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Perceived Post-Graduate Job Prospects of University of Montana Wildlife Biology Students

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Introduction

The wildlife profession is highly competitive and is projected to experience minimal growth in the coming decade, according to the US Bureau of Labor Statistics(1). The University of Montana's Wildlife Biology Program is ranked in the US and Canada for our faculty's research quality and awards (Academic Analytics 2016). Undergraduate students go to wildlife related jobs in government agencies,-private corporations, and nonprofits. Students invest significant funds to pursue a college degree, in-state students spend an estimated \$25,534 per year, and out-of-state students spend an estimated \$48,936 per year (4). Understanding how these students perceive their wildlife-related job prospects after graduating can predict the proportion that will stay in the wildlife field.

An industry is only as sustainable as the willingness of people to work in it. If the future generation of technicians, researchers, and managers no longer perceive the wildlife career as worth pursuing, then they may no longer pursue a wildlife career. Therefore, it is crucial to ascertain current wildlife students' dispositions to improve the program so that future students will feel aptly prepared and willing to continue in this increasingly important field. Further, there is a shrinking population of traditional college-aged students. This population shrinkage and historically low unemployment have decreased the number of students pursuing a college education. Programs need to know if they are meeting the needs of their students.

Studies have been conducted on whether college graduates have gone on into a job in their field, though these tend to be non specific to particular industries or degree programs(2). These tend to find that approximately 38% of bachelor's degree graduates regret their degree(2). Reliable Data for the percentage of graduates who work in their degree field was not prevalent, but according to a study conducted by the New York Federal Reserve Bank~40% were not employed in their degree field(3)

Question:

1. How do wildlife students feel about their ability to succeed at a career in wildlife biology?
2. How are these feelings related to the program here at the University of Montana?
3. What do students think could be improved about the program?

Methodology

To answer the questions posed, we created a survey that included Likert questions and two short answer questions totaling to 13 questions. The short answer questions were intended to provide a place where the students could voice any opinion that could be expressed through the Likert questions. The first is about potential program improvements, and the second is a general

comments section. There was also a consideration for the number of participants who engaged in these questions to quantify the pervasiveness of certain beliefs or attitudes.

The Likert questions focused on achieving answers which could be used to interpolate participants' attitudes. Each question had a gradient of answers except for those with yes or no questions or those which sought to determine academic information such as grade or graduation date. A neutral answer was also available for each Likert, barring the aforementioned short answer and academic questions. A neutral option was instituted to not make unsure participants pick an option they did not feel best represented them and potentially over-represent certain answers. Our intention was to survey the attitudes of upperclassmen in the wildlife program regarding the program itself, and their prospects after graduation.

The following are the Likert questions as they were phrased and ordered for the participants of the survey.

1.	What is your anticipated graduation date?
2.	In terms of credit hours, what is your current academic standing?
3.	As a wildlife biology major, which option are you pursuing?
4.	Are you planning on proceeding into a masters or other post-graduate program after you graduate?
5.	If you are planning on continuing on to a post-graduate program, in how many years do you expect to begin that program?
6.	If you do intend on proceeding into a graduate program, would that program be within, related to, or unrelated to the wildlife field?
7.	If you have no intention or are unsure about grad school, how would you say you feel about your prospects post-graduation?
8.	How do you feel you have been prepared for a job or career in the wildlife field?
9.	How likely would you say you are to continue into a career in the Wildlife field post-graduation?
10.	Do you believe a Wildlife degree will assist you on your future career path regardless of future career plans?
11.	How do you feel about your decision to pursue a bachelor's degree in wildlife?

Results

if you have no intention or are unsure about grad school, how would you say you feel about your prospects post-graduation?

34 responses

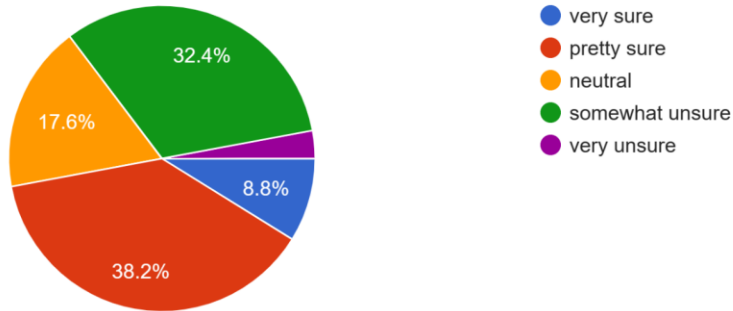


Figure 1. Approximately 47 % students that had no intention or were unsure about pursuing graduate school felt positive about their post prospects graduation (n=34). Only a 2.9% were very unsure about their post-graduation job prospects.

how do you feel you have been prepared for a job or career in the wildlife field?

