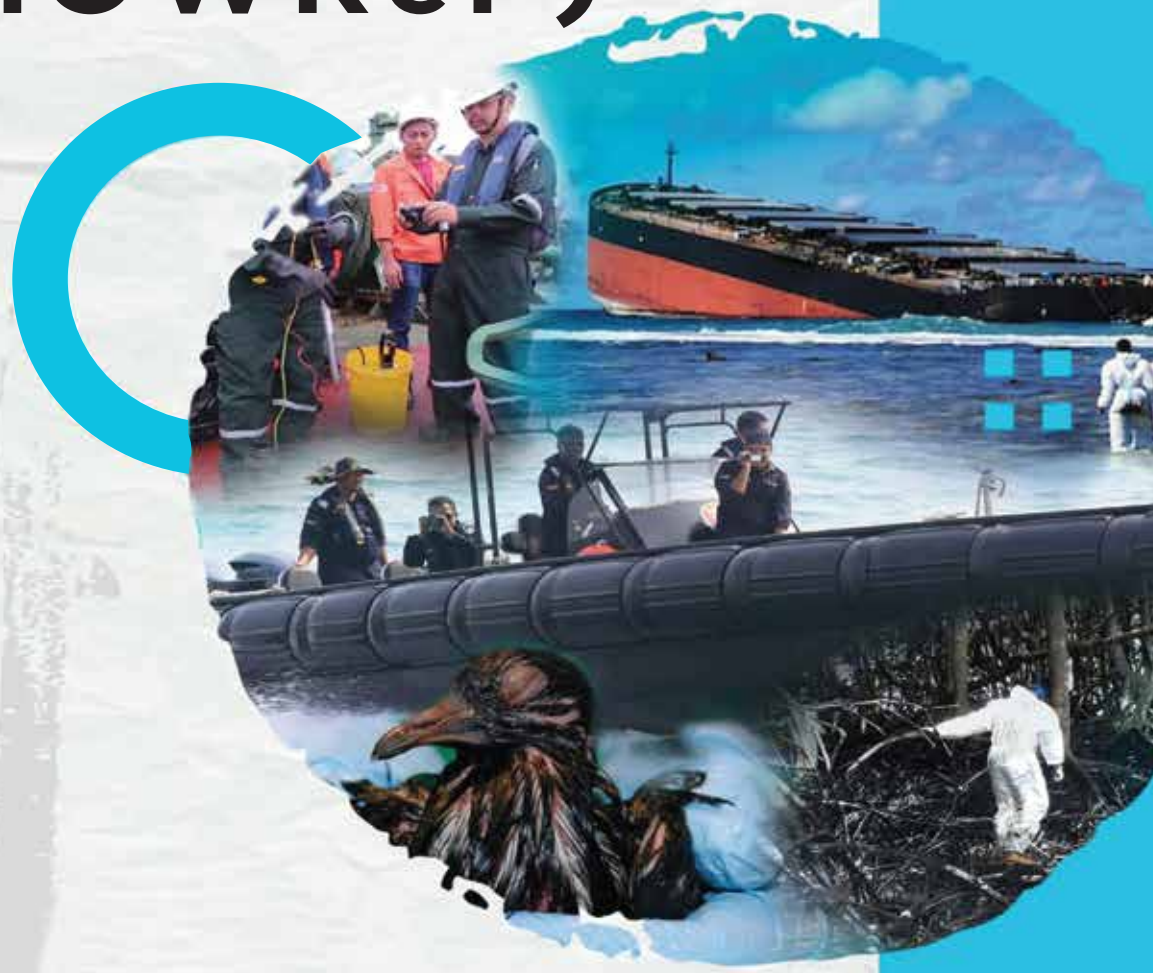
KERAJAAN MALAYSIA
MALAYSIA GOVERNMENT

MALAYSIA OILED WILDLIFE RESPONSE PLAN (MOWReP)



Malaysia Oiled Wildlife Response Plan (MOWReP) is integrated with Malaysia Oil Spill Contingency Plan (MOSCoP) aimed to minimize the impacts of oil spill to wildlife and its habitat. MOWReP used as a guidance to the responders from other agencies to respond in the case of wildlife impacted by oil spill incidents.

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MALAYSIA OILED WILDLIFE RESPONSE PLAN (MOWReP)

2023 EDITION
DEPARTMENT OF ENVIRONMENT

Department of Environment Malaysia
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SPECIFIC ABBREVIATION

No.	Abbreviation	Description
1.	CMT	Crisis Management Team
2.	DOE	Department of Environment
3.	DWNP	Department of Wildlife and National Park, Peninsular Malaysia Zone
4.	ECC	Emergency Control Centre
5.	ESI	Environmental Sensitivity Index
6.	EEZ	Exclusive Economic Zone
7.	IAP	Incident Action Plans
8.	ICP	Incident Command Post
9.	IMT	Incident Management Team
10.	IPIECA	International Petroleum Industry Environmental Conservation Association
11.	MTW	Malaysian Territorial Waters
12.	MMZ	Malaysia Maritime Zone
13.	MOSCoP	Malaysia Oil Spill Contingency Plan
14.	NOSC	National Oil Spill Operation Committee
15.	MOWRC	Malaysia Oiled Wildlife Response Committee
16.	MOWReP	Malaysia Oiled Wildlife Response Plan
17.	OWRT	Oiled Wildlife Response Team
18.	OEM	Original Equipment Manufacturer
19.	PFD	Personal Flotation Devices
20.	REMPEC	Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea
21.	SBCRP	State Beach Clean-up Response Plan
22.	SWD	Sabah Wildlife Department
23.	SFC	Sarawak Forestry Corporation
24.	SCAT	Shoreline Cleanup Assessment Technique
25.	SOSC	State Oil Spill Operation Committee
26.	SME	Subject Matter Expert
27.	WCC	Wildlife Command Centre

1.0 INTRODUCTION

1.0 INTRODUCTION

The awareness of Oiled Wildlife Response starts to increase after the Macondo incident. Department of Environment (DOE) together with the industry has initiated to develop the Malaysia Oiled Wildlife Response Plan (MOWReP) as a guidance to the responders from other agencies to respond in the case of wildlife impacted by oil spill incidents. The MOWReP will be integrated with the Malaysia Oil Spill Contingency Plan (MOSCoP) aimed to minimize the impacts of oil spill to wildlife and its habitat. In addition, this plan will also integrate with State Beach Clean-up Response Plan (Pelan Tindakan Pembersihan Pantai Negeri (PTPP)).

Any oil spill incident may have significant impacts on people, environment, asset and reputation. Thus, the comprehensive MOWReP is a paramount important in ensuring the sustainability of the environment, specifically the wildlife. In order to achieve a cohesive implementation of MOWReP, the following process wheel should be implemented that is derived from International Petroleum Industry Environmental Conservation Association (IPIECA) tiered preparedness wheel.

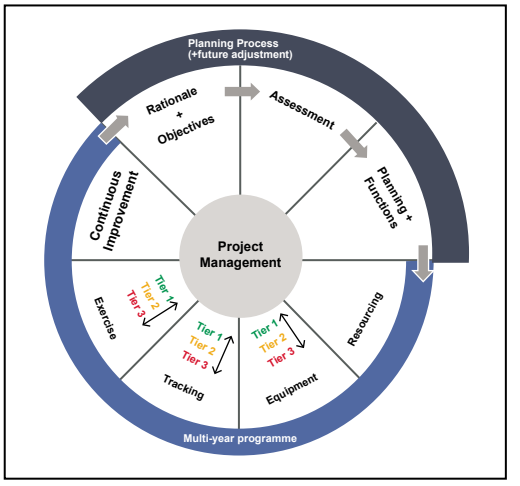
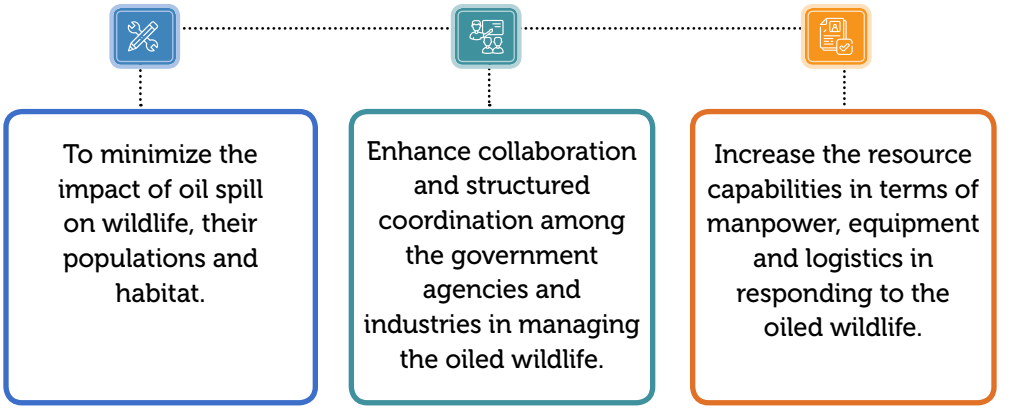


Figure 1: IPIECA Tiered Preparedness Wheel

1.1 Objective

MOWReP is aimed at achieving the following objectives:



1.2 National Legislation

MOWReP will be part of the MOSCoP and PTPP in managing oiled wildlife. The roles, responsibilities and legislations governed by the various authorities should be recognized and respected in the field. In this connection and not limited to, the act and enactments are as follows:

Table 1: National Legislation related to oiled wildlife response

Federal	
1	Fisheries Act 1985
2	Wildlife Conservation 2010 (Act 716)
3	National Forestry Act 1984
Sabah	
1	Parks Enactment 1984 (Sabah)
2	Wildlife Conservation Enactment 1997 (Sabah)
Sarawak	
1	Forest Ordinance 1958 (Sarawak)
2	National Parks and Nature Reserves Ordinance 1998 (Sarawak)
3	Wildlife Protection Ordinance 1998 (Sarawak)

MOWReP's practices and activities should be in line with respective national and state legislation in order to provide sufficient empowerment to responding agencies when required.

