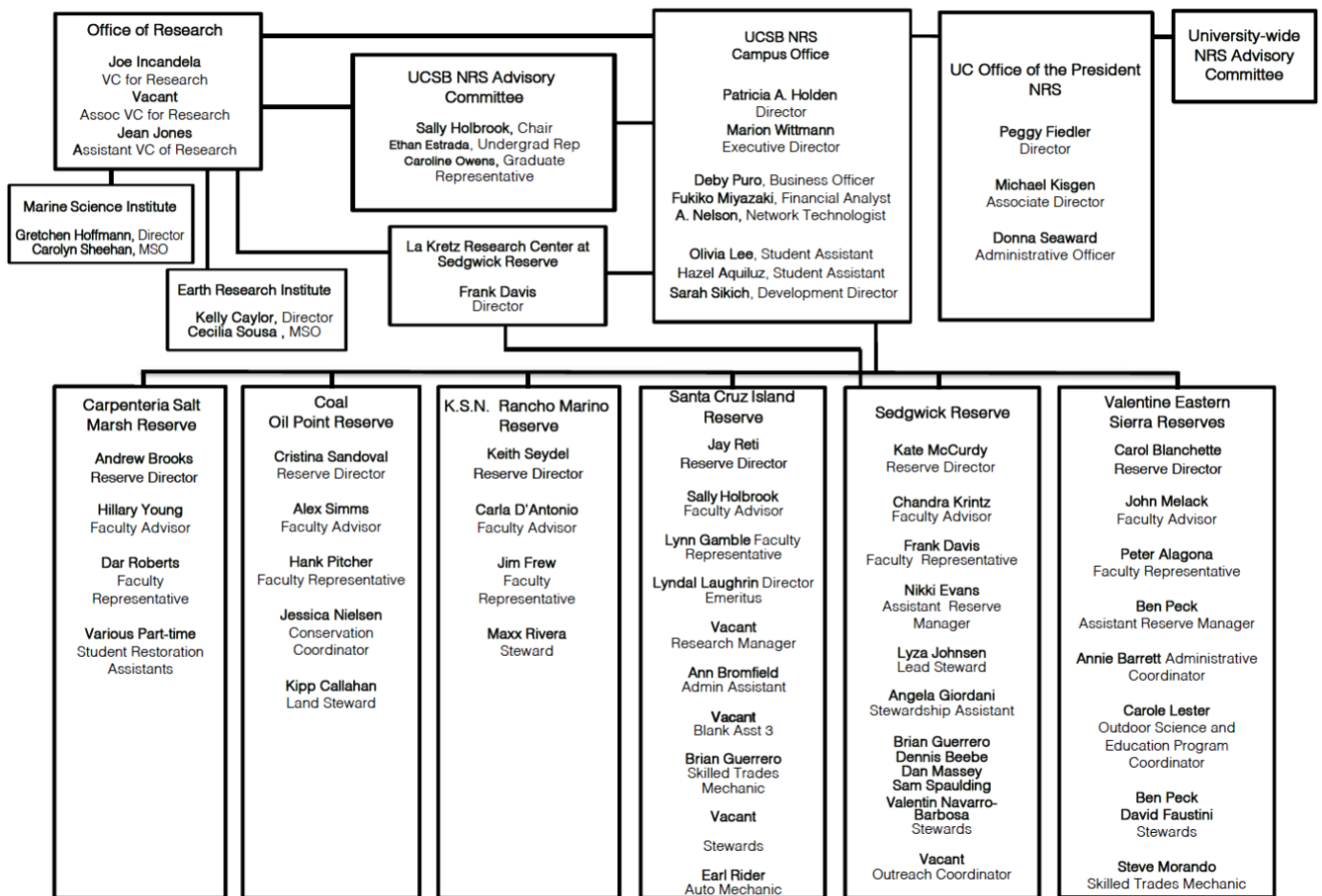


Figure 4. UC Santa Barbara Natural Reserve System Organizational Chart

G. Advisory Committee, Administrative and Technical Staff

UCSB Natural Reserve System Advisory Committee

The UCSB Natural Reserve System is guided by an Advisory Committee comprised of UCSB faculty, undergraduate and graduate student representatives, and external advisors from non-UCSB organizations. The UCSB NRS Advisory Committee met via Zoom three times during the 2020-2021 academic year. The meetings were well attended, and a number of important issues were discussed. Prior to each meeting, quarterly summary reports from UCSB's seven Reserves were circulated to the committee, and these provided background on progress and activities at each Reserve, as well as a foundation for committee discussions. The FY 2020-2021 UCSB NRS Advisory Committee included:

Sally Holbrook Committee Chair; Ecology, Evolution and Marine Biology

Patricia Holden Director (ex-officio); Bren School of Environmental Science and Management

Marion Wittmann Executive Director (ex-officio); Natural Reserve System

Carpinteria Salt Marsh Reserve

Hillary Young Faculty Advisor (ex-officio); Ecology, Evolution, and Marine Biology

Dar Roberts Faculty Representative; Geography

Coal Oil Point Reserve

Alex Simms Faculty Advisor (ex-officio); Earth Science

Hank Pitcher Faculty Representative; College of Creative Studies

Kenneth S. Norris Rancho Marino Reserve

Carla D'Antonio Faculty Advisor (ex-officio); EEMB, Environmental Studies

James Frew Faculty Representative; Bren School

Santa Cruz Island Reserve

Sally J. Holbrook Faculty Advisor (ex-officio); Ecology, Evolution, and Marine Biology

Lynn Gamble Faculty Representative; Anthropology

Sedgwick Reserve

Chandra Krintz Faculty Advisor (ex-officio); Computer Science

Frank Davis Faculty Representative; Bren School

Valentine Eastern Sierra Reserves

John Melack Faculty Advisor (ex-officio); Ecology, Evolution & Marine Biology, Bren School

Peter Alagona Faculty Representative; History, Environmental Studies

Community Representatives

John Randall Lead Scientist, California Chapter, The Nature Conservancy

Meredith Hendricks Executive Director, Land Trust of Santa Barbara County

UCSB Student Representatives

Jeremy Francoeur Undergraduate Representative; Associated Students

Caroline Owens Graduate Representative; Graduate Student Association

UCSB NRS Administrative and Technical Staff

- Marion Wittmann, Executive Director
- Deby Puro, Business Officer
- Fukiko Miyazaki, Financial Analyst
- Olivia Lee, Work-study, Undergraduate student
- Julie Vu, Work study, Undergraduate student
- Hazel Aguiluz, Work study, Undergraduate student
- Anthony Nelson, Communications Technician and Specialist

