INSTITUTE OF MARINE
Engineering, Science & Technology

NCEA
Natural Capital and Ecosystem Assessment

Supplementary Material 3:

MARINE MAMMAL MONITORING STAKEHOLDER SURVEY

Prepared by:
MMSIG Marine Mammal Monitoring Innovation Team

Welcome to the Marine Mammal Monitoring Technology Survey!

This survey is to gather data on the current state of marine mammal monitoring technologies and methodology in order to identify emerging innovations and technologies in the field. The research is being conducted by Institute of Marine Engineering, Science and Technology (IMarEST) in collaboration with the UK Department for Environment, Food & Rural Affairs (Defra) under the marine Natural Capital and Ecosystem Assessment (mNCEA) programme. Please complete by **January 24th, 2025**. The survey should take no more than **20-30 minutes** & your participation is hugely appreciated.

Stakeholder Survey

The survey is divided into five sections:

1. **Contact information**: Basic details about you and your organisation, ensuring we can follow up as needed while keeping responses confidential.
2. **Insights into commonly used technologies and methods**: Information about the tools and technologies and methods you currently use in marine mammal monitoring.
3. **Limitations**: Identifying challenges, gaps, and barriers in current marine mammal monitoring technologies and methodologies.
4. **Horizon Scanning**: Gathering your thoughts on emerging technologies, innovations, and opportunities to advance the field.
5. **Further engagement:** Acquiring information on your interest in participating in our virtual workshop and providing follow-up information.

How Your Responses Will Be Used

Responses to this survey are voluntary as is your provision of contact information for subsequent follow-up. At the beginning of the survey, you have the option of making your responses anonymous. If you do choose to include your contact information, please be aware that they will be provided to Defra's mNCEA programme. The survey data may be used in subsequent research or reports to guide innovation and decision-making in the field of marine mammal monitoring. Personal identifiers may be used to facilitate follow-up, clarification, and virtual workshop participation, but all data will be processed and stored securely in compliance with General Data Protection Regulation (GDPR) requirements. You have the right to access, correct, or request the deletion of your personal data at any time,

but please be aware the timeline of this project results in reporting to the Defra and mNCEA soon after the close of the survey.

Contact Information

If you have any questions about this survey or the project, please feel free to reach out to us:

- **Liz Ferguson**
- **Institute for Marine Engineering, Science, and Technology (IMarEST)'s Marine Mammal Special Interest Group**
- **Email:** liz.ferguson@sigs.imarest.org

Consent and Participation

By clicking "Next" to begin the survey, you consent to participate in this study. Your participation is voluntary, and you may withdraw at any time. There are no known risks associated with participation.

Thank you for contributing your expertise to this project. Your responses will further inform marine mammal monitoring and innovation.

Contact and Company Information

Please provide your optional contact details and information regarding your background. By completing this survey, you con-sent to participate in this study (including any partially completed survey responses). Your participation is voluntary, and you may withdraw at any time. There are no known risks associated with participation. Thank you for contributing your expertise to this project - your responses will further inform marine mammal monitoring and innovation!

1. I would like to share my contact information for this survey (Response required)
   - Yes (if selected, please fill in the details below regarding your name, role and email address for us to be able to follow-up)
   - No (if selected, please disregard contact information questions, although we appreciate any company details if you are willing to contribute)

2. Your name:

3. Your role/position:

4. Email address:

5. Confirm email address (to ensure we have the correct details):

6. Company/Organisation name:

7. Headquarters Location (Country):

8. What is your primary function within the marine sector/blue economy? (Select all that apply):
   - **Conservation and Biodiversity Management** (Working on initiatives to protect marine species and ecosystems, including conservation planning and habitat restoration)
   - **Consultant (MMO/PSO/PAM)** (Offering expertise as Marine Mammal Observers (MMOs), Protected Species Observers (PSOs), or Passive Acoustic Monitoring (PAM) specialists)
   - **Data Processing and Analysis** (Specialising in analysing and interpreting marine data, including acoustic, visual, or environmental datasets)
   - **Education and Outreach** (Engaging in public education, awareness campaigns, or stakeholder involvement for marine science and conservation)
   - **Environmental and Ecosystem Modelling** (Developing models to predict or simulate environmental conditions, habitat use, or species distributions)

