A RESEARCHER'S STARTER GUIDE TO Wild Animal Welfare





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Who is this for?

The Researcher's Starter Guide provides an introduction to wild animal welfare science and provides guidance on how to build a career in the field. This document is primarily intended for individuals that are early in their research career (e.g. students or interns), though mid-career researchers interested in pivoting their research to include wild animal welfare might also find many sections useful.

What is wild animal welfare?

At Wild Animal Initiative, we consider a wild animal to be any individual animal whose life is not closely managed by humans. This includes animals living freely in human-dominated environments, such as parks and urban spaces, but excludes pets, farmed animals, and animals kept in zoos or laboratories.

And we use welfare to mean the aggregate quality of subjective mental experiences, at a given point in time or over a given period of time, for an individual or a group of individuals. This can also be called well-being or quality of life.

Why should we study wild animal welfare science?

While the meaning of welfare is relatively simple in theory, there are many open questions about how it works in practice.

First, we are interested in basic science to investigate how wild animals experience their lives. That starts with questions about who has welfare. In other words, which species are sentient? At what point in those animals' development does sentience emerge? How does the quality or intensity of sentience differ across species and life stages?

The next set of questions deals with how to measure welfare. Given that we can't measure subjective experiences directly (Nagel 1974, Muehlhauser 2017), what physiological or behavioral metrics can reliably serve as proxies for welfare? What are the relevant baselines, ranges, and benchmarks we can use to interpret that data within and across species? How can we collect that data in the field: remotely, at scale, and in uncontrolled conditions?

Finally, responsible wildlife welfare management will require understanding how to compare and combine different experiences. At the individual level, how do acute feelings compare with chronic feelings, or positive ones with negative ones? How can we estimate welfare at the population level, especially when quality of life varies greatly across individual members of the population? Similarly, how can we compare welfare across species in order to estimate total welfare at the community level?

Research on questions like these can advance the field of wild animal welfare science and ultimately inform applications of responsible welfare-driven wildlife management, so that the suffering of wild animals is reduced and their lives are improved at scale.

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A DAY IN THE LIFE of a wild animal welfare science researcher

Scientists in a variety of roles are actively conducting research in the field of wild animal welfare. The following pages give will give you a glimpse into their daily lives.





Katie LaBarbera | United States | Non-profit

Eighty minutes before sunrise, my alarm goes off. I am not a "morning person," but I have a system — clothes, keys, and glasses laid out the night before — so I can get out of the apartment without giving my brain a chance to reconsider. To get to my field station, I drive on the freeway past the lights of Silicon Valley, buildings labeled Google Cloud and Analog Devices and billboards advertising chips for autonomous vehicles and dating services for people making more than \$300,000; then I exit and drive past a semipermanent tent community to a locked gate, and through the gate towards a sunken meadow bordered by dark trees and filled with silver fog.

My field site, where I'm doing research on behalf of the San Francisco Bay Bird Observatory, is a patch of riparian greenery nestled between an Amazon Warehouse, an In-N-Out, a waste treatment plant, and the San Francisco Bay. Here I meet up with my community science volunteers and, for six hours, everything is birds: safely capturing them, taking measurements, inspecting them while their dark eyes tilt to inspect me back. Birds are full of air, even in their bones, and beneath their feathers their skin is so translucent that I can see purple-red muscle and yellowred fat. One bird I examine, a bushtit, fierce-eyed floof weighing less than two pennies, has a crooked lower leg. Looking through our records, I see that we captured her a month ago with a freshly broken leg; now the break has healed, imperfect but functional. I add this to the data. Then I set the bird's feet on my flat palm and lift my other hand, and she flies back to her own life.

After field work what I need is a nap; what I get is a coffee. My cat claims my lap and I balance my laptop on my thighs to answer emails: my volunteers have questions; my collaborator has sent a manuscript draft. A colleague calls to go over budget spreadsheets. I get briefly lost in the city permits website, trying to figure out how to restore the field station's electrical power.

I pull up my R window and open my notes. Our dataset holds decades of records of birds captured repeatedly, from which I hope to derive an understanding of the impacts of injury on wild birds. I have spent months converting old text notes into analyzable variables, and now I am constructing my statistical models. In the end it will just be a few score lines of code, but to get there I am sifting through published studies, R package documentation, and years-old StackOverflow answers. My records cover thousands of individual bird lives, and with such a complex dataset, it would be easy to make an analytical error and draw incorrect conclusions.