1.3 Scope

Wildlife in this document refers to any species of wildlife or wild birds including aquatic mammals and turtles whether totally protected or non-protected by the authorities. The plan will also cover the protection of sensitive marine habitats such as mangrove, coral reef and seagrass.

The plan will cover the response action in dealing with oiled wildlife within Malaysian Waters.

"Malaysian Waters" mean Malaysia Maritime Zone (MMZ)

Priority areas for wildlife protection in case of an oil spill include the vulnerable biological resources areas as stated in Environmental Sensitivity Index (ESI).

2.0 RESPONSE

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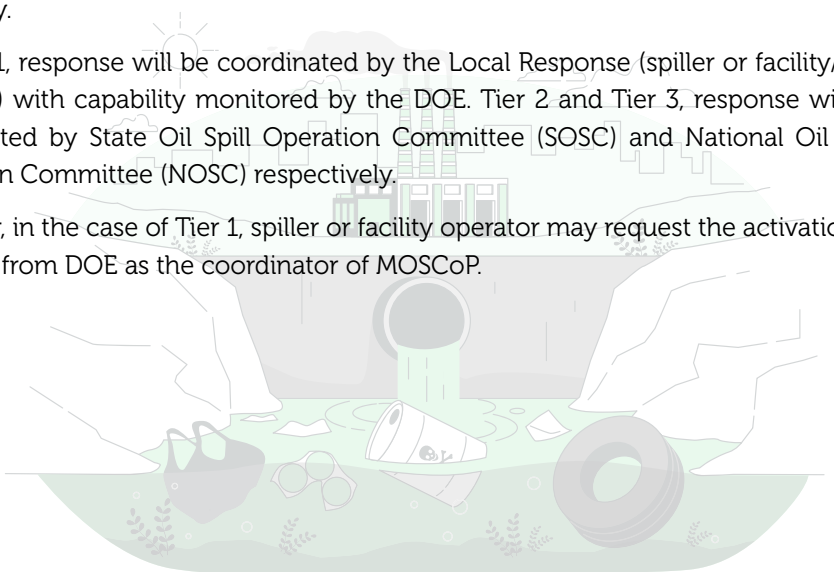
Integrating MOWReP to MOSCoP or PTPP at the appropriate level ensures that the wildlife response will achieve the agreed-upon objectives consistent with the overall response. The integration is relevant for incidents where oiled wildlife is discovered before a release is reported. It also provides support to the relevant structure even if oiled wildlife is the only response action required. Integration enables the wildlife response to benefit from existing national and international administrative arrangements for mutual assistance (tiered response) e.g. cross border response.

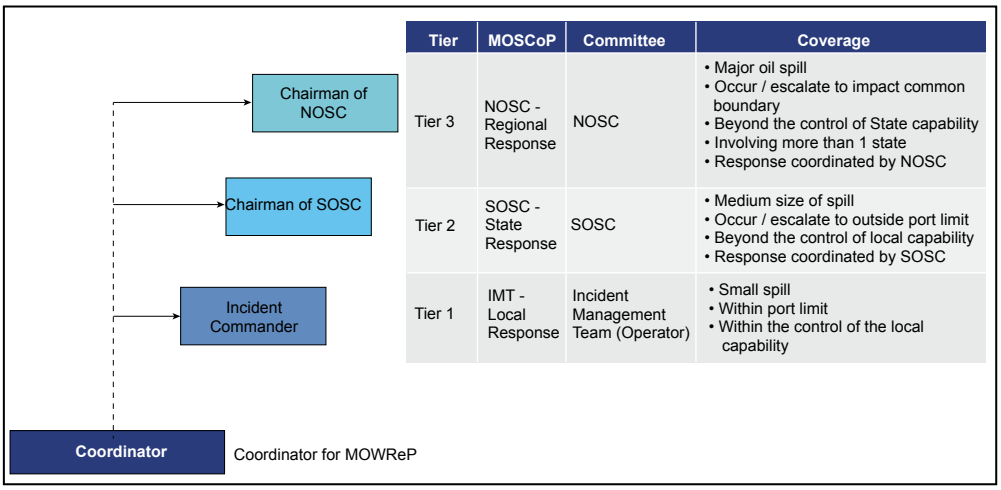
2.1 Tiered Response System

MOWRC will integrate with existing MOSCoP or PTPP response structure. The tiered response system is defined as stipulated in MOSCoP or PTPP. In this setup, tiered response system will be activated based on the location and quantity of the spill as well as response capability.

For Tier 1, response will be coordinated by the Local Response (spiller or facility/port operator) with capability monitored by the DOE. Tier 2 and Tier 3, response will be coordinated by State Oil Spill Operation Committee (SOSC) and National Oil Spill Operation Committee (NOSC) respectively.

However, in the case of Tier 1, spiller or facility operator may request the activation of MOWRC from DOE as the coordinator of MOSCoP.





Tier	MOSCoP	Committee	Coverage
Tier 3	NOSC - Regional Response	NOSC	• Major oil spill • Occur / escalate to impact common boundary • Beyond the control of State capability • Involving more than 1 state • Response coordinated by NOSC
Tier 2	SOSC - State Response	SOSC	• Medium size of spill • Occur / escalate to outside port limit • Beyond the control of local capability • Response coordinated by SOSC
Tier 1	IMT - Local Response	Incident Management Team (Operator)	• Small spill • Within port limit • Within the control of the local capability

Figure 2: MOWReP Integration with MOSCoP

The following table describes the roles and responsibilities for NOSC and SOSC in oiled wildlife response:

Table 2: Roles and Responsibilities for NOSC and SOSC

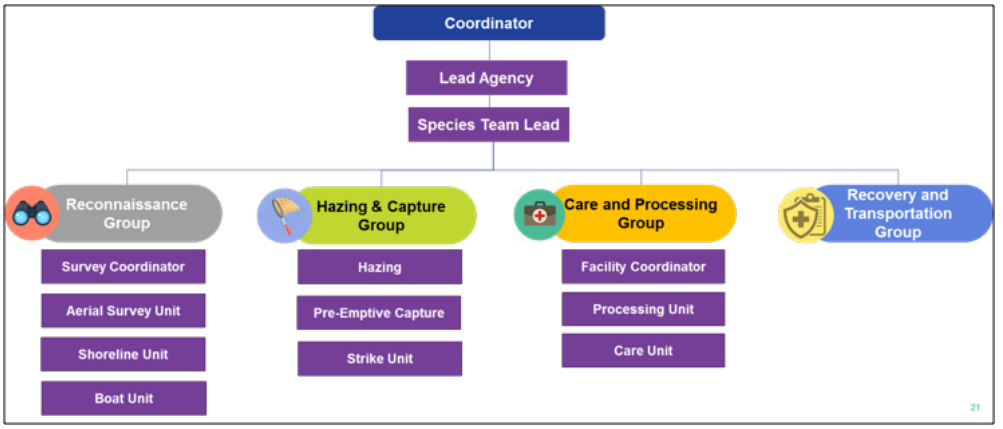
Organization	Roles & Responsibilities
NOSC (DOE HQ)	Activated during Tier 3 oil spill emergency Oversight activities for all agencies involved in oiled wildlife response As an advisor to SOSC Coordinate external assistance with MOFA if required Facilitate strategic communication
SOSC (State DOE)	Coordinate affected area Coordinate assessment and cleanup activity Implement site legal compliance Technical advisor for State Beach Clean-up Response Committee Manage waste generated from the cleanup activity Facilitate post spill cleaned up environment monitoring Provide information on ESI

2.2 MOWRC Structure

The composition of MOWRC will consist of main committee overseeing the overall operation and supported by various response team. Each team may have additional specialized unit.