- **Environmental Services** (Providing assessments such as Environmental Impact Assessments (EIA), Environmental Statements (ES), or equivalent regulatory compliance reports)
- **Geospatial Technology and Mapping** (Using GIS, remote sensing, or spatial data to support marine mammal monitoring and habitat studies)
- **Non-Governmental Organisations (NGOs)** (Organisations advocating for marine conservation, biodiversity protection, or environmental sustainability)
- **Offshore Surveys Implementation or Staffing** (Providing services or personnel for conducting marine surveys, including biological, acoustic, or environmental studies)
- **Oil, Gas, Renewable Energy and Marine Infrastructure** (Involved in offshore energy production, subsea cabling, or other marine infrastructure development and monitoring)
- **Product Developer** (Focused on designing and building new technologies or tools for marine mammal monitoring and conservation)
- **Policy and Regulation** (Focused on developing or implementing policies and regulations for marine conservation, monitoring, and industry compliance)
- **Research and Academia** (Universities, research institutions, or individuals conducting marine mammal and ecosystem research)
- **Technology Provider** (Organisations or individuals offering tools, devices, or software solutions for marine mammal monitoring or related activities)
- **Wildlife Observation and Tourism** (Providing services related to ecotourism, wildlife watching, or citizen science initiatives for marine environments)
- **Other**

9. Which industries or sectors do you primarily serve? (Select all that apply):
   - **Conservation and Advocacy** (e.g., environmental NGOs)
   - **Defence and Maritime Security** (Clients such as navies, coast guards, or maritime surveillance agencies)
   - **Environmental Monitoring and Compliance** (Clients requiring environmental impact monitoring, mitigation planning, or regulatory compliance support)
   - **Fisheries and Aquaculture** (Clients managing commercial fisheries, aquaculture facilities, or sustainable seafood initiatives)
   - **Government / Fisheries Management** (Clients in government agencies, fishery management, or regulatory bodies)
   - **Offshore Renewable Energy: Offshore Wind** (Clients involved in wind farm projects and infrastructure development)
   - **Offshore Renewable Energy: Tidal** (Clients working on tidal energy systems such as barrages, streams, or lagoons)
   - **Offshore Renewable Energy: Wave** (Clients focused on wave energy generation and related projects)
   - **Offshore Renewable Energy: Ocean Thermal Energy Conversion (OTEC)** (Clients developing or implementing OTEC technologies)

- **Offshore Renewable Energy: Floating Solar** (Clients deploying solar panel systems in offshore environments)
- **Oil and Gas** (Clients in offshore exploration, drilling, production, and infrastructure support)
- **Research and Academia** (Clients from universities, research institutions, or scientific organisations)
- Other

10. Which geographic areas/regions do you operate? (Select all that apply):
    - Arabian Sea
    - Antarctic waters
    - Arctic waters
    - Baltic Sea
    - Black Sea
    - Global
    - Gulf of Mexico
    - Indian Ocean
    - Mediterranean Sea
    - North American Atlantic coastal waters
    - North American Pacific coastal waters
    - North-East Atlantic Ocean
    - North-West Atlantic Ocean
    - North-East Pacific Ocean
    - North-West Pacific Ocean
    - North Sea
    - Persian Sea
    - South Atlantic Ocean
    - South Pacific Ocean
    - UK and Irish continental shelf
    - Other

11. **Do you conduct marine mammal monitoring in English waters (e.g., coastal or offshore)?** While we are interested in global perspectives, this question aims to capture regional operations under Defra jurisdiction?
    - Yes
    - No

Insights into Commonly Used Technologies

To better understand the types and scope of technologies and methodologies used for marine mammal monitoring, we would like to gather information about how you collect and utilise data.