My responsibility is to do this right and find out the truth — and, I eventually remember, to put rice on for dinner.

Photos courtesy Katie LaBarbera



Luiza Figueiredo Passos | United Kingdom | Academia

Currently, I work as a lecturer at Liverpool John Moores University, so my time is divided between teaching and research, and sometimes I can do both simultaneously. I mainly divide my weeks between teaching days and research days. Even if I am not teaching the whole day, I use the rest of my hours to finish teaching-related tasks, so I can entirely focus on my projects on research days.

I currently hold two grants from Wild Animal Initiative. The first grant I'm working on uses acoustics to monitor the welfare of wild birds. For this project, I do field work a few times during the year to deploy and collect my recorders. The field is followed by a lot of time analyzing data on the computer. The advantage of computer-based analysis is that I can select to work from my office, home or any other location – especially over summer when there's no teaching.

My second grant involves measuring the welfare of great crested newts with different population densities. This project will start in early 2024. This project will include field work during the breeding season, in which I will collect environmental and behavioral data and biological samples requiring laboratory analysis. I will be running endocrinology and genetic analysis on the days I'm not teaching. The laboratory analysis can take a long time, so I prefer a dedicated day.

Whenever possible, I will get students, whether they are under- or post-graduate, involved in my projects so they can help me and also improve their skills. Students can develop their final year dissertation or master's degree projects by helping me with my research projects. I also have PhD students working on both projects.

As an undergraduate, I know that being a lecturer does not always sound like a dream career. However, this is a fascinating and fulfilling job in which I can develop projects working with different species and methods and inspire young researchers to work with animal welfare. I have the chance to travel to different parts of the world for field work and take students on expeditions. Being a lecturer is definitely a very busy job but days are never the same, and it never gets boring.







Megan Flanagan, Sydney Falcon, and Jacob Kearns United States | Academia

We're graduate students performing field work for a Wild Animal Initiative funded project. We hope to gain a better understanding of how corticosterone varies across age classes, seasonality, and different populations of lesser sirens. Another aspect of our work is evaluating the impact of two different identification methods on the lesser sirens: PIT tagging and photo recognition.

To avoid the extreme heat, we try to get to our field site by sunrise. Once we get all our supplies unloaded and set up, we put on waders to begin to check our traps. We use fyke nets, minnow traps, and modified trash cans to capture our sirens. We record bycatch as well as any sirens that we capture. For most of the crew, this is the best part of the day, as we often get interesting animals in our traps in addition to our target species. Most notably, we've caught mud snakes, cottonmouths, snapping turtles, and even an <u>amphiuma</u>! While traps are being checked, one person on the crew is putting the sirens in their containers for waterborne hormone samples. For each siren, three samples are collected.

The first sample establishes the "baseline" corticosterone for that individual. We then gently agitate the siren and take another hormone sample to establish their "stressed" levels. Lastly, we take a sample immediately following the stressed sample to see if they can regulate their corticosterone output and "recover."

When looking at the identification methods, the protocol changes slightly by replacing the agitation stressor with either a PIT tag or photo to understand how stressful each of those experiences are for sirens. After all the hormone samples are taken, measurements of each siren are recorded (total length, snout-vent length, mass, etc.) and sirens are returned to the water.

Photos courtesy Sydney Falcon







Ruth Feber | United Kingdom | Academia

People often think we need to be concerned about the welfare of wild creatures only if they have fur or feathers. Invertebrates, despite their vast numbers, are rarely considered. The evidence is mounting that this oversight is a mistake. My work at the University of Oxford is a desk-based exploration of how farmland management might impact the welfare of wild insects, focusing on butterfly caterpillars, and trying to quantify those effects.

There are about 25 species of butterfly that commonly live on UK farmland. These beautiful insects have complex and fascinating adaptations and behaviors, especially in the caterpillar stage. For example, some caterpillars have honey glands, which attract ants that help protect them from predators. Others are cannibalistic, eating nearby eggs to reduce competition for food. They are a lot less mobile than adult butterflies, so are especially vulnerable to welfare impacts from human activities such as farming, as they cannot easily move away.

