The Student Chronicles

Newsletter from the SDWG November 2017

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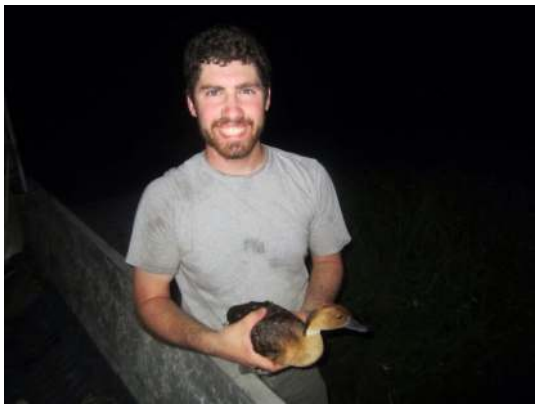


Hello Students! My name in Phillip Stephenson and I am proud to be the Chair of the Student Development Working Group this year. I would like to thank our out-going Chair, Kristi Confortin and the out-going Past-Chair Krysten Zummo, for their hard-work and dedication to the students and our working group. These officers are not here for only a year, but serve a three-year term, constantly lobbying your concerns to council and assisting with your needs and wants as students.

I joined The Wildlife Society during my undergraduate years because my advisor would not advise me until I became a member. That nudge launched me into volunteering at deer-check stations, planting trees for warblers, working with school groups, and serving in officer positions at The University of Tennessee and The University of Arkansas. There were times during my masters were I was dedicating more time to strengthening our student members professional development and experience opportunities than I was dedicating to my own masters project. But do I regret those all-weekend deer-check stations, those chances to develop students, or those moments our members learned a new skill? No!!! Those moments reiterate why I enjoy being a wildlifer. Part of The Wildlife Society's mission is, "to enhance networking and learning opportunities, professional and career development, and provide numerous ways to get more involved in creating a better future for wildlife and their habitats." I don't know if you have realized it yet, but those are living goals that our student chapters, state chapters, sections, and the Student Development Working Group thrive to provide to each of you.

It is my mission to strengthen communication between the student chapters, sections, and TWS Council and Staff to have a more transparent model of fluid communication between our various subunits. We are all on the same team, but sometimes we do not know who is on that team. That is where I plan to bridge the divide. I have experienced the needs and wants of students, but I will still need your input to push for the concerns of the student body. We are the future of The Wildlife Society, but we still have an obligation to standup for our development needs and rights as students. I plan to continue our outreach to students through the implementation of student section representatives, involvement through our Facebook page highlighting you, the student and your student chapters, and by increasing our Google group use to sustain diverse ideas across student chapters and sections. Please take advantage of these resources. We also have a page dedicated to the Student Development Working Group on The Wildlife Society's website.

One more comment before you get to the rest of this great newsletter! The Wildlife Society is reintroducing the "Give back" program to student members Nov 1st. This program allows you to send a FREE 6 month membership to anyone you know. I would suggest that we all take advantage of this opportunity to pass it forward. Give it to a fellow student chapter member, a recent graduate, or even a state/federal agency employee. Remember, sometimes you have to be nudged to get involved, but it is worth every moment and friendship that comes along the way.

You are the biologists of tomorrow, but we can make the best of your student activities today! Please feel free to contact me with any of your concerns/suggestions/questions: phillipleestephenson@gmail.com

Congratulations to our New Officers!

Colleen Hartel, Chair-Elect

Colleen Hartel is currently a graduate student at Ohio State University and is pursuing dual Master's degrees in Environmental Social Science and Public Administration. She uses mixed-methods to study how individual-level psychological factors and broad-level social and ecological contexts impact respondents' descriptions of negative interactions with wildlife. Colleen received her B.S. in Wildlife from Purdue University in 2014 and was an active member of the Purdue Student Chapter of TWS. After working in a forest genetics lab for most of undergrad, Colleen made the switch to human dimensions, working on a variety of projects with state agencies. Colleen became heavily involved with TWS after joining Headquarters' government affairs team as the Policy Intern, engaging in a range of wildlife management issues through drafting articles, briefs, and letters and meeting with legislators. She has continued to remain active in TWS policy initiatives as the Chair of the Conservation Affairs Committee for the North Central Section. As chair-elect of the SDWG, Colleen is excited to support student professional development, and is especially thankful for the opportunity to reciprocate the support she received to students exploring the variety of multidisciplinary interests under the umbrella of wildlife management. When not working or studying, Colleen enjoys exploring Columbus' natural areas with her camera and dog.

Kristi Confortin, AWB ®, Past Chair

After a growing involvement with The Wildlife Society over the past 7 years, Kristi Confortin was elated to serve as the Student Liaison to Council this past year. Over her three-year term, she worked enthusiastically to increase communication between students and their Student Chapters especially, using social media platforms. She will complete her term this year as Past Chair for The Student Development Working Group. Her goals are to increase student awareness, in hope that more students get involved with TWS. She looks forward to continuing her efforts as being a mentor to students. Kristi finds mentoring to be extremely rewarding as she watches students reach their career goals. Kristi believes the opportunities and experiences that she has gained from TWS has led her to where she is today. She is excited to see how her involvement will continue in her next steps as an early career professional.

Laken Ganoe, Secretary

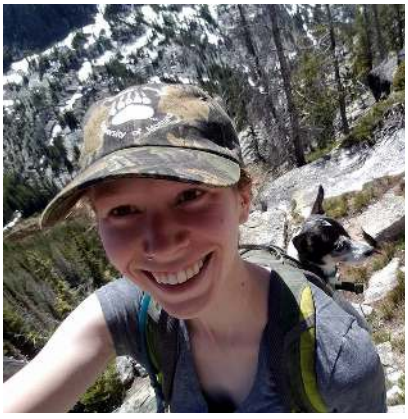
Laken Ganoe is currently finishing her Bachelor's in Environmental Science with a concentration in Wildlife and Fisheries Science at California University of Pennsylvania. She plans to attend Penn State University in the near future for her Master's degree. Laken has a passion for mustelids, especially for studying fishers! She is actively researching the fisher population in Pennsylvania and hopes to pursue a career in field research on mesocarnivores. As your secretary, my goal is to apply the knowledge I have gained as a student leader to increasing communication among the SDWG, Council, and the students, as well as effectively relaying information to Student Chapters. I am extremely excited to work with the other amazing officers, and with you, the students!

