

NOAA
FISHERIES

Greater Atlantic

Marine Mammal
M **C** **G**
Career
Guide





A career that makes a difference!

NOAA FISHERIES

Science, Service, Stewardship.



The National Oceanic and Atmospheric Administration (NOAA) is the federal government agency working to understand and predict changes in the Earth's environment and atmosphere, share that knowledge with others, and conserve and manage coastal and marine ecosystems and species. NOAA hopes to create a future in which ecosystems, communities, and economies are resilient in the face of change.



NOAA Fisheries is the branch of NOAA dedicated to protecting and preserving the nation's living marine resources through research, management, enforcement, and habitat conservation. NOAA Fisheries is the lead federal agency responsible for managing, conserving, and protecting the nation's marine fish, sea turtles, and marine mammals.

Contact Us for More Information

NOAA Fisheries
Greater Atlantic Regional Fisheries Office
Protected Resources Division

978-281-9328

or visit our website:

www.greateratlantic.fisheries.noaa.gov/protected/

Protecting Marine Mammals

This Career Guide

NOAA Fisheries is responsible for implementing the Marine Mammal Protection Act, the law protecting all marine mammal species from being harmed, harassed, or killed by people. In the Greater Atlantic Region (Maine through Virginia), several species of large whales are also protected by the Endangered Species Act because their populations are endangered or threatened. Together, these laws serve to reduce human impacts in order to conserve and recover healthy marine mammal populations.

Marine mammal career opportunities with NOAA Fisheries are diverse and can include scientific field work, law and policy development, law enforcement, or communications and education.

Marine mammal careers in the Greater Atlantic can present challenging, but rewarding, work.

The NOAA Fisheries offices working to protect marine mammals in the Greater Atlantic:

Policy & Stewardship
Greater Atlantic Regional Fisheries Office- Protected Resources Division in Gloucester, MA; and

Science & Research
Northeast Fisheries Science Center- Protected Species Branch in Woods Hole, MA.

This guide offers an introduction to some of Greater Atlantic NOAA Fisheries marine mammal careers related to conservation, management, policy and science.

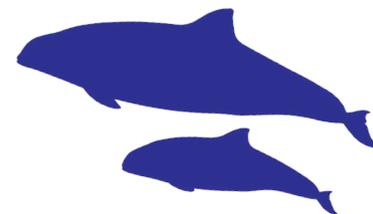
What You'll Learn

You'll hear from NOAA Fisheries staff who work on marine mammal issues and learn what each employee does on a day-to-day basis, their favorite parts of their job, and the path that led them to their current NOAA careers.

Follow-Up

Check out *Advice from the Field* for tips from our experts on how to pursue a marine mammal career at NOAA.

“Protected Resources” are species protected under federal law, such as marine mammals, sea turtles, and endangered/threatened fish.





Disentanglement Program Manager David Morin

Position Description

- Manages the Greater Atlantic region component of the Atlantic Large Whale Disentanglement Network (Maine through Virginia).
- On call 24/7 to arrange rescue efforts when whales are reported to be entangled in fishing gear.
- Assists with on-the-water rescue efforts to help free whales from fishing gear- very dangerous work!
- Organizes data on whale injuries and deaths to help scientists and managers make the best conservation decisions.

ENTANGLEMENTS occur when marine animals are caught or wrapped in the ropes, lines, or openings of some material in the water.

David's Story

From a young age I knew I wanted to work on the water. I grew up in a really exciting time and was inspired by magazine and TV specials about Jacques Cousteau. In college, I got a Bachelor's degree in biology with a concentration in marine and freshwater ecology but still didn't know exactly what I wanted to do.

During my senior year of college, I went on a whale watch out of Gloucester, MA that had college interns onboard collecting whale sightings data and speaking with passengers. I approached the whale watch naturalist, expressed my interest, and was accepted as an intern for the following season. I worked hard that summer because I loved being out on the water. The next season I came back as a naturalist and later

became the program's intern coordinator.

Later, receiving my captain's license helped me to get hired for my next job as a large whale rescue team member. At this job, I physically helped rescue whales from life threatening entanglements by removing the gear they were stuck in. Whales are huge and wild, and entangled animals are often in a great deal of pain... so this was dangerous, but very exciting, work.

