

Ocean Science Analytics

Pathways to Marine Mammal Careers in the Blue Economy

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About Ocean Science Analytics

- Founding in 2018 by Liz Ferguson
- Marine ecological research and analytical tool development. Expertise in marine mammal passive acoustic data analysis.
- Online technical training:
 - Passive acoustic software
 - R training in an ocean science context
 - Coming soon! QGIS for Marine Science Professionals



Differentiating Marine Mammal Careers in the Blue Economy vs. Traditional Roles

Blue Economy Careers

- **Focus on Monitoring and Mitigation:** Support economic activities such as offshore energy, shipping, and fisheries
- **Applied Problem-Solving:** Noise pollution reduction, ship strike prevention, compliance monitoring.
- **Industry Partnerships:** Roles embedded within industries (renewable energy, consulting, or governmental agencies)

Traditional Careers

- **Ecological and Natural History Research:** behavior, ecology, and evolution of marine mammals.
- **Pure Research Focus:** Advancing fundamental knowledge instead of direct link to economic activities
- **University or Nonprofit Roles:** Positions primarily in academia or conservation organizations, with long-term studies and publishing as key outputs.



Requirements for Marine Mammal Careers

Blue Economy Careers

- **Degrees:** Undergraduate degree in marine science, oceanography, or related fields.
- **Specific Training:** Short-term technical courses
- **Skills Acquisition:** Certificate programs, industry partnerships, or on-the-job training

Traditional Careers

- **Degrees:** Require advanced degrees (MSc or PhD) in marine science, oceanography, or related fields.
- **Extended Training:** Research methodologies/statistical analysis gained over years of coursework and fieldwork.
- **Skills Acquisition:** Academic training through graduate programs, mentorship , and independent research.

Importance of Continuing Professional Development (CPD)

- Career advancement
- Staying current with emerging technologies (e.g., bioacoustics, AI)
- Examples of CPD:
 - Certifications
 - Professional Organizations
 - Compliance and Regulatory Training



Example Certification: Protected Species Observer

The screenshot shows the NOAA Fisheries website with a search bar at the top right. The main navigation bar includes links for 'Find A Species', 'Fishing & Seafood', 'Protecting Marine Life', 'Environment', 'Regions', and 'Resources &'. Below this is the 'ENDANGERED SPECIES CONSERVATION' section, featuring the 'Protect' logo and the 'JNCC' logo. A search bar is also present on the right side of this section. The main content area has a navigation menu with 'Our role', 'Monitoring', 'Evaluating', 'Advice', 'Our Work', 'Resources', 'About JNCC', and 'News'. The 'Our Work' menu item is highlighted. The main image shows a whale breaching the water, with the text 'Marine Mammal Observer Training Course Providers' overlaid. Below the image is a breadcrumb trail: 'Home / Our Work / Marine mammal observer training'. The main text reads: 'Marine mammal observers receive formal training through attendance of a JNCC approved training course. JNCC recognises MMO courses that explain the rationale'. A link 'Marine mammals and' is visible on the right side.




Examples of Continuing Professional Development

Professional Organizations

- **CPD Recognition:** Reviews and provides course recognition for wide range of technical courses

The screenshot shows the Institute of Marine website. The top navigation bar includes links for Library & Resources, IMarEST Connect, Professional Community, My CPD, Marine Jobs, and a Login button. Below the navigation bar, there are menu items for Membership, Events, Our Partners, Education & Training, Get Involved, News, and About Us. The main content area features a heading: "Access the full list of organisations that provide opportunities for Continuing Professional Development here, with information about the course or event and contact details." To the right of this text is a large graphic with the Institute of Marine logo and the text "CPD RECOGNISED". Below the heading is a list of organizations, each with a plus sign to its right:

 Alpha Marine Services	+
ASA Consulting Engineers Ltd	+
ASRANET	+
C4FF	+
Castrol Academy	+
Clyde Marine Training	+

On the right side of the page, there are two additional sections:

- IMechE training courses:** View additional training courses provided by the IMechE, available to IMarEST members. A button labeled "Courses" is present.
- CPD recognition for events:** Find out if your event is eligible for.



marine technology society

Opportunity runs deep™

Examples of Continuing Professional Development

Professional Organizations

- **MTS:** International society promotes awareness, understanding, and the advancement and application of marine technology.
- **Career Technology Center:** Connects you to opportunities in the marine sector
- **Microcredentials:** Training relating to specific skillsets required for the blue economy.



