

Chapter 11

SKILLS FOR NON-ACADEMIC WILDLIFE AND CONSERVATION CAREERS

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INTRODUCTION

One of the challenges that you will face when entering the job market is determining what skills employers are looking for in a prospective job candidate, and how these align with your own skill set. Equally challenging can be figuring out how to successfully communicate to a prospective employer, through your application materials, that you have indeed developed those desirable skills (see also Chapter 8).

As discussed in Chapter 6, a wildlife or conservation degree can lead to a wide variety of different career paths. In this chapter, we present information about the skills needed for non-academic conservation careers and share insights from a survey of 19 individuals who work in the field of wildlife biology or conservation and who have experience in hiring undergraduates. These individuals work for a mix of non-profit, for-profit, and federal and state government organizations. In aggregate, the group has hired individuals for field positions, lab positions, seasonal, and volunteer positions. Throughout this chapter, we present useful solutions that will help guide you in developing your general career goals and direct you toward highly desirable skill sets. You will learn the general skills that will apply to a broad suite of potential employers and find the skills needed for a specific job in a specific sector. In addition, our hope is you will

be able to better define your career goals by ascertaining which jobs use the skills that best align with your interests. The right approach is the one that works for you.

For the purposes of this chapter, job skills have been separated into two categories, disciplinary and non-disciplinary (Blickley et al. 2013). Disciplinary skills are specific to the wildlife and conservation field, such as the ability to identify a particular species from its morphological traits, use a statistical analysis program, or operate and maintain the equipment and vehicles used for fieldwork. Non-disciplinary skills are those that are associated more with interpersonal skills and work ethic. Examples of non-disciplinary skills include the ability to work in a team, write a clear and concise technical report, proactively identify and solve a complex problem, and complete a task on time and on budget.

WHAT ARE THE TOP SKILLS NON-ACADEMIC EMPLOYERS WANT FROM UNDERGRADUATES?

The field of wildlife biology offers a wide range of possible careers and positions, each with varying expectations of experience for potential employees. As a student interested in pursuing a job in wildlife biology, you must strategically plan a curriculum that includes appropriate academic courses and targeted extracurricular activities that will give you the skills you need to get the job you want (Chapters 8, 10).

Expertise in the job-specific discipline (disciplinary skills) is commonly cited as an important job qualification in studies that evaluated skills and competencies sought by employers of entry-level wildlife and conservation employees (Adelman et al. 1994, Brown and Nielsen 2000, DeLany Jr. 2004, Kubik 2009, Sample et al. 1999, Saunders and Zuzel 2010). A strong

foundation in wildlife and conservation science is of primary importance for many employers. For example, employers surveyed by Delany Jr. (2004) generated an exhaustive list of 384 skills required for entry-level positions in wildlife management, 57% of which were disciplinary.

Through our surveys, we also found disciplinary skills to be of primary importance to employers in multiple sectors of wildlife biology. When asked “What are 3 of the top skills undergraduates need in order to get a job in the field of wildlife biology (or conservation more generally) after graduation?” interviewees named disciplinary skills most frequently (14 out of 17 respondents). Respondents cited disciplinary skills comprised of formal training, knowledge of study organisms and systems, and hands-on skills with specific tools and programs. Formal training was described by respondents as “strong coursework record” and a certification such as a “biology-related degree.” Responses also included “know [ledge of] wildlife issues (species and ecology)” and ability to use specific tools such as geographic information and positioning systems (GIS and GPS).

Even though disciplinary skills are decidedly important, surveyed employers also emphasized several key non-disciplinary skills. The most important of these appear to be communication and interpersonal skills (Brown and Nielsen 2000, Kubik 2009, Sample et al. 1999). In at least two studies (Sample et al. 1999, Saunders and Zuzel 2010), employers ranked communication or interpersonal skills as more important than any disciplinary skill. Delany Jr. (2004) reported that among the 73 skills ranked as “highly important” by wildlife professionals, 34% were related to communication or interpersonal skills. Respondents in our survey mentioned communication and interpersonal skills in 47% of responses and work experience in

