EPI’s Guide
To Research & Conservation Service

Tips for finding authentic research and service experiences.
Introduction to Field Research and Conservation Service

The burning environmental issues (literally) of today are inspiring many to plunge into environmental studies and ecology careers and university programs. Each year, the number of degrees awarded in environmental science and ecology increases, as do the number of jobs in these areas. But applicant pools have increased too. The big question remains: how can you make yourself stand out?

One of Ecology Project International’s (EPI) top tips to help you make a wave in the applicant ocean is to get on the ground and into some field research or conservation service. Field research gives you real scientific skills—how do you pose an answerable scientific question? How do collect data in a consistent, accurate way? How do you analyze those results? Those are critical skills for any applicant. Conservation service allows you to prove your passion for the environment in a different way—by showing your willingness to give for the greater good.

But how can you find those authentic research and service experiences? Many programs focus on either one or the other. Some programs focus on both. Either way, we want you to know that there many opportunities to get these valuable practices, and we’ve selected some of the best of them here.

U.S. Department of State Pathways Programs

Start here. The United States government has a vested interest in growing a science-literate workforce, and offers many paid scientific research and trainings for high school to graduate students through their Pathways programs. These opportunities often have the added benefit of leading to permanent jobs with the government afterwards!

To see and apply for these opportunities, visit the USAJOBS website. Start building yourself a profile that you can use to apply to multiple jobs. Pro tip: Don’t miss any opportunities! You can sign up to receive an email any time the latest Pathway position opens up.

Pathways Internship Program
For high school, undergraduate, & graduate students
If you are hoping to launch a solid career as a government scientist or resource manager, from work on water rights with the Bureau of Land Management (BLM) to fish biology with the United States Fish & Wildlife Service (USFWS), a Pathways Internship is a great first step. Pathways Internships offer students paid developmental programs in many areas of environmental studies and ecology. Not only will you get real field science experience, your internship may flow right into a real career track.
Pathways Recent Graduates Program
*For recent graduates*
Have you already finished school (trade, university, community college)? Did you knock it out of the park? Use your stellar transcripts from within two years of graduation to land one a one-year, paid career development programs with any of the U.S. departments.

**American Fisheries Society**
**Hutton Junior Fisheries Biology Program**
*For high school students*
Do you love rivers and lakes—and maybe fishing? The Hutton Junior Fisheries Biology Program offers paid eight-week summer internships in fisheries science management training to high school students from underrepresented groups in science. Participants are matched with a local fisheries mentor where they will get their hands wet with real fisheries science experiences—from snorkeling to take fish population surveys to assisting with children’s educational programs—in either a marine or freshwater location.

**Boston Leadership Institute Marine Biology Program**
*For high school students*
The Boston Leadership Institute offers high school students one and three-week hands-on lab or field experiences in a dizzying variety of scientific subjects. In their Marine Biology Program, You’ll get to study impacts of ocean temperature and acidification on the growth of local marine organisms and document invasive species, go on field trips to local marine organizations, and even create art with fish. The marine biology program is three weeks long, and costs $2200, plus lodging if required, but some scholarships are available.

**Colombia University Secondary School Field Research Program**
*For high school students and their teachers in New York partner schools*
How about six weeks of laboratory AND field research at Columbia University? The Lamont-Doherty’s Secondary School Field Research Program uses their research reserve, Piermont Marsh, to study wetland ecology, natural carbon sequestration, and alternative strategies to managing invasive plants. Students and teachers will have a diverse experience from classroom teachings to wading in the marsh to collect samples to analyzing those samples back in the laboratory. Funding is available.
The Echinacea Project
For high school and undergraduate students, and recent graduates
Based on the prairie in Minnesota, The Echinacea Project (TEP) is dedicated to research related to prairies and the effects of habitat fragmentation in Minnesota and beyond. TEP offers many paid field research opportunities—with internships or assistantships for high school students through recent college graduates. Research at TEP digs into native prairie plant physiology, phenology, and their pests and pollinators. TEP is also involved in community science, and has a devoted group of local volunteers.

Ecology Project International Field Courses
For high school and undergraduate students
Overwhelmed by the options for field research? Don’t have time for a year-long project? Ecology Project International offers one of the easiest ways to dive into meaningful field research and conservation service. On EPI’s seven to 12-day courses, students travel to one of five international field sites to work with scientific researchers studying endangered species and climate-threatened habitats. Best of all, no prior experience is required in order to participate.

On EPI’s Belize Marine Ecology program, you will work with the Toledo Institute for Development and the Environment to snorkel while you collect data on seagrass beds—critical food for endangered sea turtles and manatees. EPI’s Baja Coastal Ecology program immerses you in the cerulean Gulf of California, where you may see endangered species from the blue whale to the tiny, endangered vaquita porpoise, and you’ll work to survey the marine invertebrates that form the foundation of the Gulf’s rich ecosystems. Courses are also offered in Yellowstone National Park, Costa Rica, and the Galapagos. Programs are tuition based, but credit and scholarships are available.

Institute of Arctic Studies at Dartmouth College
These field courses offer field research in the Arctic, as well as cultural immersion and exchange for high school students.

Joint Science Education Project
For high school juniors
Meet and work with students from other countries in the Arctic. This program offers a unique, fully-funded, multicultural field science experience to passionate and broad-minded high school students. The Joint Science Education Project (JSEP) brings students from Greenland, the United States, and Denmark together to participate in polar science research in the tundra of Greenland. You will also deploy your own inquiry-based projects over your three weeks in the field, gathering and using concrete scientific skills. Travel, lodging, meals, and extreme cold outerwear (when necessary) are provided.
Joint Antarctic School Expedition
*For Spanish-speaking, high school sophomores and juniors*

The Joint Antarctic School Expedition (JASE) is also a fully-funded, multicultural science program. For one to two weeks, students from the United States are paired with a Chilean high school to visit international research stations and field sites in Chile and Antarctica, where they help conduct animal behavior observations and vegetation studies. The entire program is conducted in Spanish, so applicants to the JASE program need to be fluent in Spanish.

