Ocean Country Partnership Programme

Final Report

Necropsy training and capacity building to support conservation and management of protected, endangered and threatened mobile marine species in Sri Lanka

Author(s): Emma Neave-Webb, Andrew Brownlow, International Whaling Commission; Hannah Lawson, Joint Nature Conservation Committee

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INTERNATIONAL WHALING COMMISSION

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For further information please contact:

Joint Nature Conservation Committee
Quay House
2 East Station Road
Fletton Quays
Peterborough
PE2 8YY

https://jncc.gov.uk/our-work/ocean-country-partnership-programme/Communications@jncc.gov.uk

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Authors: Emma Neave-Webb, Andrew Brownlow, Hannah Lawson

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Ocean Country Partnership Programme: The Ocean Country Partnership Programme (OCPP) is a bilateral technical assistance and capacity building programme that provides tailored support to countries to manage the marine environment more sustainably, including by strengthening marine science expertise, developing science-based policy and management tools and creating educational resources for coastal communities. The OCPP delivers work under three thematic areas: biodiversity, marine pollution, and sustainable seafood.

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1. Summary

This project successfully delivered comprehensive necropsy training and capacity building to support the conservation and management of protected, endangered and threatened (PET) mobile marine species in Sri Lanka, specifically marine mammals and sea turtles. Led by the International Whaling Commission (IWC) Strandings Expert Panel (SEP), the project addressed critical gaps in local veterinary capacity for marine species strandings response.

The project was delivered through two main work packages:

(1) Technical advice and development of standard operating procedures (SOP) for strandings response, and

(2) Delivery of specialised necropsy training workshops for veterinary practitioners, students and Wildlife Rangers.

Key outputs included the development of tailored SOPs for PET marine species strandings response, creation of specialised training videos and resources, establishment of networking links with the SEP, and assessment of the Beachtrack monitoring app for potential implementation in Sri Lanka.

The SOPs incorporate tiered approaches that accommodate different response levels based on available resources and expertise, ensuring that appropriate action can be taken regardless of local capacity constraints. The procedures include detailed sample collection and necropsy protocols and data curation that will standardise response efforts and improve the quality and consistency of information gathered from stranding incidents across the country.

Specialised training videos, comprehensive field guides, and reference materials have been developed to support both current participants and future training initiatives. These resources provide accessible, locally relevant guidance that can be used for self-directed learning and as training aids for future workshop delivery, ensuring that the knowledge and skills developed through the project can be sustained and expanded over time.

The training workshops covered foundational knowledge of marine species biology and threats, practical necropsy techniques, biological sample collection protocols, euthanasia considerations, and frameworks for sustainable strandings response networks. Participants gained hands-on experience through practical exercises, case studies, and mock stranding desk-top exercises.

Forty participants received comprehensive training in strandings networks, live stranding response and basic sampling techniques for PET species, equipping them with

fundamental skills for initial assessment and response to marine mortality incidents. Twenty-five participants attended specialist cetacean and sea turtle necropsy at the University of Peradeniya, Kandy, providing them with the technical expertise necessary for conducting thorough post-mortem investigations that can inform conservation strategies and threat assessment.

The workshops successfully enhanced veterinary capacity across Sri Lanka through comprehensive training programs that reached key personnel in marine conservation. They also strengthened institutional partnerships between government agencies, universities, and both local and international conservation organisations. Creating a foundation for future discussions on developing a sustainable strandings response network and provide the collaborative framework necessary for long-term capacity building.

The project also facilitated the establishment of a network of experts to allow direct connections between Sri Lankan responders and the Stranding Emergency Partnership through dedicated WhatsApp groups. This enables real-time expert consultation and ongoing technical support, providing Sri Lankan practitioners with immediate access to international expertise when responding to challenging stranding incidents. The network creates a sustainable support mechanism that extends well beyond the project period.

2. Project Background and Rationale

Sri Lanka's extensive coastline and rich marine biodiversity support populations of protected, endangered and threatened marine species including cetaceans, sea turtles, and seabirds. However, limited local capacity for investigating marine strandings and mortality events has hindered effective conservation management and threat assessment for these species.

An effective strandings monitoring programme serves as an important tool for ecosystem and species health monitoring while enabling identification of potential threats to marine ecosystems. The development of specialist necropsy training represents a fundamental component for establishing skillsets to investigate strandings and encourage discussions regarding the establishment of a national strandings response network.