From there I made my way to NOAA, helping to manage the region wide Atlantic disentanglement program. The rest is history!

Rewarding Work

I really enjoy talking to students about my job and getting

Disentanglement Program Manager David Morin

Entanglement in fishing gear is one of the biggest threats marine mammals face and can lead to serious injury or death for the animal.

them excited about the field. It's an incredibly interesting field, but also a hard one to break into, so I'm happy to help them figure how they can get to where they want to go.

Saving whales is obviously a hugely rewarding part of my job. Seeing a whale I helped save go on to have a calf later on is wonderful to experience.



In the US, only trained responders are legally authorized to disentangle marine mammals. Photo: FL Fish and Wildlife Commission



Marine Mammal Policy Analyst Kate Swails

Marine Mammal Policy Analyst Kate Swails

Position Description

- Coordinates teams of people (known as Take Reduction Teams) to help reduce bycatch of large whales and harbor porpoises in certain fishing gear types. Teams consist of fishermen, conservationists, marine mammal scientists, state government representatives, and NOAA policy workers, who work together to come up with plans to reduce the risk of entanglements.
- Moves Team suggestions through the policy process by writing regulations and environmental analyses that provide conservation benefits to marine mammals.



Kate's Story

I've known that I wanted to work with marine mammals for a long time. I still remember in sixth grade, we had a unit called *Voyage of the Mimi*. It was a PBS special, starring Ben Affleck that was about a group of scientists who went out on a schooner to study humpback whales. After that I was hooked, and knew I wanted to study marine mammals.

I earned my Bachelor's in Environmental Resource Management at Penn State, and then received my Master's in environmental management from Duke University. The program combined policy with science, so I got a good mix of the two.

Afterwards, I got a job at NOAA Fisheries Headquarters (near Washington D.C.) in the

Regulations protecting large whales from entanglement on the Atlantic coast have helped remove enough fishing line from the ocean to encircle the Earth 1.2 times!

Permits, Conservation, and Education Division.

I helped with permitting different marine mammal and endangered species scientific research projects. That means I kept tabs on all different kinds of research going on in the U.S. I was lucky enough to participate in some of the projects I permitted.

One time, I did a research cruise from San Diego to San Francisco, tagging leatherback turtles, and then another out of Woods Hole, MA surveying for right whales.

Rewarding Work

In light of all the challenges we face, the most rewarding part of my job is when we get positive feedback from the community. It's my job to put a face to the regulations we're putting out, and it's great to hear someone say "this was easier than I thought it would be" or "thank you for listening to me." Getting out to the public and letting them know that we're approachable is very rewarding.





Aerial Survey Fisheries Biologist Christin Khan

Aerial Survey Fisheries Biologist Christin Khan

Position Description

- Conducts whale population surveys from a small airplane that flies over the ocean. These surveys help scientists determine how large or small the population of a species, such as the North Atlantic right whale, is.
- Meets pilots at the airport in the early morning to change into flight suits and life jackets containing emergency supplies.
- When in the air, looks through bubble windows for 4-6 hours at a time, looking for signs of North Atlantic right whales, such as blows or water disturbances.
- If North Atlantic right whales are seen, pictures are taken of the animals, and information is recorded about their behavior. In the office, the collected data is prepared for further analysis.



Christin's Story

I didn't always know that I wanted to study marine mammals. It took me a little while to settle on this career path. For a long time, I thought that I wanted to be a veterinarian, but realized that medicine and disease were not what I found fascinating about animals. It was their behavior, particularly the behavior of wild animals, that I was really interested in. I was inspired by a

mammals course I took in college.

After that, I did a Master's program in San Francisco where I studied vocalization development in harbor seals.

Rewarding Work

The most rewarding part for me is getting up in the airplane or out on a boat to see these amazing animals in their natural habitat, and thinking about all the things we have yet to understand about them.



Aerial surveys are important for understanding the distribution and habitat use by large whales.



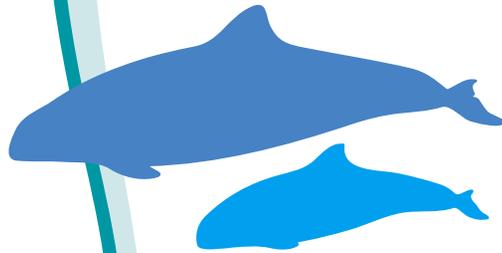
There are fewer than 500 North Atlantic right whales left in the world.