12. **Data Streams & Means of Acquisition:** Please indicate which types of data your organisation collects or utilises for monitoring marine mammals.

	1 - Frequently Collect/Use	2	3	4	5 - Never Collect/Use
Acoustic data (e.g., passive or active sound detection)	O	O	O	O	O
Biological data (e.g., environmental DNA sampling, tissue samples)	O	O	O	O	O
Biologging data (e.g., animal movements, environmental information)	O	O	O	O	O
Drone-derived Imagery (e.g., from small or large uncrewed drones)	O	O	O	O	O
Non-visible wavelength data (e.g., infrared, multispectral, false colour)	O	O	O	O	O
Plane-derived Imagery (e.g., from aerial surveys with specialized cameras)	O	O	O	O	O
Radio signals (e.g., tags, telemetry)	O	O	O	O	O
Satellite-derived Imagery	O	O	O	O	O
Visual data (e.g., within line of sight, shipboard, aerial surveys, or shore-based)	O	O	O	O	O

13. Which of the following platforms or technologies does your organisation use, develop, or produce to collect data?

	1 - Frequently Collect/Use	2	3	4	5 - Never Collect/Use
Aerial platforms: Drones/Remotely Piloted Aerial Systems (RPAS), Uncrewed Aerial	O	O	O	O	O

Vehicles (UAVs), crewed aerial surveys					
Citizen engagement: Citizen science programs and opportunistic reporting	o	o	o	o	o
Instrument packages: Oceanographic unit deployments (e.g., seafloor moored systems, floating acoustic arrays, autonomous integrated multi-sensor systems)	o	o	o	o	o
Remote sensing technologies: Satellite monitoring tools, radar systems	o	o	o	o	o
Subsurface platforms: Underwater Autonomous Vehicles (UAVs), gliders, remotely operated underwater cameras, seafloor mounted moorings or data acquisition seafloor landers	o	o	o	o	o
Surface platforms: Autonomous/Uncrewed Surface Vessels (ASVs), boats/vessels, surface expressed moored or drifting data acquisition buoys	o	o	o	o	o

14. **Data Collection, Processing and Analysis:** Please indicate which processing methods do you typically use for the data you collect.

	1 - Frequently Collect/Use	2	3	4	5 - Never Collect/Use
Laboratory-based sample processing	o	o	o	o	o
Manual processing (e.g., data analysis or processing done by hand without automation or specialized software tools).	o	o	o	o	o
Software Packages and Custom Scripts (e.g., using specialized software like MATLAB, R, or Python scripts to process and analyze data).	o	o	o	o	o
AI and machine learning applications (e.g., automated detection and classification systems)	o	o	o	o	o

Hybrid data processing (e.g., human-in-the-loop classification systems)	o	o	o	o	o

15. **Other Methods:** If you use another means of commonly processing data that is not mentioned above, please describe that here: [Open text answer]

16. **Software:** Which software tools, systems, or products do you commonly use, produce, or develop for marine mammal monitoring data processing and analysis? (e.g., commercial software, open-source tools, or custom scripts). Please describe the types of analyses you perform using these tools (e.g., large dataset processing, generating occurrence maps, habitat modelling). [Open text answer]

17. **Hardware:** For your top three technologies that your company most commonly use/produce/develop to monitor marine mammals, please list your top three products/devices/systems. For example, PAM devices may be hydrophone arrays, acoustic recording units (ARUs such as SoundTraps) or automated click detectors (CPODs or FPODs) etc. If you prefer not to specify due to proprietary nature of equipment, you can simply state you use in-house equipment. Indicate "N/A" if not applicable to your operations. [Open text answer]