Internships: Practical Experience

- **Real-World Application:** hands-on experience with techniques and tools
- **Types of internships:** field surveys, lab work, data analytical skill development, monitoring tools



Protected Species Observer- AK

Apply now



Dartmouth, MA, USA

Posted on Jan 4, 2025

A.I.S., Inc. (AIS) is a national scientific services firm supporting maritime activities requiring certification of compliance with environmental regulations as well as collecting data for use by Federal, State, Municipal, and other government agencies along the US coastline.

Primary Function:

AIS is recruiting protected species observers to observe the monitoring and exclusion zones around noise producing operations and implement protective measures when necessary. The PSO will work independently during operations which will be conducted during daylight hours with an anticipated eight to ten hours of work per PSO per day. This position is expected to start in September 2024 for an estimated 45 days of work. Duties include but are not limited to: identification of protected species; documenting location, documenting behavior and other essential data; documenting data on logs in an

organized manner. Candidates will be selected based on their past experience identifying protected species.

Duties/Responsibilities:

Duties include, but not limited to:

- Identify marine animals using the naked eye and visual technology
- Ability to vigilantly monitor for visual and acoustic detections of marine mammals around observation



Key Skills for Careers in Marine Mammals



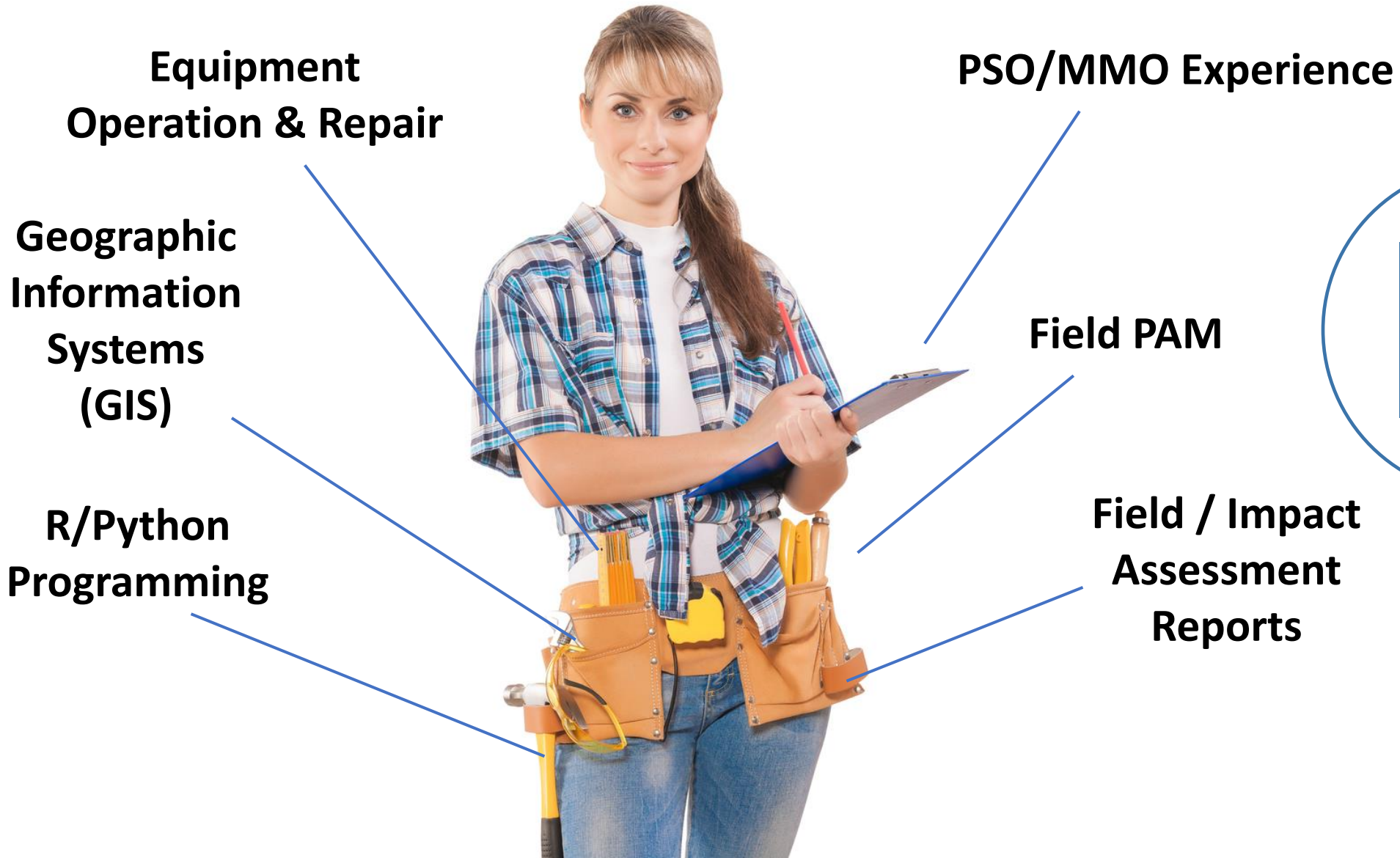
Technical Skills

- Behavioral observation and data collection (PSO/MMO certification - mitigation)
- **Bioacoustics analysis**
- Environmental impact assessments
- **GIS and spatial mapping**
- Statistical modeling (R, Python)
- **Remote sensing techniques**
- eDNA sampling and analysis
- **Drone-based survey methods**

Soft Skills

- **Communication and public outreach**
- Teamwork and collaboration
- **Problem-solving**
- Attention to detail
- **Adaptability in fieldwork settings**