41%. Other key non-disciplinary skills included ethics (DeLany Jr. 2004, Sample et al. 1999), computer modeling (Brown and Nielsen 2000, Saunders and Zuzel 2010), critical thinking, innovation, and problem-solving (Brown and Nielsen 2000, DeLany Jr. 2004, Kubik 2009). Although some studies mentioned project management or program leadership (Adelman et al. 1994, Sample et al. 1999), most studies did not identify these skills as critical for undergraduate-level applicants. Similarly, interdisciplinary training was often mentioned (Allison and McBride 2003, Dietz et al. 2004) but rarely ranked near the top of the list when it came to important skills. In our survey, 53% of responses mentioned non-disciplinary skills such as the ability to work independently and in a team and to “maintain self-motivation”. Twelve percent of responses focused on other skills, which included “interest in” and “passion for” the field of work, “cultural sensitivity” and a diversity of references who can attest to skills beyond the classroom. Many of these non-disciplinary skills can be gained through previous work experience or on-the-job training (Bonine et al. 2003, Blickley et al. 2013).

To better understand the balance between disciplinary versus non-disciplinary skills, we asked the question: “When hiring undergraduates, how important are disciplinary skills (such as identifying birds or using a GPS unit) relative to non-disciplinary skills (such as project management or interpersonal skills)?” Respondents were split about which skill set was more important. Of the 19 responses for this question, eight stated that disciplinary skills were more important, six stated that interpersonal skills were more important, and five viewed both as equally important. We conclude the take-home message here is you must devote time and effort to developing both sets of skills and be able to indicate your capacity for both when applying for

positions. A safe approach might be to develop both in equal measure. Once you have your career goals more clearly defined (if they aren't already), you should better understand where that balance might rest.

Response	Count of responses
Disciplinary skills are much more important	2
Disciplinary skills are slightly more important	6
They are the same	5
Interpersonal skills are slightly more important	3
Interpersonal skills are much more important	3

HOW DO THE EXPECTATIONS OF NON-ACADEMIC EMPLOYERS DIFFER FOR GRADUATE-LEVEL POSITIONS COMPARED TO UNDERGRADUATE-LEVEL POSITIONS?

Unsurprisingly, positions requiring an undergraduate degree have different expectations about applicant skills and experience than positions requiring a graduate degree. That difference may be found more in the depth of your skill set rather than its breadth. Previously, we sifted through job advertisements that required graduate degrees in conservation science (Blickley et al. 2013). We quantified how often different skills were mentioned in job advertisements for three

non-academic job sectors: nonprofit, government, and private. Disciplinary skills made up 37% of the average job advertisement and were clearly critical for graduate level applicants. Several non-disciplinary skill sets also stood out as important for graduate-level applicants. These included project management (11% of the average job advertisement), interpersonal (8%), written communication (6%), program leadership (6%), and networking (6%). Different forms of communication, including written, oral, and outreach, made up about 14% of the average advertisement.

Our more recent survey specifically asked “How do [the previously listed top 3 undergraduate] skills differ from the skills that graduate students need?” Fifty-six percent of respondents felt that graduate students should have more advanced disciplinary skills (e.g., data analysis) and 44% of respondents expected graduate-level applicants to be more skilled in non-disciplinary skills such as scientific writing, independent work, leadership, and management. A third of the respondents felt that experience is the main difference between the two education levels. One respondent captured the general tone by noting that “graduate students are typically hired for higher level positions, and therefore would additionally need more refined interpersonal skills, language proficiency and higher level disciplinary proficiency.” Only 2 out of 18 responses indicated that there is not a marked difference between undergraduate and graduate level education in terms of required skills.

From our past job advertisement and interview results (Blickley et al. 2013) and our more recent survey, we conclude that disciplinary skills, communication, and interpersonal skills continue to be very important as students transition from the undergraduate-level to the graduate-

level job field. However, employers hiring graduate-level applicants want evidence of increased disciplinary ability and increased management and leadership capacity. Most of our survey respondents suggested that graduate-level applicants should have higher-level skills and more experience. In other words, employers expect graduate school to transform students from active contributors into managers and leaders of scientific endeavors.

Despite these clear differences in expectations, the competitiveness of today's wildlife job market causes applicants with graduate degrees to apply for jobs that technically only require an undergraduate degree. This makes it difficult for people with less experience to get a permanent wildlife position without an advanced degree. Applicants without a master's degree may need to build up experience and skills through temporary, seasonal, or term positions to be competitive for higher-level permanent positions. Linking up with a governmental agency, non-governmental agency, or private company during your undergraduate (e.g., through the SCEP and STEP programs for the United States federal government) can be a way to short-circuit this process. Alternatively, you could view your undergraduate as a time to build up the skills, experiences, networks, and good grades that will make you competitive for a good graduate program.