I spend much of my day at the computer. As well as researching the ecology of the caterpillars, I find out about current farming practices and how they might impact caterpillar welfare. For example, what pesticides are used, and are they toxic to butterfly larvae? What might happen to caterpillars when a field is mown for silage or a hedgerow has its annual cut? I investigate where and when the farming activity typically happens, identify points of coincidence with caterpillar activity and assess potential impacts on their health, nutrition, behavior and environment. For some topics, there is a huge amount of information to be sifted through, while others are sparsely covered. In the end, a great deal of literature research might be distilled into just one line of numbers in a spreadsheet. It is absorbing work and there is so much to learn!

Luckily I am not on my own. Collaboration and conversation is a really important part of scientific research, not only with other scientists, but with practitioners and policy-makers, helping lead to positive outcomes for welfare. Farmers, insect ecologists and animal welfare experts have all been kind enough to let me pick their brains! This project is a team effort, and I work with a statistical analyst who does the crucial "number-crunching." We often meet to discuss the best ways for us to collate and analyze the data.

It is very important to get away from the computer and catch up with my study animals in real life in the field. A daily lunchtime walk keeps me in touch with what is happening in the countryside and how wild insects are faring. Although not a formal part of the project, connecting with nature in this way has many benefits and is a great reminder of why we do this work.

Getting involved



Career Opportunities: Academic

Academic researchers typically require a Doctor of Philosophy (PhD) degree. PhD programs generally aim to develop research skills and deepen knowledge in a specific area. The process of applying for and completing a PhD program will vary widely depending on the country where you are located. PhDs are highly specialized and often take about 3-6 years to complete, so you want to ensure that the program and advisor you choose are aligned with your research interests.

Even if you're confident you want to pursue a research career, you don't need to rush into a master's or doctoral program. Grad school can take a big toll on you personally (i.e., financially, emotionally, and interpersonally) and burnout is common. If you're not sure what you want to specialize in, or if you'd be unduly stressed by graduate school right now, it's okay to wait. Use this time to explore your interests and identify what exactly you are interested in studying. Start a PhD only if you are highly and personally interested in the research topic to which you will devote most of your time for several years. Be ready to learn challenging disciplines (e.g., statistics) that were not necessarily your primary motivation to start a PhD. Finally, because many PhD supervisors have a heavy workload and might not be able to devote as much time to your project as you would like, be as autonomous as possible and create your own network of collaborators. For an illustration of what life as a PhD student could look like, have a look at PhD Comics (which is quite realistic).

As you begin to narrow down the topics that really excite you, do some exploratory research. When reading journal articles that are especially relevant to your area of interest, take note of the authors and which institutions they are affiliated with. Investigate whether these institutions have relevant PhD programs and whether the faculty member you are interested in is taking on new graduate students.

If you would like additional help identifying a program that suits your goals and interests, email <u>outreach@wildanimalinitiative.org</u>.

Academic researchers studying wild animal welfare science can be found in the following disciplines:

Animal behaviorEcologyAnimal nutritionEnvironAnimal scienceEvolutiAnimal welfareAnimalBiology (animal-focused)VeterinComparative epidemiology or immunologyWildliffComparative neuroscienceZoologyConservationVeterin

Ecology Environmental science Evolution Animal physiology Veterinary medicine Wildlife management Zoology

AS YOU BEGIN to narrow down the topics that really excite you, do some exploratory research.

Career Opportunities: Non-Academic

There are also several pathways outside of academia where you can pursue a career related to wild animal welfare science. These include careers in government agencies, nonprofit organizations, and private organizations.

The level of education and types of required experience vary for each of these roles. Be sure to do your research and talk to people currently working in the role you are interested in. They can tell you about their journey and provide you with recommendations. For more information about finding a mentor, please see Finding a Mentor.



A few examples of relevant job titles include:

Animal care specialist Animal nutritionist

Animal trainer

Communications and public relations specialist

Director (outreach, science, education)

Economist

Educator (environment, biology, or general)

Field or lab technician

Fishery manager

GIS specialist

Humane educator

Journalist (science, environment, or general)

Naturalist

Outreach coordinator

Photographer (nature or general)
Policy analyst
Program manager
Research assistant
Researcher
Teacher
Veterinarian
Wildlife administrator
Wildlife biologist
Wildlife consultant
Wildlife law enforcement officer
Wildlife manager
Wildlife rehabilitator
Wildlife technician
Zookeeper

Photos courtesy Megan Holst

Internships

Internships are an excellent way of building experience, networking, and developing skills that will help you throughout your career and may make the difference when competiting for future positions. They also provide you with the opportunity to try out different roles you may be considering before joining the workforce. Internships vary in the types of assignments you are given, amount of time required (full-time or part-time), and whether they are paid or unpaid. Be sure to choose an internship that aligns with your career goals, availability, and financial need.