18. What are the primary objectives of collecting data to monitor marine mammals? Please select all that apply.
    - **Assessments** (e.g., mitigation of harmful interactions)
    - **Behavioural Studies** (e.g., diving activity, sound production rates, etc.)
    - **Biodiversity Monitoring** (e.g., species richness, ecological dynamics)
    - **During/Post-Construction Monitoring / Impact Assessments** (e.g., construction noise, vessel strikes, human-wildlife interactions, behavioural impact)
    - **Habitat Use and Suitability Assessments** (e.g., critical habitats, seasonal trends)
    - **Health Assessments** (e.g., disease monitoring, physical condition, stress indicators)
    - **Marine Protected Area Monitoring and other Mitigation Effectiveness**
    - **Population Estimates** (e.g., abundance, density, trends over time)
    - **Pre-Construction / Baseline Surveys** (e.g., species characterisation, occurrence, spatial-temporal distribution)
    - **Regulatory Compliance Monitoring** (e.g., adherence to legal or environmental standards)
    - **Technology Testing or Validation**
    - **Other**

19. Based on your perspective, rate the importance of the following when determining which technology/device/product to select for monitoring marine mammals? Please select from:

	1 - Very Important	2	3	4	5 - Not Important
Accessibility of the species or area (Considerations such as habitat type, remoteness, or depth of the monitoring location)	O	O	O	O	O
Advancements in technology (Adoption of cutting-edge methods, such as AI, drones, or bio-logging)	O	O	O	O	O
Balancing multi-use areas (Balancing monitoring with other activities in the area, such as fishing or renewable energy projects)	O	O	O	O	O
Budgetary constraints (Available funding or cost-effectiveness of the method/technology)	O	O	O	O	O
Collaboration opportunities (Partnerships with other organisations to share resources or data)	O	O	O	O	O
Compatibility with existing infrastructure or systems (Ability to integrate new tools with current workflows or equipment)	O	O	O	O	O
Data quality and resolution needs (Level of detail required for analysis or decision-making)	O	O	O	O	O
Duration and scale of monitoring (Short-term vs. long-term studies and the geographic extent of the monitoring area)	O	O	O	O	O
Environmental conditions (Factors like weather, sea state, visibility, or seasonal variation)	O	O	O	O	O
Field personnel experience and training (e.g., technical skills, safety training, species expertise)	O	O	O	O	O
Impact on marine mammals and the environment (Minimising disturbance to	O	O	O	O	O

species or habitats during monitoring)					
Integration with conservation or management objectives (e.g., addressing policy needs, informing marine protected area decisions)	o	o	o	o	o
Logistical challenges (Availability of vessels, personnel, buoy deployment conditions, or support equipment for field operations)	o	o	o	o	o
Project goals or regulatory requirements (Specific objectives, such as population assessment, behavioural studies, or compliance with legislation like the Marine Mammal Protection Act)	o	o	o	o	o
Public or stakeholder engagement (e.g., community involvement, partnerships with Indigenous groups)	o	o	o	o	o
Real-time vs. archival data requirements (Need for immediate data processing versus post-collection analysis)	o	o	o	o	o
Regulatory or permitting requirements (e.g., compliance with local, national, or international regulations)	o	o	o	o	o
Reliability and maintenance of equipment (Durability of technologies in marine environments and ease of maintenance)	o	o	o	o	o
Safety considerations (Ensuring safety of personnel in challenging or hazardous environments)	o	o	o	o	o
Stakeholder or client expectations (Specific deliverables or outcomes required by stakeholders or clients)	o	o	o	o	o
Target species behaviour and detectability (Whether species are vocal, surface frequently, or live in inaccessible areas)	o	o	o	o	o

Technological availability or familiarity (Access to or expertise with specific technologies or methodologies)	o	o	o	o	o

Limitations of and Improvements to Existing Technologies/Methods

This section aims to capture details of the challenges, gaps and barriers of current marine mammal monitoring technologies and methodologies.

20. Based on your perspective, what are the most important hardware/software challenges (current issues or obstacles with tools) when conducting marine mammal monitoring?