3. Project Implementation

3.1. Work Package 1: Technical Advice and Preparedness

The first work package focused on developing Sri Lanka's preparedness and response capabilities through:

- **Sampling and Necropsy Equipment:** Provision of basic sampling and necropsy kits enabling access to high quality kit and necropsy equipment when needed. In addition, two chest freezers were sourced to be held at the University of Peradeniya for storage of small carcasses and tissue samples.
- **Standard Operating Procedures (SOPs)**: Development of comprehensive SOPs covering live cetacean stranding response, tiered approaches to dead animal response (basic documentation, sampling, and full necropsy), sample storage and diagnostics protocols, and data curation procedures. Existing turtle necropsy guidance was also shared with Sri Lanka.
- **Training Resources**: Development of specialised training videos, field guides, and reference materials that will serve as ongoing training aids for participants and future capacity building efforts.
- **Network Integration**: Establishment of linkages with the SEP through dedicated communication channels, enabling access to real-time expert advice and facilitating ongoing networking opportunities.

3.2. Work Package 2: Necropsy Training Workshops

The second work package delivered intensive theory and practical training through two, two-day workshops in Colombo and Kandy. The agendas for both workshops are listed in the Appendices.

Figure 1: Practical training during the workshops: (a) taking basic tissue samples, (b) sea turtle necropsy techniques, (c) virtual reality cetacean necropsy training tool.

3.2.1. Workshop 1, Colombo – 26/27 March 2025

Workshop 1 was conducted at the Taj Samudra Hotel in Colombo, Sri Lanka on 26 and 27 March 2025, with 40 participants in attendance comprising veterinary practitioners and Wildlife Rangers.

The comprehensive two-day programme provided both theoretical foundations and practical experience in marine mammal stranding response protocols, with participants gaining understanding of PET marine species biology and ecology, threats identification, live stranding response, sample collection protocols, mass stranding response procedures, and sustainable network development principles. The workshop equipped participants with specialised skills for responding to strandings, recording biometric measurements, and collecting basic samples from carcasses.

Figure 2: Workshop Participants in Colombo, Sri Lanka.

3.2.2. Workshop 2, Kandy – 2/3 April 2025

Workshop 2 was conducted at the Faculty of Veterinary Medicine and Animal Science, University of Peradeniya in Kandy on 2 and 3 April 202,5 with 25 participants, including 12 veterinarians who also attended Workshop 1 and university students. The two-day programme provided veterinary practitioners and students both theoretical foundations and practical experience in cetacean and sea turtle necropsy procedures. Participants gained understanding of necropsy procedures, health and safety considerations, sample curation, and report writing, equipping them with specialised skills for investigating marine mortality incidents.

Figure 3: Workshop Participants in Kandy, Sri Lanka.

3.3. Outcomes and Impact

3.3.1. Immediate Outcomes

Capacity Enhancement: 40 veterinary practitioners, students and Wildlife Rangers gained specialised skills in marine species biology and physiology and strandings response, significantly increasing Sri Lanka's technical capacity for responding to cetacean and sea turtle strandings.

Resource Development: Comprehensive training materials, SOPs, and video resources have been developed creating a sustainable foundation for ongoing capacity building and knowledge transfer.

Network Formation: Participants established connections with international experts and regional networks, creating pathways for continued learning and support.

3.3.2. Long-term Impact Potential

The workshops established through this project provide a valuable starting point for strengthening marine conservation efforts for PET species and initiating regional collaboration networks.

The enhanced investigative capabilities for marine mortality events provide essential foundational skills for Sri Lanka veterinary practitioners and Wildlife Rangers and represent an important first step toward broader ecosystem health assessment initiatives.

Recommendation for further training and support to continue building on the success of this project can be found in Section 4. Recommendations for Future Development.

3.4. Challenges and Lessons Learned

3.4.1. Implementation Challenges

The implementation of marine mammal stranding response training workshops in Sri Lanka faced several challenges that provide valuable lessons for future initiatives.

The absence of established marine mammal stranding response infrastructure in Sri Lanka presented fundamental challenges for workshop implementation. The lack of existing institutional frameworks, standardised protocols, and dedicated response networks meant the project needed to work within an underdeveloped system where roles, responsibilities, and coordination mechanisms were not clearly defined.

