

University of California Santa Barbara

SEDGWICK RESERVE



ANNUAL REPORT

FY 2013-2014

July 1, 2013 – June 31, 2014

Part 1. Reserve Use Data

	UC Home		UC Other		CSU System		CA Comm College		Other CA College		Out of State College		International University		Government		NGO/Non-Profit		Profit Business		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
Arts/Humanities (non-student/faculty/postdoc)	0	0	0	0	0	0	0	0	45	45	0	0	0	0	0	0	1	2	0	0	0	0	1	1	47	48
Docent	645	1415	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	0	0	93	93	49	52	788	1567
Faculty	53	94	1	1	0	0	2	6	21	29	7	30	4	9	0	0	4	1099	0	0	0	0	1	3	93	1271
Graduate Student	65	117	4	21	0	0	0	0	25	25	2	8	1	9	0	0	1	1	0	0	0	0	0	0	98	181
K-12 Instructor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29	35	1	1	30	36
K-12 Student	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	18	0	0	492	513	10	20	508	551
Other	60	98	0	0	0	0	1	2	0	0	0	0	0	0	4	4	351	558	20	40	1	10	1076	1257	1513	1969
Professional	29	59	2	11	0	0	0	0	0	0	0	0	0	0	3	52	40	73	66	69	0	0	4	11	144	275
Research Assistant (non-student/faculty/postdoc)	17	282	1	33	0	0	0	0	0	0	3	9	0	0	8	113	0	0	0	0	0	0	3	10	32	447
Research Scientist/Post Doc	33	176	4	5	0	0	0	0	0	0	3	9	12	48	10	164	1	9	0	0	0	0	2	5	65	416
Undergraduate Student	184	228	13	13	0	0	21	63	0	0	15	45	1	9	0	0	0	0	0	0	0	0	0	0	234	358
Volunteer	3	3	0	0	0	0	0	0	0	0	0	0	0	0	60	60	6	14	0	0	18	18	28	261	115	356
TOTAL	1089	2472	25	84	0	0	24	71	91	99	30	101	18	75	85	393	411	1781	86	109	633	669	1175	1621	3667	7475

Part 2. Reserve Users' Affiliation

University of California

Sedgwick Reserve

University of California, Berkeley

University of California, Davis

University of California, Irvine

University of California, Los Angeles

University of California, Office of the President

University of California, Riverside

University of California, San Diego

University of California, Santa Barbara

University of California, Santa Cruz

California Community College

Cuesta College

California Community College

Riverside Community College

Santa Barbara City College

California Other College or University

University of Southern California (USC)

U.S. - University or College Outside of California

Cornell University

Duke University

Pacifica Graduate Institute

Other U.S. College or University

Green Mountain College

Hendrix College

University of Maryland, College Park
University of Nebraska
University of Tennessee
International University or College

International College or University

ETH Zurich
Swiss Federal Institute for Forest, Snow and Landscape Research
The University of Queensland
University of Mainz

K-12 Education

Dunn School
K-12 Schools Los Olivos
K-12 Schools Oxnard
NatureTrack Foundation
Santa Ynez Valley Charter School

Non-Governmental Organization or Non-Profit Entity

Bodhi Path
California Native Plant Society
California Student Sustainability Coalition
Fund for Santa Barbara

Non-Governmental Organization

Land Trust Santa Barbara County
Las Cumbres Observatory Global Network
Santa Barbara Audubon Society
Santa Barbara Botanic Garden
Santa Barbara County Search and Rescue
Santa Barbara Sage Hens
Santa Ynez Valley Natural History Society
Wheeling Warriors Central Coast Cycling
Wilderness Youth Project
Woodstock Property Owners Assoc.

Governmental Agency or Entity

Channel Islands National Marine Sanctuary
Oak Ridge National Laboratory
Special Technologies Laboratory
US Geological Survey

Business Entity

Angels Foster Care of Santa Barbara
California Bee Company, LLC

Individual or Other Entity

Ecology Global Network
Independent Journalist
Natural History Museum of Santa Maria
Royal Botanic Gardens, Kew

Part 3. Use by Instructional Groups

University of California, Santa Barbara, CA:

1. BIOL CS 101, Walking Biology, Claudia Tyler, May, 2014
2. Methods and Techniques of Field Archaeology, H.B. Thakar, May 2014
3. Biological Community Survey and Analysis, Frank W. Davis, April, 2014
4. California Naturalist Certification Course, March, 2014
5. Watershed Analysis, Derek Booth, Jan., 2014
6. ES/EEMB 119, Ecology & Management of California's Wildlands, Nicole Molinari, October, 2103
7. Soil Genesis, Samuel Prentice, November, 2013
8. Physics, Philip M. Lubin, October, 2013
9. Art CS 101, Sect 1, Field Painting with an Artist & a Botanist, Bruce Tiffney, Hank Pitcher, July, 2013

