



Bodega Marine Laboratory and Reserve

What are field stations?

“Field stations are places where we can read the book of life in the language in which it was written.”

— James Kirchner, U.C. Berkeley

Biological field stations provide living libraries and outdoor laboratories for students, researchers, and the general public interested in the environment. They vary greatly in form and purpose, and include both marine laboratories whose focus is offshore, as well as terrestrial reserves dedicated to protecting key ecosystems. Field stations vary in size from a few urban acres to thousands of acres spread across a remote landscape. Station facilities might range from trail networks to state-of-the art laboratories. Whatever form individual field stations may take, they all share the same commitment to advancing our understanding of the Earth by supporting research, teaching, and public education.

Research stations provide an invaluable service to local communities and the country by providing unbiased scientific information and facilities to help governmental and other stakeholders tackle critical environmental issues. Field station staff researchers often play a critical role in ensuring that environmental considerations are factored into local planning and development decisions.

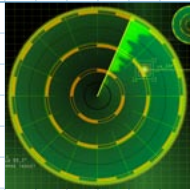


Rocky Mountain Biological Laboratory

Far-reaching findings from field stations



Little brown bat/Brock Fenton



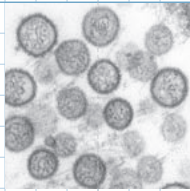
Radar screen

Inspiring new technology

In 1938 at the Edmund Niles Huyck Preserve and Biological Research Station in New York, Donald Griffin discovered that bats use echolocation to navigate and hunt. This finding quickly took on global implications, leading directly to the Allied Forces' development of sonar and radar during World War II.



Deer mouse/Mark Chappell



Hantavirus/Ctr. for Disease Control

Linking ecology and human health

Researchers at Sevilleta Field Station in New Mexico have drawn on the station's long-term data sets to demonstrate that hantavirus outbreaks are linked to deer mice populations and El Niño weather patterns.



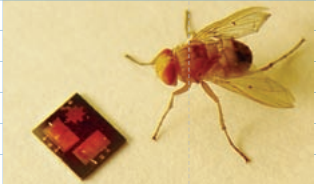
Measuring CO₂ uptake/JRBP



Study plot of the JR global change experiment/JRBP

Predicting the effects of climate change

Dozens of global climate change studies are underway at field stations across the country, from Stanford University's Jasper Ridge Biological Preserve (JRBP) in California to the Harvard Forest in Massachusetts. Together, these long-term studies have fundamentally altered our understanding of the impact climate change is having on natural systems.



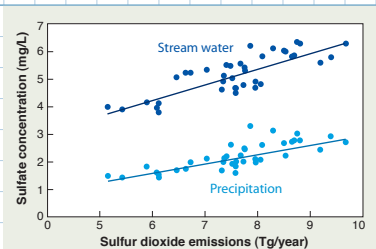
Ormia ochracea/Binghamton University

Sparking new biomedical technology

Scientists studying a population of parasitic flies at the Brackenridge Field Laboratory in Texas discovered that the fly had a previously unknown acoustical organ. This finding has led to a groundbreaking design for innovative directional hearing aids.



Indirect acid rain damage/HBEF



Correlation of SO₂ emissions with rain and stream acidity/HBEF

Observing and tracing environmental change

At Hubbard Brook Experimental Forest (HBEF) in New Hampshire, researchers working on long-term water-quality studies noted a disturbing increase in the acidity of lakes and streams. Further work linked "acid rain" with emissions from coal-fired power plants and industrial facilities, resulting in national emission standards that have substantially improved water and air quality.

Become a part of OBFS



Fairfield Osborn Preserve

Field stations depend upon the support and involvement of nearby communities. In return, many stations offer their communities a wealth of rewarding opportunities.

Whether you're a student, a senior citizen, a parent with young children, or simply an adult who wants to know more about the natural world, you can experience the impact of field stations first-hand by taking a class, attending a public lecture, organizing a field trip for your child's school, or volunteering as an educational docent or research assistant. You can find a list of member stations on the OBFS web site, www.obfs.org.

“You do realize what that summer...did to us, don't you? Made us realize we could actually do science.”

— Jeff, past student at a field station



OBFS/Trevor Hébert

Field stations are located all over the world. Visit www.obfs.org to search an interactive map for information on biological field stations in your area.