Brenna Hyzy, Treasurer

Brenna Hyzy is currently a full-time permitted bat biologist working for Western Ecosystems Technology Inc., an environmental and statistical consulting firm. She currently lives and works out of their Minnesota office in the Twin Cities. Brenna received her bachelor's degree in Biology from Radford University in southwest Virginia in 2015. While at Radford, Brenna was heavily involved in research projects focusing on threatened and endangered bat species in the face of White-nose Syndrome and worked on many projects studying many different bat species from 2012-2015 through both Radford University and Virginia Tech. She was very active in both the Virginia chapter of The Wildlife Society (VATWS) and Radford's student chapter (RUTWS). She held multiple officer positions in RUTWS, most notably the president position from 2013-2015. She was also elected student representative for VATWS and held that position from 2013-2014. After graduating, Brenna continued on to earn her master's degree in Wildlife Ecology from the University of Wisconsin - Stevens Point in 2017. For her thesis, Brenna studied occupancy patterns and maternity roost selection of the federally threatened northern long-eared bat in the Lake States region. Brenna has been an active member of TWS since 2012, and has traveled to or presented at multiple state and national TWS conferences and conclaves. Brenna looks forward to contributing to the effort of inspiring and leading new and current students of wildlife and facilitating the crucial connection between students and professionals in the field of wildlife.

Letter from the Editor

Hey folks, thanks for reading the SDWG Newsletter! This edition is all about graduate school. The more graduate students you talk to, the more paths to graduate school you'll discover and getting there can seem overwhelming. This newsletter has you covered with some of the best tips and stories for getting where you want to go. My top two tips regarding graduate school are: 1) NETWORK! I know you've heard it so many times it hurts, but there's good reason. I secured every job I had after undergrad through my network and I did not compete for my graduate position—because of my network! Get to know the people around you, the people you work for, and the people you want to work for; you never know where your network can take you. 2) Before applying to graduate school, spend a year wishing you were in graduate school. Being in graduate school isn't easy, but on the hardest days, it's always nice to fall back on that passion and the memories of the work you put in to get there. Know what you want—then go get it!



We love highlighting TWS student members in the newsletters! If you have questions, comments, concerns, photographs, or articles, send them my way! Enjoy!

Summer Higdon, SDWG Newsletter Committee Chair

School of Natural Resources, University of Missouri

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A Good Guide to Getting into Grad School

Contributed by Hannah Clipp

If you like research, you have questions about the natural world, and you're willing to work hard to unearth answers to those questions, then it sounds like you should consider pursuing a graduate degree. But how do you do that? Unfortunately, most universities don't teach undergraduates how to get into to graduate school. Many students, including myself, have had to stumble our way through the process on our own. In this article, I'll share what I learned and how I managed to secure my current Master's position.

First of all, the fields of wildlife and ecology don't work like most fields. You can't just apply to a graduate program at the school of your choice and expect to get in. I've been told stories about how recent graduates with shiny, new Bachelor's degrees applied to a bunch of different schools and got rejected from *every single one*. Why? Because your qualifications mean nothing if there's no funding to support you. What you need to do instead involves time, effort, and contacting professors before you ever start the application process.

Let's break down some of the key steps of getting into graduate school:

1. Start by figuring out your research and career interests. Get research and field experience as an undergraduate, through summer internships, technician jobs, and volunteering. Dabble in different areas of ecology. It's just as important to figure out what you don't like as what you do. You don't want to find out midway through graduate school that you actually have no interest in your research. So… Pinpoint your passions. Come up with questions. Think about where you want to work in the future and what you want to work on. If you are intending to go straight into graduate school from your undergrad (which is what I did), then you really want to be considering these things in your junior year, if not sooner. If you plan to take some time between graduating and going for a higher degree, then you'll have more time to figure out your research and career interests. In fact, that time in-between can be really valuable in clarifying what you want to do and in coming up with potential research questions.

2. Make sure graduate school is the right choice. It may seem obvious, but before you commit to a graduate program, make sure you really want to do that. Being a graduate student is not all smiles and rainbows. There's frustration when your R code isn't working for no discernible reason and anxiety when your deadlines keep piling up, with no end in sight. You won't be paid much money, and most of that will go into paying off student loans and paying for rent. However, it can be a rewarding experience, with advantageous long-term benefits, so it's important to weigh the pros and cons, and make sure it fits into your life and career plans. Consider the following: Can you afford to be in graduate school? Is a higher degree necessary for your dream career? Will it help with advancement in your career? Also, talk to graduate students. Honestly, that's the best piece of advice I can give anyone interested in graduate school. *Talk to current graduate students – ask them about their experiences*. When I was an undergraduate student, I organized a graduate school Q&A session. I put together a panel of current graduate students and had them introduce themselves, talk about their experiences, and answer questions from the attendees.

3. Look into fellowships. This isn't absolutely necessary, but it will be helpful for the next step. If you can manage to get a fellowship, then you are a more attractive option for potential faculty advisors and you have more choices because you are not restricted to projects that already have funding. The big, pie-in-the-sky fellowship is the National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP). If you are awarded this fellowship, you're pretty much set. I applied to the NSF GRFP as a senior and as a first-year Master's student. I earned Honorable Mention the first time, and then received it the second time around. It's been a great boon when contacting professors about PhD opportunities. There are also other fellowships out there – federal (e.g., Truman Scholarship, Dr. Nancy Foster Scholarship), regional (e.g., the Switzer Fellowship, Bullitt Environmental Fellowship), and plenty of university fellowships. If you're eligible and the fellowship seems to fit, then it's worth a try.

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4. Reach out to potential faculty advisors. This is the unspoken requirement for applying to graduate school. You have to find a faculty advisor willing to take you on as a student. At this point, you've already figured out your research and career interests. During the year before you intend to start graduate school (e.g., if you want to enroll in Fall 2018, start doing this Fall 2017), you should be looking into professors who share your research interests and work with people or organizations with whom you want a career. For instance, I am interested in bird responses to anthropogenic activities, environmental change, and management actions, and my career goal is to work as a federal research wildlife biologist. Therefore, I looked for professors who do applied bird research and work at a school with a USGS Coop Unit. My search process involved going through faculty listings on university websites. Another approach is to ask your professors for suggestions or to look up the authors of scientific papers that you find interesting. Once you find potential faculty advisors, visit their websites (if they have one) and read about their current research. Does it match up with your interests? Perfect! Now the hard part – contacting them out of the blue. Your search probably turned up a number of faculty advisors, so create a list of your top 20 or so to begin.