H. Statistical Summary

The following is a summary of the Reserve Use statistics for the 7 UCSB Natural Reserve System sites for FY20-21. The UCSB Natural Reserve System's seven sites offer a unique assemblage of protected wildland sites throughout Central and Eastern California. UCSB's Reserves encompass many of the State's major ecosystems preserved in as undisturbed a condition as possible to support University-level research and teaching programs. The ecosystems and facilities offered by each Reserve are available to faculty, researchers and students from all University of California campuses, and to users from other institutions, public or private, throughout the world. The UCSB NRS is among the most utilized of the 41-site system across the University of California. In FY 2020 – 2021 there were 16,516 user days at all 7 of the UCSB NRS sites with the highest use category being Research (82%) (Figure 1; Table 1). This unusually high percentage of Reserve use along with the unusually low number of user days (e.g., in FY18-19 before the onset of the COVID-19 pandemic, the number of user days was 39,833) is a result of the shutdown of academic activities associated with the pandemic, and the related allowance of only critical research use for an approximate one-year period before class and other uses were once again permitted.

Data Used in this Report

The UC Natural Reserve System tracks Reserve use with its online Reserve Application Management System (RAMS). Those wishing to visit a Reserve provide information about their role, their reason for visiting, and other data via the online application. Reserve staff grant permission for use that is deemed appropriate. Most Reserves are closed to the public, except for guided public service events. RAMS is a user-driven system, with the majority of data provided by users themselves. Due to differences in Reserve operations and facilities, the methods used to collect and compile the data may vary among Reserves. The metrics collected via RAMS correspond to metrics required by the National Science Foundation infrastructure programs, and they are commonly used across national and international field stations. The metrics presented here are those most commonly collected by Reserves by RAMS, and are the measures that are well suited to demonstrate utilization of UC NRS Reserves.

For nearly all Reserves, permission to use a reserve is granted on the basis of information provided via RAMS applications. Coal Oil Point Reserve has a unique use category due to its public accessibility in certain areas of the Reserve. Due to the nature of this public access without restrictions or application requirements, there are numerous users who engage in passive recreation at Coal Oil Point Reserve (via beach access, trail use and other access points). These small portions of Coal Oil Point Reserve which have had historic public access remain open to the public, but estimates of that use are not included here. The following statistics describing NRS use and facilities were generated using RAMS data collected

during FY2020–21, unless otherwise noted. For all Reserves, including Coal Oil Point Reserve, use volume is tracked in two ways:

1. *Users* — the number of unique individuals who visited a Reserve
2. *User days* — the number of days that users spent at a Reserve

Type of reserve use falls into one of three categories:

1. *Research* – For the purpose of carrying out field or laboratory-based research applications.
2. *University-level class* – For the purposes of university-level instruction.
3. *Public Service* – Other uses, including K–12 classes, docents, volunteers, and agency use.

Users

Users, or the number of unique individuals who visit a Reserve, is an important indicator for the volume of unique exposures to Reserve sites and of the characteristic of the use. “User” is a metric required by the National Science Foundation infrastructure support programs (e.g., Field Stations and Marine Laboratories (FSML) program) for evaluation of proposals and programmatic and infrastructure support success.

Each year, thousands of users from around the world conduct field research in the protected landscapes of UCSB’s Reserves. The UC NRS, as a whole, averages approximately 60,000 users per year. In FY20-21, the UCSB NRS facilitated 1,449 users (Table 1) – almost an order of magnitude less than FY18-19 (with 11,980 users), prior to the onset of the COVID-19 pandemic.

The NRS draws investigators for many reasons: the natural landscapes represent a living library of California's diverse ecosystems; Reserve lands are protected for the long term, enabling researchers to conduct experiments without fear of the land or their equipment being disturbed; data archives enable scientists to build on decades of previous research; overnight accommodations, laboratories, reference collections, internet access, and other amenities make field work more comfortable and productive.

More than 75 undergraduate courses from UCSB, across the UC and CSU and Community College systems in California, the US, and abroad visit UCSB NRS Reserves in each typical year. Class subjects range from botany to zoology, archaeology to environmental planning, public health to the performing and visual arts. In the field, students learn by doing. They readily absorb concepts difficult to teach in a traditional classroom, such as how to identify, quantify and observe biota and physical features in the field using professional standards. Their direct observations enrich lectures and textbook readings.

The NRS is committed to public service on many levels. From elementary school field trips to courses on botanical illustration to scientific lecture series, Reserves host a range of learning opportunities for the general public. As authorities on regional ecosystems, NRS personnel inform and improve wildland planning and management efforts. As stewards of thousands of acres of marine and terrestrial protected areas, Reserves help ensure the continued health of California State ecosystems. Finally, the NRS influences conservation and land management practices well beyond State borders by participating in a broad array of international biodiversity and training programs.

Table 1. UCSB Natural Reserve System Users (the number of unique individuals who visited a Reserve) in FY19-20. CSMR = Carpinteria Salt Marsh Reserve; COPR = Coal Oil Point Reserve, KNRM = Kenneth S. Norris Rancho Marino Reserve, SCIR = Santa Cruz Island Reserve, SEDG = Sedgwick Reserve, SNARL = Sierra Nevada Aquatic Research Laboratory, VALC = Valentine Camp Reserve

Reserve	Research	University-Level Class	Public Service	Total
CSMR	79	1	8	88
COPR	110	55	113	278
RMR	64	41	1	106
SCIR	128	0	26	154
SEDG	288	46	115	449
SNARL	183	40	7	230
VALC	31	0	113	144
Total	883	183	383	1,449

User Days

User days represents the number of days that the above-reported number of Users were onsite at each Reserve. User days can vary by activity and need for utilizing the site and include any 24 hour or less utilization of a Reserve or its amenities. Each year, there are many thousands of user days at UCSB’s Reserves. In FY20-21, the UCSB NRS facilitated 16,516,300 user days (Table 2).