Fishery Liaison & Gear Expert Glenn Salvador

Position Description

- Maintains communication between NOAA and the commercial fishing industry with regards to marine mammal and sea turtle issues and regulations.
- Conducts fishing gear research to understand the mechanics of how fishing gear works so NOAA can make the best decisions when regulations are required.
- Investigates whale entanglements to determine where the entanglement occurred, what kind of gear it was, and any additional information that can help prevent entanglements in the future.
- Helps law enforcement agents understand marine mammal protection laws and make sure fishing gear meets the current regulations.



Glenn's Story

I'm a 4th generation fisherman. I fished gillnets and lobster gear for 18 years and spent 3 years fishing in the West Indies for spiny lobsters and red snapper.

Eventually I wanted to try something new, so I got a job working for the state of Maine in the Department of Marine Resources as a gear technologist. I worked with fishermen to reduce bycatch, came up with new ways to harvest fish, and monitored aquaculture cases. I even helped repair research vessels. I was a jack-of-all-trades in that position and stayed there for 3 years.



Afterwards, I worked as a senior observer in Plymouth, MA on all kinds of boats- lobster, scallop, purse seiners and midwater trawlers. I went on trips that lasted between 1 day and 3 weeks and collected data on weather conditions, gear configurations, catch, and marine mammals.

"If members of the industry have concerns, then I bring them back to the Protected Resources Division. If NOAA has a message for the industry I get the message out."

Fishery Liaison & Gear Expert Glenn Salvador

After 6 years, I saw an advertisement to work at NOAA helping implement the Atlantic Large Whale Take Reduction Team, and I've been there now for 17 years.

Rewarding Work

I find it most rewarding when I bring my knowledge and experiences to people higher up the ladder, and my information affects change that helps both industry members and the marine mammal and sea turtle populations.

On a more daily basis, answering questions from fishermen and Coast Guard officers and really helping them to understand the regulations is highly rewarding for me.



Communications Specialist Colleen Coogan

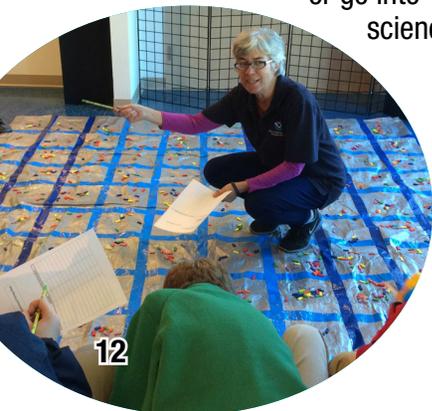
Communications Specialist Colleen Coogan

Position Description

- Simplifies complex scientific and legal documents so they can be understood by people who are not experts.
- Manages regional educational grant program that helps teachers and students explore their environment.
- Responds to requests for marine education events.
- Helps teach kids about the amazing qualities of marine animals and why it's important to take care of them and our oceans.

Colleen's Story

In college I studied biology, taking extra writing courses. I didn't know exactly what I wanted to do. I thought I'd conduct field research or go into science



"I loved the jobs that combined field work, research, and teaching."

journalism. My first job was working in a New York City museum taking care of live reptiles and a collection of ancient specimens. Not exactly what I had pictured!

Because I worked hard, that job led me to a position with a marine mammal and sea turtle stranding response organization on Long Island, NY. I spent the following two years helping stranded, injured, and sick animals and teaching onboard whale watch boats. The pay was low, but the experience was incredible!

After leaving there, I assisted with whale research in Greenland,

and helped count marine mammals, sea turtles, and seabirds while onboard a NOAA research vessel.



work closely with our staff and leaders to provide opportunities for kids to learn about our mission and species.

I also worked on sea turtle projects conducting aerial surveys and teaching volunteers how to monitor sea turtle nests. From these experiences, I realized that my ideal career would combine field work, research, and teaching.

When a job came up to work for the Protected Resources Division for NOAA Fisheries, the timing was perfect. My field experience, willingness to spend extra time getting the job done, and strong communication skills helped me get a job managing the network of marine mammal stranding responders along the Northeast coast.