I recommend email as a means of first contact. When inquiring about Master's opportunities, my first email to a potential faculty advisor was formatted like a cover letter (see "Making Contact: A Few Tactics to Make the Best First Impression" on page 7 for more details). If you would be interested in an example of some of my initial cover letters, feel free to contact me at hannah.clipp@gmail.com. In general, I erred on the side of overloading the professor with information and impressive accomplishments. For instance, if you already have a graduate fellowship, mention it in the opening paragraph! If not (and that's totally fine), mention your accolades (publications, scholarships, honors/awards, etc.) later in the email. You want to make a good impression. Wow them so that they want to open your CV and consider you. Even if professors don't have a position coming up, they may be willing to pass on your materials to someone else in the department. Also, make sure you tailor each email to that professor, and be aware that some professors actually have sections on their websites detailing exactly what they want a potential student to include in their first contact email. After emailing your top 20 potential faculty advisors, don't be discouraged if you don't receive a reply right away. Most professors get back to you within a few days, but for those that don't, a follow-up email a week or two later would be appropriate. Sometimes, they won't ever respond, through no fault of your own.

5. Monitor job boards for advertised graduate student positions. Contacting professors is the best way to inquire about upcoming openings in their labs, but a lot of those positions will also be advertised on job boards or list-servs. If you haven't already heard of them, I highly recommend the Texas A&M Job Board and the Ecolog-L listserv. Ultimately, I ended up with my current Master's position after seeing the opportunity advertised on the Texas A&M Job Board and applying for it. Keep in mind that advertised positions may not show up until just a few months before the starting semester. For instance, in October, I was still seeing positions for a January start date. Because of this, keep an eye on job boards year-round, especially if you have a flexible start date, since projects can begin during the fall, spring, or summer semester. When you see a cool position pop up, you'll still need to contact the professor first, before applying to the school, but the advertisement will usually have specific instructions to follow.

6. Weigh your options and make a decision. Hopefully, some of the professors you contacted replied and said they had an opening in their lab, or you found a couple of positions advertised on job boards, sent your materials to those professors, and received a positive response. After you have talked with the professors and they are willing to take you on as a student, the application is pretty much just a formality. But… how do you choose between opportunities? Or perhaps, how do you know an opportunity is the right one to take? Obviously, it's going to be up to you, but there are some important points to consider when making that decision. First, know the details of the graduate student position. You should not be paying out-of-pocket to attend graduate school. Most positions will include a personal stipend and waived tuition. In fact, good faculty advisors will not take students if they don't have funding in place for them.

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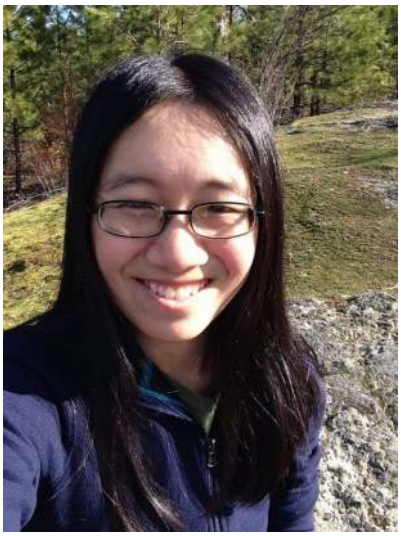
Be sure to ask what kind of funding is involved. Will you be on a fellowship, research assistantship, or teaching assistantship? In general, with fellowships, you are paid to do your thesis/dissertation research, and with research or teaching assistantships, you are paid to either work on a specific project or to help teach specific classes. Teaching assistantships are good for those who want to stay in academia and eventually teach their own classes, but they will take up a lot of time and could slow your research progress. You also want to consider logistics of the project. Is there field work involved, or will you be in an office staring at a computer screen all day? Are field sites already established, or will you have to set up your own study plots? Just know what you are getting into.

Second, getting along with your faculty advisor is just as important as the research itself. I know you looked up that person's research interests already, but also figure out if they are someone you can work with, personality-wise. What is their advising style? Are they hand-holders or hands-off? Master's students may not want advisors that expect their students to be completely independent. How many students does the advisor already have in their lab? A lot of students means plenty of peer support and experience, but it also means less one-on-one time with the advisor, especially if he/she also teaches classes. How does the professor's publication history look? Is he/she publishing regularly and in good journals? Are graduate students first authors on publications from their research? Have the advisor's past students graduated in a timely manner? What jobs were they able to obtain? It's a good sign if those jobs are similar to what you want as a future career because it means they were prepared for that job and you'll have connections to that work sector. I would strongly advise trying to visit the school and meet with the professor before agreeing to be their student. I know this can be logistically and financially difficult, but it's worth checking whether the professor would be willing to help pay for or reimburse your visit. Finally, talk to the professor's current and recent students. To start, ask them how they would evaluate the professor as an advisor, about his/her best and worst traits, and what they wish they would have known when first joining the lab/school.

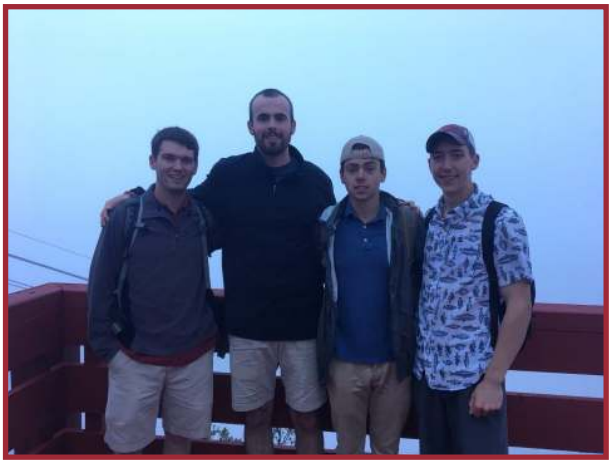
Finally, the university doesn't matter as much as you would think. Prioritize the research and advisor over school considerations. However, the school and location can come into play with coursework, networking opportunities, and recreational activities. Does the school/department have courses that you haven't taken and that tie into your prospective research? Does it have statistics courses within the department? Those tend to be more applied and useful than traditional stats courses from the statistics department. Is the department specifically geared towards natural resources and wildlife, or is it a more general biology department? Does the department provide funding to support travel to conferences? Does it have a weekly seminar series? How many professors and graduate students are in the department? None of these answers should make or break your decision, but they are good to keep in mind. On a related note, many students will get back-to-back degrees (e.g., get both their B.S. and M.S.) at the same university, and that is perfectly fine. However, the advantages of going to a different school for your different degrees include increasing your network and getting a new perspective.