Green Mountain College, Vermont

1. Biology 3072 Field Course, James H. Graves, March 2014

Santa Barbara City College, Santa Barbara, CA

1. Methods in Field Biology, Adam K. Green, March, 2014

Pacifica Graduate Institute, Santa Barbara, CA

1. DPS 732, Ecopsychology: The Body on the Earth, Elizabeth A. Perluss, Oct. 2013
2. Psyche in Nature, Feb. 2014

Part 4. Current Research

Principal Investigator	Affiliation	Project Title	Application #	Status	Project Duration
Ian Pearse Walter Koenig	University of Nebraska Cornell University	Reproductive ecology of Quercus lobata	19705	continuing	Feb 2009 to Jun 2015
Ashley Atwell	University of Nebraska	Female Mate Choice Plasticity in Multiple Intrinsic and Extrinsic Factors	26397	ending	Jul 2013 to Jul 2013
Regine Claßen-Bockhoff Daniela Klein	University of Mainz	Pollination ecology in Salvia	27477	continuing	May 2013 to Nov 2016
Janneke Hillerislambers Jonathan Levine	University of California, Santa Barbara University of Toronto University of Washington ETH Zurich	California annual serpentine communities	5611	ending	Jan 2005 to Jul 2014
Anita Krause Carla D'Antonio	University of California, Santa Barbara Google University of Minnesota - Twin Cities	Nutrient Network: A Cross-Site Investigation Of Bottom-Up Control Over Herbaceous Plant Community Dynamics And Ecosystem Function.	9822	continuing	Sep 2009 to Sept 2014
Bruce Mahall Shelly Cole Claudia Tyler	University of California, Santa Barbara	The role of water stress (drought) in oak seedling and sapling survival and performance at Sedgwick Reserve	1784	continuing	Jul 2006 to Oct 2014
Bruce Mahall Claudia Tyler	University of California, Santa Barbara	Santa Barbara County Oak Project	1785	continuing	Jan 1995 to Jun 2014
Shelly Cole Claudia Tyler	University of California, Santa Barbara	Valley oak seedling competition with near neighbors	22728	continuing	Nov 2010 to Jul 2014
Andy MacDonald	University of California, Santa Barbara	Tick population dynamics and Lyme disease risk in Southern California	25518	continuing	Jul 2012 to Dec 2016
Grant Canova-Parker Kate McCurdy	University of California, Santa Barbara	Using trail cameras to document wildlife using Sedgwick's water sources.	26310	continuing	Jul 2012 to Jun 2015
Patricia Holden Joshua Schimel Stefano Manzoni Sean Schaeffer	University of California, Santa Barbara	Controls over C sequestration: physiology vs. physics	26333	continuing	Dec 2012 to Dec 2015
Heather Schneider Susan Mazer	University of California, Santa Barbara	Project Baseline	26607	ending	Jan 2013 to Sep 2015
Brian Haggerty Outreach Coordinator	University of California, Santa Barbara	Plant phenology at Sedgwick Reserve	26715	continuing	Oct 2012 to Jun 2015
Eric Slessarev	University of California, Santa Barbara	Roots and Microbial Enzymes: Investigating an Understudied Component of the Terrestrial Carbon Cycle	28281	continuing	Jan 2014 to May 2015
Brenda Juarez Kate McCurdy	University of California, Santa Barbara	Valley Oak Restoration Techniques	29120	continuing	Dec 2013 to Jun 2015
Nina Bingham Oliver Chadwick	University of California, Santa Barbara	Landscape evolution and exhumation of rock nitrogen	29558	continuing	Jun 2014 to Dec 2014
Jennifer King Oliver Chadwick Samuel Prentice	University of California, Santa Barbara	Assessing scale-dependent soil process domains with high resolution DEM	23384	ending	Mar 2011 to Jun 2014
Yang Lin	University of California, Santa Barbara	Photodegradation of Bromus diandrus thatch in a semi-arid grassland	23689	ending	May 2011 to Jun 2014
Nathan Emery	University of California, Santa Barbara	Seasonal fog and the effects on moisture content in shrubs	25531	ending	Jul 2012 to Sep 2013
Dar Roberts	University of California, Santa Barbara	HypSIIRI discrimination of plant species and functional types along a strong environmental-temperature gradient.	27237	ending	Apr 2013 to Aug 2014
Lars Bildsten	University of California, Santa Barbara	Supernovae Progenitors	28535	ending	Jan 2014 to Dec 2014
Jon Conway Arturo Keller	University of California, Santa Barbara	ex situ measurements of nanoparticle transport	28738	ending	Oct 2013 to Apr 2014
Jonathan Markowitz	University of California, San Diego University of Southern California (USC)	The Comparative Governance of Common Pool Resources	26024	continuing	Oct 2012 to Aug 2014
Elsa Cleland Ellen Esch	University of California, San Diego	Litter decomposition in California chaparral: Examining the effects of photodegradation and local microbial adaption across a naturally occurring precipitation gradient.	27137	continuing	May 2013 to May 2016
Bruce Pavlik Hank Pitcher Paddy Woodworth Peggy Fiedler Philip Rundel	University of California, Los Angeles University of California, Santa Barbara University of California, Office of the President Royal Botanic Gardens, Kew Independent Journalist	Mediterranean Ecosystems Restoration Initiative	27775	ending	Sep 2013 to Dec 2023
Jake Ueckert	University of California, Los Angeles Texas A&M	Controlled Hybridization in Quercus spp.	29007	ending	Mar 2014 to Mar 2014
Andy Lentz	University of California, Los Angeles	Phenology of Quercus Lobata on the Sedgwick Reserve in the Figueroa watershed	19460	continuing	Jan 2009 to Jun 2015
Paul Gugger	University of California, Los Angeles	Utilizing a natural oak hybrid zone to identify genetic variation underlying fitness traits	28093	ending	Sep 2013 to Nov 2013
Nathan Kraft Oscar Godoy	University of California, Irvine University of California, Santa Barbara	Application of niche coexistence theory to evaluate the invasibility of Mediterranean-type ecosystems	22626	ending	Oct 2010 to Jan 2015
Jonathan Levine Nathan Kraft	University of California, Irvine University of California, Los Angeles University of California, Santa Barbara University of Maryland, College Park	Functional trait correlates of annual plant coexistence	28374	continuing	Nov 2013 to Aug 2017
Kelly Carscadden	University of California, Davis University of California, Merced University of California, Santa Barbara University of Toronto	mechanisms underpinning niche breadth in monkeyflowers	29458	ending	Jun 2014 to Aug 2014
Stella Copeland Susan Harrison	University of California, Davis	Statewide Sites Data Collection Susan Harrison Lab	29128	one time	Apr 2014 to Mar 2015
Alexandra Weill	University of California, Davis	Variation of fire-adapted traits in space and time: what can Ceanothus tell us about shrubland resilience in the face of shifting fire regimes?	31091	ending	Apr 2015 to Sep 2015
Margaret Mayfield	The University of Queensland	Functional responses to invasion and drought: a comparison of American and Australian annual plant systems	29131	ending	Apr 2014 to May 2014
Thomas Wohlgemuth	Swiss Federal Institute for Forest, Snow and Landscape Research	Oak and pine coexistence	29207	ending	Mar 2014 to Mar 2015
Gene Capelle John DiBenedetto Ian McKenna Kirk Miller Mary O'Neill	Oak Ridge National Laboratory Special Technologies Laboratory	Frequency-Modulated Phosphorescence Detection of Solid Materials	28553	ending	Jan 2014 to Sep 2014
John Hyggelund Lorna Boyd	Las Cumbres Observatory Global Network	Sedgwick Observatory	20689	continuing	Jan 2010 to Jun 2015
John Hyggelund	Las Cumbres Observatory Global Network	Development of the Global Network of Robotic Echelle Spectrographs	25763	continuing	Aug 2012 to Aug 2015
Walt Koenig	Cornell University	Reproductive Phenology of Valley Oaks (Quercus lobata)	1702	continuing	Sep 1980 to Dec 2016