I now work in the Stakeholder Engagement Division where I

Rewarding Work

Over the years, I've seen a huge increase in peoples' concern for the environment. This helps us work with people who rely on the ocean for their livelihood. For example, we work with fishermen to reduce their impact on marine mammals caused by the fishing gear they use. Since our regulations can affect people's livelihoods, we often start off on opposite sides of an issue. Finding common ground, problem solving, and collaborating is very rewarding. Talking to students who will grow up into these same roles, is an equally rewarding part of my current job.

Common Greater Atlantic Region Marine Mammals

Fin Whale
Balaenoptera physalus



Humpback Whale
Megaptera novaeangliae



Minke Whale
Balaenoptera acutorostrata



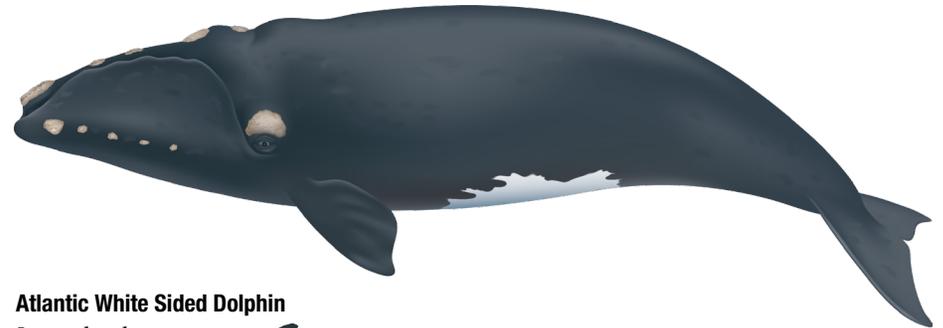
Sei Whale
Balaenoptera borealis



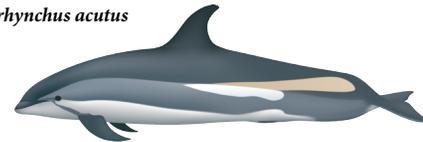
Harbor Porpoise
Phocena phocena



North Atlantic Right Whale
Eubalaena glacialis



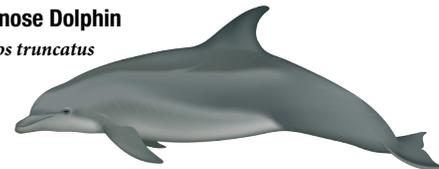
Atlantic White Sided Dolphin
Lagenorhynchus acutus



Harbor seal
Phoca vitulina concolor



Bottlenose Dolphin
Tursiops truncatus



Grey Seal
Halichoerus grypus grypus



Short Beaked Common Dolphin
Delphinus Delphis



Illustrations by Uko Gorter



Environmental Lawyer Kevin Collins

Environmental Lawyer Kevin Collins

Position Description

- Oversees NOAA Fisheries' project compliance with marine mammal and endangered species protection laws.
- Helps develop methods for protecting marine mammals and endangered species from harm, hunting, getting caught in fishing gear, struck by ships, pollution, climate change, and any other threats NOAA Fisheries identifies.
- Reviews proposed fishery regulations to ensure that they do not jeopardize endangered or threatened species, and that they don't negatively impact critical habitat for those species.

Kevin's Story

As a kid, I started scuba diving and became very interested in ocean animals and I decided I wanted to be a marine biologist. In college, I studied marine biology and marine resource conservation but then thought I could help protect the ocean more if I got into the policy side of things.

That is the reason I went to law school. My hope was to get involved in developing the policies and regulations that direct how our ocean resources are used and protected.

After graduating law school, NOAA offered me a job using what I had learned in college and law school to help them protect marine mammals and endangered species.



As I obtained more experience with different issues, legal matters, learned how NOAA works, and developed professional relationships with people within and outside of NOAA, I moved into more senior positions.

Rewarding Work

The most rewarding parts of my job are getting to work closely with different groups of people, writing a laws that

protect marine resources, and being able to defend NOAA when someone challenges what the agency has done to try and protect marine mammals.

Helping NOAA make good decisions that protect natural resources while also ensuring that the people who depend on the ocean and its resources for their livelihood can continue to earn a living is also incredibly rewarding.





Passive Acoustic Research Biologist Dr. Sofie Van Parijs

Position Description

- Organizes a team that studies sounds produced by marine animals in the ocean to learn what they are doing, where they are, and when they are using an area.