Table 2. UCSB Natural Reserve System User Days (the number of days users spent at a Reserve) in FY20-21. CSMR = Carpinteria Salt Marsh Reserve; COPR = Coal Oil Point Reserve, KNRM = Kenneth S. Norris Rancho Marino Reserve, SCIR = Santa Cruz Island Reserve, SEDG = Sedgwick Reserve, SNARL = Sierra Nevada Aquatic Research Laboratory, VALC = Valentine Camp Reserve

Reserve	Research	University-Level Class	Public Service	Total
CSMR	795	1	26	822
COPR	1687	62	1069	2818
RMR	405	396	5	806
SCIR	1057	0	181	1238
SEDG	1851	50	304	2205
SNARL	7341	313	388	8042
VALC	318	0	267	585
Total	13,454	822	2,240	16,516

Use by Faculty

In FY 20-21, faculty research use at UCSB Reserves totaled 113 unique individuals over 1546 user days (Table 3). Faculty members utilizing UCSB Reserves have originated from multiple institutions, including UC campuses (n=44 users; not including UCSB Faculty). Of overall faculty use at UCSB NRS sites, and of this use, 45% originated from UCSB (n=97 users). Other faculty users originated from California State Universities, Community Colleges, Other California university level institutions, U.S. University Level institutions outside of California, International, and others.

Publications

Each year, a number of publications are published based on the ability to access the Reserve's amenities. Here we report on publications from calendar years 2020 and 2021², in which there were a total of 162 publications in 2020 and 114 in 2021. General topics addressed by the suite of publications included but were not limited to: biology, ecology, physiology, evolution, hydrology, anthropology, archeology, atmospheric science, toxicology, geology, geography, geophysics, endocrinology, microbiology, history, earth science and others. Please see the following for the breakdown of publications by Reserve as well as the relevant bibliography (Table 4).

Table 3. Faculty Use of UCSB Reserves. UCSB Natural Reserve System Faculty Users and User Days. These include UC Faculty, UCSB Faculty and Faculty from all institutions of higher learning in FY20-21. CSMR = Carpinteria Salt Marsh Reserve; COPR = Coal Oil Point Reserve, KNRM = Kenneth S. Norris Rancho Marino Reserve, SCIR = Santa Cruz Island Reserve, SEDG = Sedgwick Reserve, SNARL = Sierra Nevada Aquatic Research Laboratory, VALC = Valentine Camp Reserve

Reserve	All Faculty		UC Faculty		UCSB Faculty	
	Users	User Days	Users	User Days	Users	User Days
CSMR	6	16	1	5	1	1
COPR	14	112	2	23	7	83
KNRM	13	77	5	35	3	6
SCIR	8	47	3	30	0	0
SEDG	26	230	8	113	14	97
SNRL	53	1008	29	298	5	28
VALC	4	56	2	36	2	20
Total	113	1546	45	540	29	235

Table 4. Numbers of Publications in Calendar Years 2020 and 2021² which utilized Reserve habitats, facilities or environmental resources made accessible by UCSB Reserve.

Reserve	# of Peer reviewed Publications	
	2020	2021 ²
Carpinteria Salt Marsh Reserve	14	9
Coal Oil Point Reserve	12	8
K.S.N. Rancho Marino Reserve	7	2
Sedgwick Reserve	18	24
Santa Cruz Island Reserve	29	18
Sierra Nevada Aquatic Research Laboratory	76	39
Valentine Camp	6	14
Total	162	114

² 2021 Publication Data provided up to 11/1/21

I. Principal Investigator List

The following are the PI's of the NRS staff who have submitted proposals or who have active awards and relevant award information (Table 5):

- Blanchette, Carol A. Director, Valentine Eastern Sierra Reserves, Natural Reserve System
- Brooks, Andrew J., Director, Carpinteria Salt Marsh Reserve, Natural Reserve System
- Laughrin, Lyndal, Director, Santa Cruz Island Reserve, Natural Reserve System
- Wittmann, Marion E., Executive Director, Natural Reserve System
- Holden, Patricia A., Director Natural Reserve System
- Brooks, A, Director, Carpinteria Salt Marsh Reserve

Table 5. Award information for Natural Reserve System Primary Investigators, FY20-21

<u>Record #</u>	<u>PI</u>	<u>Agency</u>	<u>Title</u>	<u>Award Begin</u>	<u>Award End</u>	<u>Total Award</u>
20171435	Wittmann, M.E.	CA Wildlife Conservation Board	Sedgwick Reserve Infrastructure and Facilities Project: Phase 2	11/13/17	9/30/20	\$1,380,000
20171438	Wittmann, M.E.; Brooks, A.J.	CA Wildlife Conservation Board	Carpinteria Salt Marsh Infrastructure Improvement Project	11/13/17	9/30/20	\$91,700
20180688	Wittmann, M.E.; Laughrin, L.	National Science Foundation	Developing a Strategic Plan for Santa Cruz Island Reserve	7/1/18	10/30/21	\$24,944
20190749	Blanchette, C.A.; Wittmann, M.E.	CA Department of Forestry and Fire	Valentine Reserve Fuels Reduction	6/14/19	3/15/21	\$506,800
20211118	Wittmann, M. E.; Reti, J. S.	CA Wildlife Conservation Board	Santa Cruz Island Infrastructure Project	6/29/21	10/31/25	\$1,250,000
20211114	Wittmann, M.E.; Blanchette, C.A.	CA Wildlife Conservation Board	Sierra Nevada Aquatic Research Laboratory Facilities Enhancement Project	6/29/21	10/31/25	\$320,000
	Hoffmann, G Blanchette, C.A.	National Science Foundation	FUERTE: Field based Undergraduate Engagement through Research, Teaching and Education			\$2,400,000
	Holden, P A; Fiedler, P, Brooks, A	Tobacco Related Disease Research Program	A Pilot Study of Tobacco & Cannabis Contaminants in Protected Areas	07/01/19	12/31/21	\$205,708

J. Names of Graduate and Undergraduate Students

In FY2019-2020 there were 130 student participants (undergraduate and graduate) at UCSB Reserves (Table 6). Their experiences ranged from field research, writing internships, docent work, administrative support, graduate student awardees, graduate student researchers and website internships. These do not include all names of student researchers, but rather, include students who are on the NRS payroll, are recipients of NRS awards, including fellowships, and also internships funded by UCSB NRS or UCSB sources such as donor support or the UCSB Coastal Fund.