The composition of the MOWRC will be based on the following structure: -

Figure 3: MOWRC Structure



2.3 Coordinator and Lead Agency

DOE as the coordinator of the MOSCoP will also coordinate MOWReP assisted by lead agencies based on the region as follows:

Table 3: List of Lead Agency based on the Region

Region	Lead Agency
Peninsular Malaysia & Federal Territory of Labuan	Department of Wildlife and National Park (DWNP) Peninsular Malaysia
Sabah	Sabah Wildlife Department (SWD)
Sarawak	Sarawak Forestry Corporation (SFC)

The respective lead agency will exercise their act and enactment during the activation of MOWReP to facilitate the operation.

2.4 Species Team Lead

Table 4: Species and Related Response Agency

Species	Agency
Terrestrial & Bird	1. DWNP 2. Department of Veterinary Services (DVS) 3. SWD 4. SFC
Marine mammal (Whale, Dugong, Dolphin)	1. Department of Fisheries Malaysia (DOF Malaysia)
Coral	1. DOF Malaysia (Peninsular) 2. Sabah Parks 3. SFC 4. Department of Fisheries Sabah (DOF Sabah)
Reptiles i.e. Sea turtle, Crocodiles, Snakes, terrapin	1. PERHILITAN 2. DOF Malaysia 3. SFC 4. SWD 5. Sabah Parks 6. DOF Sabah
Seagrass and mangroves	1. Forestry Department (Peninsular) 2. Sabah Forestry 3. Sarawak Forest Department (SFD) 4. DOF Malaysia 5. DOF Sabah 6. SFC 7. State Forestry Department

2.5 Response Team and Unit

The following table describes the role of relevant agencies on the structure mentioned in MOWReP Structure in Section 2.2.

Table 5: Role of Relevant Agencies on MOWReP Structure

Team	Unit	Agencies		
		Peninsular	Sabah	Sarawak
Reconnaissance Team	Survey & Planning	Department of Fisheries Malaysia (DOFM)	Sabah Wildlife Department (SWD)	Sarawak Forestry Corporation (SFC)
	Aerial Survey	PDRM-Royal Malaysian Police Air Wing Unit	PDRM-Royal Malaysian Police Air Wing Unit	PDRM-Royal Malaysian Police Air Wing Unit
	Shoreline	DOFM / DWNP	SWD	SFC

Team	Unit	Agencies		
		Peninsular	Sabah	Sarawak
Reconnaissance Team	Boat	DOFM / APMM	SWD	SFC
	Technical Support	• DWNP • Marine Department • Malaysia Maritime Enforcement Agency (MMEA) • DOFM • Department of Forestry (Peninsular Malaysia) • Royal Police Malaysia (RMP) • ATM • Third Party/ Contractor including PIMMAG	• Sabah Forestry Department • PDRM • Third Party/ Contractor including PIMMAG	• Natural Resources and Environment Board Sarawak (NREB) • PDRM • Third Party/ Contractor including PIMMAG
Hazing & Capture Team	Hazing	DWNP / DOFM	SWD / DOF Sabah	SFC / DOF Sarawak
	Pre-emptive Capture	DWNP / DOFM	SWD / DOF Sabah	SFC / DOF Sarawak
	Strike Unit	DWNP / DOFM	SWD / DOF Sabah	SFC / DOF Sarawak
Care & Processing Team	Facility	DWNP / DOFM	SWD	SFC
	Processing	DOFM / DWNP	SWD	SFC
	Care Unit	Department Veterinary Services (DVS) &DWNP	SWD / Sabah Veterinary Services	SFC

Team	Unit	Agencies		
		Peninsular	Sabah	Sarawak
Recovery & Transportation Team		DWNP Other related agencies:- - Local authority - Fire and Rescue Department (FRD) - Malaysia Civil Defence Department (MCDD) - Malaysia Armed Forces (MAF) - Third Party/ Contractor including PIMMAG	SWD Other related agencies:- - Local authority - Fire and Rescue Department (FRD) - Malaysia Civil Defence Department (MCDD) - Malaysia Armed Forces (MAF) - Third Party/ Contractor including PIMMAG	SFC Other related agencies :- - Local authority - Fire and Rescue Department (FRD) - Malaysia Civil Defence Department (MCDD) - Malaysia Armed Forces (MAF) - Third Party/ Contractor including PIMMAG

3.0

ROLES & RESPONSIBILITIES

3.0 ROLES & RESPONSIBILITIES

The role and responsibilities for each unit are described below and should be aligned with respective agencies Standard Operating Procedures (SOP) in wildlife rescue.

Table 6: Role of Relevant Agencies on MOWReP Structure

Team	Unit	Roles and Responsibilities
Reconnaissance Team	Survey & Planning Unit	• Develop survey plan and make reference to ESI map • Consolidate unit daily log and survey report • Conduct data analysis for reporting to Chairman • Provide situational updates including post monitoring • Communicate with Incident Management Team (IMT) (Tier 1) /SOSC (Tier 2) /NOSC (Tier 3) for additional logistical support e.g. aircraft, boat and land transport
	Aerial Survey, Shoreline and Boat Unit	• Conduct survey according to the plan • Capture daily log and submit survey report to Survey Coordinator including photo, video and other relevant data

Team	Unit	Roles and Responsibilities
Hazing & Capture Team	Hazing Unit	• Obtain necessary information from reconnaissance team • Identify relevant hazing technique and equipment e.g. human disturbance, vehicular disturbance, visual disturbance etc. • Communicate with IMT/SOSC/NOSC for additional support • Execute hazing and submit situational updates to the team leader
	Pre-emptive Capture Unit	• Identify species and conduct activity risk assessment • Obtain approvals from relevant authorities. • Coordinate capture planning (techniques and personnel) to ensure wildlife welfare as well as responder safety are taken care of • Facilitate captive care arrangements (housing, husbandry, personnel expertise etc.) • Provide relocation solutions (release location, transport, site fidelity, predicted time to return, costs of return, etc.).
	Strike Unit	• Coordinate with facility coordinator on establishment of search and rescue facilities e.g. remote site, PPE, rescue equipment • Conduct search and rescue live casualties • Perform primary treatment / first aid • Collect carcasses of dead wildlife
Care and Processing Team	Facility Unit	• Develop facility and equipment setup • Establish manpower planning including volunteers • Submit daily updates to the team leader
	Processing Unit	• In charge of registration and tagging of captured wildlife • Upkeep of wildlife record and data
	Care Unit	• Check all relevant wildlife information and consolidation • Registration of live and dead wildlife • Triaging based on different groups for treatment considering on available resources • Provide stabilization, care and monitoring of wildlife condition. Provide intensive care for critically ill wildlife and wildlife which condition doesn't improve within 48 hours

Team	Unit	Roles and Responsibilities
		• Perform washing to remove oil and other dirt • Implement post-wash care and monitor their activity and condition • Preparation for release or transfer to rehab center including habitat assessment evaluation post-spill.
Recovery and Transportation Team		• Wildlife and marine species recovery (on-site and center) • Procure transport vehicle and equipment arrangement
Contractor		• Provide additional manpower and equipment during operation • Provide technical advice when required

3.1 Zoning and Control Centres

3.1.1 Incident Zoning

In a typical oiled wildlife response, incident zoning should be established as follows: -

HOT ZONE:

Areas where oil (and traces) is present. The area can only be accessed by specialized / tactical team e.g. Oil Spill Response Team (OSRT), SCAT/Survey team and is presumed to be hazardous and requires Personal Protective Equipment (PPE)

WARM ZONE:

Non-hazardous area surrounding the HOT ZONE which the Incident Command Post can be located FRD, MMEA etc

COLD ZONE:

Safe area surrounding the WARM ZONE which Wildlife Command Centre (WCC) and support and rehabilitation agencies including Local/State/National Emergency Command Center (ECC) can be located.

Incident zoning can be referred in **Appendix A.**

3.2 Wildlife Response Facilities

The requirements for appropriate facilities can be met by one or more of three different approaches—the use of permanent facilities, buildings of opportunity or mobile facilities—as required to best address the needs of a particular plan. Whichever approach is selected, facilities should include reliable systems for the supply of potable water, electricity, heating or cooling, and ventilation, that meet the specific requirements for wildlife.

The following table describes three (3) methods for facility in managing oiled wildlife: -

Table 7: Method of facility in managing oiled wildlife

Type of Approach	Description
Permanent/turnkey facilities	Permanent or turnkey facilities are purpose-built or remodeled before a spill occurs, and are therefore, available to satisfy the requirements for appropriate facilities as soon as they are needed to meet the goals of the Plan.
Buildings of opportunity	An appropriate building for oiled wildlife response/operation that is normally used for some other purpose but quickly transformed into a suitable facility i.e. warehouses, community centers, etc.
Mobile facilities	Mobile facilities are comprised of modules (trailers, containers, tents, etc.) that can be easily transported and set up wherever they are needed.

Details of oiled wildlife response facility is described in **Appendix B.** For the purpose of MOWRC response operation, the facilities are comprised of WCC and temporary rehabilitation area center.