This required more extensive groundwork at initiation to identify appropriate stakeholders and establish working relationships than initially expected. It also highlighted, that longer term collaborative frameworks and working relationships between Sri Lanka organisations and individuals, may require support beyond the lifetime of the project to ensure successful implementation of frameworks and protocols.

The absence of suitable cetacean carcasses for hands-on practical training represented a critical limitation in workshop delivery. The lack of fresh specimens for practical necropsy demonstrations significantly constrained the ability to provide comprehensive hands-on learning experiences, which are essential for developing competency in marine mammal necropsy procedures. This limitation necessitated reliance on theoretical instruction and video-based demonstrations, though these alternative approaches could not fully replicate the practical experience that direct specimen work would have provided.

3.4.2. Lessons Learned

The implementation challenges highlight several key considerations for future marine mammal training initiatives in regions with limited existing infrastructure. Experience from this project demonstrates that adequate time must be allocated for stakeholder engagement, partnership development, and local capacity assessment, as these foundational activities require longer timeframes than may initially be anticipated and are critical to effective project delivery.

Stakeholder engagement and partnership development should begin as early as possible in the planning process. Comprehensive stakeholder mapping exercises can help identify key government agencies, research institutions, NGOs, and community

organisations that should be involved. Establishing memorandums of understanding or formal partnership agreements before workshop implementation can clarify roles, expectations, and resource commitments from all parties.

Local capacity assessment is essential for designing appropriate training programs. Understanding the existing skill levels, institutional capabilities, and resource constraints of potential participants allows for better tailoring of workshop content and delivery methods. This assessment should include evaluation of equipment availability, laboratory facilities, and ongoing support structures that participants will have access to after training completion.

Contingency planning for practical components is critical when working in regions where biological specimens may be scarce or unpredictable. Alternative training approaches should be developed in advance, including partnerships with museums or veterinary schools for preserved specimens, high-quality video resources, simulation materials, or arrangements for participants to access practical training opportunities in other locations.

Cultural and administrative orientation for international facilitators can significantly improve workshop effectiveness. Understanding local communication styles, decision-making processes, regulatory requirements, and cultural sensitivities helps avoid misunderstandings and builds stronger working relationships with local partners.

Long-term sustainability planning should be integrated from the outset, considering how trained participants will maintain and apply their skills, what ongoing support or refresher training may be needed, and how local capacity can be built to eventually deliver training independently.

4. Recommendations for Future Development

4.1. Overview:

The work delivered to date has established a strong foundation for the development of a marine strandings response network. There is clear capacity within the country to provide a rapid and effective response to both live and dead animals in line with internationally recognised protocols. Collectively, there is considerable expertise in country to deliver a broad programme of response and investigation options.

The priorities listed below are intended as suggestions for how further support might be most effectively targeted, while recognising that the initiative should ultimately be guided by Sri Lankan responders based on their own assessment of where resources can have the greatest impact.

4.2. Immediate Priorities

To build upon the foundation established through these workshops, several key implementation steps are recommended for sustained impact.

Work to build relationships between government agencies and other institutions involved in strandings response will be essential to formally adopt and implement the standard operating procedures, ensuring consistent application of protocols nationwide.

Support for the acquisition of additional equipment as needed, which could include sampling kits, personal protective equipment, and storage facilities will be crucial for enabling effective strandings response capabilities.

Adoption of the Oceanswell strandings recording website or the Beachtrack monitoring app should be considered, with appropriate user training to maximise its effectiveness for systematic data collection.

Additionally, maintaining active engagement with the IWC Strandings Expert Panel and wider Global Strandings Network connections through regular communication and ongoing case consultation will ensure continued access to international expertise and support for Sri Lankan responders.

4.3. Medium-term Development

Continued capacity building efforts should focus on several strategic areas to ensure sustainable long-term impact. Advanced training modules should be delivered for veterinary participants who are or would be taking a lead on future necropsies and protocols. Potentially including overseas training opportunities at IWC trainer institutions to develop local expertise to international standards.

The identification and development of local trainers will be crucial for ensuring sustainable capacity building and reducing dependence on international experts, creating a self-sustaining training system. Working with universities and government agencies to integrate marine strandings response training into existing curricula and professional development programs will institutionalise these capabilities and ensure ongoing skill development.

