

I have recently begun graduate study at the University of California-Berkeley in the Department of Environmental Science, Policy, and Management. I am in the process of developing a cross-disciplinary program of study in the department's ecosystems science division which shall include coursework in the fields of watershed science, aquatic ecology, hydrology, geomorphology, and environmental planning and policy. My research goals and methodology are guided by a team of watershed research scientists currently studying the resilience of stream ecosystems to the cumulative impacts of water extraction in the Mediterranean-climate region of California. Access to senior research faculty and post-doctoral fellows is providing rich and valuable insight to current research developments and is presenting exciting opportunities for original contributions.

My previous research, volunteer and professional work experiences have given me the tools to succeed in a demanding doctoral degree program. As an undergraduate at Stanford University I completed my degree in less than four years, earning a B.S. in Biology with Departmental Honors and Distinction, an overall GPA of 3.8, and a minor in German. Coursework for the biology degree provided me with a broad scientific background and included such subjects as marine and terrestrial ecology, conservation biology, cell physiology, chemistry, physics, calculus and statistics. I also took advantage of research opportunities while at Stanford, including participation in a six week intensive research project in the Caribbean islands. Funded by an undergraduate fellowship, I worked with Dr. Joan Roughgarden and a team of five other students to design and conduct a study of territorial behavior of anole lizards on the island of St. Martin. It was a valuable experience in team-based research under the direction of a premiere research ecologist. Although the short-term project was necessarily limited in scope and application, I gained a strong understanding of experimental design methodology and became further motivated to strengthen my research background.

After spending a term studying abroad in Berlin, I took a leave of absence from university and work as an intern for the World Wildlife Fund (WWF) in northern Germany. Funded by the Krupp Foundation Internship Program and a Stanford Undergraduate Research Opportunities Grant, I worked as a field biologist intern in the Wadden Sea office of the WWF. My primary role was to assist the organization's senior ecologist in conducting a regional monitoring program for migratory birds on the coast of the North Sea. I also organized several community outreach projects, educating the public about the North Atlantic Flyway and the biological significance of coastal ecosystems. During my internship, I became familiar with wetland habitats and functions, learned to identify and band shorebirds and developed an understanding of the challenges of managing bird populations along migratory flyways. I was also responsible for assembling a database of over 10 years of resighting records of individual banded geese observed in the region. While immersed in these long-term data, I saw the potential for interesting analyses and findings pertaining to the migration timing and regional movements of geese. Focusing on the resighting records of barnacle geese (*Branta leucopsis*), I conducted an independent research project that detected significant shifts in migration timing over a 10 year study period. I would later use this research as the basis of an undergraduate Honors thesis project in the Biology Department. My thesis project provided the opportunity to follow a highly-independent, intensive research effort through to completion. It was extremely satisfying to create a scientific product that represented the culmination of my education and research experience while at Stanford.

After graduating, I worked in California as a biologist in the environmental consulting field, which strengthened my background in ecosystem sciences and further developed my field research skills. My work included ecological assessments, general plant and wildlife surveys, and vegetation mapping. I also conducted focused surveys under strict federal and state protocols for such endangered species as the Quino checkerspot butterfly (*Euphydryas editha quino*), San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus wootoni*), Arroyo toad (*Bufo californicus*), and coastal California gnatcatcher (*Polioptila californica californica*). I gained extensive experience identifying and mapping wetlands in accordance with federal, state, and local

jurisdiction criteria and became intimately familiar with the environmental regulations pertaining to rare and endangered species and other threatened biological resources.

In between jobs, my continued interest in biological research coupled with a desire to travel in South America, led me to a position as a volunteer field biologist at the Tambopata Research Center in southeast Peru. The research center was located in a pristine rainforest preserve on the western boundary of the Amazon basin, accessible only by a 7-hour boat ride from the nearest town. I assisted Dr. Donald Brightsmith, research scientist from Duke University, in a long-term study of the ecology and life history of parrots. My primary research task was monitoring wildlife activity at the world's largest avian claylick, where parrots, parakeets and macaws gather daily to eat clay from exposed riverbanks. The purpose of the research was to find an ecological explanation for the behavior, and to better understand clay-use patterns and interspecies interactions on the clay lick. Sunrise at the claylick was the most spectacular display of nature I have ever witnessed, as hundreds of brightly colored birds congregated on the red clay banks of the Tambopata River. As part of a reproductive ecology study, my research activities also included monitoring natural nests and artificial nest boxes for three species of large macaws. The purpose of the study was to explain the naturally low reproductive rates of macaws and the significance of hatching asynchrony. When not engaged in fieldwork I read scientific papers and books on tropical ecology, watched birds on jungle trails and conversed with local naturalists and visiting researchers. The research experience enhanced my understanding of scientific methodology and tropical ecology, and further focused my interests on ecosystems science.

I returned to the U.S. and began working for another environmental consulting firm in northern California. There, an important aspect of my work included the design and implementation of stream and wetland restoration plans in coastal watersheds. My work in ecological restoration introduced me to the fields of hydrology and geomorphology and helped build a strong understanding of how physical and biotic forces interact to create and sustain ecological communities. Because most of the restoration projects were required as mitigation to compensate for project impacts to environmental resources, I was faced with the unique challenge of designing a restoration program that effectively restored natural ecological functions for a specific area while minimizing costs to the project applicant. My role as a scientific expert and liaison between resource agencies and clients has shown me the importance of professional communication skills in advancing projects. Exposure to the applications of environmental law in the context of California's increasing land development has also demonstrated to me the need to enhance the involvement of the scientific community in conducting research relevant to policy and in disseminating such knowledge to the public.

In recognition of the importance of communicating science to the general public, I have been an active member of Friends of the Dunes, a community outreach organization on the California north coast. My involvement with the organization included supervising teams of volunteers to remove exotic species from the dunes and leading tours through nature preserves, educating the public on the unique character of the coastal dune ecosystem. I hope to continue my work in volunteer community outreach while in graduate school, through my involvement with the Berkeley Chapter of the Society for Conservation Biology (SCB) and participation in local environmental education programs.

My previous involvement in scientific research, professional environmental consulting and community outreach has prepared me for success in conducting graduate-level scientific research. My experiences demonstrate a talented ability to enhance scientific understanding and benefit society through the effective communication of scientific knowledge.