45 responses

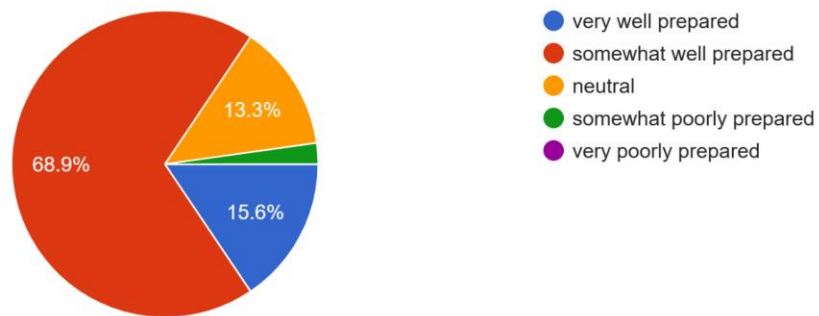


Figure 2. 68.9% of the participants felt somewhat well prepared for a job or career in wildlife (n=45). Only 2.2% felt somewhat poorly prepared for a job or career in wildlife.

how likely would you say you are to continue into a career in the Wildlife field post-graduation?

46 responses

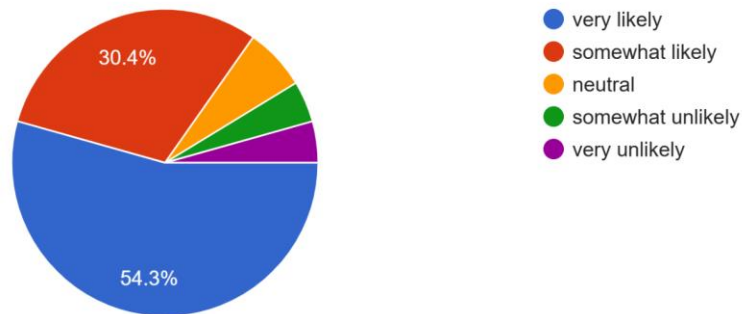


figure 3. 54.3% of participants said they were very likely to pursue a career in the wildlife profession (n=46). 4.3% answered somewhat unlikely and another 4.3% answered very unlikely to pursue a career in wildlife. 6.5% answered neutral to the question.

How do you feel about your decision to pursue a bachelor's degree in wildlife?

46 responses

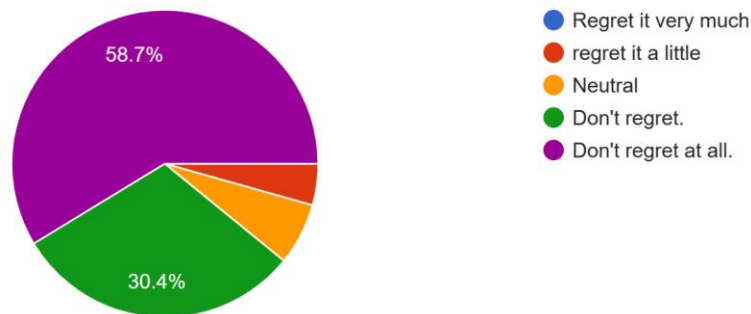


figure 4. 58.7% of participants responded that they don't regret at all pursuing a bachelor's degree in wildlife (n = 46). 4.3% of participants responded that they did regret it a little, in regards to pursuing a degree in wildlife.

how likely would you say you are to continue into a career in the Wildlife field post-graduation?

46 responses

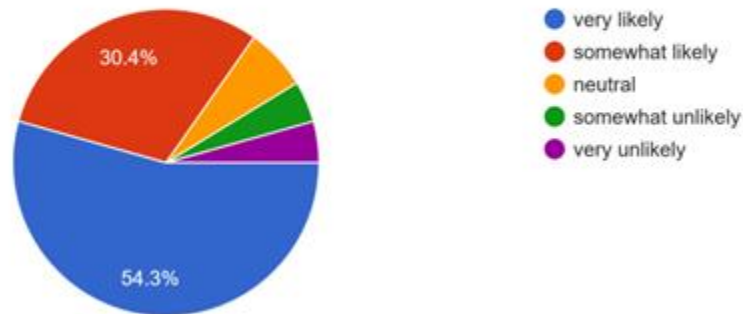


figure 5. 54.3% of participants answered that they were very likely to continue into a career in wildlife post graduation. A combined 15.1% answered they were neutral(6.5%), somewhat unlikely (4.3%), or very unlikely (4.3%) to continue into a career in wildlife.