Part 5. Publications

Adeleye, Adeyemi S, Jon R Conway, Thomas Perez, Paige Rutten, and Arturo A Keller. *Influence of Extracellular Polymeric Substances on the Long-Term Fate, Dissolution, and Speciation of Copper-Based Nanoparticles*. Environmental Science & Technology 48, no. 21 (2014): 12561-68.

Atwell, Ashley, and William E Wagner. *Female Mate Choice Plasticity Is Affected by the Interaction between Male Density and Female Age in a Field Cricket*. Animal Behaviour 98 (2014): 177-83.

Barringer, Brian C., Walter D. Koenig, and Johannes MH Knops. *Interrelationships among Life-History Traits in Three California Oaks*. Oecologia 171, no. 1 (2013): 129-39.

Becerra, C., and J. Schimel. *Microbial Decomposition of Dead Grassland Roots and Its Influence on the Carbon Cycle under Changing Precipitation Patterns*. AGU Fall Meeting Abstracts -1 (December 2013): 0325.

Blankinship, Joseph C., Caryl A. Becerra, Sean M. Schaeffer, and Joshua P. Schimel. *Separating Cellular Metabolism from Exoenzyme Activity in Soil Organic Matter Decomposition*. Soil Biology and Biochemistry 71, no. 0 (April 2014): 68-75. doi:10.1016/j.soilbio.2014.01.010.

Boot, Claudia M., Sean M. Schaeffer, and Joshua P. Schimel. *Static Osmolyte Concentrations in Microbial Biomass during Seasonal Drought in a California Grassland*. Soil Biology and Biochemistry 57, no. 0 (February 2013): 356-61. doi:10.1016/j.soilbio.2012.09.005.

Borer, Elizabeth T., W. Stanley Harpole, Peter B. Adler, Eric M. Lind, John L. Orrock, Eric W. Seabloom, and Melinda D. Smith. *Finding Generality in Ecology: A Model for Globally Distributed Experiments*. Methods in Ecology and Evolution 5, no. 1 (2014): 6573. doi:10.1111/2041-210X.12125.

Borer, Elizabeth T., Eric W. Seabloom, Charles E. Mitchell, and James P. Cronin. *Multiple Nutrients and Herbivores Interact to Govern Diversity, Productivity, Composition, and Infection in a Successional Grassland*. Oikos 123, no. 2 (2014): 214-24. doi:10.1111/j.1600-0706.2013.00680.x.

Boroson, T., T. Brown, A. Hjelstrom, D. A. Howell, T. Lister, A. Pickles, W. Rosing, E. Saunders, R. Street, and Z. Walker. *Science Operations for LCOGT: A Global Telescope Network*. In Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 9149:1. Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 2014. doi:10.1117/12.2054776.

Castro-Díez, P., O. Godoy, A. Alonso, A. Gallardo, and A. Saldaña. *What Explains Variation in the Impacts of Exotic Plant Invasions on the Nitrogen Cycle? A Meta-Analysis*. Ecology Letters 17, no. 1 (2014): 1-12. doi:10.1111/ele.12197.

Colman, Benjamin P., and Joshua P. Schimel. *Drivers of Microbial Respiration and Net N Mineralization at the Continental Scale*. Soil Biology and Biochemistry 60, no. 0 (May 2013): 65-76. doi:10.1016/j.soilbio.2013.01.003.

Davies, T. Jonathan, Elizabeth M. Wolkovich, Nathan J. B. Kraft, Nicolas Salamin, Jenica M. Allen, Toby R. Ault, Julio L. Betancourt, et al. *Phylogenetic Conservatism in Plant Phenology*. Journal of Ecology 101, no. 6 (2013): 1520-30. doi:10.1111/1365-2745.12154.

Fernandez-Going, B. M., S. P. Harrison, B. L. Anacker, and H. D. Safford. *Climate Interacts with Soil to Produce Beta Diversity in Californian Plant Communities*. *Ecology* 94, no. 9 (September 1, 2013): 2007-18. doi:10.1890/12-2011.1.

Friberg, Magne, Christopher Schwind, Robert A. Raguso, and John N. Thompson. *Extreme Divergence in Floral Scent among Woodland Star Species (Lithophragma Spp.) Pollinated by Floral Parasites*. *Annals of Botany* 111, no. 4 (April 1, 2013): 539-550.

Friberg, Magne, Christopher Schwind, Lindsey C. Roark, Robert A. Raguso, and John N. Thompson. *Floral Scent Contributes to Interaction Specificity in Coevolving Plants and Their Insect Pollinators*. *Journal of Chemical Ecology* 40, no. 9 (September 1, 2014): 955-65. doi:10.1007/s10886-014-0497-y.

Germain, Rachel M., and Benjamin Gilbert. *Hidden Responses to Environmental Variation: Maternal Effects Reveal Species Niche Dimensions*. *Ecology Letters* 17, no. 6 (2014): 662-69. doi:10.1111/ele.12267.

Gilbert, Benjamin, and Jonathan M. Levine. *Plant Invasions and Extinction Debts*. *Proceedings of the National Academy of Sciences* 110, no. 5 (January 29, 2013): 1744-49. doi:10.1073/pnas.1212375110.