To find internship opportunities, take advantage of your network and relevant resources. You might begin by searching online or looking at the careers page of relevant organizations. While you are searching for an internship, tell everyone you know. Reach out to your institution's career center, your department, instructors, research labs, family members, and friends. You might find internship opportunities through various groups, clubs, forums, professional organizations, conferences, mentors, volunteer opportunities, or colleagues. Generate as many leads as possible to identify your best options.

In some cases, the organizations you are most interested in may not have developed an internship program. But you can still reach out to them, especially if you are able to provide a detailed proposal of the role you would like within the organization and the benefits you have to offer. Be sure to specify the type of work or role you are interested in contributing, your availability (in regard to duration of the internship and the number of hours per week you can commit to), and your pay requirements.

The ideal internship has the following characteristics:

- It is a learning experience that is specific to your area of study or interest.
- Assignments allow you to apply theoretical knowledge that you have gained in your coursework while helping you build skills relevant to your career interests.
- The skills and knowledge you gain are transferable and can be applied throughout your career.
- Supervision is provided by an expert in your field, and they provide routine feedback.

TO FIND INTERNSHIP OPPORTUNITIES take advantage of your network and relevant resources.

Research Experience

If you are specifically interested in doing research or getting into a PhD program, then you will need research experience. Working as a research assistant allows you to:

- develop important skills such as collecting, analyzing, and interpreting data
- gain a deeper understanding of your field
- gauge whether research and a PhD program would be a good fit for you
- receive mentorship
- strengthen your application for graduate study or professional research positions

Additionally, the skills and experience you gain as a research assistant can easily transfer to other career paths.

Most undergraduate students begin by taking courses in statistics and research methods. These classes teach you how to effectively design an experiment, collect, analyze, and interpret data, and how to report your results in accordance with the standards of your field. Taking these important classes early in your academic career is likely to foster more opportunities to join a research team working on an already existing project, as you will have the skills and knowledge required to significantly contribute. As part of a research team, you can make professional connections, develop an understanding of the process, develop and demonstrate research skills, and potentially gain authorship to add to your CV. Some undergraduate students build on this experience by creating their own research project, depending on the resources available at your institution and the ability to find a professor who is able and willing to supervise your research.

If you are interested in getting involved in research, you're welcome to contact us at <u>outreach@wildanimalinitiative.org</u> for career advising.

To find research opportunities available to you:

- Work with your academic advisor to **complete your program's statistics and research methods** courses as early as possible.
- As you are taking courses, be sure to **engage actively with your instructors** and develop mentorship opportunities. Let them know about your interest in conducting research. They might be looking for a research assistant or know someone who is.
- **Research other faculty members** and identify those completing research you are interested in. Don't be shy! Schedule a meeting with them to learn more about their research and whether you can be involved. Read their publications in advance and be prepared to demonstrate your interest and knowledge of their research.
- Use your school's resources. Many institutions offer programs to help connect students with research opportunities or have personnel trained to help connect students to the various extracurricular activities available to them. Reach out these offices for support.
- Search outside of your institution. Similar to internships, various other institutions, non-profits, government agencies, and private research organizations might be conducting relevant research. Follow websites posting regular announcements (e.g., <u>evoldir</u>, <u>ecolog-l</u>). Check whether they accept volunteers, offer internships, or have paid research positions.



Finding a Mentor

A mentor is someone who is further along on their career path and can provide you with guidance and feedback. They can share their experiences and give advice as you navigate through challenges. They may be able to point out potential roadblocks or opportunities that you had not anticipated. Essentially, they are an active role model that supports your success and growth.

Before trying to find a mentor, it is important to clearly establish your goals and intentions for the mentor relationship. The potential mentors you ultimately reach out to should reflect this goal. For example, you might choose a mentor who is an expert in a skill or topic you are trying to learn more about, is currently in your ideal role, has gone through a life stage or transition you are currently experiencing, or shares one or more of your identities. Once you understand what area of your life or career you want guidance on, then you will be better prepared to identify a mentor who is a good fit.