3.2.1 Wildlife Command Centre (WCC)

WCC is facility that will be established upon activation of wildlife response team. WCC will be the main response operations center for wildlife response operations. The location of the WCC will be decided upon the activation of MOWReP and it will be established at the cold zone. The setup and layout of a WCC is described in **Appendix C.** Amongst the list of location that can be used as WCC is listed in **Appendix D.**

3.2.2 Rehabilitation Centre

Rehabilitation Centre is responsible to manage and conduct wildlife rehabilitation and release of wildlife in captivity. The following is the identified rehabilitation center according to the region and specific to the certain species. List of Rehabilitation Centre is listed in **Appendix E.**

4.0 PLANNING

4.0 PLANNING

In a spill response, any decisions will have to be made in timely manner, because there is limited time to initiate effective action. The decision-making process will need take a large number of factors to assess the feasibility of different response options and their expected success in consideration of the specific conditions at stake.

4.1 Risk Assessment

4.1.1 Identification of activities and risks

Malaysian waters and shoreline are exposed to various potential of oil spill risk due to shipping activity, oil and gas industry and neighboring countries oil spill incident.

4.1.2 Types of oil likely to be spilled

Typically, wildlife mostly impacted by persistent oil i.e. crude oil and fuel oil. In many other circumstances, wildlife can also be impacted by other type of non-persistent oil such as diesel due to exposure to the fume.

4.1.3 Vulnerable species and habitats

It is important to identify the taxa and species that are at risk and understanding their critical needs as it will dictate the appropriate methods for reconnaissance, capture techniques and equipment, personnel requirements and facility infrastructure, as well as legal and governmental reporting requirements as listed in **Section 1.2.** For example, the following species may be affected during oil spill incident.

Table 8: Potential Wildlife affected by Oil Spill Incident

Wildlife Group	Relevant Agency
Marine Mammals	DOFM/DOF of Sabah/SWD/SFC
Terrestrial Mammals	DWNP/SWD/SFC
Reptiles	DWNP/SWD/SFC
Birds	DWNP/SWD/SFC
Crustacean	DOFM/DOF of Sabah /SFC

4.1.4 Effects of oil on wildlife at risk

The oiling of wildlife can take place in marine, freshwater or even terrestrial environments depending on the circumstances of the spill and the behavior of species. In marine spills, many may die and disappear at sea. The number that comes ashore, therefore, is a fraction of the total number of casualties.

Response operations should prioritize response to endangered species and to provide baseline data to facilitate response operations. Species team lead to provide relevant vulnerable species in the event of oil spill at a location prior to mobilization of the strike team.

4.1.5 Environment Sensitivity Index (ESI)

Environmental Sensitivity Index (ESI) maps, published by PETRONAS, provide a concise summary of coastal resources that are at risk if an oil spill occurs nearby. The maps have been an integral component of oil spill contingency planning and response since 1979. The tool is crucial for oil pollution preparedness, response and cooperation efforts and recovery and clean up.

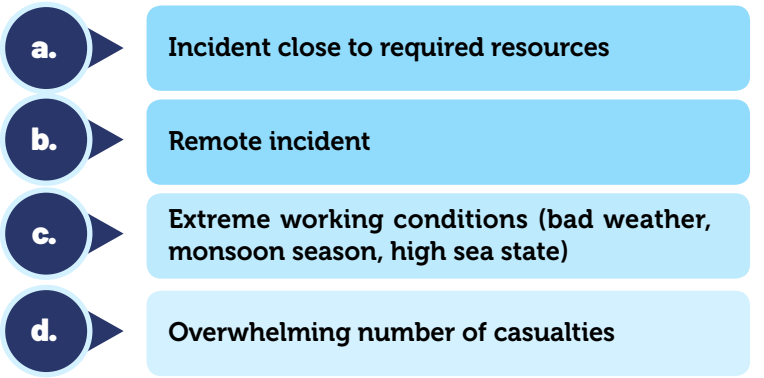
ESI maps are comprised of three general types of information: -

a. Physical Shoreline Classification - ranked according to a scale relating to sensitivity, natural persistence of oil, and ease cleanup.
b. Biological Resources - including oil-sensitive wildlife and rare plants; and habitats, which are used by oil-sensitive species or are themselves sensitive to oil spills, such as submersed aquatic vegetation and coral reefs.
c. Human-Use Resources - specific areas that have added sensitivity and value because of their use, such as beaches, parks and marine sanctuaries, water intakes, and archaeological sites.

In this plan, the focus will be on biological resources whereby it is important to identify the types of species that tend to be vulnerable to spilled oil and their habitat that play an important role in the persistence of oil and species exposure to oil.

4.1.6 Development of oiled wildlife scenarios and Incident Action Plans (IAP)

MOWRC shall identify credible wildlife response scenarios based on risk assessment. Typical scenario may include the condition of the response for example (not limited to):



Example of Incident Action Plan (IAP) for oiled wildlife response is provided in **Appendix F.**

4.2 Incident communication and information system

4.2.1 Field team communication equipment

Throughout the operation, various MOWRC function (reconnaissance, hazing, wildlife care team etc.) will be communicating by available and agreed means including, mobile phone (WhatsApp, Telegram), e-mail, etc.).

4.2.2 Reports, manuals, maps, charts and incident logs (record keeping)

Reporting will take place as part of the overall IMS reporting system but will also be done by each stakeholder group and organization. MOWRC should keep a standard form of personal / unit log in which all key decisions and instructions received or provided are recorded, together with a note of the date and time of the respective event as per **Appendix G.** Each form should have its own communication protocols and reporting plan. In addition to this personal documentation, all critical data collected from the field and from the work floor should be captured.

Daily assessment report should at least contain number of wildlife collected (dead or alive), the species, age and (possible) origin, as per **Appendix H.**

MOWRC should establish record keeping system e.g. using Microsoft Excel in order to systematically monitor the current status and number of wildlife rescued. This will allow better management and effectively facilitate claim and compensation process.

4.2.3 Malaysia / External Expertise

The following external expertise may be contacted when needed to assist in providing technical advice during an oiled wildlife incident:

Table 9: Wildlife Related Expertise in Malaysia

No	Agencies / Institution	Expertise	Contact Number / Email
1	WWF Malaysia	Wildlife Conservation	+603 7450 3773 contactus@wwf.org.my
2	Malaysia Nature Society (MNS)	Mangrove and Wildlife Conservation	+603 2287 9422 mns@mns.org.my
3	Forest Research Institute Malaysia (FRIM)	Forest research	+603 6279 7000 feedback@frim.gov.my
4	Institute of Environment and Development LESTARI (Dr. A Aldri) UKM	Mangrove	+603 89214144/4149 lestari@ukm.edu.my
5	Wildlife Conservation Society	Wildlife conservation	+6082-239795 wcsmalaysia@wcs.org
6	Reef Check Malaysia	Coral Reef	+603 2161 5948 wecare@reefcheck.org.my

The external assistance which involve transboundary equipment mobilization will be under the purview of Royal Custom and Excise. Applications for from overseas will be referred to the Request for Government Assistance for Oil Spill Response Operation Guideline (Tier 1 & Tier 2 Industry).

4.3 Strategy for health and safety

Working with live or dead wildlife presents specific health and safety issues, such as the risk of injuries (bites, scratches) or zoonotic diseases. In addition, field activities related to wildlife response will have site specific safety concerns that will need to be addressed, including extreme weather and climate condition.

An effective wildlife readiness plan includes the requirement for a written safety plan to be developed and signed by all participants so that their awareness of both general as well as incident specific hazards is emphasized. General guidelines on Safety and Health is provided in **Appendix I.**

Wildlife responders and volunteers can protect themselves by understanding the relevant health and safety issues relating to their work, and by using appropriate control measures. This information is to be communicated and documented during safety briefing.

5.0 ACTIVATION OF MOWReP

5.0 ACTIVATION OF MOWReP

Activation of MOWReP should be scheduled for the earliest possible opportunity when the risk of a spill incident is high (such as a ship grounding) or immediately after a spill has been reported. This allows identified MOWRC including wildlife experts to assess the potential impact on wildlife, and to assess the level at which resources need to be mobilized, if at all.

DOE will notify MOWRC (Lead Agency or Species Lead Agency) that a wildlife plan may need to be on standby or activated immediately after a reported spill incident based on situation assessment by the spiller.

5.1 Spill Response Strategy

5.1.1 Philosophy and objectives

There are three phases of operational activities in the chronological order of events associated with a typical wildlife incident phase: emergency management; response operation; and demobilization, as described in table below.

Table 10: Different phases in a response, and the corresponding actions and tasks.