- Studies the sounds produced by humans, such as boats, oil and gas activities, navy sonar, and other man-made sounds to see how they affect marine mammals.
- On boat days-deploys acoustic recorders (underwater microphones) and collects data on marine mammals to help correlate sounds with the animal's behavior.

ACOUSTICS:
The science of investigating the properties of sound. Bioacoustics combines biology and acoustics to better understand how animals produce and utilize sound.

Sofie's Story

I've always been interested in animal communication and conservation. I started out by working with bats—they really fascinated me. I got my undergraduate degree in natural science from Cambridge University in the UK, and then a PhD in zoology from Aberdeen University, which was my first introduction to marine mammals. There, I worked on a project that investigated the sounds made by seals.

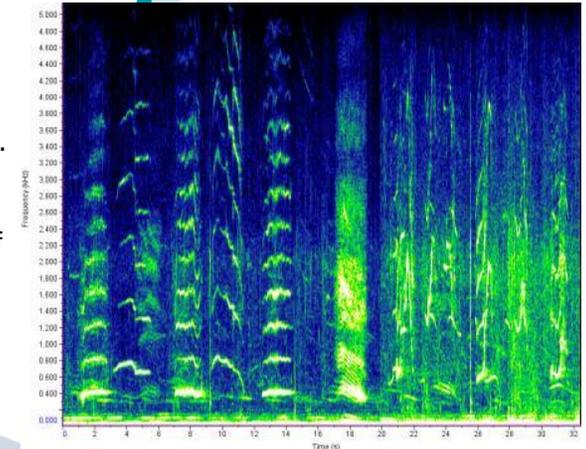
Passive Acoustic Research Biologist Dr. Sofie Van Parijs

After that, I traveled quite a bit, going from James Cook University in Australia, the Norwegian Polar Institute in Norway, Cornell University in the US, and then arrived at my current job at NOAA.



Rewarding Work

The most rewarding part of my job is working on a conservation issue that allows me to contribute to decisions NOAA makes to protect endangered species. I also enjoy working with amazing animals and with colleagues who are some of my best friends.



Spectrograms are graphs of sound waves based on frequency and time. They provide scientists with "visualizations" of sound. This spectrogram is of a humpback whale call recorded by underwater buoys.



Fisheries Engineer John Kenney

Position Description

- Categorizes fishing gear that has been removed from whales by identifying the types of gear and where the gear came from.
- Works closely with gear specialists and fishermen.
- Collects information to inform managers about large whale entanglements, and help them create regulations in order to reduce entanglements in the future.

John's Story

I started as an engineering student at Northeastern University. They have a wonderful co-op program where students take time off to work full-time in different industries as a part of their degree.

I got my co-op job at the Northeast Fisheries Science Center in Woods Hole, MA in the fisheries engineering group. There, my main duty was developing fishing gear for the fishing industry that would catch the most fish.

After I graduated I was hired back. Our goal shifted from catching the most fish to saving the fish we didn't want to catch, and improving the accuracy of the fishing gear.

After that, I operated a research boat for about 10 years and eventually my position was merged into the Protected Resources Division. From there, my work shifted to the position I'm in today, and that's how I got involved in marine mammal work.

Rewarding Work

I work with a group of talented and hardworking people, so my colleagues are the most rewarding part of my job.

Fisheries Engineer John Kenney



BYCATCH is a fish, marine mammal, or other species that is accidentally caught in fishing gear.



Endangered North Atlantic right whale skims the water's surface for food.



Regional Stranding Coordinator Mendy Garron

Position Description

- Oversees the regional Marine Mammal Health and Stranding Response Program.
- Collaborates with a network of authorized response organizations to help injured and sick marine mammals that come ashore.
- Coordinates rehabilitation services for marine mammals in need of medical intervention.
- Participates in emergency response drills to prepare for emergency events, such as an oil spill or a natural disaster where marine mammals would be affected.
- Uses data collected from strandings to monitor animal population health and environmental changes.

Mendy's Story

I knew at a very young age that I wanted to work with marine mammals. When I was 5-years old I watched the 1970's movie *Orca*. If you look up information about that movie, you will notice that it is listed as a horror film (not sure what my parents were thinking letting me watch that at the age of 5!). What I remember about the movie is how intelligent and strong the family bond was between the animals in the story. From that moment on I knew that I wanted to study and learn as much as I could about marine mammals and ways to protect them.

