

**Next Generation Careers, NSF RCN UBE
Job Scan Survey
January 21, 2016**

Introduction

Recent trends have demonstrated that fewer doctoral and post-doctoral level scholars are attaining the sought-after careers in academia for which they have spent many years training. Many of them move on to alternative career tracks very different from the academic paths to which they were geared. We considered the possibility that many undergraduate scientific programs could enhance their preparation of students for career-oriented trajectories rather than grooming them specifically for graduate school. Hence, the Next Generation Careers – Innovation in Environmental Biology Education (NGC) project aims to determine whether undergraduate environmental biology programs in the United States are effectively preparing their students for entry-level positions following graduation. The first task in this project was to scan, collect and sort entry-level job postings from various environmental sectors to determine what the most-cited necessary qualifications are. These data will then be used to compare with survey responses from faculty, administration and career counselors of undergraduate environmental biology programs to determine whether similar patterns emerge and important factors align.

Methodology

The first step of this project was to understand what jobs exist for environmental biology graduates, so we began searching job boards for full-time, permanent, entry-level positions in mid-October 2015. We ran preliminary searches using relevant keywords (e.g.—“ecological,” “wildlife,” “conservation,” etc.) to determine what common required skills were found in the job listings. From these we formulated a list of keywords based on the most commonly occurring skills employers cited as being required of a successful applicant.

To ensure we included jobs from all sectors, including government, non-profit, industry and universities, we used several job search engines to query job postings during the official job scans. These included Idealist, USAJOBS, Ecojobs, Sustainable Business, and the job boards run by the Society for Conservation Biology, Texas A&M, and Warnell University. We retrieved and recorded all entry-level job postings on these sites that matched our search criteria from late-October - December 1, 2015. After the search period ended, we determined which skills from our list of keywords were found in each job posting.

Results

Sector

Government, business, and nonprofits were the most commonly occurring sectors in our job scans. Government jobs represented over 40% of all jobs retrieved, which is likely due to the fact that one of our search engines—USAJOBS—focuses solely on federal government positions. Many other sites had state and local government jobs available, in addition to positions in the private sector and industry. There were no K-12 education jobs listed, nor were there outreach or non-traditional education jobs retrieved. This is likely because we decided not to include seasonal and part-time jobs that resulted from the searches.

Degree Required

The most frequent degree requirement was a Bachelor's (over 92%). Jobs that required simply an Associate's degree or a high school diploma were rare. Many jobs did not specify a degree at all.

Job Focus

The most commonly cited categories were natural resources and forestry, but there were many jobs that were specific to forestry (these were marked both in the "forestry" and "natural resources" categories). Most jobs had multiple foci, so many were coded under several categories. The next most commonly cited categories (in descending order) were wildlife, ecology, agriculture (this could be horticulture or experience working with livestock), fisheries, and conservation, all of which constituted more than 10% of the retrievals.

Communication Skills

Verbal and written communication skills were hugely important, both of which were found in over 75% of retrieved job postings. This was one of the job requirement criteria most unaddressed, though—only 88 job postings indicated a need for communication skills; 52 jobs postings we retrieved skipped this section.

People Skills

The people skills category was largely left unaddressed, as only 77 postings mentioned the applicant needing this skillset while 63 postings didn't mention it at all. From what was answered, group work (nearly 50%) and independent work were the most important

Technical Skills

Computer skills eclipsed most other skills with nearly 70% of jobs requiring them. Data collection and analysis and GIS/GPS experience were required by over 30% of the jobs.

Requirements

Having a license and being able to work in the United States were very important, as nearly 50% of jobs required either of them. Almost 50% of the jobs scanned also wanted some number of years of experience—this could come from summer internships or research assistantships if it were only one year that was required, but some of the "entry-level" jobs did require two or more years. Applicants also need to be fit for about 30% of jobs, which included requirements for lifting, walking, and being able to be out of doors in all weather conditions.

Application Type

Nearly all of the job postings retrieved required applications through an online portal or via email. About 15% of jobs allowed applicants to hand in or mail their applications.

Additional Specialized Skills

About 50% of jobs needed skills specific to knowledge of a region or being able to identify certain species.

Summary

The job scans revealed that a significant number of full-time, permanent entry-level jobs in environmental biology were in the forestry and natural resources fields. Many jobs were found in the government sector, although the non-profit and industry sectors also solicited for a number of positions. The term “Entry-level” varied across positions, with some jobs requiring solely a high school diploma or Associates degree to other jobs requiring a Bachelor’s degree with one or more years of relevant experience. We found that most of the jobs we retrieved required a combination of skill sets, including communication skills, technical skills, and in some cases, people skills and “specialized skills.” Most jobs allowed applicants to apply electronically, but some made concessions for in-person and postal mail submissions.