Response Phase	Action	Tasks
Preparation on activating the wildlife plan	Notification, assessment and mobilization	• Notify Lead Agency or Species Team Lead to: determine whether the MOWReP should be activated or not, and under which circumstances. • Gather data species at risk including priority of species - Seasonal variability (nesting, migrating) - Real time location of wildlife - Sensitive habitats in relations to oil. • Involvements of specialist and marine biologist.
Activation and emergency management	Anticipate and react to the unfolding scenario	• Activate MOWRC • Strategies the response and tactical actions which the main objective is to minimize the impact on wildlife, their populations and habitats. • Ensure functioning of communication systems and data flow • Develop a response action plan (e.g. 12–48 hours), which is updated every day for each operational section and continue field assessments to monitor potential changes in scale and new developments • Scale up existing operations as necessary • Prepare information for press release if required.
Operations	Deliver on response objectives i.e. Reconnaissance, hazing, deterrence, displacement, capture and rehabilitation.	• Daily / periodic surveillance / reconnaissance operations for data and impact assessment • Ensure stability of operations, effectiveness, cost-efficiency and in safely manner. • Implement long-term personnel plans and routines. • Confirm continued communication flows • Ensure efficient use of resources • Prioritize all the response actions • Develop and initiate post-release monitoring plan • Records all the response actions and resources including manpower and damage of equipment for claim purposes. • Hazing and deterrence e.g. control disturbance to deter wildlife from contaminated or at-risk areas. • Displacement e.g. capability too pre-emptively capture and translocate.

Response Phase	Action	Tasks
Demobilization	Scale back down to zero	Demobilization of resources should be based on field operations decreasing; Decontamination of all resources should be exercised. Medical check for responder Debriefing evaluation
Post demobilization	Reporting and claims processing	Site evaluation based on authorities and SMEs recommendations. Classification and analysis of all data Conclusions and recommendation Financial round-up Preparation and submission of claims

The following figures describes the overall Oiled Wildlife Response Process Flow: -

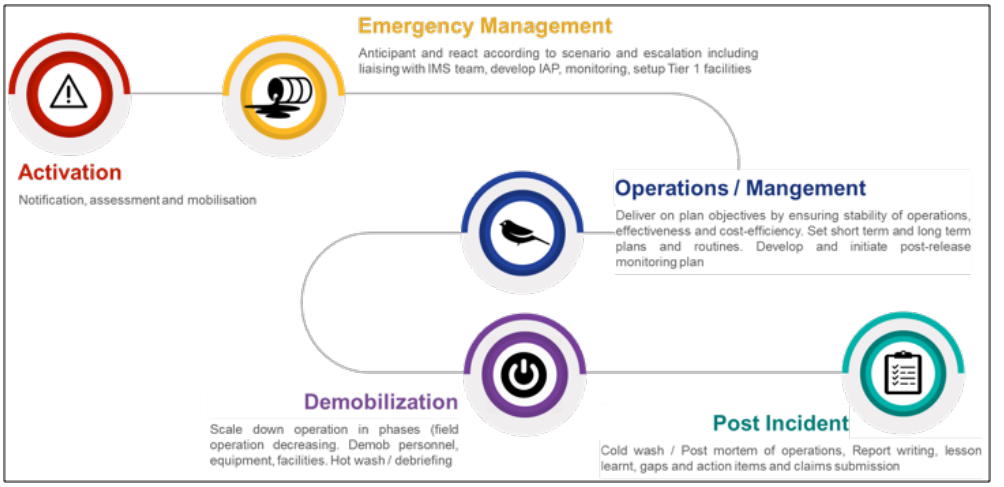


Figure 4: Overall Oiled Wildlife Response Process Flow

The steps taken for preventing oil reaching wildlife, and for preventing wildlife from becoming oiled are described in **Appendix J.**

5.2 Notification Procedure

Once the MOWReP is activated, the notification procedure ensures that all the MOWRC members are informed of the details of the incident. All relevant information should be obtained from the reporter including location, access, number, species, and condition of oiled wildlife and provided to DOE as soon as possible. By providing accurate and appropriate information during the notification process, the timely involvement of key role-players will ensure early action.

Format of notification form can be referred in **Appendix K.**

5.3 Activation Phase

MOWRC will decide on the mobilization of all the response team and equipment immediately after activation of the plan. The mobilization of resources usually takes place in parallel with the Reconnaissance Team activities. Once MOWRC have determined the appropriate options for wildlife response, the timely mobilization of oiled wildlife responders, response facilities and equipment will be critical.

The activation of MOWReP is described in the flowchart below:-

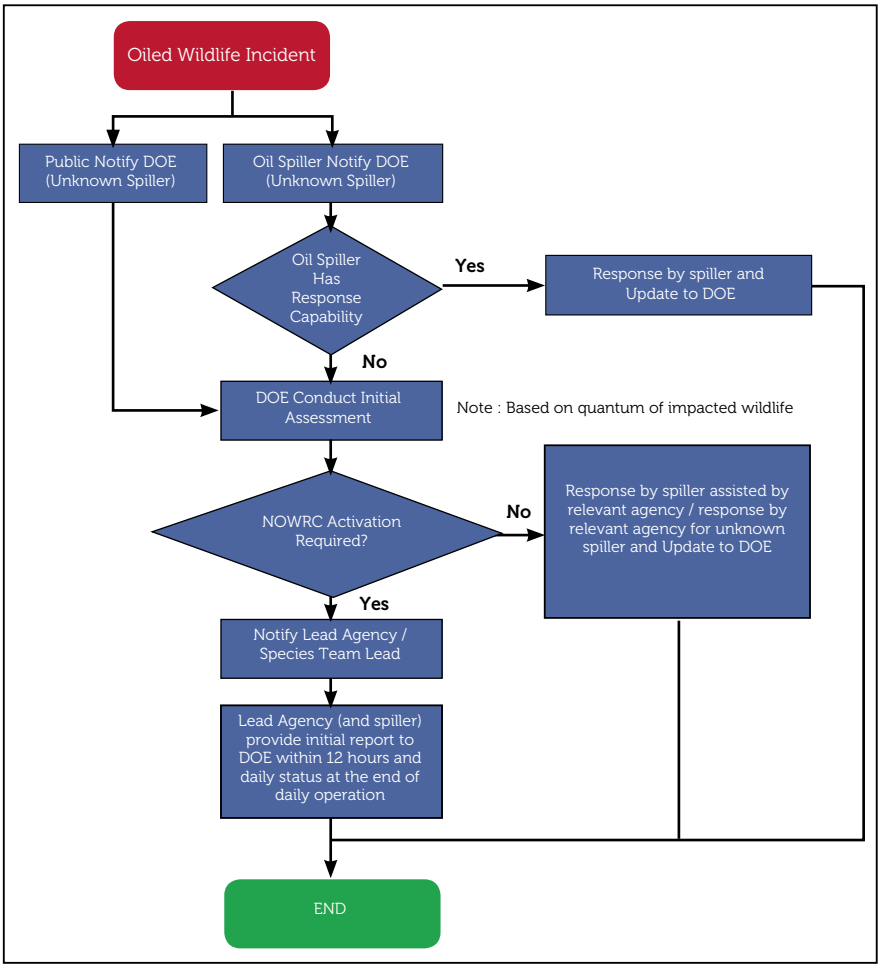


Figure 5: Activation of MOWReP Flowchart

Note: Lead agency and Species Team Lead may exercise their own internal procedure to strengthen response operations.

5.4 Assessment

An Reconnaissance Team shall be mobilized immediately after activation of the plan the earliest possible opportunity when the risk of a spill incident is high (such as a ship grounding) or immediately after a spill has been reported. This allows MOWRC Coordinator to gather as much field information as possible in assessing the potential impact on wildlife, and the level at which resources need to be mobilized. Therefore, the MOWRC Coordinator can make the right decision on the type of response that will be required, based on realistic projections of wildlife impacts.

5.5 Manpower, Facilities & Equipment

5.5.1 International / Local oiled wildlife responders and advisers

The team of specialists has been trained by the respective agencies. The team will be engaged in oiled wildlife response. If required, volunteers from the local community may be engaged in wildlife response operations that do not require special knowledge or training.

In the event of a large number of wildlife affected by an oil spill, international oiled wildlife response manpower and resources may be mobilized by the decision of MOWRC but not limited to wildlife response organization participating in the GOWRS project, OSRL, Sea Alarm etc.

5.5.2 Responders

The responder involved in the oiled wildlife response includes full time government agencies and supported by subject matter experts (SME) from various institutions and research centre on on-call basis. Responders that will be directly involves in oiled wildlife response should be appointed/nominated by Lead Agency /Species Team Lead based on their experience, competency and skill.

In maintaining the responders' capability, the respective government agencies should:

- Incorporate OWR training in the agency current training plan which could be based on the available international standard i.e. IPIECA.
- Conduct training at least once a year specific to OWR.

5.5.3 Oiled Wildlife Response Equipment (OWRE)

Respective government agencies especially the Lead Agency & Species Team Lead should prepare adequate OWRE to facilitate the response operations as listed in Appendix L.

All OWRE should be maintained, inspected and tested according to Original Equipment Manufacturer (OEM) standard.