Discussion

As shown in Figures 1 and 2, an interesting yet counter-intuitive trend appeared in the data. Generally speaking, the participants were mixed in their beliefs about their prospects in the wildlife field, but that did not broadly affect their feelings regarding the program and how it prepared them. Though a noteworthy minority or plurality routinely would answer negatively towards both the field and the program.

The short answer questions reveal an interesting perspective on these results. In the general comments question, participants broadly agreed that they were quite fond of the program even if it had certain shortcomings, which they were more than willing to discuss and which we will get to shortly. Furthermore, some comments alluded to their answer regarding the question in Figure 1 being more so linked to experience in the field they already had from outside the program.

Students identified four categories where the program could improve. Firstly, R coding and GIS should be taught in a more in-depth way. For clarification, R is a free statistics coding program, and GIS or Geographic Information Systems is a tool to help visual spatial data. As it presently stands, there is no dedicated R coding class here at the University of Montana, and R is fast becoming an indispensable tool for biologists. The university does have a GIS certificate program, but the program is not required for graduation. Second, there should be more classes and opportunities for experience in the program. The program requires 80 credit hours to complete a plurality of prerequisites. Thirdly, there should be more hands-on learning experiences, most classes rarely venture out of the classroom and talk about processes in a largely abstract context. Lastly, there should be a focus on decision-making and applying the

knowledge practically. In fairness to the program, there are applied classes and required classes on public decision-making, but these don't come about until near the end of the program.

Conclusion

The Wildlife Biology Program at the University of Montana is broadly thought about fondly by its students, who have a positive perception of their post-job prospects. However, those students are more than willing to vocalize apparent shortcomings. Students are acutely aware of the field they are entering and have more complicated feelings about it. According to some comments, the feelings of confidence or lack thereof are likely coming from external experiences of the profession, such as prior job experience.

While students surveyed seem willing to pursue regardless of what they feel their chances are as highlighted by figure 1 and 5 there are still areas which if improved may increase student confidence in their elected career field. As identified by the students themselves, dedicated R programming classes and incentivised GIS certification, more classes and for the school provided opportunities to gain experience, more hands-on learning, and more decision-making and applied knowledge courses.

Integrating changes such as these could make the degree from UM carry more weight in a competitive job market. By integrating more involved coding classes in R the students are more than prepared by the time they experience it in an internship or during a thesis project. By involving more opportunities to learn and do so hands-on, they will be more confident doing so independently. Ultimately, most of these improvements touched on by the participants serve a similar purpose: to increase their skill base and confidence therein and to maintain an up-to-date understanding of the field and its necessary skills.

The following steps of this project would focus on expanding the participants' base and injecting more context. Subsequent surveys might be better served by asking alumni of the program to see if these figures adequately match actual career experience. Furthermore, refining the questions could be potentially useful. The wording of some in retrospect, potentially limited the participation on those questions. Future surveys should seek to avoid such reductive framings. The survey should also be expanded beyond the wildlife program, perhaps first to related or closely associated programs but perhaps to undergraduates more broadly. Expanding the base of participants puts our findings into context. Would other programs have similar or different findings? What would that mean for these findings, et cetera?

In conclusion, the feelings of undergraduate wildlife students toward post-graduation realities are complicated. Rather than being derived from their experience of the program, as one might expect, they seem to derive their feelings from external sources such as job experience or difficulties in the field. Students seem to be acutely willing to suggest improvements regardless of whether or not they will be around to see them enacted. Finally, future surveys should seek to contextualize and expand upon the data collected here.

Citations

(1) Bureau of Labor Statistics, U.S Department of Labor, *Occupational Outlook Handbook*, Zoologists and Wildlife Biologists, at <https://www.bls.gov/ooh/life-physical-and-social-science/zoologists-and-wildlife-biologists.htm> (visited March 21, 2023).

(2) [Federal Reserve Board Publication](#) (n.d.).

<https://www.federalreserve.gov/Publications/Files/2021-Report-Economic-Well-Being-Us-Households-202205.pdf#Page=76>.

(3) Wise, J. (2022, July 26). *How Many People Use Their Degrees in 2022?* - EarthWeb. Earthweb.com. <https://earthweb.com/how-many-people-use-their-degrees/>

(4) <https://www.umt.edu/finaid/cost-of-attendance/bachelors-deg-COA/default.php>