Godoy, Oscar, Nathan JB Kraft, and Jonathan M Levine. *Phylogenetic Relatedness and the Determinants of Competitive Outcomes*. *Ecology Letters*, 2014.

Godoy, Oscar, and Jonathan M. Levine. *Phenology Effects on Invasion Success: Insights from Coupling Field Experiments to Coexistence Theory*. *Ecology* 95, no. 3 (March 1, 2014): 726-36. doi:10.1890/13-1157.1.

Gugger, Paul F., Makihiko Ikegami, and Victoria L. Sork. *Influence of Late Quaternary Climate Change on Present Patterns of Genetic Variation in Valley Oak, Quercus Lobata Née*. *Molecular Ecology* 22, no. 13 (2013): 3598-3612. doi:10.1111/mec.12317.

Haggerty, Brian P., Elizabeth R. Matthews, Katharine L. Gerst, Angela G. Evenden, and Susan J. Mazer. *The California Phenology Project: Tracking Plant Responses to Climate Change*. *Madroño* 60, no. 1 (January 1, 2013): 13. doi:10.3120/0024-9637-60.1.1.

Hamada, Yuki, Douglas A. Stow, Dar A. Roberts, Janet Franklin, and Phaedon C. Kyriakidis. *Assessing and Monitoring Semi-Arid Shrublands Using Object-Based Image Analysis and Multiple Endmember Spectral Mixture Analysis*. *Environmental Monitoring and Assessment* 185, no. 4 (April 1, 2013): 3173-90. doi:10.1007/s10661-012-2781-z.

Harrison, Susan, Ellen Damschen, Barbara Fernandez-Going, Anu Eskelinen, and Stella Copeland. *Plant Communities on Infertile Soils Are Less Sensitive to Climate Change*. *Annals of Botany*, November 30, 2014. <http://aob.oxfordjournals.org/content/early/2014/11/29/aob.mcu230.abstract>.

Homyak, Peter M., James O. Sickman, Amy E. Miller, John M. Melack, Thomas Meixner, and Joshua P. Schimel. *Assessing Nitrogen-Saturation in a Seasonally Dry Chaparral Watershed: Limitations of Traditional Indicators of N-Saturation*. *Ecosystems* 17, no. 7 (November 1, 2014): 1286-1305. doi:10.1007/s10021-014-9792-2.

Hufford, Kristina M, Susan J Mazer, and Scott A Hodges. *Genetic Variation among Mainland and Island Populations of a Native Perennial Grass Used in Restoration*. *AoB Plants* 6 (2014): plt055.

Hufford, Kristina M., Susan J. Mazer, and Joshua P. Schimel. *Soil Heterogeneity and the Distribution of Native Grasses in California: Can Soil Properties Inform Restoration Plans?* *Ecosphere* 5, no. 4 (April 1, 2014): art46. doi:10.1890/ES13-00377.1.

Koenig, Walter D., and Johannes M. H. Knops. *Large-Scale Spatial Synchrony and Cross-Synchrony in Acorn Production by Two California Oaks*. *Ecology* 94, no. 1 (January 1, 2013): 83–93. doi:10.1890/12-0940.1.

Koenig, Walter D., Mario Díaz, Fernando Pulido, Reyes Alejano, Elena Beamonte, and Johannes M. H. Knops. *Acorn Production Patterns*. In *Mediterranean Oak Woodland Working Landscapes*, edited by Pablo Campos, Lynn Huntsinger, Jose Luis Oviedo Pro, Paul F. Starrs, Mario Diaz, Richard B. Standiford, and Gregorio Montero, 16:181–209. Landscape Series. Springer Netherlands, 2013.
http://dx.doi.org/10.1007/978-94-007-6707-2_7.

Lin, Y., R. D. Scarlett, and J. Y. King. *Effects of Litter Exposure to UV Radiation on Subsequent Microbial Decomposition*. *AGU Fall Meeting Abstracts -1* (December 2013): 0562.

Lin, Yang, and Jennifer Y. King. *Effects of UV Exposure and Litter Position on Decomposition in a California Grassland*. *Ecosystems* 17, no. 1 (January 1, 2014): 158–68. doi:10.1007/s10021-013-9712-x.

Lister, T., E. Gomez, E. Christensen, and S. Larson. *The LCOGT Near Earth Object (NEO) Follow-up Network*. In *AAS/Division for Planetary Sciences Meeting Abstracts*, 46:#414.10. AAS/Division for Planetary Sciences Meeting Abstracts, 2014.

MacDonald, Andy. *Lyme Disease Risk and the Ecology of Tick-Borne Disease in Southern California*: Mildred E. Mathias Grant Progress Report, September 2013.

Mayfield, Margaret M, John M Dwyer, Alanna Main, and Jonathan M Levine. *The Germination Strategies of Widespread Annual Plants Are Unrelated to Regional Climate*. *Global Ecology and Biogeography* 23, no. 12 (2014): 1430–39.

Mazer, Susan J, Steven E Travers, Benjamin I Cook, T Jonathan Davies, Kjell Bolmgren, Nathan JB Kraft, Nicolas Salamin, and David W Inouye. *Flowering Date of Taxonomic Families Predicts Phenological Sensitivity to Temperature: Implications for Forecasting the Effects of Climate Change on Unstudied Taxa*. *American Journal of Botany* 100, no. 7 (2013): 1381–97.

McLaughlin, Blair C., and Erika S. Zavaleta. *Shifting Bottom-up and Top-down Regulation of Oak Recruitment across a Regional Resource Gradient*. *Global Ecology and Biogeography* 22, no. 6 (2013): 718–27. doi:10.1111/geb.12028.

Molinari, Nicole A, and Carla M D'Antonio. *Data from: Structural, Compositional and Trait Differences between Native and Non-Native Dominated Grassland Patches*, 2013. *Structural, Compositional and Trait Differences between Native-and Non-Native-Dominated Grassland Patches*. *Functional Ecology* 28, no. 3 (2014): 745–54.