5.5.4 Exercise Program

Exercises play a critical role in testing MOWReP, identifying potential gaps and their possible solutions, and maximizing success when a real incident occurs. Exercises also provide excellent training opportunities for all personnel involved in areas that may not be regularly practiced, such as incident management, logistical and documentation procedures, the safe handling of hazardous materials, and multi-agency and organizational teamwork.

The type of exercise and the detail of it is described in the table below.

Table 11: MOWReP Exercise and the Descriptions

TYPE OF EXERCISE	FREQUENCY	EVALUATOR / CONDUCTED BY	DESCRIPTION
Role familiarization (classroom)	Once off upon appointment	SME from government agencies and the industry	• To familiarize with designated role upon appointment as responders • Organized in a small group of 15-20 pax
Virtual discussion – based operational exercise	When necessary	SME from government agencies and the industry	• To familiarize discussion within virtual environment • Organized in a small group of 15-20 pax
Tabletop/ Functional Exercise	Once in 2 years	SME from government agencies and the industry	• Tier 2 / Tier 3 MOSCoP protocol • Participation or mobilization of MOWRC
Full Scale	Aligned with National Oil Spill Exercise	SME from government agencies and the industry	• Tier 2 / Tier 3 MOSCoP protocol • Participation or mobilization of MOWRC as well as involvement of relevant organization

6.0

POST DEMOBILIZATION OF OILED WILDLIFE RESPONSE

6.0 POST DEMOBILIZATION OF OILED WILDLIFE RESPONSE

Post demobilization refers to the activities after completion of the oiled wildlife response and rescue. The activities are not limited to the following.

6.1 Report Preparation

Reports on oiled wildlife response will be prepared by each OWRT, reviewed by Lead Agency prior to be submitted to SOSC/NOSC. The report shall be submitted two (2) weeks after the termination of the wildlife response operation.

The report shall be done as per the format in **Appendix M** that will allow a useful evaluation and their subsequent use in legal procedures and claims.

6.2 Claim & Compensation

For the purpose of submission of response, clean up and damage claim cost, all evidence and information regarding cleanup operation, actions taken, personnel deployed and equipment/logistic utilized has to be preserved and submitted. The submission must be in concise manner by filling up cost analysis form, as per IOPC Claims Manual 2019 Edition & Example Claim Form 2018. For unknown sources, any expenses for the response and clean-up cost should be covered under respective Government agency.

The type of industry and the detail of the claims are described in the table below.

Table 12: Type of industry and claim

Type of Industry	Eligibility	Manual/Procedure
Shipping	• Spiller Insurance (First Tier) • 1992 Civil Liability Convention (CLC) (Second Tier)	• Spiller Internal Manual/ Procedure • MOSCoP Claim Procedure
Oil & Gas	Spiller Insurance	• Spiller Internal Manual/ Procedure • MOSCoP Claim Procedure
Others	Spiller Insurance	• Spiller Internal Manual/ Procedure • MOSCoP Claim Procedure

6.3 Waste Management

All components of oiled wildlife response waste including oiled wildlife should be dealt with meeting the requirement of Scheduled Waste Regulation 2005. Each component of the wildlife response should aim to minimize waste and secondary pollution as well as health hazard whenever possible. The process of scheduled waste disposal generated from the operation shall be accordance to DOE advise and supervision.

Management of non-oiled wildlife casualty shall be in accordance to Veterinary Services Department related regulation/guideline.

6.4 Post-release Monitoring

Post-release monitoring can have a direct bearing on methodologies and practices involved in significant parts of the response process and can have a direct effect on wildlife welfare. Without such monitoring it is impossible to scientifically evaluate outcomes in relation to the ultimate objectives of response and rehabilitation, i.e. determining the fecundity and longevity of released wildlife. The post-release monitoring procedure will be based on the respective agencies' SOP.

Common techniques for post-release monitoring include (subject to agencies consideration):

i. banding/ringing of birds, including the use of bands/rings that can be read in the field;
ii. tagging of marine mammals and marine reptiles;
iii. microchipping of marine mammals and wildlife; and
iv. deployment of VHF/GPS satellite telemetry equipment on select wildlife.

6.5 Public Relations

All media statement which involved oiled wildlife response operation should be done by Chairman of NOSC / SOSC /State Beach Clean-up Response Committee respectively. For Tier 1, all press statement will be done according to respective spillers protocol. All relevant information on the status and progress of oiled wildlife response shall be provided to Chairman of NOSC / SOSC /State Beach Clean-up Response Committee.

6.6 Continuous Improvement / Review

This Plan shall be reviewed and updated from time to time whenever necessary.

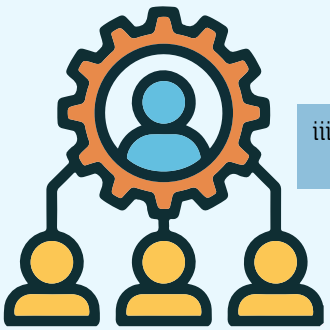
7.0

PREPARATION FOR OPERATIONALIZATION

7.0 PREPARATION FOR OPERATIONALIZATION

In order to achieve a successful implementation of MOWReP, relevant government agencies should ensure the following actions to be undertaken:-

i. Cascade MOWReP information within the department



iii. Conduct training regularly

ii. Allocate/Provide adequate resources including manpower and equipment

8.0 BIBLIOGRAPHY

8.0 BIBLIOGRAPHY

In this plan, reference was made to the following standards / publications:

Malaysia Oil Spill Contingency Plan , 2023

Department of Fisheries Malaysia's SOP

Wildlife Response Preparedness, IPIECA , 2014.

Oiled Wildlife Response Manual , POSOW, 2013.

PETRONAS Technical Standard, Oil Spill Contingency Planning, 2016

PETRONAS Environmental Sensitivity Index (ESI)

Key Principles for the Protection, Care and Rehabilitation of Oiled Wildlife, IPIECA-IOGP, 2017.

Appendix A: Incident Zoning

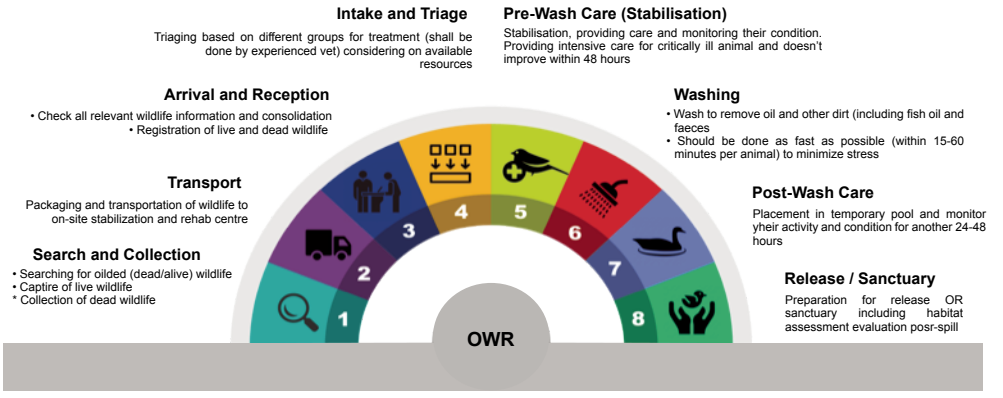
Appendix B: List of Basic Facility required during an integrated oiled wildlife response

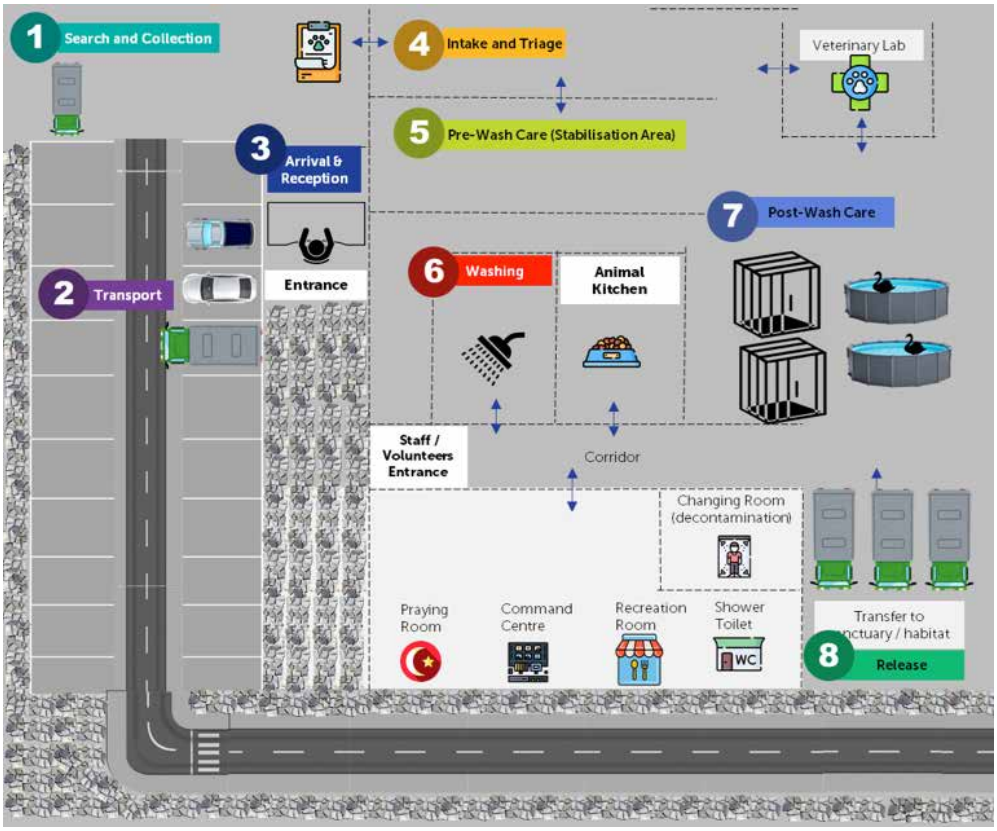
Reception	Stabilization Room	Parking and Security
Desk	Clean environment	Parking Space
Space to store wildlife	Good ventilation	Security checkpoint