National Science Foundation Research Experiences for Undergraduates
*For undergraduate students*

Through funding from the National Science Foundation (NSF), the Research Experience for Undergraduates (REU) is offered at a number of universities wishing to employ and provide training for undergraduate students in scientific research. A few examples of participating universities and their environmental studies or ecology programs are listed below. Students apply through the NSF portal, and will receive a significant stipend, lodging, and a food allowance.

**Cary Institute of Ecosystem Studies REU**
*For undergraduate students*

The Cary Institute in Millbrook, New York, is interested in providing its undergraduate researchers with field experiences in ecological subjects, from mosquito acoustics to carbon cycling in forest soils. The program also has the unique focus of “translational ecology” – encouraging focus on connections between science and humanity.

**Central Michigan University Great Lakes REU**
*For undergraduate students*

The Great Lakes REU will be held at Central Michigan University’s Biological Station on Beaver Island. The ecosystems of and environmental challenges facing lakes are complex, and so research is highly interdisciplinary, covering issues and scientific practices from microbial ecology and limnology. Students will walk through all parts of creating a scientific project, from experimental design to sharing results and discussing with the local community.

**Saint Michael’s College Research Experience**
*For high school students and their teacher in Vermont and partner states*

If you’re interested in studying climate change resilience in aquatic ecosystems, this may be the experience for you. The format is a bit different—you’ll travel to St. Michael’s College in Vermont for a week in summer to learn how research and the scientific process first-hand. Then, you and your teacher will return to school and design and
conduct your own independent research projects. In the spring, you’ll return to Saint Michael’s for an authentic poster presentation of your findings. Teachers will receive a $1000 stipend, and $1000 toward funding and equipment for the classroom.

**Shoals Marine Laboratory Research Internships**  
*For undergraduate students*  
From seabirds and plastic pollution to intertidal ecology, Shoals Marine Laboratory (SML) in Maine offers eight different summer internships for undergraduates. The internships provide lodging, food, a stipend, and local transportation. Interns will work alongside faculty mentors and SML scientists to help with long-term monitoring projects, as well as design and conduct new research projects in marine ecology and sustainable design.

**Shedd Aquarium of Chicago**  
**Teen Science Expedition: The Bahamas**  
*For high school students*  
For over two decades, the Shedd Aquarium has offered this incredible experience to high school students: to live and work aboard their research vessel, the Coral Reef II. Participants will explore some of the richest marine ecosystems, including coral reefs, mangroves, and seagrass beds, while also conducting their own scientific observations and research, and learning about Bahamian culture. Housing, food, snorkeling equipment, and all activities are provided for the 8-day trip (just not airfare to Miami).

**Student Conservation Association**  
The sixty-year-old SCA gives youth the opportunity to help “protect, restore, and enhance national parks, marine sanctuaries, cultural landmarks, and urban green spaces across the United States.” While the SCA does not offer field science or research opportunities, it does offer the chance for youth from high school to recent graduates to embark upon meaningful conservation projects on our public lands.

**Community Crews**  
*For high school students in their communities*  
Don’t want to travel far from home? SCA’s student crews allow you to gain ecological restoration experience in your own community, during the school year as a volunteer, or during the summer as a paid crew member. During the school year, the volunteer program is offered after school and on the weekends. You’ll work in teams of 6-12 volunteers on projects like restoring river environments and building trails.

Feeling like an adventure further afield? The SCA also offers regional and national conservation service opportunities.
Career Discovery Internship Program  
*For undergraduate freshmen and sophomores*

Spend one of your summers in college as a Student Conservation Association intern with the United States Fish and Wildlife Service. Internships could be in fields from visitor services and education to resource management.

Gap-Year Program  
*For recent high school graduates*

According to recent studies, more than 35% of high school seniors are considering taking a gap year—a year out of school in between high school and college. And students who have taken that gap year? More than 90% say that their gap year helped increase their confidence, personal development, and communications skills. The SCA offers both team-based and individual gap-year opportunities and internships, where you can spend a year immersed in conservation service, from trail work to education, for the good of our public lands—and your college application.

United States Forest Service  
*The 21st Century Conservation Service Corps (21CSC)*  
*Youth and returning veterans*

Love meaningful physical work outside? The original Civilian Conservation Corps was created nearly 100 years ago to provide work for unemployed young men during the depression. Corps members planted trees, constructed flood barriers, battled forest fires, and kept up forest roads and trails. Today, the 21CSC provides opportunities for young men and women, as well as returning veterans, to continue these valuable conservation efforts on our public lands, helping build skills that can translate into future careers in natural resources. Search for a public-private partnership programs near you or far away—21CSC internships often provide housing, although sometimes it’s a tent in the wilderness!

...or Choose Your Own Adventure!  
*Find a Science Mentor*  
*For everyone!*

Finding a science mentor is not a ready-made field experience, but it could end up being the most meaningful. Some scientific researchers are happy to help budding scientists—and maybe you can even offer your data-entry skills or legs in the field as a helper. Once you’ve decided what field of science you’re most interested in, cruise your local university’s website for professors and graduate students working in that subject. Then, reach out to a few of them! And be persistent—PhD students and professors are busy, and just because they don’t write you back immediately doesn’t mean they’re not
interested. Science Buddies, an online science mentoring program, offers a step-by-step guide to how to find a mentor.

Hopefully these options have made you feel hopeful and excited about building field research and conservation service into your life—and your job or college application! We wish you the best of luck in your applications, and we hope to see you in the field soon.