	1 - High Priority	2	3 - Low Priority	Not Relevant to My Technology
Data accessibility and sharing (e.g., integration with platforms, open data policies)	O	O	O	O
Data quality assurance and validation processes (e.g., accuracy, consistency, error rates)	O	O	O	O
Data transmission costs (e.g., transmitting data from sampling platform to shore either via remote / radio transmission or archival retrieval of equipment)	O	O	O	O
Deployment and retrieval systems (e.g., acoustic release systems, ease of recovery for equipment)	O	O	O	O
Equipment durability and mooring design (e.g., surface vs. seabed designs, exposure to environmental conditions)	O	O	O	O
Hardware Maintenance Costs (e.g., funds required to maintain equipment or replace lost equipment)	O	O	O	O
Interactions with other sea users (e.g., fishing, shipping, recreational activities)	O	O	O	O
Localisation or spatial tracking systems (e.g., arrays for acoustic localisation, GPS-enabled tags)	O	O	O	O
Multi-sensor/data streams (e.g., particle motion sensors, underwater cameras, drones, environmental sensors)	O	O	O	O
Power availability (e.g., battery life, renewable energy options)	O	O	O	O
Real-time vs. archival data collection (e.g., live-streamed data for immediate decisions vs. post-collection analysis)	O	O	O	O
Sensor sensitivity and calibration (e.g., hydrophones, cameras, tagging devices)	O	O	O	O

Species detection or classification tools (e.g., automated classifiers, AI-based recognition)	o	o	o	o
Vessel availability and operational costs (e.g., research vessel access, charter costs)	o	o	o	o

21. **Please describe the inherent constraints and boundaries to methodologies you use when conducting marine mammal monitoring with current technologies.** (List up to three key limitations, using examples such as limited temporal or spatial coverage, low detection rates, or difficulties in species identification as it relates to your specific technology / methods.)
    Examples to consider:
    - **Acoustic Detection Limitations:** Limited spatial coverage, reliance on vocalising species/individuals, or difficulties differentiating between species.
    - **Data Availability and Bias:** Limited temporal coverage (e.g., surveys conducted at the same time of day each month), leading to gaps in understanding finer-scale temporal patterns.
    - **Detection Rates:** Low detection rates for less common species, affecting accurate assessments of species composition and occurrence.
    - **Environmental Factors:** Influence of high sea states or weather conditions on detection rates, potentially biasing seasonal or species-level variability analyses.
    - **Visual Species Identification:** Challenges in distinguishing between certain species or species groups (e.g., small cetaceans).

    [Open text answer]

22. Indicate which technologies would benefit increased scalability (as they are under-utilised) in order to meet current and future monitoring requirements? Rank in order of importance to invest development and funding efforts.)

	1 - High Priority	2	3	4	5 - Low Priority
Acoustic Telemetry (Tags, trackers etc)	o	o	o	o	o
Aerial Survey Equipment (e.g., Camera systems)	o	o	o	o	o
AI and Machine Learning Applications (e.g., Automated	o	o	o	o	o

detection and classification and localisation systems)					
Autonomous/Uncrewed Surface Vessels (ASVs/USVs)	o	o	o	o	o
Biologging (tags)	o	o	o	o	o
Drones/Remotely Piloted Aerial Systems (RPAS)	o	o	o	o	o
Environmental In-Situ Sampling (eDNA sensors)	o	o	o	o	o
Gliders	o	o	o	o	o
Integrated Multi-Sensor Systems (Using systems that combine acoustic, visual, and environmental data for comprehensive monitoring)	o	o	o	o	o
Passive Acoustic Monitoring (PAM systems / instruments)	o	o	o	o	o
Radar Systems	o	o	o	o	o
Satellite Monitoring Tools (software for detection / classification of marine mammals in satellite imagery)	o	o	o	o	o
Surface-Based Visual Survey Equipment (Cameras, Big eye, Theodolite, IR/thermal camera systems, night-vision binoculars, standard binoculars)	o	o	o	o	o
Underwater Autonomous Vehicles (UAVs)	o	o	o	o	o
Underwater Camera Systems	o	o	o	o	o

23. Please indicate which species groups the primary monitoring technology you use or develop is limited to (multiple may be selected):
    - o Small cetaceans (e.g., dolphins and porpoise)
    - o Large odontocetes (e.g., sperm whales)
    - o Mysticetes (e.g., baleen whales)
    - o Pinnipeds (e.g., seals, sea lions, etc.)
    - o Sirenians (e.g., manatees and dugong)
    - o Other (e.g., polar bears, sea otters, etc.)