Examination Room (vet)	Veterinary lab (if vet available)	Wildlife Kitchen
Water, Electricity	Desk, chair	Hot/Cold water
Table	Computer	Work tables
Cupboard with medical supplies	Centrifuge	Fridge, freezer
Scales	Freezer	Microwaves/mixer

Common facilities	Corridor	Dressing Room
Lockers / change area	Connecting all indicated rooms	Benches and Hooks
Toilet	Signposts	Lockers
Pantry		
Surau		

Appendix C: Typical Oiled Wildlife Response Strategies and Wildlife Command Centre (WCC) Setup





Appendix D: Potential Facilities for WCC

Region	WCC
Peninsular Malaysia	**Pusat Pengeluaran & Penyelidikan Benih Udang Kebangsaan** (National Prawn Fry Production and Research Centre) Kg. Pulau Sayak 08500 Kota Kuala Muda Kedah
	Institut Penyelidikan Perikanan 11960 Batu Maung Pulau Pinang
	Pusat Konservasi Dan Penerangan Penyu Segari Pasir Panjang, Segari Perak Tel: 05-2554061
	Pusat Ikan Hiasan Port Dickson, Negeri Sembilan Jalan Kemang 8, Kampung Baharu, 71050 Port Dickson, Negeri Sembilan 06-662 1089
	Pusat Penerangan dan Konservasi Penyu Pangkalan Balak, Padang Kemunting, 78300 Masjid Tanah, Melaka 06-384 6754
	Bahagian Penyelidikan Akuakultur Air Payau, Fri Gelang Patah Kampung Baru Gelang Patah, 81550 Gelang Patah, Johor 07-510 1202
	Pusat Penerangan dan Konservasi Penyu Cherating, Pahang KM 45, Jln Kuantan - Kemaman, Bukit Cherating, 26080 Kuantan, Pahang 09-581 9087
	Pusat Penerangan dan Konservasi Penyu Rantau Abang Rantau Abang, Terengganu, 23050 Kuala Dungun 09-844 4169
	Marine Fish Aquaculture Research Division, Fisheries Research Institute (Pusat Pengeluaran & Penyelidikan Ikan Laut) Tanjung Demong, 22200 Besut, Terengganu 09-695 6778
Sabah	**Turtle Island Park** Jalan Buli Sim Sim, Pusat Bandar Sandakan, 90719 Sandakan, Sabah 089-212 711
	Tun Mustapha Park
Sarawak	Tanjung Datu National Park
	Samunsam Wildlife Sanctuary
	Similajau National Park

Appendix E: List of Rehabilitation Centre

State/Region	Conservation Area	Species Covered
Peninsular	PERHILITAN National Wildlife Rescue Centre, Sungkai, Perak with a capacity of 30 ha.	All species
	PERHILITAN Wildlife Forensic Laboratory located at Jalan Cheras, Kuala Lumpur	Penyu & Anak Dugong
	Rantau Abang turtle sanctuary	Turtle & Anak Dugong
	Ma'Daerah Turtle Sanctuary	Dugong & Dolphin
	Bota Kanan Wildlife Conservation Centre	Terrapin
	Kuala Gula Bird Sanctuary	Bird
	Bukit Paloh Wildlife Conservation Centre	Terrapin
Sabah	Pulau Mabul Sea Turtles Rehabilitation Centre	Sea turtles
	Turtle Island Park, Sandakan	Turtle
	Tun Mustapha Park – conservation area for endangered marine life, such as green sea turtles and dugongs	Marine life such as green sea turtles and dugongs
Sarawak	Tanjung Datu National Park – Marine turtle hatchery and conservation	Marine Turtle
	Samunsam Wildlife Sanctuary – Marine turtle hatchery and conservation	Marine turtle
	Similajau National Park – Marine turtle hatchery and conservation	Marine turtle
	Kampung Puguh – Marine turtle hatchery and conservation	Marine turtle
	Kuala Bandang – Marine turtle hatchery and conservation	Marine turtle
	Tanjung Batu – Marine turtle hatchery and conservation	Marine turtle

Appendix F: Sample of IAP

Oiled Wildlife				Ref. no: Date approve: Rev:0
RESPONSE STRATEGY: MINIMIZE IMPACT ON WILDLIFE, POPULATIONS & HABITAT Confirm spill – Notify Authorities – Activate MOWRC – Conduct Operations				
Initial		**Actions**	**Equipment / Resources**	**Details**
At location	[ ] Spiller / Facility Operator [ ] Coordinator [ ] Species Team Lead **Reconnaissance Team** [ ] Survey & Planning (DOE) [ ] Aerial Survey, Shoreline and Boat Unit	Request confirmation and notify Coordinator. Get details of incident. Notify IMT Notify as per notification list (DOE) Take command & control and give direction to MOWRC. Activate units according to Agencies Develop overall response operations strategy based on affected species and the severity of the incident Identify nearest / appropriate WCC location Conduct initial survey Develop survey plan and conduct survey	Walkie-talkie ESI Walkie-talkie ESI / Species database SCAT report Walkie-talkie Aircraft Boat Land transport Camera Video camera Mobile phone	Location/area/ unit/equipment, casualties, product, source of spill if possible & provide weather data to Coordinator Species Team Lead: Terrestrial & Bird, Marine Mammal, Coral, Reptiles, Seagrass & Mangroves Reconnaissance Team (Survey & Planning, Aerial Survey, Shoreline Unit, Boat Unit, Technical Support Priorities: Notify DOE Operation Center within 1 hour Refer to MOWREP

1st Response		Actions	Equipment / Resources	Details
At location	**Reconnaissance Team** [ ] Survey & Planning (DOE) [ ] Aerial Survey, Shoreline and Boat Unit	• Capture daily log • Conduct data analysis • Conduct situational update	• Walkie-talkie • ESI • Aircraft • Boat • Land transport • Camera • Video camera • Mobile phone	• Log as per MOWREP Appendix M
	Hazing & Capture Team [ ] Pre-emptive Capture Unit [ ] Strike Unit	• Identify relevant hazing technique (human, vehicular, visual) • Coordinate capture planning (techniques and personnel) • Facilitate captive care arrangements • Provide relocation solutions • Coordinate with facility coordinator on establishment of search and rescue facilities • Conduct search and rescue live casualties • Perform primary treatment / first aid • Collect carcasses of dead wildlife	• Walkie-talkie • Smog machine • Strobe light • Housing • Net • Wildlife control pole • Grasper • Torch light • Flip chart • Wipes • Housing for dead wildlife • PPE	• SOP for life capture according to species
	Care & Processing Team [ ] Facility Unit [ ] Processing Unit [ ] Care Unit	• Setup facility and equipment • Establish manpower planning • Register and tag captured wildlife • Record wildlife data • Check all relevant wildlife information and consolidation • Register live and dead wildlife • Setup triage based on different groups for treatment considering on available resources	• Internet connection • Housing • Standby capture equipment • Flip chart • Computer • Husbandry • PPE • Veterinary supplies • Morgue necropsy • ICU • Laboratory • Conditioning pools/ pens • F&B • Wash equipment • Waste and hazardous material disposal	

1st Response		Actions	Equipment / Resources	Details
At location	[ ] Recovery & Transportation Team	• Provide stabilization, care and monitoring of wildlife condition. • Provide intensive care for critically ill wildlife and wildlife which condition doesn't improve within 48 hours • Perform washing to remove oil and other dirt • Implement post-wash care and monitor their activity and condition • Preparation for release or transfer to rehab center including habitat assessment evaluation post-spill. • Wildlife and marine species recovery (on-site and center) • Procure transport vehicle and equipment arrangement	• Housing • List of rehab center • Transport vehicle and equipment	
2nd Response		**Actions**	**Equipment / Resources**	**Details**
State HQ	[ ] SOSC	• Provide additional assistance on manpower, logistic and financial by activating supporting agencies	Not Applicable	
3rd Response		**Actions**	**Equipment / Resources**	**Details**
HQ	[ ] NOSC	• Coordinate external assistance with Wisma Putra	Not Applicable	Customs clearance on certain equipment