Moroney, Jolene R., and Philip W. Rundel. *Effects of Fire and Fireline Disturbance on the Plant Community in a Southern California Ecological Reserve*. *Madroño* 60, no. 3 (July 1, 2013): 173–78. doi:10.3120/0024-9637-60.3.173.

Moroney, Jolene R., and Philip W. Rundel. *Abundance and Dispersion of the Invasive Mediterranean Annual, *Centaurea Melitensis* in Its Native and Non-Native Ranges*. *Biological Invasions* 15, no. 3 (March 1, 2013): 495–507. doi:10.1007/s10530-012-0302-1.

Ortego, Joaquín, Paul F. Gugger, Erin C. Riordan, and Victoria L. Sork. *Influence of Climatic Niche Suitability and Geographical Overlap on Hybridization Patterns among Southern Californian Oaks*. *Journal of Biogeography* 41, no. 10 (2014): 1895–1908. doi:10.1111/jbi.12334.

Pearse, Ian S, Walter D Koenig, Kyle A Funk, and Mario B Pesendorfer. *Pollen Limitation and Flower Abortion in a Wind-Pollinated, Masting Tree*. Bulletin of the Ecological Society of America 95, no. 4 (2014): 462-64.

Pearse, Ian S., Sophie Griswold, Desirree Pizarro, and Walter D. Koenig. *Stage and Size Structure of Three Species of Oaks In Central Coastal California*. Madroño 61, no. 1 (January 1, 2014): 1-8. doi:10.3120/0024-9637-61.1.1.

Pearse, I. S., W. D. Koenig, and J. M. H. Knops. *Cues versus Proximate Drivers: Testing the Mechanism behind Masting Behavior*. Oikos, 2014.

Placella, Sarah A., and Mary K. Firestone. *Transcriptional Response of Nitrifying Communities to Wetting of Dry Soil*. Applied and Environmental Microbiology 79, no. 10 (May 15, 2013): 3294-3302. doi:10.1128/AEM.00404-13.

Schimel, Joshua. *Soil Carbon: Microbes and Global Carbon*. Nature Clim. Change 3, no. 10 (October 2013): 867-68.

Sork, Victoria L, and Silke Werth. *Phylogeography of Ramalina Menziesii, a Widely Distributed Lichen-Forming Fungus in Western North America*. Molecular Ecology 23, no. 9 (2014): 2326-39.

Sorte, Cascade JB, Ines Ibáñez, Dana M Blumenthal, Nicole A Molinari, Luke P Miller, Edwin D Grosholz, Jeffrey M Diez, et al. *Poised to Prosper? A Cross-System Comparison of Climate Change Effects on Native and Non-Native Species Performance*. Ecology Letters 16, no. 2 (2013): 261-70.

Stahlheber, Karen A, and Carla M D'Antonio. *Do Tree Canopies Enhance Perennial Grass Restoration in California Oak Savannas?* Restoration Ecology, 2014.

Stahlheber, Karen A, and Carla M D'Antonio. *Using Livestock to Manage Plant Composition: A Meta-Analysis of Grazing in California Mediterranean Grasslands*. Biological Conservation 157 (2013): 300-308.

Thompson, John N. *Interaction and Coevolution*. University of Chicago Press, 2014.

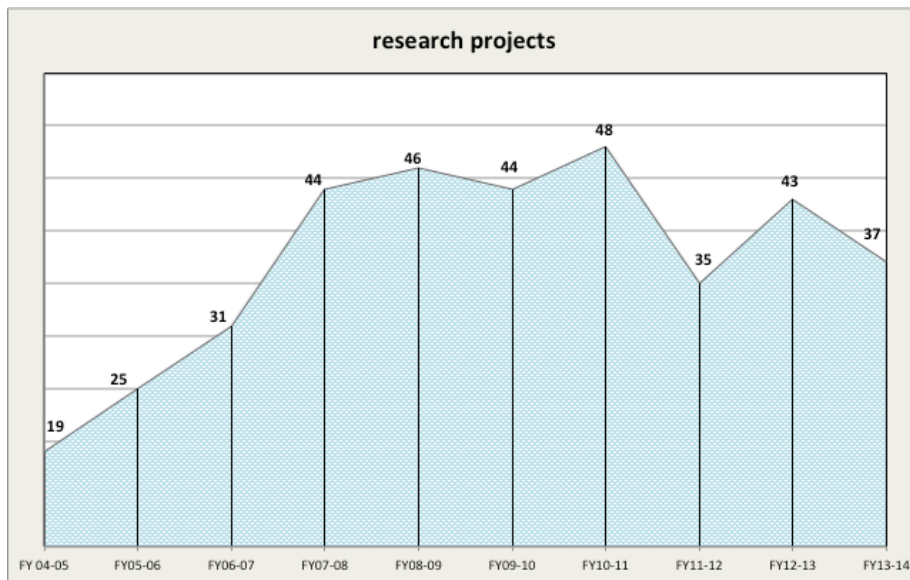
Thompson, Pamela, Peter Smouse, Douglas Scofield, and Victoria Sork. *What Seeds Tell Us about Birds: A Multi-Year Analysis of Acorn Woodpecker Foraging Movements*. Movement Ecology 2, no. 1 (2014): 12. doi:10.1186/2051-3933-2-12.

Werth, Silke, and Victoria L Sork. *Ecological Specialization in Trebouxia (Trebouxiophyceae) Photobionts of Ramalina Menziesii (Ramalinaceae) across Six Range-Covering Ecoregions of Western North America*. American Journal of Botany 101, no. 7 (2014): 1127-40.