- Time management
- **Critical thinking**

Interdisciplinary Roles



What Experience Do I Gain?

2025 SPRING INTERNSHIP

JOIN THE DPMMR ANIMAL CARE TEAM



Located in Key Largo, Florida

We are seeking motivated individuals to apply for our Animal Care and Training Internship For our Extended Spring Internship!

Early January- Mid May

<https://www.connecttoprotect.org/internships>

Email: intern@dpmmr.org

- **Husbandry Skills:** Less transferable to many positions
- **Behavioral Training:** Specific to animal care facilities
- **Public Communication:** Useful for conference presentations, etc..



What Experience Do I Gain?



CIMAS/MDC INTERNSHIP PROGRAM

UNIVERSITY OF MIAMI
COOPERATIVE INSTITUTE for MARINE & ATMOSPHERIC STUDIES

NOAA



APPLY NOW!

CIMAS is offering several 10-week paid part-time internships for MDC and Broward College students in summer 2025, with research projects on hurricane modeling, coral reefs, Florida current transport, biodiversity monitoring, and culturing coral bacteria. Located on Virginia Key.



<https://cimas.earth.miami.edu/education-outreach/internship/index.html>

PROJECTS:

1. Evaluating NOAA hurricane analysis and forecast systems
2. Investigation of resilience mechanisms in south Florida coral reefs
3. Defining relationships between ocean tracers and the Florida Current
4. Biodiversity monitoring in south Florida using plankton imaging and eDNA
5. Culturing beneficial coral bacteria



- **Data Analysis & Modeling:** Analyze habitat use, migration patterns, and environmental impacts
- **eDNA Techniques:** Detect marine mammals and their prey through non-invasive genetic monitoring.
- **Oceanography Expertise:** Predict marine mammal movement based on current systems and ocean tracers.



Other Opportunities for Skill Development

- Technical courses and certifications
 Ex: GIS at community colleges
- Online resources: eLearning platforms, MOOCs
- Internships in adjacent discipline with transferable skill



Most importantly, relay
passion, communicate
effectively, and be
proactive—seek out
opportunities to build
technical skills!