Additionally, exploring opportunities for regional training and knowledge sharing with other Indian Ocean countries will expand the network's reach and create broader collaborative frameworks for marine conservation efforts across the region.

4.4. Long-term Vision

The long-term vision for PET species in Sri Lanka encompasses several ambitious but achievable goals that will transform the country's capacity for marine species protection. Additionally, developing linkages between strandings data and broader marine research programmes will maximise conservation impact by integrating mortality information with population studies, threat assessments, and ecosystem health monitoring.

Expanding training to include coastal communities, tourism operators, and other stakeholders will create a broader network capable of early reporting and initial response, significantly improving response times and data collection coverage.

Supporting the development of national policies and legislation for marine species conservation based on strandings monitoring data will ensure that conservation efforts are informed by scientific evidence and backed by appropriate regulatory frameworks.

Establishing a comprehensive national strandings response network with standardised procedures, trained personnel, adequate resources and the ability to support wider marine research programmes, will require enhanced inter-agency coordination and formal partnerships with the Department of Wildlife Conservation to create a truly effective coordinated system capable of responding to marine mortality incidents nationwide.

5. Conclusion

The OCPP necropsy training and capacity building project addressed critical gaps in Sri Lanka's marine conservation capacity while establishing foundations for sustainable strandings response networks. Through partnership with the IWC Strandings Expert Panel, the project delivered internationally recognised best practices adapted to local contexts and needs, providing a valuable starting point for enhanced marine conservation efforts. Demonstrating the value of international partnerships in delivering specialised technical training while building local ownership and sustainability.

The training of 40 veterinary practitioners and Wildlife Rangers plus students represents a significant enhancement to Sri Lanka's technical capacity for investigating marine mortality events. Development of comprehensive standard operating procedures, training resources, and network connections provides a foundation for continued capacity building and conservation impact, supporting Sri Lankan marine conservation efforts well beyond the project period.

However, transforming these initial foundations into a truly effective national strandings response network will depend on strengthening inter-agency coordination and formal partnerships between government agencies, research institutions, and conservation organisations.

Future development should focus on implementing established procedures, maintaining international network connections, and building local training capacity to ensure long-term sustainability of strandings response capabilities.

6. Appendices

6.1. Appendix 1 – Workshop 1 Agenda

Ocean Country Partnership Programme: Sri Lanka
C24-0604-1990

WORKSHOP 1 - COLOMBO

Workshop Title: Developing Veterinary Capacity for Necropsy and Strandings Response for Marine Mammals and Sea Turtles

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Learning Objectives:

By the end of the workshop, participants will:

1. Understand the biology, physiology, and ecology of PET marine species in Sri Lanka.
2. Understand how strandings data can help identify major threats to PET species and how to apply this knowledge to stranding response, conservation and threat mitigation strategies
3. Appreciate how stranding investigation findings contribute to ecosystem health and conservation strategies.
4. Understand the principles and legal considerations for maintaining welfare where humane euthanasia is not an option due to social, religious or logistical reasons
5. Develop a framework for implementing a sustainable strandings response network in Sri Lanka.

Day 1: Foundational Knowledge and Strandings Response Essentials

Morning Session: Introduction and Context

- **9:00–9:15**: Welcome and Workshop Overview
- **9:15–9:35**: Overview of IWC's work and its context in stranding response (by IWC)
- **9:35–10:20**: Biology and Ecology of PET Species (by Asha de Vos, Oceanswell)
    - Overview of marine mammals, turtles, and seabirds in Sri Lanka.
    - Ecological roles of PET species in Sri Lanka.
    - Key physiological adaptations (by IWC)
- **10:20–10:45**: Major Threats to PET Species
    - Fishing bycatch, pollution, ship strikes, habitat degradation.

[COFFEE BREAK]

Mid-Morning Session: Strandings Response Essentials

- **11:00–11:30**: Introduction to strandings networks
- **11:30–12:15**: Introduction to Strandings Response Protocols
  - Overview of SOPs for marine strandings.
  - Key steps in response and health and safety considerations.
- **12:15–13:00** Euthanasia Techniques
  - Principles of humane euthanasia.
  - Legal and logistical considerations in Sri Lanka.