Table 6. Names of Graduate and Undergraduate students directly contributing to the NRS who are on the NRS' payroll, participate through assistantships, fellowships or traineeships, or are otherwise involved with the unit's work. COPR = Coal Oil Point Reserve.

No	First	Last	Student Level	Reserve	Role	Funding Source	Year
1	Albert	Kasinski	Undergraduate	COPR	Habitat Restoration	UCSB Coastal Fund	2021
2	Curtis	Davenport	Undergraduate	COPR	Habitat Restoration	UCSB Coastal Fund	2021
3	Holly	Alvarez	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
4	Kiley	Beaart	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
5	Joelle	CantoAdams	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
6	Sasha	Holland	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
7	Shaylin	Patil	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
8	Max	Roberts	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
9	Madeleine	Sharp	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
10	Kevin	Tessier	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
11	Hanna	Weyland	Undergraduate	COPR	Bren Intern	UCSB Coastal Fund	2021
12	Max	Roberts	Undergraduate	COPR	Camera Trapping Intern	UCSB Coastal Fund	2021
13	Kiley	Beaart	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
14	Dimitri	Katsioularis	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
15	Madeleine	Sharp	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
16	Elizabeth	Cotter	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
17	Yalda	Khodadad	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
18	Vered	Pinhas	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
19	Nick	Fager	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
20	Rachel	Loewy	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
21	Parker	Malhotra	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
22	Kevin	Tessier	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
23	Shaylin	Patil	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
24	Yuki	Ito	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
25	Sasha	Holland	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
26	Hanna	Weyland	Undergraduate	COPR	Bren Intern	UCSB Coastal Fund	2021
27	Holly	Alvarez	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
28	Kiley	Beaart	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
29	Joelle	Canto- Adams	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
30	Andrew	Cheng	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
31	Carlos	DeHaro	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
32	Zoe	Douglas	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
33	Dimitri	Katsioularis	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
34	Nasim	Khorasani	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
35	Jack	LaLonde	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
36	Leah	Loftus	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
37	Zoe	Pelech	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021

No	First	Last	Student Level	Reserve	Role	Funding Source	Year
38	Rayna	Ruggeri	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
39	Mehran	Sajjad	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
40	Madeleine	Sharp	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
41	Haley	Weinstein	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
42	Joelle	CantoAdams	Undergraduate	COPR	Water Quality	UCSB Coastal Fund	2021
43	Alexa	Kerr	Undergraduate	COPR	Climate Change Intern	UCSB Coastal Fund	2021
44	Hanna	Weyland	Undergraduate	COPR	Bren Intern	UCSB Coastal Fund	2021
45	Aya	Ide	Undergraduate	COPR	Writing Intern	UCSB Coastal Fund	2021
46	Kathleen	Kelly	Undergraduate	COPR	Writing Intern	UCSB Coastal Fund	2021
47	Joelle	CantoAdams	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
48	Elise	Cypher	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
49	Carlos	DeHaro	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
50	Alexis	Fether-Hashimoto	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
51	Jack	LaLonde	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
52	Sydney	Pastore	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
53	Rayna	Ruggeri	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
54	Haley	Weinstein	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2021
55	Alexa	Kerr	Undergraduate	COPR	Climate Change Intern	UCSB Coastal Fund	2021
56	Joelle	CantoAdams	Undergraduate	COPR	Water Quality	UCSB Coastal Fund	2021
57	Hanna	Weyland	Undergraduate	COPR	Species List Intern	UCSB Coastal Fund	2021
58	Ronya	Keeley	Undergraduate	COPR	Land Steward Intern	UCSB Coastal Fund	2021
59	Rayna	Ruggeri	Undergraduate	COPR	Land Steward Intern	UCSB Coastal Fund	2021
60	Iona	McCabe	Undergraduate	COPR	Land Steward Intern	UCSB Coastal Fund	2021
61	Emalia	Partlow	Undergraduate	COPR	Land Steward Intern	UCSB Coastal Fund	2021
62	Hanna	Weyland	Undergraduate	COPR	Species List Intern	UCSB Coastal Fund	2020
63	Michael	Recinos	Undergraduate	COPR	Web Field Guide Intern	UCSB Coastal Fund	2020
64	Rayna	Ruggeri	Undergraduate	COPR	Web Field Guide Intern	UCSB Coastal Fund	2020
65	Maritza	Vasquez	Undergraduate	COPR	Web Field Guide Intern	UCSB Coastal Fund	2020
66	Joelle	CantoAdams	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2020
67	Elise	Cypher	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2020
68	Alexis	Fether-Hashimoto	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2020
69	Kat	Lane	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2020
70	Anneke	Padmos	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2020
71	Sydney	Rouse	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2020
72	Rayna	Ruggeri	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2020
73	Madeleine	Sharp	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2020
74	Adamari	Torres	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2020
75	Maddie	Wilson	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2020
76	Alexa	Kerr	Undergraduate	COPR	Climate Change Intern	UCSB Coastal Fund	2020

No	First	Last	Student Level	Reserve	Role	Funding Source	Year
77	Jaclyn	Vo	Undergraduate	COPR	Water Quality	UCSB Coastal Fund	2020
78	Lyndsay	Baughman	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2020
79	KD	Casantusan	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2020
80	Kurt	Dansby	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2020
81	Alexis	Fether-Hashimoto	Undergraduate	COPR	Snowy Plover Docent	UCSB Coastal Fund	2020

K. External Participation

The following is the use of all UCSB NRS Reserve External Participation, by Reserve. Of the UCSB's Natural Reserve System's 1,449 **Users** in FY20-21, 480 (33%) were UCSB faculty, researchers, post-docs and students. Of the 16,516 **User Days**, 8,020 (49%) were UCSB faculty, researchers, post docs and students. All others, both Users and User Days, were from non-UCSB organizations, including other UC campuses, non-UC universities and colleges, Government, NGO, business, K-12 and others. The following shows a Reserve-by-Reserve breakdown of the use. Note, "UC Home" refers to the UCSB campus users.