THE IMPORTANCE OF JOB SECTOR

Outside of academia, wildlife biologists are typically employed in the private (15 %), government (65%), and nonprofit (5 %) sectors (Doyle et al. 1999). Employers across the three job sectors value many of the same skills and experience in job candidates, particularly when

seeking to fill entry-level wildlife biology positions. However, employers in these sectors may also prioritize different skills and competencies due to differences in mission, culture, and requirements of the specific job they are seeking to fill.

As a jobseeker, what strategies can you use to determine the breadth and range of skills that an employer is seeking when filling a specific job? For early-career conservation professionals with a graduate degree the different sectors emphasize different skills in their hiring (Blickley et al. (2013). Private-sector job advertisements asked for more specific analytical and disciplinary skills than either government or non-profit ads. Project management skills came up more commonly in non-profit ads than government or private sector ads. Communication and networking skills came up more in government and non-profit job ads than in private sector ads.

It is important to understand what the employer is looking for. A good place to start is with a careful reading of the job advertisement. Most job advertisements explicitly list the skills that are required or desired in a successful job applicant. You can also glean valuable information through researching the mission and approach of the hiring organization and by investigating the background of employees in similar positions. As you make decisions on where to focus your energy and effort, do so with an understanding of your skills and abilities and also what type of job you wish to pursue. As you apply for jobs, craft your letter of interest and resume with those specific jobs in mind (Chapter 8).

HOW CAN UNDERGRADUATES BEST SIGNAL THEIR SKILL SETS TO POTENTIAL NON-ACADEMIC EMPLOYERS?

Knowing when and how to convince a future employer that you have what it takes to excel in a wildlife biology career can be difficult. Once you have identified and targeted the skills and experience needed for your chosen career, the next step is to determine how your own experience and interests have prepared you, directly or indirectly, to take on the duties for specific jobs. Your avenues to communicate this information will likely be traditional job application materials, namely a cover letter, resume, writing samples, and/or interview (Chapters 8 and 9).

Being an effective communicator of your skills sets with these written and in-person tools takes effort and practice. In fact, self-promotion may be a skill in of itself. Being able to list skills on a resume and providing evidence that you have used the skills presents you as being better prepared for careers in wildlife biology and conservation (Martinich et al. 2006). By tailoring your job application materials to specifically address the requirements of a particular job, you indicate to an employer that you understand the duties of the job and are well-prepared to work in that position. Because communication is an important skill that employers are seeking in prospective employees, you should think of the job application process as your first opportunity to demonstrate your ability to effectively communicate.

Listing relevant course work communicates foundational knowledge in a discipline (Nelson et al. 2008) but being able to signal your use of the disciplinary knowledge gained in the classroom demonstrates an ability to implement such skills (Colón-Rivera et al. 2013). Undergraduate research activities also present a good opportunity to demonstrate the application of disciplinary, organizational and interpersonal skills (Colón-Rivera et al. 2013). When employers were

directly asked how to communicate competence in several specific skills, Blickley et al. (2013) reported that experience, above and beyond coursework, is the best way to signal competence. Employers mostly obtained this information from the resume by looking at volunteer positions or internships. Employers also found evidence for desired skill sets during the interview of the candidate or, in some cases, from talking with a person's references (Blickley et al. 2013). Many professional organizations have certification programs that serve as an effective means of signaling your competence in basic or advanced skills related to wildlife careers. For example, The Wildlife Society has a certification program for wildlife biologists with different designations depending on educational and work experience (<http://wildlife.org/learn/professional-development-certification/certification-programs/>). A certification from a respected professional organization signals to a prospective employer that you meet the professional standards for a career in that field in addition to participating in your professional society (Chapter 7).

When respondents in our recent survey were asked "How can undergraduates demonstrate to potential employers that they have competency in the desired skills?" they corroborated our findings from Blickley et al. (2013). Our survey respondents most frequently answered that signals of competency came from work outside the university setting, either as a volunteer or in another work environment. One respondent described a positive association between a diversity of skills and extracurricular activity, stating that "volunteering at an agency [as] an undergraduate can show [a person has] gathered a skill set around: 1) leadership, 2) project

management, 3) fundraising, or 4) partnership development...” Working outside the university setting could show “proof of initiative...to improve their skill set and experience level.”