[LUNCH BREAK]

Afternoon Session: Live Animal Response Necropsy, Sampling and Data Collection

- **13:45–14:30**: Introduction to Live Animal Response
  - Live animal assessment, basic first aid and intervention considerations
- **14:30–16:00**: Practical Exercise: live cetacean handling
  - Hands-on session demonstrating safe handling techniques
- **16:00–16:30**: Wrap-Up and Q&A

Day 2: Sampling & Data Collection and Developing a Stranding Network

Morning Session: Sampling and Data Collection

- **09:00–09:15**: Recap Day 1
- **09:15-10:00:** Marine species identification
- **10:00–10:45**: Biological Sample Collection Protocols
  - Importance of data collection for conservation and research.
  - Tiered sampling approaches (basic to advanced).

[COFFEE BREAK]

- **11:00–12:30**: Practical Exercise: Sample Collection
  - Hands-on practice in collecting and storing biological samples (e.g., skin, feathers, blubber).

[LUNCH BREAK]

Afternoon Session: Strandings Response Essentials

- **13:30–14:45:** Break out Groups - Common Challenges & Resource Needs

    - Discussion on most common challenges to stranding response and what resources would be most helpful in improving response in Sri Lanka.

[COFFEE BREAK]

- **15:00–15:45**: Building a Strandings Response Framework, Sustainability Planning, Evaluation and Next Steps
    - Collaborative discussion on SOP implementation and building a stranding network in Sri Lanka.
    - Identifying local resources (laboratories, diagnostic facilities).
    - Strategies for training local trainers.
    - Outline of advanced training opportunities and long-term goals.
- **15:45–16:00**: Wrap up & Q&A

6.2. Appendix 2 – Workshop 2 Agenda

Ocean Country Partnership Programme: Sri Lanka
C24-0604-1990

WORKSHOP 2 - KANDY

Workshop Title: Developing Veterinary Capacity for Necropsy and Strandings Response for Marine Mammals and Sea Turtles

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Learning Objectives:

By the end of the workshop, participants will:

1. Understand how necropsy data can help identify major threats to PET species and how to apply this knowledge to stranding response, conservation and threat mitigation strategies
2. Collect and handle biological samples using standard protocols for diagnostic and conservation purposes.
3. Be confident in undertaking necropsies to identify causes of death and produce detailed necropsy reports.
4. Appreciate how necropsy findings contribute to ecosystem health and conservation strategies.
5. Demonstrate competency in safe and effective stranding response procedures, including analgesia and/or euthanasia where applicable
6. Understand the principles and legal considerations for maintaining welfare where humane euthanasia is not an option due to social, religious or logistical reasons
7. Develop a framework for implementing a sustainable strandings response network in Sri Lanka.

Day 1: Advanced Necropsy Techniques and Analysis

Morning Session: Conducting Necropsies

- **9:00-9:30:** Welcome and Workshop Overview
    - Welcome from the Dean
- **9:30–10:15:** Necropsy Procedures Overview
    - Step-by-step guide to conducting necropsies.
    - Equipment and PPE requirements.

[COFFEE BREAK]

- **10:30–13:00:** Practical Exercise: Necropsy Techniques
    - Video walkthrough of standardised cetacean necropsy
    - Demonstration using virtual necropsy kit.
    - Identifying trauma, disease, or human-induced injuries.
    - Linkages to ecosystem health and species conservation.

[LUNCH BREAK]

Afternoon Session: Report Writing

- **14:00–15:30:** Remote Area Response & Code 4 Carcasses
- **15:30–16:00:** Day 2 Wrap-Up and Discussion

Day 2: Advanced Necropsy Techniques & Case Studies

Morning Session: Specialised Marine Species Necropsies

- **09:00-10:15:** Sea Turtle Necropsy theory
    - Introduction to biology and physiology of sea turtles
    - Video walk through of standardised sea turtle necropsy
- **10:30–12:00:** Practical Session
    - Demonstration of a sea turtle necropsy
    - Hands-on group practice in necropsy of sea turtles

[LUNCH BREAK]

Afternoon Session: Mass Strandings

- **13:00–14:30:** Mass stranding Simulation
    - Mock stranding response exercise and carcase triage in cases where there are significant mortality events
- **14:30-15:15:** Break out Groups - Common Challenges & Resource Needs
    - Discussion on most common challenges to stranding response and what resources would be most helpful in improving response in Sri Lanka.

Closing Session: Evaluation and Next Steps

- **3:15–4:00**: Feedback from participants.
    - Certificates of completion.
    - Outline of advanced training opportunities and long-term goals.