RESERVE USE DATA Fiscal year: 2020-2021

Campus: University of California, Santa Barbara
Reserve: Carpinteria Salt Marsh Reserve

	UC Home		UC Other		CSU System		CA Comm College		Other CA College		Out of State College		International University		Government		NGO/Non-Profit		Business Entity		K-12 School		Other		Total		
	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	
UNIVERSITY- LEVEL RESEARCH																											
Staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	4	0	0	0	0	2	4
Faculty	1	1	1	5	1	3	2	6	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	6	16	
Research Scientist/Post Doc	2	32	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	35	
Research Assistant (non-student/faculty/postdoc)	5	236	0	0	7	32	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	271	
Graduate Student	5	13	4	36	3	7	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	0	13	58	
Undergraduate Student	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	
Professional	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	4	14	25	344	0	0	1	2	33	363	
Other	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	
Docent	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	1	5	
Volunteer	1	6	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	3	0	0	0	0	2	28	5	38	
SUBTOTAL	16	291	6	44	12	44	3	9	0	0	1	1	0	0	5	9	6	19	27	348	0	0	3	30	79	795	
UNIVERSITY - LEVEL INSTRUCTION (CLASS)																											
Other	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
SUBTOTAL	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
OTHER																											
Professional	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	1	4	
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	20	0	0	0	0	5	20		
Volunteer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	
SUBTOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	24	0	0	2	2	8	26		
HOUSING																											
TOTALS	17	292	6	44	12	44	3	9	0	0	1	1	0	0	5	9	6	19	33	372	0	0	5	32	88	822	

RESERVE USE DATA Fiscal year: 2020-2021

Campus: University of California, Santa Barbara
Reserve: Coal Oil Point Natural Reserve

	UC Home		UC Other		CSU System		CA Comm College		Other CA College		Out of State College		International University		Government		NGO/Non-Profit		Business Entity		K-12 School		Other		Total			
	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs		
UNIVERSITY- LEVEL RESEARCH																												
Staff	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Faculty	5	78	2	23	3	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	105	
Research Scientist/Post Doc	9	117	1	2	0	0	0	0	0	0	0	0	0	0	5	40	0	0	0	0	0	0	0	0	0	15	159	
Research Assistant (non-student/faculty/postdoc)	5	43	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	47	
Graduate Student	7	37	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	39	
Undergraduate Student	61	1124	0	0	1	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	1137	
Professional	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	16	0	0	0	0	0	2	17	
Other	1	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	181	
Volunteer	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
SUBTOTAL	89	1580	9	32	4	17	0	0	0	0	0	0	0	0	6	41	1	1	1	16	0	0	0	0	110	1687		
UNIVERSITY - LEVEL INSTRUCTION (CLASS)																												
Staff	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
Faculty	2	5	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	7	
Graduate Student	4	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	7	
Undergraduate Student	25	25	0	0	0	0	0	0	20	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	45	
Other	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
SUBTOTAL	33	40	0	0	0	0	1	1	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	55	62	
OTHER																												
Staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	3	3	
Research Scientist/Post Doc	3	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	100	
Undergraduate Student	20	250	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	254	
Professional	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	4	0	0	0	0	0	0	5	5	
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	0	0	0	0	0	0	38	38	45	45	
Docent	1	130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	280	29	410	
Volunteer	1	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	227	4	252	
SUBTOTAL	25	505	0	0	4	4	0	0	0	0	0	0	0	0	0	11	11	4	4	0	0	0	0	69	545	113	1069	
HOUSING																												
TOTALS	147	2125	9	32	8	21	1	1	21	21	0	0	0	0	6	41	12	12	5	20	0	0	0	0	69	545	278	2818

RESERVE USE DATA Fiscal year: 2020-2021

Campus: University of California, Santa Barbara
 Reserve: Kenneth S. Norris Rancho Marino Reserve

	UC Home		UC Other		CSU System		CA Comm College		Other CA College		Out of State College		International University		Government		NGO/Non-Profit		Business Entity		K-12 School		Other		Total		
	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	
UNIVERSITY- LEVEL RESEARCH																											
Staff	0	0	6	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	77
Faculty	3	6	2	7	4	27	0	0	0	0	0	0	1	9	0	0	0	0	0	0	0	0	0	0	0	10	49
Research Scientist/Post Doc	4	10	4	53	0	0	0	0	0	0	0	0	0	0	0	0	1	10	0	0	0	0	0	0	9	73	
Research Assistant (non-student/faculty/postdoc)	2	12	10	57	2	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14	85	
Graduate Student	3	23	9	37	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	80	
Undergraduate Student	3	7	1	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	14	
Professional	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0	0	0	1	5	
Other	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	1	3	
Volunteer	0	0	2	14	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0	3	19	
SUBTOTAL	15	58	34	252	10	63	0	0	0	0	1	3	1	9	1	5	2	15	0	0	0	0	0	0	64	405	
UNIVERSITY - LEVEL INSTRUCTION (CLASS)																											
Staff	0	0	3	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	36	
Faculty	0	0	3	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	28	
Graduate Student	0	0	11	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	44	
Undergraduate Student	0	0	24	288	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	288	
SUBTOTAL	0	0	41	396	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	396	
OTHER																											
Other	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	
SUBTOTAL	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	
HOUSING																											
Research Assistant (non-student/faculty/postdoc)	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	
Graduate Student	0	0	4	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8	
Professional	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	
SUBTOTAL	0	0	6	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	13	
TOTALS	15	58	82	666	10	63	0	0	0	0	1	3	1	9	1	5	2	15	0	0	0	0	0	0	112	819	

RESERVE USE DATA Fiscal year: 2020-2021

Campus: University of California, Santa Barbara

Reserve: Sedgwick Reserve

	UC Home		UC Other		CSU System		CA Comm College		Other CA College		Out of State College		International University		Government		NGO/Non-Profit		Business Entity		K-12 School		Other		Total		
	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	
UNIVERSITY- LEVEL RESEARCH																											
Staff	3	47	3	23	0	0	0	0	0	0	0	0	0	0	3	47	0	0	0	0	0	0	0	0	0	9	117
Faculty	13	95	8	113	1	8	0	0	1	5	0	0	1	3	0	0	0	0	0	0	0	0	0	0	24	224	
Research Scientist/Post Doc	8	60	4	56	0	0	0	0	0	0	1	2	0	0	4	36	2	4	0	0	0	0	0	0	19	158	
Research Assistant (non-student/faculty/postdoc)	5	22	22	87	0	0	0	0	5	7	1	96	0	0	2	2	0	0	0	0	0	0	1	1	36	215	
Graduate Student	16	186	19	164	1	4	0	0	0	0	3	92	0	0	0	0	0	0	0	0	0	0	0	39	446		
Undergraduate Student	4	26	7	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	47		
K-12 Instructor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8	0	0	1	8		
K-12 Student	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8	1	8	
Professional	8	47	5	43	0	0	0	0	0	0	1	1	0	0	38	77	13	64	1	1	0	0	0	66	233		
Other	5	7	3	12	0	0	0	0	0	0	0	0	0	0	40	40	2	7	0	0	0	0	0	50	66		
Docent	12	203	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	14	205	
Volunteer	4	78	0	0	0	0	0	0	0	0	1	2	0	0	0	0	2	19	0	0	0	0	11	25	18	124	
SUBTOTAL	78	771	71	519	2	12	0	0	6	12	7	193	1	3	87	202	19	94	1	1	1	8	15	36	288	1851	