24. If you use multiple instruments/methods, please indicate what species groups are detectible with each method (e.g., Digital aerial surveys = all species, Thermal camera system = Mysticetes, large odontocetes, pinnipeds). [Open text answer]

Monitoring Horizon Scan

This section is intended to gather your thoughts on emerging technology, innovations, and opportunities to advance the field.

25. In your opinion, what technological components would benefit from further development in order to enhance marine mammal monitoring?

	1 - High Priority	2	3	4	5 - Low Priority
Sensor capabilities (e.g., precision, accuracy or sensitivity of sensors or laboratory equipment, calibration)	O	O	O	O	O
Power capabilities (e.g., battery life)	O	O	O	O	O
Memory or data storage capacity (e.g., storage limits for recordings, images, or telemetry data)	O	O	O	O	O
Equipment durability and mooring design (e.g., surface vs. seabed designs, exposure to environmental conditions)	O	O	O	O	O
Real-time vs. archival data collection (e.g., live-streamed data for immediate decisions vs. post-collection analysis)	O	O	O	O	O
Localisation or spatial tracking systems (e.g., arrays for acoustic localisation, GPS-enabled tags)	O	O	O	O	O
Software and analytical barriers (e.g., automated detectors, localisation or spatial tracking, AI or neural network capability limitations or lack of training data)	O	O	O	O	O
Detection rates / marine mammal presence or behaviour (e.g., sub-surface activities, lack of sound production, etc.)	O	O	O	O	O
Species identification capability (e.g., ability to distinguish between different species)	O	O	O	O	O
Data quality assurance and validation processes (e.g.,	O	O	O	O	O

accuracy, consistency, error rates)					
Data accessibility and sharing (e.g., integration with platforms, open data policies)	o	o	o	o	o
Comparability to existing data/equipment (e.g., ability to integrate into current workflows, analyses and deployment setups, etc.)	o	o	o	o	o
Multi-sensor/data streams (e.g., benefits and challenges of integrating different data types, such as particle motion sensors, underwater cameras, drones, environmental sensors)	o	o	o	o	o
Remote ocean sensors (e.g., cabled arrays, telecommunication fibre optic cables, and autonomous buoys)					

26. **Near-Term Emerging Tech:** Considering monitoring technologies that are used for other environments or species (e.g., terrestrial tools, bats, etc.), please describe one monitoring technology (hardware or software) that can be used for marine mammal monitoring, which you believe will emerge or significantly advance **in the near-term**.
[Open text answer]

27. **Near-Term Emerging Tech:** Please indicate how critical you believe this technology will be for advancing marine mammal monitoring: [1 (least) - 10 (most]

28. What monitoring need will this technology provide that current technology does not address? [Open text answer]

29. Expected Time Frame (multiple choice question) When do you expect this near-term technology will become available or widely implemented?
    - o <1 year
    - o 1-3 years
    - o 3-5 years
    - o 5-10 years
    - o >10 years
    - o Indeterminant

30. **Long-Term Potential Tech:** Considering monitoring technologies that are used for other environments or species (e.g., terrestrial tools, bats, etc.), please describe one monitoring technology (hardware or software) that potentially could be used for marine mammal monitoring, which you believe will emerge or significantly advance **in the long-term**. [Open text answer]

31. **Long-Term Emerging Tech:** Please indicate how critical you believe this technology will be for advancing marine mammal monitoring: [1 (least) - 10 (most]