Science was my favorite subject in school and after high school I pursued a

Bachelor's degree in marine biology. After college, I interned at a whale research organization helping with stranding response.

After 2 years of fieldwork, I started working for NOAA, assisting with administrative and education projects. NOAA oversees and authorizes all the organizations that help with stranding and rehabilitation services. I got involved with the stranding program in 2004, and started coordinating the program in 2006. Since that time I have earned a degree in Veterinary Technology and became a certified veterinary technician. I am currently enrolled in a Master's program for Public Policy and Administration.

Rewarding Work

I am in this field because I am passionate about marine mammals. It is hard to pick one or two things to say are the most rewarding parts of my job because there are many. Seeing a healthy animal released back into the ocean after an illness or an injury is truly amazing. The bigger

Regional Stranding Coordinator Mendy Garron

picture is helping people understand the impacts of their actions on the ocean environment and how we can make little changes in our lives to reduce negative impacts on marine mammal species.

Providing new information to someone that can impact their view of the ocean environment and the species we work to protect can be just as rewarding, especially if it helps to prevent an animal from becoming injured because of human behavior in the future.



Rehabilitated animals are sometimes satellite tagged when released back into the wild to make sure their release is successful and learn more about the animal's habitat use.

"I am in this field because I am passionate about marine mammals."



Law Enforcement Special Agent Todd Nickerson

Position Description

- Enforces federal marine mammal and endangered species protection laws.
- Investigates violations of the Marine Mammal Protection Act and Endangered Species Act, such as fishing gear that entangles a whale because it did not comply with protection regulations, or a vessel that operates unlawfully and injures or kills a whale by striking it.
- Tracks and investigates cases of illegal marine mammal and endangered species parts trafficking into the US, such as sperm whale teeth and narwhal ivory.



Todd's Story

My father was the Chief Endangered Species Biologist for the US Fish and Wildlife Service in New England. This exposed me to wildlife conservation, specifically matters related to bald eagle recovery in New England, at a very early age. This plus growing up fishing and hunting in northern New England, gave me an appreciation for nature and the desire to work in the field of wildlife conservation. I also had an interest in police work and law enforcement.

It is illegal to possess endangered species parts -such as bones and teeth. It is also illegal to purchase, sell, or import any marine mammal parts, with limited exceptions.

Law Enforcement Special Agent Todd Nickerson

I went to college in New Hampshire and earned a Bachelor's degree in sociology and a Master's degree in business administration.

I started my career as a local police officer in New Hampshire and then became a Special Agent with the US Customs Service, assigned to New York City. From there, I applied for, and was fortunate enough to be hired by, NOAA as a Special Agent in Massachusetts.

Rewarding Work

The most rewarding part of this job is holding those who perpetuate the black market wildlife trade accountable for their actions. Criminal convictions of



wildlife smugglers have the potential to reduce demand for illegal wildlife parts in the United States, therefore saving the lives of protected or endangered animals.

I also enjoy the diversity of this career. On any given day I might be on a boat, traveling across the country for case work, conducting interviews in the field, or helping local fisherman follow the laws that help reduce marine mammal entanglements.



Advice From The Field

NOAA Marine Mammal Experts Share Their Advice On Some Of Your Tough Career Questions

Q: I'm in high school and I know I want a career working with marine mammals! What should I do next?

Look for Opportunities!

Even in high school you can start to gain valuable experience by looking for general science, marine science, animal science, law, or education experience opportunities. Attend conferences, workshops, or informal lectures. Look for volunteer opportunities that can expand your skill set or get you involved with your community (i.e. beach clean-ups, recycling drives, etc.). If your school doesn't provide these opportunities, you might have to do some research to find them...but they are out there and they are worth your time!



Science & Writing!

Taking a broad range of science classes in high school can provide you with a good foundation as you become more specialized in college. Focus on that and on sharpening your writing skills. Whether you pursue the science, law, policy or an education route in your marine mammal career, strong writing skills are incredibly important!

Network!

Reach out to experts in the field at conferences or through email. Tell them your interests and why you are interested in what they do. Ask questions about their work and for information on available student opportunities they might be aware of. Most people are happy to speak to students and offer helpful advice.