When you are ready, there are many resources and methods you can use to find a mentor. For a wild animal welfare science mentor, begin reading research in the field (see "Recommended reading and listening" to get started). Once you find articles you are especially interested in, take note of the authors. As you are identifying scientists doing research in your area of interest, begin reaching out to them.

Alternatively, you can select your own mentor by identifying individuals that are compatible with your previously established goals and reach out to them directly. When reaching out to a potential mentor, be sure to prepare by learning as much as you can about their work. When initiating contact, let them know what appealed to you about their profile, how it relates to your long term goals, and request an opportunity to connect, such as a short meeting or coffee break. This meeting presents you with the opportunity to introduce yourself and what you are looking for, ask questions, and determine if you and your potential mentor are a good fit.

If so, you can choose between allowing a mentorship relationship to develop organically or explicitly asking them to be your mentor. Of course, remember that the people you reach out to may not have the capacity, time, or willingness to mentor you. In either case, be sure to thank them for their time and make note of anything you learned from the interaction. If they seem open to mentoring you, be sure to keep in touch, let them know how their recommendations worked out for you, and offer any resources you have available in exchange.

Some people choose to find a mentor through a formal mentoring program. This is a great option if you would like support in being paired with a mentor. Many of these programs serve individuals of specific demographics or fields, so do your research to find one that best fits your needs, goals, and situation.

If you need help finding a wild animal welfare science mentor, you can ask us to help — just email <u>outreach@wildanimalinitiative.org</u>.

Finding funding



Funding through Wild Animal Initiative

<u>Wild Animal Initiative</u> provides grants to support wild animal welfare scientists in conducting relevant research. We support research that advances our understanding of the fundamental concepts, novel methods, and preliminary interventions that will most rapidly accelerate progress in the field.

Wild Animal Initiative offers three types of funding opportunities:

- **Seed Grants:** We offer small grants to support pilot projects or to facilitate integrating wild animal welfare questions into existing projects. Seed grants are ideal for researchers who are new to working on wild animal welfare.
- **Challenge Grants:** These are large grants for complex projects that address key research questions that accelerate progress in wild animal welfare science.
- **Fellowships:** Our fellowship program provides early career researchers with salary support and mentorship to facilitate the growth of a diverse community of scientists who intentionally integrate wild animal research and welfare science.

If you are just getting started as a wild animal welfare researcher, our seed grants and fellowships are especially relevant to you. To stay up-to-date with upcoming funding opportunities, <u>subscribe</u> to our newsletter and <u>follow us on</u> X (formerly Twitter).

For more information about our funding opportunities, please visit <u>Grants —</u> <u>Wild Animal Initiative</u>.

Funding from other sources

It can be worthwhile to pursue traditional sources of funding for your wild animal welfare research, but there are also certain sources that prioritize this field specifically.

The following are just a few examples of funders that are interested in certain projects pertaining to wild animal welfare:

- Animal Welfare Institute's annual <u>Christine Stevens Wildlife Awards</u> fund "innovative strategies for humane, nonlethal wildlife conflict management and improved methods of wildlife study."
- Experiment allows you to <u>crowdfund research projects</u> across a wide range of topics in the US, UK, Canada, and Australia. This funding is available to scientists at all levels regardless of institutional affiliation. The <u>Wildlife Disease Association Challenge Grant</u> recently funded numerous projects seeking to alleviate wild animal suffering as it relates to disease. Although this challenge grant is now closed, similar opportunities are likely to open on Experiment.com in the future.
- Insect Welfare Research Society offers <u>student research awards</u> and <u>small meeting grants</u>.
- Morris Animal Foundation's <u>grants</u> have specific themes that vary each grant cycle. Grants are available for wildlife projects as well as feline and canine projects.
- Universities Federation for Animal Welfare (UFAW) offers grants and <u>awards</u> to promote animal welfare research and study, including for "free-living wild animals whose welfare is compromised by humans."

Additional resources





Career Advising

Wild Animal Initiative provides career advising services to those trying to get involved in wild animal welfare research. Whether you are a student just starting out or an established researcher interested in pivoting your research, please contact <u>outreach@</u> wildanimalinitiative.org for assistance.