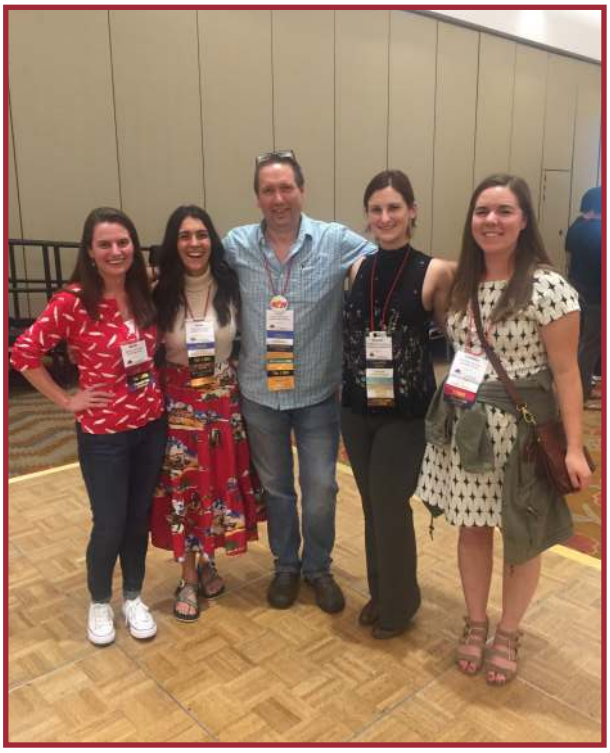


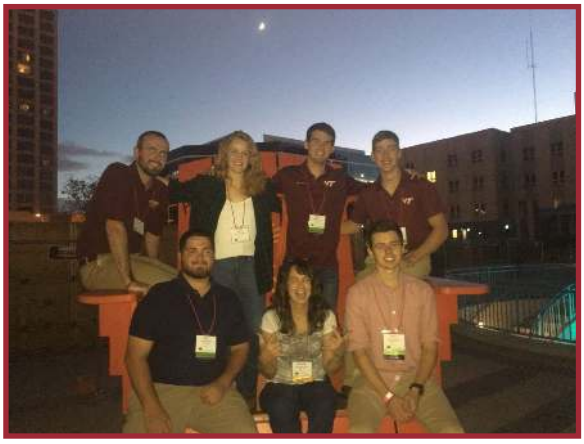
At the end of the day, a Master's degree is typically two or three years, while a PhD is usually four or five years, sometimes up to seven years, so you want to be sure to give very careful consideration to graduate school decisions. This guide is based on my experience, but I hope that you find it helpful! Remember to talk to other graduate students as well. Good luck in your future endeavors!

Author Hannah Clipp is a second-year Master's student pursuing a degree in Wildlife Ecology at the University of Delaware. For her thesis, she is using weather surveillance radar to study migration and stopover ecology of birds along the northern coast of the Gulf of Mexico. The purpose of Hannah's research is to relate stopover distribution patterns along the coast to synoptic weather and winds over the Gulf at multiple spatial and temporal scales in order to increase our understanding of how weather influences stopover.

We had a great time at the 2017 Annual Conference!







The Annual Conference is the perfect place to learn about what is going in the field, learn a new skill through a workshop, explore a new city through a fieldtrip, and let everyone know what you've been up to by presenting research! Of course, it is also the ideal place to network with other students and professionals. The 2018 Annual Conference will be held in Cleveland, Ohio on October 7-11. In the meantime, be sure to check out your student and local TWS Chapters and attend your local conference for all the perks of the Annual Conference at the state level.

Making Contact: A Few Tactics to Make the Best First Impression

Contributed by Stacy Lischka

So, you've done it. You've decided you want to take the big plunge and head to (or back to) graduate school. You've thought about where you want your career to go, and you've decided that grad school is the way to get there. Congratulations on taking one step toward achieving your career goals! Now what?

There are 2 primary ways to find the best graduate program for you. One approach involves searching through profiles of faculty members, finding those whose research aligns with your interests, and contacting them to build a relationship (hoping that will yield a graduate position in the future). A second approach involves searching graduate postings for an advertised position that suits your interests and applying for it (hoping you will be selected for the position). To be successful in either of these approaches, you are going to need to develop some sort of letter which introduces you to your potential advisor (a cover letter or an introduction email). Because this first contact is so critical in moving ahead in the process, I will focus here on a few suggestions for how to write the best, most compelling letter. There are a handful of tactics you can use to make your chances of success the highest, which I've drawn from my professional experience in reviewing applications for internship, technician, and graduate positions.

1. You do you

I once heard a faculty member tell others that he receives over 100 unsolicited emails from prospective students in a year. This is during a time when he is not even actively advertising a graduate position! That same faculty member commonly receives more than 100 applications for an actively listed graduate position. So, the competition is stiff, but don't let that dissuade you from taking the plunge. You may think that the first step to success in finding an advisor and/or project is getting an interview… but in reality the first step is getting them to read your introductory email or cover letter from start to finish.

So, your first strategy is to make sure that your letter stands out from the crowd. How do you do that, you ask? *Be yourself.* You've probably heard a lot about all of the things you need to do to get into graduate school (get good grades, get professional experience, get involved with your University), but remember that everyone is getting that advice, and all of the good candidates will have done those things. Think about what makes you different from all of those other well-prepared applicants. Maybe you've had a really impactful experience in the field. Start your letter with a sincere, and intriguing, story about it. Maybe you have followed a unique path to get where you are. Describe how your unusual skill set makes you qualified. Do you have a cool hobby or interest? Talk about how something you learned in that hobby translates to your professional life. Is there a quote from a conservation writer that speaks to you? Tell the person reading your letter how. Don't be afraid to get personal, as long as you can make a concrete connection to your skills and potential. The most critical thing is to describe, very early in your letter, some memorable thing about you, something that makes you unique, to hook their interest.

Leave the details of your classwork, jobs, GRE scores, etc. for your CV, which you should attach to any initial contact.

2. Flattery will get you everywhere

This tactic could also be called "Do your homework." Read as much as you can about the person you are contacting. Find their papers, and read them. Think of some interesting questions related to them (these will come in handy for an interview, too!). Now think about how your interests align. If you're applying for an existing position, talk about how you might use some of their previous research to inform work on the advertised project. Or how your field, classroom, or life experience gives you a unique view on their work and the project. If you're contacting someone with the hopes of developing a project or position, describe what drew you to them as a potential advisor. Be specific. Say more than "I am interested by your work on large carnivores." Show that you understand what their work is about (habitat connectivity, human dimensions, life history, international conservation, etc.), and talk about what you would like to do related to that specialty. Talk specifically about any project ideas you may have. If you have done related work in the past, talk about how your experience shapes your thinking about graduate work. What did you learn? What do you want to learn more about? What new ideas do you have for a project? This will show them that you are serious about the topic area of their research or posting, and that you've put in some brain power to think about what you'd like to do and where you'd like to go.