32. What monitoring need will this technology provide that current technology does not address? [Open text answer]

33. Expected Time Frame (multiple choice question) When do you expect this near-term technology will become available or widely implemented?
    - <1 year
    - 1-3 years
    - 3-5 years
    - 5-10 years
    - >10 years
    - Indeterminant

34. What are the most important reasons for investing in advancing marine mammal monitoring technology? (rank top 3)
    - **Better Integration:** Multi-sensor systems combine acoustic, visual, and environmental data for comprehensive insights.
    - **Cost Efficiency:** Automation and long-term deployments reduce labour-intensive monitoring efforts and operational costs over time.
    - **Expanded Coverage:** Technologies like drones, autonomous underwater vehicles (AUVs), and satellite monitoring enable monitoring in remote or hard-to-reach areas.
    - **Expediting Data Product Creation**: Analytical efforts to improve the efficiency of deriving meaningful data product generation (from raw data).
    - **Future-Proofing:** Investments in innovation prepare the field for growing challenges, including climate change and increasing marine activities.
    - **HSE Risk Reduction:** Automated platforms like unmanned surface or underwater vehicles minimise human involvement in risky marine operations.
    - **Increased Data Collection:** To increase spatial and temporal resolution of monitoring.
    - **Improved Data Accuracy:** Advanced sensors, AI-based classifiers, and automated detection systems reduce false positives and enhance precision in species identification.

- **Increased Collaboration:** Emerging technologies support data sharing, collaborative research, and standardised methodologies across stakeholders.
- **Real-Time Monitoring:** Integrating real-time data collection allows for faster decision-making during high-risk activities like construction or seismic surveys.
- **Sustainability:** Advanced, energy-efficient technologies support long-term, low-impact monitoring solutions.
- **Other**

Further Engagement

This section is intended to gather your thoughts on emerging technology, innovations, and opportunities to advance the field.

35. We are aiming to capture diverse perspectives to identify the key challenges and opportunities requiring investment. Your assistance in spreading the word is invaluable. Do you know of any organisations, vendors, or experts we should contact for this project? **Please share their names and/or contact information below.**

36. If you are a technology provider, product developer, staffing/service provider, or academic researcher and would you be willing to contribute to a reference catalogue by completing a standardised 2-3 slide presentation summarising your company or organisations existing products, tools, services, or innovations currently in development?
    This information would include:
    - **Slide 1:** Details on products/tools and technical specifications and relevant applications.
    - **Slide 2:** Overview of available services and pertinent contact information.
    - **Slide 3 (Optional):** Information on innovation and its Technology Readiness Level (TRL) status or services under development.

    These slides will be shared with Defra as part of a comprehensive reference catalogue and could also serve as a useful marketing resource for your organisation.
    - Yes I am interested in contributing to these slides
    - No thank you
    - Not relevant

37. Follow-up Questions/Interviews: Please select one from the following
    - I am interested in participating further to provide further insights into my experiences and perspectives.
    - I am not interested in participating beyond these survey responses.

38. **Workshop Participation:** Would you be interested in attending or presenting at the planned IMarEST/Defra workshop on 25th February 2025? Please let us know in what capacity you are interested in participating, and we will contact you directly to discuss further:
    - Attending only
    - Presenting a short overview of your domain and technologies used

- Participating in a lightning one-slide overview session during the workshop related to specific technology you are either familiar with/use or are developing
- Not interested

39. Thank you for taking the time to complete this survey! Is there anything else you would like to share with us? [Open text answer]

Thank you for taking the time to share your insights and expertise. Your valuable input will play a critical role in shaping the future of marine mammal monitoring technologies and practices. By contributing to this survey, you are directly supporting efforts to evaluate current methodologies, identify technology gaps, and inform on innovation in this field.

If you have any questions about the survey or would like to learn more about the project, please feel free to contact Liz Ferguson at liz.ferguson@sigs.imarest.org. We greatly appreciate your participation and commitment to advancing marine mammal monitoring.

Thank you again for your valuable contributions!