Cover letters and interviews give undergraduates the chance to detail relevant, important linkages in their extracurricular experiences and the skill sets they developed that resumes may not. For example, “if they haven’t had a field job before, but they write about spending a lot of time outdoors, or an experience volunteering in a lab, and how that can apply to what they will be doing, that is helpful.” You should explicitly think about what those experiences did for you in terms of your skills and understanding (i.e., make linkages). For example, “while it is useful to mention that one has studied anatomy and conducted a necropsy in a lab course, that point gains more relevancy if it is accompanied with a description of how one has butchered their own meat each hunting season or assisted with field necropsies with professionals. The latter experiences indicate (1) likely a solid understanding of wildlife anatomy, (2) skill in the tools used for the job, and (3) comfort in doing the job.” Thinking outside the box and focusing on holistic experiences that signal several skills could greatly benefit undergraduates when applying for positions. We recommend detailing those experiences in the cover letter, especially if they are well outside the job or academic experiences and make sure to follow up with more detailed descriptions during an interview.

WHAT ELSE MIGHT YOU CONSIDER AS YOU EMBARK ON YOUR WILDLIFE BIOLOGY CAREER?

The 18 respondents who answered the question of “What other advice would you give to undergraduates who want to become wildlife biologists?” provided a wide range of advice to

current undergraduates. We identified six common themes within the open-ended responses: (1) 83% of respondents said that undergraduates should build their disciplinary skills, and most of these respondents emphasized the value of “varied” experience. (2) 28% said that relevant, extracurricular work experience is so important that students should try to volunteer if paid positions are not available in their field. (3) Many (39%) discussed the value of building communication and interpersonal skills, and several mentioned that experiences outside of the wildlife field can help a student build these non-disciplinary skills. (4) A third (33%) of respondents discussed the importance of attitude, advising students to be enthusiastic, optimistic, determined and persistent. (5) Some (17%) respondents noted the value of building a good network of contacts and references. (6) Finally, 22% of respondents advised students to take some time to explore their world, including everything from living abroad to just going outside. This included continued education as two respondents advised not rushing into graduate school, knowing what you want out of graduate school before you start, and choosing a graduate program, advisor and funding situation with care. Possibly most importantly, as one of our respondents said, “Follow your passion, gain a broad array of experiences, get involved, and dedicate your time to something you and others believe in.”

SUMMARY

To be competitive in the wildlife biology job market, you must take control of your own educational and early professional experience. Viewing your undergraduate education as the opportune time to gain valuable workplace skills, such as communication, leadership, project management and networking, in addition to the more traditional disciplinary knowledge, will

make you competitive for a range of possible career options upon graduation. Equal to developing the relevant skills for a job, you have to effectively signal to a prospective employer that you have those skills. Lacking direct experience in a particular area should not necessarily dissuade you from applying for a job, particularly if you can communicate to the employer that skills you developed in a different context can be applied, or that you have the ability and enthusiasm to develop skills quickly once on the job. By being strategic, you can find a good fit for a career in the rapidly evolving field of wildlife biology.

The following are 9 points to help guide you through the process of gaining experience and getting the job you want. They are adapted from Blickley et al. (2013).

- 1) Focus on key skills. Gain competency in transferable skills. Broaden your potential for future opportunities by focusing on areas of overlap.
- 2) Decide on a career track as soon as possible and tailor your course work accordingly.
- 3) Be creative and go beyond minimum requirements. View it as insufficient to graduate with only coursework.
- 4) Start collecting job information early. Develop a process to scan and evaluate job advertisements long before you are ready to apply so you develop the skills needed for the positions you find appealing.
- 5) Be strategic. Identify the job skills that make you stand out, match these with positions that require these skills, and then augment your profile with complementary skills. For example, if you are a better field biologist than a people person, build your resume to that strength by gaining quantitative analytical skills.

- 6) Be proactive. If your program does not offer what you need, make your own opportunities and build your own network. Contact potential future employers and volunteer.
- 7) Do not undervalue your experiences. Potential employers may value your experiences in group leadership, event planning, or volunteer positions even if they are not directly linked to, or gained during, your undergraduate degree.
- 8) Talk to wildlife professionals. Take the time to learn about the career path and training of people with jobs that you would be excited to have.
- 9) Recognize time constraints. Budget time between the conflicting interests of finishing your degree, fulfilling work obligations, and gaining a breadth of skills.

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