Part 6. Narrative

PART I: CURRENT RESEARCH

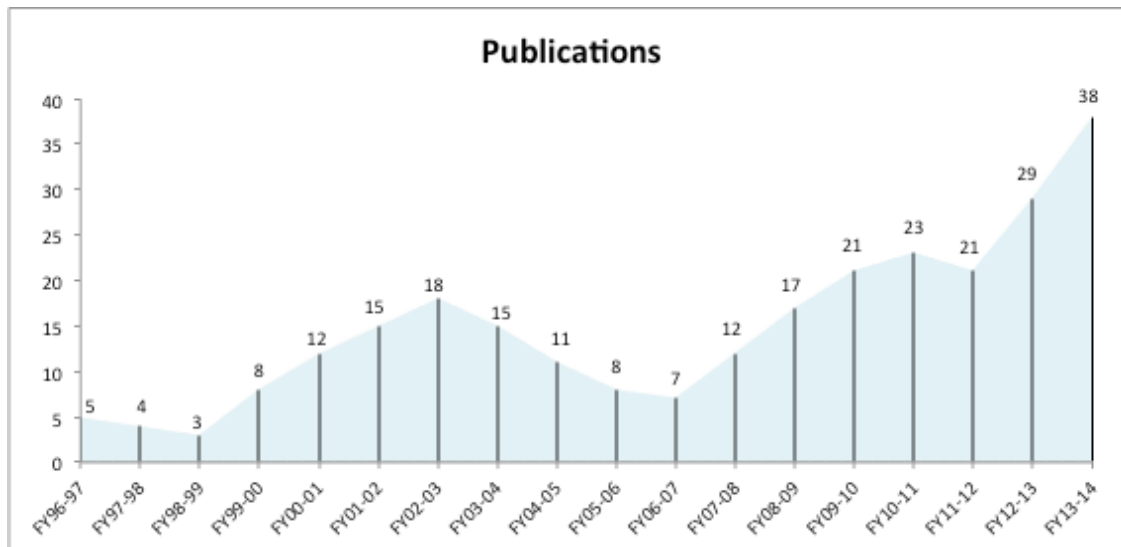
Thirty-seven (37) research projects were handled by the Reserve staff during the fiscal year. Seven (7) projects were new and 22 were ongoing. Eight on-going or one-year projects were completed by the end of the reporting period. The level of research in FY 2013-14 was consistent with the 10-year average of 39 projects per year but six (6) projects fewer than the previous year. A listing of the research can be found in Part IV: Current Research FY2013-14.



In 2013-2014, researchers spent 2935 days working on 37 projects for an average of 79 days per project. As in previous years, the majority of research conducted at Sedgwick was done during day-only visits. UCSB researchers had both the most projects (18 projects and 1169 days of use). The highest level of use was contributed by the Los Cumbres Observatory Telescope Network, which reported use of the BOS telescope on 90% of viewable nights (1263). This use was largely by remote operation of the BOS observatory. Researchers from other UC campuses were the second most frequent users with 7 projects and 69 user days. The remaining projects were completed by Out of state universities (5 projects, 47 user days), and International universities (4 projects and 27 user days).

	UCSB (18)	OTHER UC (7)	INTERNATIONAL (4)	OUT OF STATE (5)	PRIVATE (3)	TOTALS
STATUS						
New	2	3	2	0	0	7
On-going	12	3	1	3	3	22
Completed	4	1	1	2	0	8
						37
USE						
User days	1169	69	27	47	1623	2935
REVENUE						
Facility & vehicle use	\$863.10	\$356.23	\$203.56	\$307.37	\$152.67	\$1,883.10

Of those applications that reported grant support information, 68% of the projects (25) received a combined total of \$4,895,806 in grant funding for the fiscal year. Thirty-eight (38) publications were published during 2013-14 using Sedgwick data. The large number of publications can be attributed to using better search functions using Google Scholar and Zotero publication management software and lag time additional research projects conducted at Sedgwick in FY 2012-13.



PART II: UNIVERSITY LEVEL INSTRUCTION

Reserve use for college class instruction decreased by one from the previous year. Thirteen (13) classes were held at the reserve in 2013-14 compared to 14 classes in 2012-13, and the number of students who attended increased from 166 in 2012-2013 to 194 in 2013-14. Of the 13 classes held at the reserve in this reporting period, nine (9) were from UCSB comprising five (5) instructors, 159 students and 39 others, one (1) from Green Mountain College, Vermont comprising two (2) instructors and 13 students, and two (2) from Pacifica Graduate Institute in Santa Barbara with one instructor and 46 students.

PART III: PUBLIC OUTREACH

Public outreach continued to be active on the reserve during the fiscal year. There were 3399 users totaling 4488 user days.

Public Use Groups:

The field station was used by forty-nine (49) groups during the fiscal year including Woodstock Home Owners Association, the Wilderness Youth Project, The Fund for Santa Barbara Board, Nature Track Foundation, Santa Barbara County Search and Rescue, the Sage Hens, California Native Plant Society, US Geological Survey, and Las Cumbres Observatory Global Telescope.

The Santa Ynez Valley Natural History Society hosted two (2) public events at the reserve: a public viewing of the movie "Santa Ynez River Wilderness" in Tipton Meeting House Clarke Hall (125 attendees); and a lecture retired California State Park ranger and author of "Water and the California Dream," David Carle (55 attendees).

Walking Ecology Public Lecture Series:

The "Walking Ecology" lecture series resumed in October and was well attended by the public and docents, with an average of 45 attendees per lecture. The topics in the seven (7) lectures this year included topics: Space Exploration; screening of "Greenfire: The Aldo Leopold Legacy;" Geology and the Arts; Ticks and Lyme Disease; Chumash Culture; Effects of Fog on plants at Sedgwick Reserve; and Herpetology.

During the year, over one thousand visitors learned about the Reserve's rich cultural history and had opportunities to see historical preservation in action. The Walking Ecology lecture series started out with Carol Gibbon's well attended Reserve history talk and tour of the field station and barn; 165 guests came to the annual barn dance. 500 elementary school students toured the barn in search of barn owls and to learn about ranching life in early California. Seven (7) Midland high school students participated in an equestrian overnight campout in the barn. Two women's riding groups (the Sage Hens and the Fillies) used the barn as a staging area for their organized rides, which brought nearly sixty (60) equestrians onto the Reserve in FY2013-14. Stops at the barn, art studio and ranch house are part of every field station tour, which were given to 46 groups (225 people) during the fiscal year.