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Make it exceedingly obvious that you have not sent this same email to 15 different faculty members in the hopes of getting a bite. Make this section as specific to the faculty member and/or project as you can, but be careful you don't sound like a know-it-all. Grad school is all about learning, so emphasize where you would like to learn from the faculty member and their lab. You'll get bonus points if you can also describe some ways that your previous experience and interests align, and the unique contribution you could make to the lab. Think about some things *you* could teach your faculty advisor or lab mates. (Yes, they're all still learning, too!)

3. Don't be a wallflower

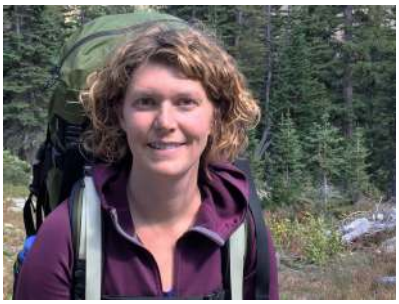
The last 2 tactics are less a part of the letter you're going to write, and more ways of ensuring you are an active part of the process. As you are looking through your potential advisor's publication list, take note of any co-authors or students that are part of your professional network. Maybe you worked for one of the person's former students, or maybe a collaborator was your instructor in undergrad. Capitalize on this network in 2 ways. First, mention it in your introductory or cover letter, particularly if the person is someone you know well and with whom you have a positive relationship. Even better, if you met the faculty member at a conference, or some other location, be sure to mention that as well! They may need a bit of a reminder, but your memory will reinforce your interest.

Second, reach out to the mutual acquaintance and let them know you are contacting their collaborator. They may feel inclined to put in a good word for you, or the faculty member may reach out directly to your acquaintance. The field of wildlife management is incredibly small and interconnected, and a good word from a mutual acquaintance can go a long way to getting your name to the top of the list of potential candidates. You want them to be prepared to say good things about you and showing your initiative is one way to reinforce that.

4. Follow up

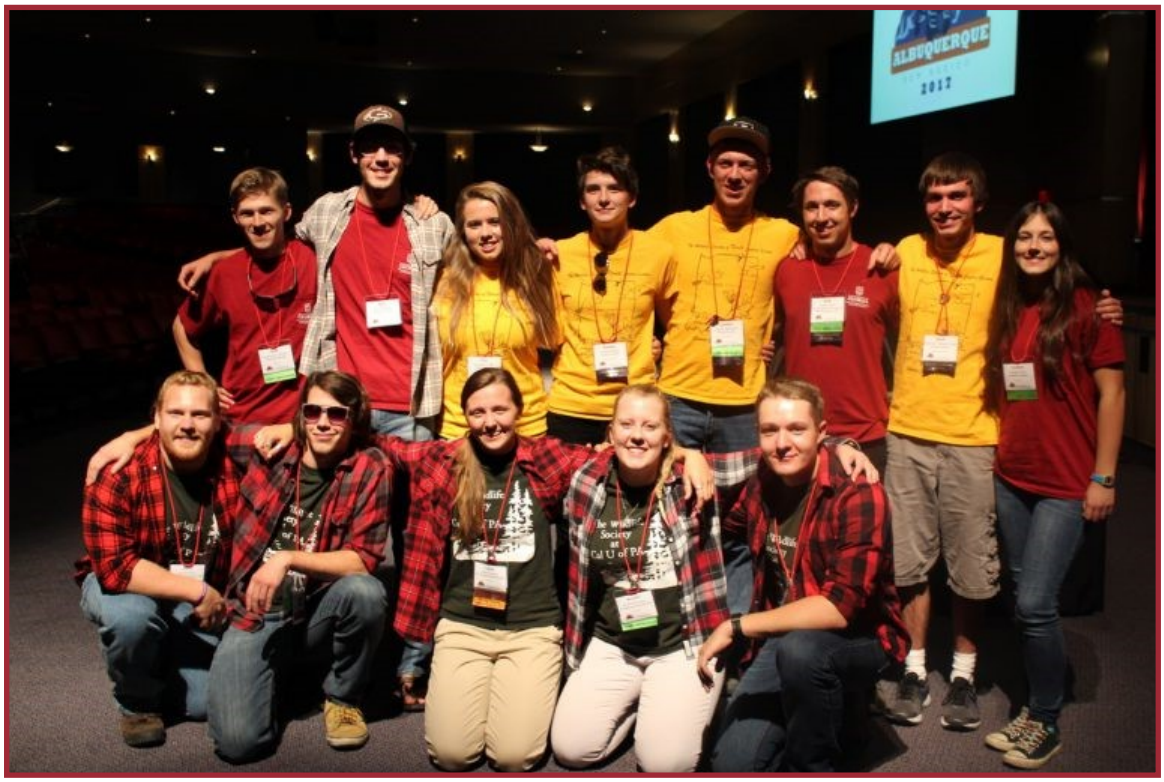
As you can probably imagine, the email inbox of faculty members can get incredibly full. They've got 100+ students contacting them about graduate positions. They've got collaborators, other faculty, and administrators emailing them about projects. They have students in their classes with many questions. So, it's really easy for an email to get missed or shuffled to the bottom of the list, despite anyone's best intentions. Don't expect an immediate response, but most faculty will make their best effort to respond in some way to students who contact them. If you don't receive a response from a faculty member, particularly if it is someone you are really eager to work with, send a follow up. If you've not gotten anything in about 2 weeks, send a very brief reminder, copying the text of your initial email at the end, just to ensure that they received your email. Ask them to confirm receipt and set the stage for further conversation. Suggest setting up a phone call to discuss more, or ask about the timeline for their decision about a specific posting.

Once you develop a good solid letter, you can recycle parts of it into future letters, so an investment in that first one out the door will help you in future efforts. Just be sure to tailor each letter as much as possible to the individual posting or contact. You'd be surprised how many of first contacts are clearly identifiable as form letters, and how good faculty are at picking that out! You're much better off sending out 3-5 really solid, well-informed contact letters or applications than 10-15 form letters. Faculty will really appreciate your dedication to the process, and your efforts will help you later in interviews! Best of luck!