UNIVERSITY - LEVEL INSTRUCTION (CLASS)																											
Staff	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	
Faculty	1	2	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6		
Graduate Student	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9		
Undergraduate Student	30	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	30		
Professional	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4		
SUBTOTAL	45	46	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	46	50		

OTHER																											
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	0	0	0	0	1	3	3	9	
Docent	102	213	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	103	216		
Volunteer	5	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	12	9	79	
SUBTOTAL	107	280	0	0	0	0	0	0	0	0	0	0	0	0	0	3	9	0	0	0	0	5	15	115	304		

HOUSING

TOTALS	230	1097	71	519	2	12	1	4	6	12	7	193	1	3	87	202	22	103	1	1	1	8	20	51	449	2205
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RESERVE USE DATA Fiscal year: 2020-2021

Campus: University of California, Santa Barbara
 Reserve: Santa Cruz Island Reserve

	UC Home		UC Other		CSU System		CA Comm College		Other CA College		Out of State College		International University		Government		NGO/Non-Profit		Business Entity		K-12 School		Other		Total		
	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	
UNIVERSITY- LEVEL RESEARCH																											
Staff	0	0	2	9	3	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	25
Faculty	0	0	3	30	3	9	0	0	1	4	1	4	0	0	0	0	0	0	0	0	0	0	0	0	8	47	
Research Scientist/Post Doc	2	46	5	22	0	0	0	0	0	0	0	0	0	0	2	21	0	0	0	0	0	0	0	0	9	89	
Research Assistant (non-student/faculty/postdoc)	4	22	3	14	0	0	0	0	2	6	1	35	0	0	1	6	1	35	1	4	0	0	2	15	15	137	
Graduate Student	1	8	9	55	9	58	0	0	0	0	2	30	0	0	0	0	0	0	0	0	0	0	0	21	151		
Undergraduate Student	2	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	10		
K-12 Instructor	0	0	0	0	3	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	38	0	0	10	62	
Professional	13	99	2	13	0	0	0	0	1	4	1	11	0	0	6	29	11	265	0	0	1	3	1	3	36	427	
Other	0	0	0	0	1	3	0	0	1	6	0	0	0	0	0	0	1	29	0	0	0	0	5	10	8	48	
Volunteer	1	3	3	18	3	15	0	0	1	3	0	0	0	0	2	7	0	0	1	3	0	0	3	12	14	61	
SUBTOTAL	23	188	27	161	22	125	0	0	6	23	5	80	0	0	11	63	13	329	2	7	8	41	11	40	128	1057	
OTHER																											
Research Assistant (non-student/faculty/postdoc)	1	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8	
Undergraduate Student	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4		
K-12 Instructor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	35	0	0	7	35		
Professional	1	4	0	0	0	0	0	0	0	0	0	0	0	0	1	15	4	21	2	2	0	0	1	2	9	44	
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	2	10	1	24	0	0	3	49	7	87	
Volunteer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	1	3	
SUBTOTAL	3	16	0	0	0	0	0	0	0	0	0	0	0	0	2	19	6	31	3	26	7	35	5	54	26	181	
HOUSING																											
TOTALS	26	204	27	161	22	125	0	0	6	23	5	80	0	0	13	82	19	360	5	33	15	76	16	94	154	1238	

RESERVE USE DATA Fiscal year: 2020-2021

Campus: University of California, Santa Barbara
Reserve: Sierra Nevada Aquatic Research Laboratory

	UC Home		UC Other		CSU System		CA Comm College		Other CA College		Out of State College		International University		Government		NGO/Non-Profit		Business Entity		K-12 School		Other		Total		
	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	
UNIVERSITY- LEVEL RESEARCH																											
Staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	14	0	0	0	0	0	0	0	0	0	1	14
Faculty	4	16	27	284	0	0	0	0	2	246	15	424	0	0	0	0	1	2	0	0	0	0	0	0	0	49	972
Research Scientist/Post Doc	7	1704	2	172	0	0	0	0	1	4	3	21	0	0	1	14	0	0	0	0	0	0	0	0	0	14	1915
Research Assistant (non-student/faculty/postdoc)	9	1647	8	466	0	0	0	0	0	0	1	83	0	0	1	111	0	0	0	0	0	0	0	0	0	19	2307
Graduate Student	4	84	11	174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	258
Undergraduate Student	8	98	33	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	11	42	295
K-12 Instructor	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5
Professional	0	0	4	62	0	0	0	0	0	0	0	0	0	0	9	77	1	35	6	715	0	0	1	17	21	906	
Other	3	471	4	24	0	0	0	0	0	0	0	0	0	0	1	85	0	0	1	15	0	0	3	11	12	606	
Volunteer	7	40	1	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	9	63	
SUBTOTAL	43	4065	90	1385	0	0	0	0	3	250	19	528	0	0	13	301	2	37	7	730	0	0	6	45	183	7341	
UNIVERSITY - LEVEL INSTRUCTION (CLASS)																											
Faculty	0	0	2	14	1	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	24
Undergraduate Student	0	0	24	168	10	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	268
Other	0	0	3	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	21
SUBTOTAL	0	0	29	203	11	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	313	
OTHER																											
Faculty	1	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12
Graduate Student	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3
Professional	3	6	0	0	0	0	0	0	0	0	0	0	0	0	1	365	0	0	1	2	0	0	0	0	0	5	373
SUBTOTAL	4	18	1	3	0	0	0	0	0	0	0	0	0	0	1	365	0	0	1	2	0	0	0	0	7	388	
HOUSING																											
TOTALS	47	4083	120	1591	11	110	0	0	3	250	19	528	0	0	14	666	2	37	8	732	0	0	6	45	230	8042	