K-12 Program:

K-12 education continued at the Reserve, facilitated by "Nature Track." Ten (10) classes visited this fiscal year compared to 11 groups in 2011-2012. Approximately five hundred and eight (508) students from Santa Barbara and Santa Ynez Valley schools visited the reserve for nature education activities.

Public Hikes:

Docent-led interpretive public hikes began in November and continued through May for a total of seven hiking days in this fiscal year. Overall, three hundred forty-five (345) hikers participated in the public hikes.

Docent Activities:

Throughout the 2013-14 year, docents participated in a number of activities totaling 1,173 user days, including seven (7) Walking Ecology lectures, the Lake Cachuma Christmas Bird Count, eleven (11) docent training lectures, one docent communication meeting, seven (7) public hikes and several private hikes for retreats of various organizations. Additionally, docents worked in the native plant nursery, planted native plants and weeded around the field station, maintained hiking trails, and completed weekly bird counts. Docents represented the reserve with a booth in the Los Olivos "Day in the Country" event in October 2013.

The Sedgwick Reserve Phenology Project, a part of the larger California Phenology Project, is now in its 3rd year. Fourteen (14) dedicated Sedgwick docents/phenologists recording data along an established phenology trail, consisting of 24 plants of 6 different species: Valley Oak, California Live Oak, California Buckwheat, Blue Elderberry, Coyotebrush and Toyon. Andy Lentz, Sedgwick docent, created a new phenology manual having

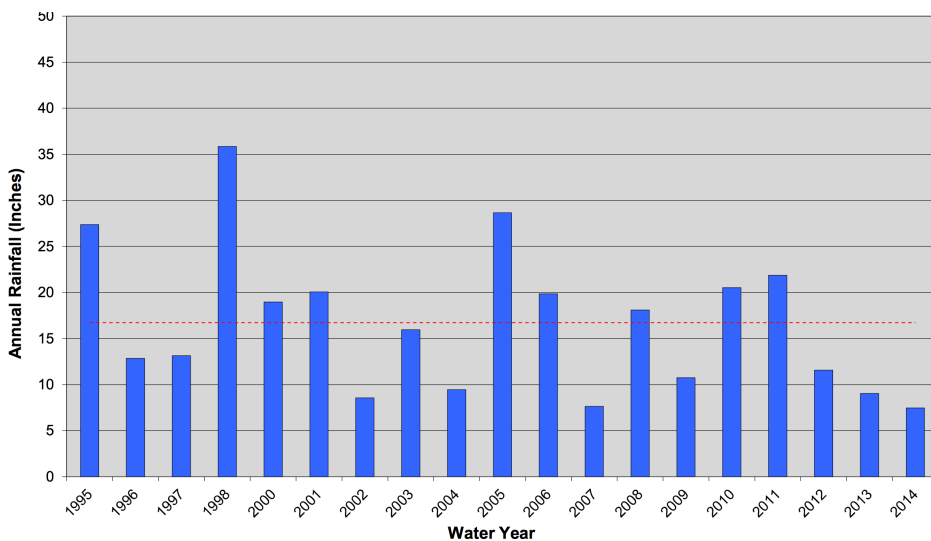
higher quality photographs than previously provided. The improved manual assists docents with recording data. Phenologists' user days totaled over 676 for the fiscal year.

Five (5) docents completed the California Naturalist certification program offered through the Santa Barbara Botanic Garden. Their "Capstone" projects enhance native plant knowledge and restoration efforts at Sedgwick reserve, wildflowers of the reserve, and a slideshow presentation of the reserve pond's denizens and cattail eradication activities.

A valley oak restoration project commenced in the winter quarter. A volunteer group of fifteen docents planted one-hundred (100) valley oak seedlings and acorns, utilizing traditional planting methods as well as using Groasis Waterboxxes, a self-watering device. Six months into the project, there was a 75% survival rate.

PART IV: STEWARDSHIP

It was an below average rainfall year for the Reserve, with the seasonal rainfall total of 7.64 inches being recorded by the DRI weather station located on the ridge north-west of the Tipton Meeting House. The last 3 winters have been the driest recorded in California history. The Reserve's aquifer was measured by the USGS in March 2014 to be 28 feet below surface (in wet years the aquifer reaches the surface, but averages 20 feet below surface. The USGS has been sampling the aquifer since 1950 (64 years).



Various projects were completed this fiscal year: Depredation efforts yielded 22 feral pigs using traps on watering sources (carried out by reserve staff and 1 volunteer). Boy Scout troop 42 out of Buellton replaced a spring box at Cuckoo Springs, a project supervised by a Sedgwick steward. In fall quarter UCOP one-time critical needs funds were used to hire a backhoe service to extract cattails from the pond. The project took five days to complete. Docent volunteers helped clean up the reed remnants floating in the pond. The rest of the year, two docent volunteers continued to remove cattails sprouting from the banks.

Management Plan for Heirs Parcel (farming and grazing) written

Farm and grazing leases canceled. New agreements will be written when drought ends.

Weed management: low weed year due to drought; no goat grass found.

Despite 2013 and 2014 being excellent acorn years the reserve is seeing a significant increase in the number of blue and Valley oaks dying in place and falling over in wind events. In 2014 two massive Valley Oaks fell, one in Windmill Canyon and one near the Director's residence.

Tricolored blackbird monitoring; camera on pond; pond turtles; bagrada bug invasion.

DEVELOPMENT

Fiscal year 2013-14 was a banner year for fundraising at the Reserve, capped off by a \$2 million pledge from UCSB alumna Linda Duttenhaver whose support for Sedgwick has been transformational over the last six years. Linda has funded outreach programming for the last several years and in 2008 funded the renovation of the barn. Her 2014 gift will make possible the renovation of the ranch house projected to be completed during fiscal year 2016. Also during the fiscal year, discussions were begun with this major donor about her estate planning; these will continue in earnest after the ranch house is completed.