Stacy A. Lischka is a human dimensions researcher with 15 years of professional experience in state and federal land management agencies. She has dedicated her professional efforts to addressing applied questions about human behavior and its impacts on wildlife resources. She is particularly interested in developing human behavior change efforts that increase pro-environmental behaviors among a wide variety of Americans. Her work has informed population management strategies for a variety of wildlife species, communication efforts to encourage pro-environmental behaviors, visitor management planning on public lands, and hunter recruitment and retention efforts, among other issues. She earned her BS from the University of Wisconsin, where she researched methods to restore native foodwebs in freshwater systems. She then earned an MS at Michigan State University, where she developed a method to integrate social and ecological information to guide population management for white-tailed deer. In 2017, she completed a PhD at Colorado State University where she researched the causes and consequences of bear-proofing behaviors in residential settings. She is currently a post-doctoral social science researcher at the USGS in Fort Collins, Colorado.

Congratulations to the Quiz Bowl Champions!

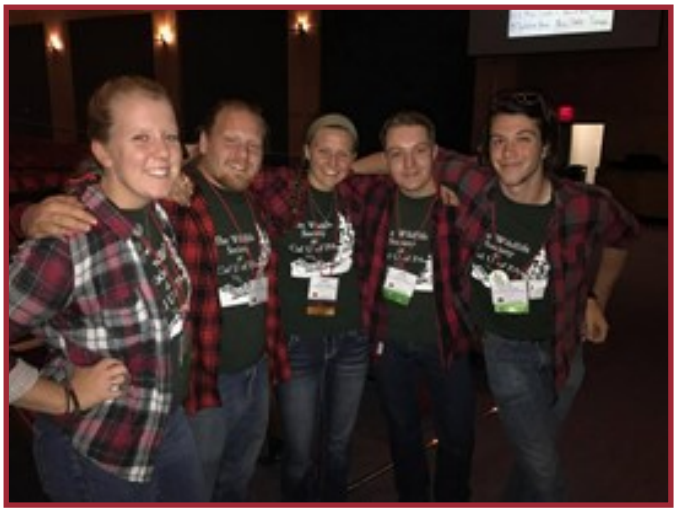


The Quiz Bowl was a hit at the 2017 Annual Conference! Congratulations to everyone who competed, especially the top three teams (pictured above together):

First Place: University of Georgia (pictured bottom left)

Second Place: Purdue University

Third Place: California University of Pennsylvania (pictured bottom right)



How I Got Into Grad School

Contributed by Alex Lewis

I played NCAA Division II fastpitch softball when I was in college at the University of Alabama in Huntsville. While I was there, I was focused on softball. That's what was paying for school, so that was my priority. I did some volunteering for a wildlife refuge, some volunteering for a graduate student, but I didn't feel well prepared once I realized I wanted to go into wildlife biology. Shortly after I graduated with a BS in biology and a BA in English, I packed my bags to move to Fairbanks, Alaska in January. Yes, I said January. I had been there for trips during the summer and that's where I wanted to go to focus my energy and learn about wildlife biology. I enrolled as a transfer student in the wildlife program and showed up to my campus housing January 15 (what I now refer to as my Alaskaversary) with my life shoved into a suitcase and a backpack. The two years I spent at UAF were some of the most rewarding of my life. While the overarching goal was to take a few classes and get lots of experience, I made long-lasting friendships too. Making such a drastic change was good for me. I gained experiences I never would have otherwise. I spent two years working in marine mammals in Fairbanks, one summer on elk in Kodiak, a week in Nome flying around looking for brown bears; it was the best and it allowed me to start honing my interests as a scientist.

When I graduated from the University of Alaska Fairbanks, I was an intern for the Arctic Marine Mammals Program at the Alaska Department of Fish and Game. At that point, I knew I wanted to do something that involved putting GPS trackers on animals, but I didn't know what. I also knew that I wanted to do research and for that, grad school was my next step.

I got a call in June about a job in Alabama collaring and managing wild pigs and I was expected in August. Until that job posting, I quite honestly didn't even know wild pigs were a thing. I drove for 7 days, 4,000 miles, to land in Lowndes County, Alabama. Later, a posting would go up on the Texas A&M job board for a Graduate Research Assistant (MS) at Auburn University on the very project I was a technician for with the very professor I already had as an overall supervisor. At that point, my immediate supervisor knew I wanted to go to grad school, my overall supervisor knew I wanted to go to grad school, so I applied. I got the job and here I am, so close to finishing my master's, I can taste it.

I went a round-about way. I don't recommend it, but everyone's different. Hey, you may even decide grad school isn't for you. That's ok. Maybe you work for a while and then decide to go to graduate school. That's ok, too. I know students who went to graduate school right after graduation. I know students who worked for a long time (like 10 years) before they decided they wanted to go to graduate school. Admittedly, it's harder the longer you wait, but that's a choice you make.

If I could do it again, here's what I would do:

Freshman & Sophomore Years: Pick wildlife biology as a major, enroll in introductory classes, develop relationships with instructors, apply for undergraduate research funding, apply for (paid) internships.

Junior Year: Work with instructors, apply for undergraduate research funding, apply for (paid) internships, go to conferences and present research, think about taking the Graduate Record Exam (GRE), think about grad school, talk to instructors/mentors/advisors, start researching schools/projects/advisors, start contacting potential advisors I get excited about working with.

Senior Year: More undergraduate research, take the GRE, present more research at conferences, keep contacting potential advisors. Publish research! Be persistent!

Post-graduation: Depending on how previous years went, work some diverse field jobs, keep building relationships with people, keep pursuing graduate school, go to graduate school for an MS.

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Here's where I am now: on the edge of finishing my MS degree and looking for PhD positions. Now that I've spent time in graduate school, I know what I'm looking for (and what I'm not), so I'm being a little pickier about projects and advisors. I'm also much more outgoing than I used to be! I want to do research at a level that going through a PhD program will be helpful. Lots of students go off into the world with an MS degree and go into exactly what they want. That's most likely a concern for a later date if you're just looking at graduate school. And yes, I do recommend working in an MS program before thinking about a PhD program.

This is a lot. You don't have to do all of it. You don't have to do any of it. If you walk away with nothing else, walk away with these next top tips:

5 top tips:

1. Get as much experience as you can and make note of the characteristics of jobs you like (and those you don't).
2. Do research about programs and professors. Don't just find someone who shares your interests, find someone who you get excited about working with. Not only that, try to chat with them so that you can see if your personalities can sync enough for a working relationship.
3. Network. No, but really. I have loved all of my supervisors and whenever I ask them to be a reference, the answer is always "yes, keep me updated on how things are going." People value you when you value them.
4. Imposter syndrome is a thing. Everyone has it and if they don't, well, I don't want to call anyone a liar… You belong. If you don't feel smart enough or qualified enough, you belong.
5. Go off into the wild and feel empowered. If you don't understand something, ask questions. If you don't know how to do something, ask someone to teach you.