RESERVE USE DATA Fiscal year: 2020-2021

Campus: University of California, Santa Barbara
 Reserve: Valentine Camp

	UC Home		UC Other		CSU System		CA Comm College		Other CA College		Out of State College		International University		Government		NGO/Non-Profit		Business Entity		K-12 School		Other		Total		
	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	Users	UDs	
UNIVERSITY- LEVEL RESEARCH																											
Faculty	2	20	2	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	56
Research Scientist/Post Doc	2	6	1	17	0	0	0	0	0	0	0	0	0	0	2	16	0	0	0	0	0	0	0	0	0	5	39
Research Assistant (non-student/faculty/postdoc)	0	0	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4
Graduate Student	1	4	4	136	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	140	
K-12 Instructor	1	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	
Professional	1	3	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	8	
Other	1	10	1	10	0	0	0	0	0	0	0	0	0	0	0	0	2	11	0	0	0	0	0	0	4	31	
Volunteer	9	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	36	
SUBTOTAL	17	83	10	208	0	0	0	0	0	0	0	0	0	0	2	16	2	11	0	0	0	0	0	0	31	318	
OTHER																											
K-12 Instructor	1	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	0	0	3	21
K-12 Student	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	63	0	0	21	63
Professional	1	3	0	0	0	0	0	0	0	0	0	0	0	0	80	80	0	0	0	0	0	0	0	0	81	83	
Other	2	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	31	0	0	0	0	0	3	3	6	94
Volunteer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	6	0	0	2	6
SUBTOTAL	4	78	0	0	0	0	0	0	0	0	0	0	0	0	80	80	1	31	0	0	25	75	3	3	113	267	
HOUSING																											
TOTALS	21	161	10	208	0	0	0	0	0	0	0	0	0	0	82	96	3	42	0	0	25	75	3	3	144	585	

L. Other Projects and Activities (Instructional Activities Support)

The following includes a Report on the Instructional Activities at UCSB NRS Sites during AY20-21.

1. List of Courses the 7 UCSB NRS Reserves Facilitated 2020-2021

In 2020-2021 University Level Instruction (class) use of the 7 UCSB Reserves included 183 Users over 822 User Days. This represents a 93% decrease in users and 89% decrease in user days compared to AY2018-2019. This significant decrease in instructional use is attributed to the COVID-19 pandemic starting in March 2020.

Undergraduates comprised the majority of the use with 133 undergraduate users or 73%, and 631 User days or 77%, of the total University-Level Instruction Class Use. The majority of university level class use of UCSB Reserves was by UCSB and UC students and instructors, with UCSB use comprising 79 Users and 87 User Days, and (non-UCSB) UC with 69 Users and 599 User Days. The majority of UC user days sources from the UC NRS Systemwide Course, “California Ecology and Conservation.” There was a total of 13 courses (graduate and undergraduate) utilizing the UCSB Reserves in AY2020-2021– a decrease of 85% from 87 courses in hosted by the UCSB NRS in AY 18-19. The UCSB Reserves also service: other UC Campuses, California State Universities, Community Colleges, other California Colleges/Universities, international Universities or Colleges, and NGO/Non-Profit Entities and Governmental Agencies in support of University Level Teaching. Table 7 provides a list of the classes that UCSB Reserves either hosted or facilitated in AY19-20.

Table 7. University Level Classes that the UCSB Natural Reserve System hosted or facilitated during Academic Year 2020 – 2021.

Course title/number	Institution Type	Institution	Department	Faculty/User
Capstone Course (ME 189/187)	University of California	UC Santa Barbara	Mechanical Engineering	Ryan Chambers
Tactical Leadership (MS131)	University of California	UC Santa Barbara	Military Science	Thomas Minor
Measuring Our Environment (Geog 175)	University of California	UC Santa Barbara	Geography	Dar Roberts
Forest Sustainability (ESM 596)	University of California	UC Santa Barbara	Bren ESM	Frank Davis
Invert Zoology, Parasitology, Higher Invert Zoology (EEMB 111, 112, 116)	University of California	UC Santa Barbara	EEMB	Christoph Pierre
Plants and Vegetation of California (EEMB/ES 103A)	University of California	UC Santa Barbara	EEMB/Environmental Studies	C. Guilliams
Invertebrate Zoology EEMB 116	University of California	UC Santa Barbara	EEMB	Zoe Zilz
Invertebrate Zoology EEMB 112	University of California	UC Santa Barbara	EEMB	Zoe Zilz
California Ecology and Conservation (BIOL/ENVS 188)	University of California	UC Santa Barbara/UCOP	Biology and Environmental Studies	Krikor Andonian
Marine Conservation Research Methods (EE271)	University of California	UC Irvine	Ecology & Evolutionary Biology	Amy Henry
Summer Field Course (Geol 129B)	California State University System	San Jose State University	Biology	Kimberly Blisniuk
Field Methods in Biology (BIO 130)	CA Community College	Santa Barbara Comm. College	Biological Sciences	Michelle Paddack
General Zoology (BIO 155)	CA Community College	Allan Hancock College	Life and Physical Sciences - Biology	Alicia Fox

2. Graduate & Undergraduate Student Support Provided by the UCSB NRS

Graduate Education Support

UCSB Reserves are regularly and frequently used as field experimental and/or collection sites for graduate student research, and also for graduate student pursuits in university-level education, either as students or teaching assistants. Reserve staff facilitate this use by providing access and accommodations, sharing knowledge about the reserve’s natural resources, assisting with experimental design and ideas, sharing data, helping students connect with other researchers, and providing field support as needed and feasible. Graduate student research and university-level coursework at UCSB Reserves is significant, but has been significantly impacted due to the use restrictions imposed by the COVID-19 pandemic. In FY20-21, graduate student use of all UCSB NRS Reserves is 141 users over 1,172 user days, representing an approximate 75% decrease since FY18-19, prior to the COVID-19 pandemic.

Graduate students utilizing UCSB’s Reserves originate from multiple departments and disciplines, including Ecology, Evolution and Marine Biology, Environmental Science & Management, Physics, Art, Engineering (various departments), Geography, and others. This use by graduate students contributes to master’s theses or doctoral dissertations by students from UCSB and various institutions of higher education. In FY20-21 there have been at least 17 master’s theses or doctoral dissertations produced owing to graduate student use at UCSB NRS Reserves (Table 8).