Advice From The Field

NOAA Marine Mammal Experts Share Their Advice On Some Of Your Tough Career Questions

Q: How do I keep moving forward in my marine mammal career once I'm in college?

Network! Network! Network!

Did we mention that networking is important? Get to know your professors, attend conferences and workshops and don't be afraid to introduce yourself to other people working in the field!

Get your foot in the door!

Volunteer and internship opportunities are very important. The marine mammal world is a competitive field and having these experiences demonstrates your work ethic and dedication which will help you stand out to future employers!



Tips for a Successful Interviewing

Before Your Interview:

- Practice answering interview questions with your friends and family. Take constructive feedback.
- Research the organization beforehand so you are familiar with their goals and mission.

During Your Interview

- First impressions count: arrive early and dress professionally.
- Ask questions about the position and organization.
- Relax, be honest, and be yourself!

Career Resources

Visit These Websites To Learn More About NOAA Programs,
Marine Mammals, And Marine Mammal Careers

NOAA Fisheries Greater Atlantic Regional Fisheries Office Protected Resources Division

www.greateratlantic.fisheries.noaa.gov/protected

NOAA Fisheries Greater Atlantic Regional Office Employment Advice

www.greateratlantic.fisheries.noaa.gov/educational_resources/jobs

NOAA Fisheries Northeast Science Center

www.nefsc.noaa.gov

NOAA Volunteer Opportunities

www.volunteer.noaa.gov

NOAA Scholarships and Internship Programs

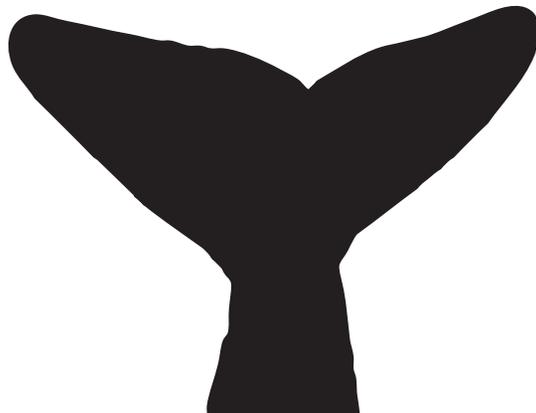
www.education.noaa.gov/Special_Topics/Student_Opportunities.php

Marine Mammal Research & Opportunities List Serv (MARMAM)

<https://lists.uvic.ca/mailman/listinfo/marmam>

National Marine Mammal Laboratory

www.afsc.noaa.gov/nmml



Become A Steward Now!

You Don't Have To Be A Marine Mammal Professional To Help
Protect Marine Mammals & Their Environment!

Admire marine mammals from a distance. Interrupting marine mammal natural behaviors is illegal and causes the animals stress. Marine mammals are also wild animals that can become dangerous if approached too closely. If you see a marine mammal, play it safe and keep your distance.

Pick up trash and reduce, reuse, and recycle! Disposing of trash properly can keep it out of the oceans, helping promote a clean and healthy environment for all marine life. Also, don't release balloons into the air. Released balloons find their way to the ocean because of air currents and marine life can mistake them for food once they deflate.

Buy USA caught seafood. USA fisheries have to adhere to some of the most stringent marine mammal protection regulations in the world including modifying their gear, taking observers, adhering to closure areas, and reporting marine mammal bycatch to NOAA Fisheries.

Don't buy marine animal products or souvenirs. Traveling abroad? Bringing marine mammal products into the US is illegal in most cases.

Report sick, injured, or dead marine mammals. These reports help authorized responders locate animals in need, potentially saving their lives. If already dead, samples can be collected, helping us learn more about their overall population health. Call 866-755-6622 to report stranded marine animals found in Maine through Virginia.

Get involved. When NOAA Fisheries creates regulations to protect marine mammals, we ask for public input on our ideas before they become regulations. Visit our website for information on upcoming actions and public meetings: www.greateratlantic.fisheries.noaa.gov

Tell your friends and family about protecting marine mammals. The more people who care and are informed, the more we can all do to help protect these animals!



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www.greateratlantic.fisheries.noaa.gov

OFFICIAL BUSINESS

National Marine Fisheries Service
Greater Atlantic Regional Fisheries Office
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Gloucester, MA 01930