Author Alex Lewis is a Graduate Research Assistant at Auburn University. Her thesis research focuses on the ecology and management of wild pigs (*Sus scrofa*).

The Student Development Working Group wants to hear from YOU! Connect with us on Facebook and Google Groups!

THE WILDLIFE SOCIETY

What are the Options, Anyways?

A Guide to Potential Careers in Wildlife

Contributed by the SDWG Executive Board

ACADEMIA

One option for a wildlife student after completing a bachelor's degree is to continue on in academia to pursue a master's or doctorate degree, or both. The idea can seem daunting, especially after working hard in college for 4 years, but graduate school is probably one of the only post-graduate options where the pros will always outweigh the cons.

The key to finding a graduate program that will work for you is to find an advisor that you respect and get along with, and a project that you are passionate about. Graduate school can be difficult, but having a solid support system, a reliable source of funding coming from the university and outside sources (you should NOT have to break the bank and take out a ton of loans to go to grad school within the wildlife field like you might have had to for undergrad), and a project that you are genuinely interested in, anyone can succeed in graduate school.

By continuing on in academia and receiving a higher degree (masters or doctorate), you are immediately more marketable as a biologist, and you are required to be paid a much higher amount than someone with only a bachelor's degree (you get bumped up a couple of tax brackets). Spending a couple of years or more in graduate school allows you to develop skills that undergrad would never be able to offer. You become more knowledgeable on a specific topic in wildlife (whatever your thesis work focuses on), you become comfortable operating independently and trusting yourself as a biologist, and your critical thinking, communication, and technical writing skills all improve immensely. All of these things plus many more experiences and skills gained from graduate school set you up to be highly successful as a biologist, and allow you to apply for full-time higher position jobs, instead of being restricted to mostly temporary technician jobs.

There are also many options for types of graduate programs that you can pursue. You can be a graduate assistant (GA), a student that is fully or partially funded to do research for a thesis project, and usually (but not always) required to teach or TA for part of the time to secure and maintain funding. You can be a research assistant (RA), which is a student doing a thesis project but not required to teach or TA classes, or you can be a teaching assistant (TA), which is a student doing a thesis project who is required to teach for the entirety of their program as a supplement to their project. You are also not always required to conduct a research project and write a thesis that you will defend at the end of your program. There are graduate programs out there that require you to take classes, do some sort of related project, and then take an intensive exam in order to pass and earn a graduate degree. The most important thing is that you find a program that has a project and advisor that is a good fit for you.

Deliverables from a completed graduate program include (usually) a finished thesis project which typically results in 1-3 peer-reviewed publications that you are first author on. Moving on after graduation you can either enter the wildlife field as a professional and pursue a career in any of the options listed below, or continue on in academia by pursuing a doctorate degree, which then leads to becoming a post-doc at a university, with the end goal of staying in research with a university, non-profit or non-governmental organization, federal or state agencies, or another research avenue.

NON-PROFIT AND NON-GOVERNMENTAL ORGANIZATIONS

Non-profit and non-governmental organizations (NPO/NGO) provide a unique option for students of wildlife science and conservation. By definition, an NPO is an organization that is barred from distributing its net earnings to individuals who operate the organization, but uses this surplus to further the groups purpose or mission; this includes groups such as: The Wildlife Society, Pheasants Forever, Ducks Unlimited, or The Nature Conservancy.

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Non-governmental organizations are a category of NPO that are usually funded either by donations or volunteer efforts such as: Natural Resource Defense Council, Oceana, Sierra Club, or the Rainforest Alliance.

As with any career path, there are pros and cons to getting a job in the NPO/NGO realm. One bonus to working with these groups is that they have less "red tape" than many state, federal, or academic agencies. This usually translates to on-the-ground habitat or species management in shorter turn-around times. Many state and federal agencies have started long term partnerships with NPO/NGOs to take advantage of their ability to do just this. Another pro is that NPO/NGOs are not subject to the hiring freezes that state and federal agencies are, which leads to more steady hiring opportunities. Finally, many NPO/NGOs are much more willing to listen to and implement new ideas. They are always looking for ways to be innovative to provide the best outcomes for conservation possible.

One of the cons of NPO/NGO positions is that many rely on "soft money," which means funding for a position is not always guaranteed and can be cut if the money is no longer there. However, state and federal agencies partnering for these positions value them, seeing as they obtain an on-the-ground biologist while only being responsible for part of a salary. Another con to NPO/NGO positions is that they may not have comparable benefits packages to state and federal agencies.

POLICY

Nonprofit organizations often have government affairs departments or staff that work in support of policy priorities that are relevant to organizational missions. These nonprofits can work in support of a specific cause (e.g., National Wildlife Federation, The Nature Conservancy), or a profession or membership (e.g., The Wildlife Society, Association of Fish and Wildlife Agencies). Organizations may operate at local, state, or national levels.

Government affairs or policy efforts can take different forms to achieve preferred administrative and legislative outcomes. Efforts may take the form of lobbying or advocacy through meeting with legislative staff; forming strategic partnerships through coalitions; preparing letters, comments, and testimony on specific issues; and preparing educational materials, such as briefs, fact sheets, and articles.

The amount of direct lobbying an organization can engage in is dependent on its tax status. A 501c3 is limited in the amount of lobbying it can engage in, a 501c4 may engage in an unlimited amount of lobbying on issues related to the purposes of the organization. Some 501c3 organizations have a sister 501c4, which operates as an advocacy partner organization. Two examples of this are the Sierra Club Foundation (c3) and Sierra Club (c4), or the Environmental Defense Fund (c3) and the Environmental Defense Action Fund (c4).

Wildlife students wanting to engage in policy efforts may want to supplement their studies with classes in outside departments, such as political science, public affairs, psychology, or communications. Awareness of an environmental or conservation issue is the first step in facilitating preferred legislative outcomes, but higher-order decision making is based on more than just a knowledge deficit. Policy is a value-laden environment, so understanding how to package preferred conservation outcomes as mutually beneficial to the cause you represent and a legislator’s constituents is fundamental to achieving success.

Working in policy can be frustrating. “Success” is often measured in very incremental ways and heavily dependent on outside factors, such as the political and administrative environments. It also requires a level of flexibility and adaptability to be able to see windows of opportunities to make the largest impact. For a smaller organization, a policy associate may have to juggle issues that cover a wide variety of technical subjects, such as invasive species, energy development, and wildlife disease, at a single time. While it takes you out of the field and into an office, working in policy can allow you to be an agent for macro-level change for the profession.