Table 8. Masters theses or doctoral dissertations produced as a result of research carried out at a UCSB NRS Site, AY20-21. CSMR = Carpinteria Salt Marsh Reserve, COPR = Coal Oil Point Reserve, RMR = Rancho Marino Reserve, SCIR = Santa Cruz Island Reserve, SEDG = Sedgwick Reserve, SNARL = Sierra Nevada Aquatic Research Laboratory, VAL = Valentine Camp Reserve.

Reserve	CSMR	COPR	SCIR	SEDG	RMR	SNARL	VAL
<i>Published Theses FY20-21</i>	2	2	4	5	2	2	0

Graduate Student Financial Support Provided by the UCSB Natural Reserve System

IN FY20-21 UCSB NRS has supported 12 graduate students with \$47,723 in graduate student support, and those funds all originate from philanthropic gifts. The following provides summaries of UCSB NRS graduate student support opportunities. Detailed information on all graduate students that have been provided funding support can be referenced [HERE](#).

- **Coal Oil Point Reserve Graduate Student Research Grants (Donor Sourced):** Through a competitive application process, one to two research awards of up to \$2,000 each are available for graduate students to conduct research at Coal Oil Point Reserve.
- **Sedgwick Reserve Single Step Fellowship in Land Ethics (Donor Sourced):** Established in 2016, this endowment supports qualified graduate student(s) in UC Santa Barbara who are engaged in new or ongoing research at Sedgwick Reserve.
- **Sedgwick Reserve La Kretz Fellowship Endowment (Donor Sourced):** Established in 2017, the purpose of the fund is to support qualified graduate student(s) with a focus in conservation science and environmental issues relevant to the Sedgwick Reserve and the ecosystems that the Sedgwick Reserve represents.

- **Valentine Eastern Sierra Reserves Graduate Student Grants (Donor Sourced):** Through a competitive application process, grants of up to \$1500 each are awarded to graduate students planning to conduct research at Valentine Camp Reserve, the Sierra Nevada Aquatic Research Laboratory (SNARL), or the surrounding area.
- **Systemwide UC NRS Mildred Matthias Graduate Student Research Awards:** Providing up to \$3,000 each, the Matthias grants encourage students to establish independent research projects at reserves. Since its inception in 1988, more than 450 UC students have received nearly \$875,000 in Mathias Grant funding. Descriptions of these projects can be found at the [Mathias Research Projects web page](#).

Undergraduate Education Support

Undergraduate education is a major component of UCSB Reserve use and occurs via multiple activity types, including research, university-level coursework, but also through internships, docent and volunteer programs hosted, and student stipends funded by the UCSB NRS, including “work-study” employment and training at the central administrative office.

In FY20-21 there are 256 undergraduate student users over 1,506 user days per year participating in research and/or university-course work at UCSB’s 7 Reserves. This represents a 90% decrease in users and 76% decrease in user days, owing to the restrictions of the COVID-19 pandemic. In FY20-21 and in previous years, the majority of undergraduate students visiting UCSB Reserves are UCSB students. The UCSB NRS sites are also heavily utilized by courses from other UC campuses, CA State Universities, community colleges and other state, national and international universities. Reserves provide significant opportunity for hands-on training in field research, mentorship by instructors and also Reserve staff, and an immersive experience that classroom-based training does not provide. The projects are largely based in the natural sciences, but also span across other disciplines including mechanical engineering, arts, and writing programs.

Course Offerings -- UC NRS Systemwide California Ecology and Conservation Course (ENVS 188)

The UC NRS Field Studies Program is a new systemwide UC program administered out of the UC Office of the President NRS that brings students from across UC's nine general campuses together for immersive learning experiences at NRS reserves. The first component of the program to launch is California Ecology and Conservation: <https://ucnrs.org/teaching/cec/>. As part of this course, UC undergraduate students spend seven weeks living and studying at different NRS reserves. While conducting firsthand study of California ecosystems, students gain skills in field research methods, experimental design, data analysis, scientific writing, and public speaking. California Ecology and Conservation emphasizes the skills needed to conduct independent scientific research. UCSB NRS Executive Director Wittmann worked with numerous undergraduate advisors in EEMB, ES, CCS and MCDB to widely distribute information about the course. Several UCSB students from various majors have taken this class over the years, earning course credit that fulfills their degree requirements. The UCSB NRS was instrumental early in the offering of this course in connecting UCSB departments with the UC NRS so that the course was advertised and its application to degree programs was established. This course occurred at UCSB NRS sites in Fall 2019, however the Spring and Summer 2020 courses were cancelled due to COVID-19. The systemwide course developed a COVID-19 protocol and began running again in Winter 2021, including visitation to UCSB NRS sites.

Internships and Docent Programs

- **Henry W. Offen Internship (Donor Funded):** The Henry W. Offen UCSB Undergraduate Research Endowment celebrates the life of Dr. Offen, Chemistry Professor and Emeritus Professor at UCSB for more than 45 years, and first Director of the UCSB Natural Reserve System (NRS), a position he held for 16 years. The Endowment provides an annual stipend to support an Internship for eligible undergraduate students at UCSB with sophomore, junior or senior standing when they apply. Each year the internship takes place at one of the 7 UCSB Reserves, and provides an opportunity for the student to be mentored by the Reserve Director, to live onsite, and learn about and support Reserve management activities. A \$1,000 stipend is provided through the endowment and supports the student throughout the internship period. The 2017-2018 intern, Jonathan Cloughesy was hosted at Sedgwick Reserve. The 2018 – 2019 intern, Cyrus Cayhan, was hosted at the Santa Cruz Island Reserve. The 2019-2020 internship was set to occur at Coal Oil Point Reserve, however, due to COVID-19, this internship is postponed until the Winter and Spring quarters of the FY20-21 Academic Year.
- **Coal Oil Point Reserve Internships (Grant Funded) and Volunteer Docent Program:** Each year, Director Sandoval and Coal Oil Point Reserve staff seek grant funds to provide paid internships for UC Santa Barbara undergraduate students. The reserve staff supervises the interns, and also manages the budget and final reporting for the grants that support the interns. The internship programs offer different internship categories to provide opportunities to a variety of student interests. Each internship pays \$375 to a student for 50 hours of hands-on activities supervised by the reserve staff. A list of the undergraduate students that received internships since 2005 is available at this [link](#).