Collaboration and Support

We partner with scientists to plan, conduct, and publish original wild animal welfare research that capitalizes on their expertise, addresses impactful research questions, and meets our rigorous standards for ethical animal research. If you would like to collaborate with us on your project, please email us at <u>outreach@wildanimalinitiative.org</u>.

Online Research Community

We offer an <u>online research community</u> where wild animal welfare researchers can connect and network globally. Membership is free and involves just a few screening questions. Current features of the community are described below, and additional resources and services are regularly added.

- **Member Directory:** The member directory provides an exclusive list of community members profiles, including contact information. It is an excellent resource for finding like minded individuals for network and collaboration.
- **Listserv:** By subscribing to the listserv, community members can share and receive updates on research, funding, events, and career opportunities related to advancing the study of wild animal welfare.
- **Opportunities Board:** Our opportunities board offers community members information on current opportunities related to advancing research and understanding of wild animals and how they experience the world. The opportunities listed here include, but are not limited to: scholarships, grants, PhD positions, postdoc positions, academic job opportunities, publications, workshops, and conferences.
- Wild Animal Initiative Events Calendar: Community members are able to see the events Wild Animal Initiative will be hosting or participating in. If you would like to meet with a Wild Animal Initiative representative in person or attend one of our presentations or workshops, the event calendar informs you of those opportunities.

Recommended reading and listening

There are a multitude of ways to stay in touch with the latest research in wild animal welfare science. To get you started, we've included some of the people and organizations we follow to stay up-to-date. But there are many more out there, so continue to do your research and network to find additional sources of information.

Websites and organizations

General

- <u>3Rs Principles in Wildlife Research</u> serves as a resource for scientists conducting wildlife research by providing information and guidance about applying the 3Rs principles to their work.
- <u>Animal & Society Institute</u> is a think tank that conducts research on human-animal relationships, with the goal of improving lives for both animals and humans.
- <u>Animal Ethics</u> provides a lot of introductory information on wild animal welfare, which is described here as "welfare biology," and wild animal suffering, including a video course and e-book.
- **Faunalytics** conducts research and shares knowledge to help advocates help animals effectively.
- <u>NYU Wild Animal Welfare Program</u> engages in research and outreach to develop an understanding of the lived experiences of animals and improving human-animal interactions. They offer a newsletter, host events, and distribute grants.
- Oxford Centre for Animal Ethics engages in research, teaching, and publication to advance the discussion of animal ethics.
- <u>Rethink Priorities</u> conducts original research and shares publications on various topics. You can use the filters on the left side of the page to limit the topic to "Wild Animal Welfare" publications.

Taxa-specific

- Fish Ethology and Welfare Group promotes research and conducts outreach to improve fish welfare.
- <u>Insect Welfare Research Society</u> features a Listserv and society membership for researchers working on insect welfare. They also offer student research awards and small meeting grants.

Wild Animal Initiative website and social media

- Library: This features our publications and research notes.
- <u>Blog</u>: On our blog you'll find explorations of key concepts in wild animal welfare, features on experts in the field, organizational updates, and more.
- <u>Audio series</u>: The four-part series covers introductory topics surrounding wild animal welfare and features interviews with leaders in the larger wild animal welfare community.
- <u>X (formerly Twitter)</u> and <u>Mastodon</u>: We share groundbreaking research, professional opportunities such as grants and jobs, and more, with a scientific audience in mind.
- **Facebook**: We share organizational news and other content for a broader audience of wild animal welfare professionals and advocates.

X (formerly Twitter)

- <u>Animal Welfare Institute (@AWIOnline)</u>
- <u>Animal Welfare Research Network (@AnimalWelfareRN)</u>
- <u>Botstiber Institute For Wildlife Fertility Control (@BotstiberIWFC)</u>
- Dr. Heather Browning (@zoophilosophy)
- Insect Welfare Research Society (@InsectWRS)
- Jeff Sebo (@jeffrsebo)
- Jonathan Birch (@birchlse)
- Lars Chittka (@LChittka)
- Lynne Sneddon (@LynneUSneddon)
- Melissa Bateson (@MelissaBateson)
- <u>NYU Animal Studies (@NYU_ASI)</u>
- Wild Animal Welfare Committee (@wawcommittee)

HELP US unlock the science that will improve wild animals' lives

As a nonprofit organization, we rely on the support of people who believe in a better future for wild animals. If you've found this free guide to be useful, please help us provide more resources and services to empower students and scientists like you by donating today.

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