Our mission

Scientists working at field stations and marine laboratories strive to understand natural processes at every scale, from the molecular to the global, from milliseconds to eons. The mission of the Organization of Biological Field Stations (OBFS) is to help member stations increase their effectiveness in supporting critical research, education, and outreach programs. We pursue this goal in a manner that maximizes diversity, inclusiveness, sustainability, and transparency.



To learn more, visit www.obfs.org

ON THE COVER: Insets, top to bottom: High-frequency radar ocean-monitoring unit, Bodega Marine Laboratory and Reserve (Chris Harley); students installing markers for long-term monitoring of grassland plants at the Hastings Natural History Reservation (Mark Stromberg); gill netting to remove introduced trout from Marmot Lake, Valentine Eastern Sierra Reserve (Pete Epanchin). Background: Wyethia leaf (Philippe Cohen).

OBFS is a 501(c)3 nonprofit organization.

Education



EN Huyck Preserve



EN Huyck Preserve

The best way to learn environmental science is to experience it first-hand in the field. Each year, tens of thousands of students—from elementary school children through doctoral candidates—visit field stations to observe natural processes, formulate questions, and think critically about environmental issues. They learn first-hand how natural systems function, the differences between healthy and unhealthy habitats, and how natural processes are at the core of human well-being.

Field station-based courses often give college students their first or only chance to apply the information they’ve learned in classrooms and books to the real world. Dry statistical theory comes alive when applied to a threatened otter population. Animal behavior takes on new meaning as students observe woodpeckers at their nest or track a fox across a snowy meadow. The impact of these direct experiences can be far-reaching. Student evaluations of field courses regularly use such phrases as

An independent project gives a student a feeling of ownership and responsibility....The amount of work it takes to carry through an experiment—time in preparation, collecting data, entering data, sweat, flies, hard work... need to be experienced to get the full effect. And they are all a part of field research that you don't really understand until you do it.

— Sara, past student at a field station

‘best class ever’ or ‘life changing.’ They often come away with strong friendships and a new perception of the world.

Lessons learned at field stations remain with students throughout their lives. They carry with them a deeper appreciation for the importance of natural systems, and some find a new focus. Many of today’s working scientists look back on a class or a summer spent at a field station as a key event that determined their career path.



Cedar Creek Natural History Area/Thomas Rohrer



Vermillion Sea Field Station/Veronica Volny



Institute for Tropical Ecology and Conservation

Whether on a lake in Minnesota, a beach in Baja California, a rainforest in Panama, or at any of 200 other biological field stations in North America, students have life-altering experiences doing real science in the field.

Research



Sweeney Granite Mountains Desert Research Center



Granite Mtns.

At a time when humans are altering the world at an unprecedented pace and scale, the need for objective field research has never been more urgent. Just as research hospitals are critical for medical breakthroughs, and telescopes essential for extending our knowledge of the universe, field stations provide the critical real-world laboratories environmental scientists need to further our understanding of the Earth and its processes.

Field stations provide protected environments in which researchers can conduct the long-term studies required for making fundamental discoveries. They serve as meeting places where scientists from different disciplines—ecologists, geologists, or engineers—can come together to share their expertise and provide valuable new perspectives for approaching environmental questions. They also furnish a supportive environment where veteran researchers can extend their legacies by mentoring new generations of young scientists.

For well over a century, basic research conducted at biological field stations has provided the scientific data and expertise required to identify and address critical environmental challenges, whether the issue was acid rain, the environment’s effect on the control or spread of new diseases, or ecosystem responses to global climate change. Today, many stations are also leading the way in the development of sustainable facilities that support the activities of researchers and students while also providing a model for community development.

Scientists cannot live and work alone if they intend to effect change. [At field stations,] I saw scientists diligently working to reach out and translate their findings to a broader audience. They taught us that in order to protect our natural heritage we cannot only publish our results in journals. We must follow through by speaking out and acting upon the implications of our results.

— Theo Colborn (co-author of *Our Stolen Future*, on endocrine-disrupting chemicals in drinking water)



Konza Prairie Biological Station/Larry Schwarm



Mountain Studies Institute



Bodega Marine Laboratory

Research connected with field stations spans scales, seasons, and environments—from maintaining tallgrass prairie by controlled burns, to core sampling in snow fields, to tracking the transport of microscopic crab larvae in the oceans.

OBFS

Supporting environmental research, education, and public understanding