INDUSTRY

Private industry is not a traditional path that most wildlife science and conservation students would consider. Industry jobs are all about making money for the company, without slowing down production.

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This is where wildlife science and conservation students come into the mix. Large companies always need environmental, health, and safety employees and sustainability/compliance employees to help their companies stay up to code with federal regulations. Large companies such as P&G, Walmart, and Amazon are all examples of companies that are trying to become environmentally sustainable with their day-to-day operations.

One of the many pros with private industry jobs is that changing one small thing at the local scale can be implemented across the nation to create a larger impact. Private industries can also allow you the opportunity to think outside the box and provide environmentally friendly solutions to previously disregarded issues while improving the companies' efficiency. The cons to a private industry job are that you can be fired at any time and your ideas might not be implemented for many months or years. Industry positions can also be difficult to navigate the application process because an industry resume (1 page) is much different than a wildlifer resume (1+ pages).

STATE FISH/WILDLIFE AND NATURAL RESOURCES AGENCIES

State department of natural resources and fish/wildlife jobs are usually a go to for most wildlife science and conservation students in our field. Most department of natural resource jobs are only posted on their individual state jobs websites and have to be monitored often for new job openings. These agencies hire fisheries, wildlife, GIS, and administration positions to name a few. Some state agencies even have their state parks included in their department of natural resources.

One pro of working for a state agency is you get to learn from current wildlife professionals and you get to try implementing your recently learned management strategies into the state agency planning process.

OTHER STATE AGENCIES

States separate departments in different ways, and some departments aside from the natural resources or fish/wildlife departments may have jobs relevant to your wildlife background. Consider exploring the structure of departments in the state you want to live. Some examples of other relevant departments might be: Forestry Department, Environmental Quality Department, Heritage Department, and Parks and Tourism Department.

FEDERAL AGENCIES

There are a wide range of federal agencies that employ natural resources professionals. There are a number of what most would consider traditional natural resources agencies, but many agencies hire natural resources professionals, including; U.S. Fish and Wildlife Service (USFWS), National Park Service (NPS), Army Corps of Engineers (USACOE), U.S. Forest Service (USFS), Bureau of Land Management (BLM), Bureau of Reclamation (BLR), U.S. Geological Service (USGS), Department of Defense (DOD), and U.S. Department of Agriculture (USDA).

These positions are wide ranging and support the primary mission of the employing agency. Many federal agencies are large landowners, and are tasked with the responsibility of managing those resources, and integrating them into the agency mission. Some agencies are regulatory, and tasked with permitting and law enforcement. Numerous agencies are service agencies and assist the public with conducting management on private lands. Additionally various agencies have research branches and employ subject matter experts. Many of the positions with a federal agency are similar to those that a state natural resources program may hire.

Although positions are federally funded, this does not mean they are permanent or full time. Many positions, especially entry level positions are seasonal or term (limited in the number of months or years). Some positions may never become permanent, but based on annual funding availability have become long-term positions. Federal jobs provide a lot of benefits, from health and welfare benefits to making it easier to transfer to other locations across the county because of their size and way the agencies are organized.

One difficulty in obtaining a position with a federal agency is understanding the announcement and application process. Almost all federal jobs are posted on USAJOBS.gov, although some positions may be posted locally.

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Learning the various Job Series that you are interested in or qualify for is very important. An example is that a Wildlife Technician (series 0404) requires different qualifications than a Wildlife Biologist (series 0486). There are a wide variety of series that are available in the natural resources field. Also, it is important to understand which job grade you qualify for based on your experience. USAJOBS.gov allows individuals to create and save a resume on a template or attach a resume, it is important to follow the application instructions and include all supporting materials and information in any form of attached resume or document.

Employment with federal agencies offer a lot of growth potential and the ability to work across the country on a wide range of natural resources activities. One thing to remember is that it is important to understand the agency you are applying with, how they are organized, and the agency mission. The job duties of a Biologist can be very different depending on the agency you are working for.

(This section contributed by Kyle Van Why – Wildlife Disease Biologist with USDA-APHIS-Wildlife Services)

PRIVATE CONSULTING

While private consultant jobs tend to have a fairly negative stereotype in our field, consulting firms have the potential to offer wildlife students a wide variety of job and career development opportunities if you take the time to find the right company for you. There are many different active consulting firms of all sizes across the U.S., and each one has its own "flavor." A few of these consulting groups actually specialize in wildlife work specifically, and follow guidelines created by the Fish & Wildlife Service to help protect and conserve threatened and endangered wildlife across the country. All environmental consulting companies work directly with clients such clean energy developers (i.e. wind and solar), pipeline and transmission line developers, and other companies wishing to construct infrastructure on the landscape. Consultants work to guide the client through every stage of the proposed project; from preliminarily evaluating the proposed project area for potential risk and impact on listed species, conducting field surveys to evaluate presence/absence of listed species within the project area, and conducting post-construction surveys to measure any mortality that may be occurring, and helping to develop proper mitigation plans for the future of the project. There are plenty of job opportunities within an environmental consulting company to suit just about anyone. There are wildlife related job opportunities such as field technicians, lead field biologists, field coordinators, and project managers. However, there are also jobs available that aren't directly wildlife focused, but relate to this field due to the nature of the work. These job titles vary and can include data entry technicians, GIS specialists, IT specialists, statistical specialists, and marketing/business personnel.

There are pros and cons to every career path. In private consulting, the biggest con is being required to adhere strictly to federal survey guidelines and client contracts. Consultants are not freely able to conduct surveys in the same way that someone in academia may be able to because consultants are limited by legal contracts, federal guidelines, and limited timelines and budgets. This is where it is essential to do proper research and find the right consulting company for you. To counteract the cons, consulting work has a number of pros as well. As a private consultant biologist, you are able to travel all over the country to conduct field surveys for a wide variety of wildlife species. You see and experience many different states and environments, and have the chance to work on a diverse set of projects that allow you to use your wildlife knowledge. Consulting work is also a phenomenal way to make a lot of money in a small amount of time, and allows for a huge amount of professional development as you usually have opportunities to climb the corporate ladder and advance as a professional wildlife biologist in a relatively short amount of time. While working as a biologist for an environmental consulting firm will advance your skills as a wildlife scientist, you are also exposed to experiences that allow you to develop your skills in professional communication with government agencies, private companies, and the general public, scientific writing, technical analysis and editing, and problem solving.

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