As in past years, several hundred Sedgwick friends and donors were personally solicited with snail mail letters and return envelopes in early December. An additional 2000+ people who receive the monthly newsletters received an online solicitation. Docents, regular users and neighbors of the Reserve continue to be the most consistent donors to the Reserve. (Public hikes elicit on average, about \$150 in voluntary contributions.) About a dozen of Sedgwick's donors whose gifts regularly amount to \$5k and above were solicited individually and in person for special projects and initiatives. Each year a few more donors and prospects are included in these stewardship, cultivation and solicitation activities which include small dinners held at Tipton House, usually coinciding with Ms. Duttenhaver's visits. Including all gifts for current use and capital projects, total support in FY14 was approximately \$2,125,000. Additionally, approximately \$110,000 was contributed in fiscal year 2013-14 to the Sedgwick operating endowment.

Events such as the public lectures and the annual Barn Dance, held in July 2013, continue to provide excellent venues for introducing newcomers and potential donors to the Reserve. Planning began in final quarter of the fiscal year for the Fifth Annual Barn Dance, a highly anticipated event.

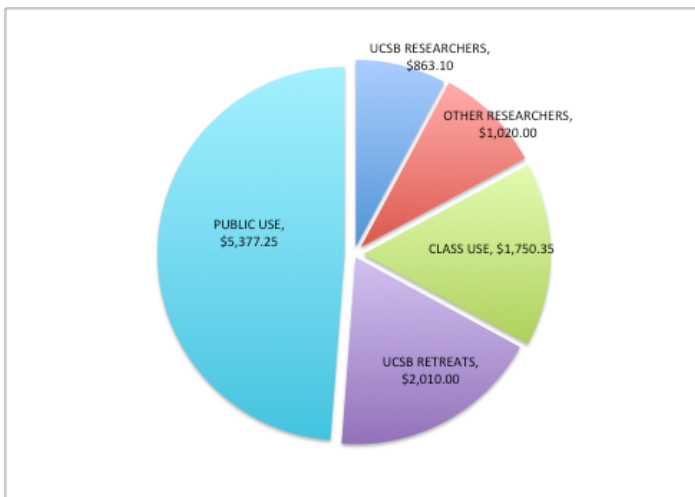
FACILITIES

During the fiscal year four long-running Prop 84 (State Wildlife Conservation Board) projects were completed: the pole barn adjacent to the historic barn was converted to a maintenance shop; electrical service was moved to a single enclosure in the parking area, lines buried within the field station and service upgrade; waterlines and a second hydrant was constructed to bring potable water to all field station buildings; and roads and parking areas were upgraded within the field station area. Total cost for these WCB funded infrastructure improvements was \$960,000.

Annual vehicle maintenance was completed on all reserve vehicles. The main waterline coming from the well was replaced. Stewards cleaned up the surplus barn and also moved everything from the pole barn in preparation for its complete remodel. Other projects completed by stewards were observatory trail restoration, mending fences and gates, rodent control and designing frost covers for fire sprinkler backflow devices, and native plant restoration.

Facility rentals generated \$11,020.70 in invoices.

RECHARGE REVENUE	UCSB RESEARCHERS	OTHER RESEARCHERS	CLASS USE	UCSB RETREATS	PUBLIC	TOTAL
RANCH HOUSE	\$673.10	\$653.10	\$356.00	\$650.00	\$2,664.97	\$4,997.17
STUDIO APT.	\$0.00	\$0.00	\$80.00	\$0.00	\$255.90	\$335.90
STUDIO CLASSROOM	\$0.00	\$91.80	\$365.10	\$0.00	\$301.80	\$758.70
VEHICLES	\$190.00	\$0.00	\$84.00	\$0.00	\$325.00	\$599.00
TIPTON BUILDING	\$0.00	\$0.00	\$382.50	\$1,360.00	\$1,293.00	\$3,035.50
CAMPING/TENT	\$0.00	\$275.10	\$452.15	\$0.00	\$248.30	\$975.55
CUSTODIAL/ADMIN ASST	\$0.00	\$0.00	\$30.60	\$0.00	\$98.28	\$128.88
PORTA-POTTIES	\$0.00	\$0.00	\$0.00	\$0.00	\$190.00	\$190.00
TOTAL	\$863.10	\$1,020.00	\$1,750.35	\$2,010.00	\$5,377.25	\$11,020.70



ADMINISTRATION

In the fiscal year, Kate McCurdy reached her 8th anniversary as director of the reserve. Assisted by two part-time (40% time) outreach coordinators, the director managed multiple reserve users including researchers (556 users and 2624 user days); university level classes (258 users and 372 user days); K-12 groups (537 users and 586 user days); and docents, volunteers, NGO groups, and other public users (2,736 users and 3,580 user days).

The office staff generated weekly news bulletin sent to Sedgwick administrators, docents and volunteers. Kate created a quarterly newsletter to the general interest list (over 3,000 subscribers).

Reserve maintenance continued to be supported by a crew of part-time stewards Valentin Barbosa-Navarro, Gloria Larios, George Granger, and Brian Guererro. During the fiscal year, Eric Massey was hired into a full time position.

Part 7. NRS Campus Committee Roster

Sally Holbrook, Committee Chair*; Environmental Studies and Ecology, Evolution and Marine Biology

Patricia Holden, Director, UCSB NRS*; Bren School

Susan Swarbrick, Associate Director*; UCSB Natural Reserve System

*Ex Officio members serve on the Committee by virtue of their position with the NRS (Director, Associate Director, Committee Chair, Faculty Advisor)

Sedgwick Reserve

Carla D' Antonio, Faculty Advisor*; Environmental Studies and Ecology, Evolution and Marine Biology

Jennifer King, Representative; Geography

Community Representatives

Chet Work, Land Trust of Santa Barbara County

Mary Meyer, California Department of Fish and Game

Eamon O'Byrne, The Nature Conservancy

Student Representatives

Marissa Bills, Undergraduate Representative; Associated Students

Nate Emery, Graduate Representative, Graduate Student Association