Incident potential hazards ***(not limited to)***

Extreme weather and climate condition
- Bad weather, monsoon season, high sea state
- Drowning due to tidal

Biological Hazard
- Risk of injuries (bites, cuts and scratches)
- Zoonotic diseases

3rd Response	Actions	Equipment / Resources	Details
Chemical / Toxicology Hazard • Waste and hazardous material • Fumes **Physical Hazard** • Hyperthermia (heat stress , heat stroke , sun burn) • Hypothermia • Slip, trip & fall • Serious laceration, broken bones **Ergonomic Hazard** • Back damage (lift heavy wildlife) **Psychosocial Hazard** • Fatigue • Work related stress			
Other concern	Wildlife Response Facilities • The requirements for appropriate facilities can be met by one or more of three different approaches—the use of permanent facilities, buildings of opportunity or mobile facilities—as required to best address the needs of a particular plan. • Whichever approach is selected, facilities should include reliable systems for the supply of potable water, electricity, heating or cooling, and ventilation, that meet the specific requirements for wildlife.		

Appendix G : Unit Log

MALAYSIA OILED WILDLIFE RESPONSE COMMITTEE (MOWRC)					
UNIT LOG					
Incident Name		**Operational Period**	**Date From**	**Date To**	
			Date From	**Date To**	
Name:					
Name of Agencies		**Position**			
Please Check Your MOWRC location in the Following Box ☐ **Site** ☐ **WCC** ☐ **Rehabilitation Centre** ☐ **ECC**					
Please Check Your MOWRC function in the Following Box ☐ Coordinator					
☐ Reconnaissance Team		☐ Hazing & Capture Team	☐ Care and Processing Team	☐ Recovery & Transportation Team	☐ Others
	Survey & Planning Unit	Hazing Unit	Facility Unit		
	Aerial Survey Unit	Pre-Emptive Capture Unit	Processing Unit		
	Shoreline Unit	Strike Unit	Care Unit		
	Boat Unit				

No	Date & Time	Event	Actions	Remarks

Appendix H : Daily Assessment Report

Incident				Ref. No.	
Report from	Name		Contact	Tel.	
	Position			E-mail	
Date			Time		

Daily Report

Location	Species	Number Collected / Received			
		Alive		Dead	
		Oiled	Unoiled	Oiled	Unoiled

Accumulated Wildlife Total

Location	Number Collected / Received				Total Number Dead
	Alive		Dead		
	Oiled	Unoiled	Oiled	Unoiled	

Manpower Report

Agency	Number	Function / Roles	Total
1			
2			
3			
4			
5			

Appendix I : General Guidelines of Safety and Health

General Note

All responders shall take note on the safety and health requirements to ensure safe operations and prevent exposure to hazard and risk in responding to oiled wildlife incident.

Recommended minimum full Personal Protective Equipment (PPE) for all relevant responders are as follows (not limited to):

- Tyvek suit / Disposable Coverall
- Rubber Gloves
- Face mask / shield
- Safety Boot (Field) / Covered Shoe (Facility)

Picture C1: Oiled Wildlife Response Full PPE

Risk and Control Measure

Responder should consider all potential risk that might be exposed during an operation. All of these risk should be mitigated by adequate control measure.

Risk	Control Measure
Bites, cut and scratches, stab wounds from sharp bills/beak	Wear PPE as directed. Refer to capture Wildlife / DWNP SOP for additional details Proper handling procedures as per respective department SOP.
Serious lacerations, broken bones (large birds, turtles, marine mammals)	
Zoonotic diseases and parasites	Follow instruction for disease control. Maintain separation and hygiene procedure Veterinar Service Department
Back damage (lifting heavy wildlife)	When lifting, keep your knees bent and back straight, keep load close to your body. Get help for heaving loads
Hyperthermia (including: heat stress, heat stroke, sunburn)	Take sufficient rest breaks (shaded areas or climate controlled is preferable) and drink enough water. Use sunhat and sun cream
Slip, trips and falls (cut, breaks, concussion)	Be vigilant to potential hazards when moving around the shoreline, be careful on rocky/slippery surface
Toxic fumes (early on when oil is still fresh, confined space etc.)	No smoking. Do not enter areas with fume present without proper protection. Supervisor should carry out gas monitoring activities prior entry
Drowning (including work in tidal areas, on jetties and harbors)	If working in or near the water, wear life jacket
Unauthorized visitor (.e.g passer-by / media)	Be aware of the responder – check their ID pass
Machinery / vehicles for shoreline cleanup	Stay aware of traffic and follow instruction given.
Injuries from medical equipment (needles, syringes)	Volunteer should not be using needles (trained personnel only or under veterinary supervision), but be aware of sharps when cleaning or assisting others. Dispose of used equipment properly and safely
Electrical injury and thermal burns	Take care when operation electrical equipment in a facility where lots of water is being used (e.g. for wildlife washing). Seek first-aid for serious burns. Supervisors should ensure that fire extinguishers (suitable for all types of fire) are available.

Decontamination

Upon completion / between breaks, responders who were exposed to oil / oiled wildlife operation shall undergo decontamination process at the designated area prior to entry and exit of red zone. The PPE worn shall be stored / dispose at designated area to avoid contamination and exposure.

Appendix J : Strategy for preventing oil reaching wildlife, and for preventing wildlife from becoming oiled

Field Assessments

Field assessments can be undertaken and should be conducted across the following area: -

i. oiled areas
ii. those areas at risk of becoming oiled, or
iii. where affected wildlife is likely to arrive on shore.

This process may be undertaken parallel with Shore Cleanup Assessment Technique (SCAT) or the field assessment data can be extracted from the existing SCAT report. Field Assessment Form appears as **Form J1.**

Form J1 Field Assessment Form

<table>
<tr><td colspan="4">Wildlife Field Collection Data</td><td>Document No.</td></tr>
<tr><td>Date:</td><td colspan="2"></td><td>Time:</td><td></td></tr>
<tr><td>Location:</td><td colspan="2"></td><td>Species:</td><td></td></tr>
<tr><td rowspan="10">Degree of Oiling of Body</td><td rowspan="5">Percent Cover
21-40
41-60
61-80
81-100</td><td>0-20</td><td></td><td rowspan="10">Sketch of Oil on wildlife:</td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td colspan="2">Eyes</td><td></td></tr>
<tr><td colspan="2">Mouth/Beak</td><td></td></tr>
<tr><td colspan="2">Head</td><td></td></tr>
<tr><td colspan="2">Back</td><td></td></tr>
<tr><td colspan="2">Front</td><td></td></tr>
<tr><td colspan="2">Feet</td><td></td></tr>
<tr><td colspan="3">Condition of wildlife</td><td colspan="2"></td></tr>
<tr><td colspan="3">Field Treatments</td><td colspan="2"></td></tr>
<tr><td colspan="2">Report By</td><td></td><td>Designation</td><td></td></tr>
</table>

Separate: Two Forms

<table>
<tr><td colspan="5">Wildlife Field Collection Data</td><td>Document No.</td></tr>
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<tr><td>Location:</td><td colspan="3"></td><td>Species:</td><td></td></tr>
<tr><td rowspan="8">Degree of Oiling of Body</td><td rowspan="5">Percent Cover
21-40
41-60
61-80
81-100</td><td>0-20</td><td></td><td colspan="2" rowspan="8">Sketch of Oil on wildlife:</td></tr>
<tr><td></td><td></td></tr>
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<tr><td></td><td></td></tr>
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<tr><td colspan="3">Condition of wildlife</td><td colspan="3"></td></tr>
<tr><td colspan="3">Field Treatments</td><td colspan="3"></td></tr>
<tr><td colspan="2">Report By</td><td></td><td>Designation</td><td colspan="2"></td></tr>
</table>

Field assessments can serve to:

i. confirm and verify baseline information;
ii. survey numbers of wildlife;
iii. identify priority species and habitats;
iv. locate oiled individuals; and
v. monitor oil spill impacts on wildlife through time, including impacts on wildlife behavior.

Hazing and Deterrence

Hazing and deterrence are terms used for activities that are undertaken to prevent wildlife from entering contaminated sites, and/or to make wildlife move away from areas that are likely to be affected by the spill.

Techniques of the hazing and deterrence include:

- human disturbance (the simple presence of people in the wildlife habitat);
- vehicular disturbance (terrestrial vehicles, boats, aircraft);
- visual disturbance (lights, reflectors, flags, effigies, balloons, etc.);
- auditory disturbance (noise generators, biosonics, propane cannons);
- pyrotechnics (gas bangers, flares); and
- physical structures (fences, crowd barriers) to prevent wildlife accessing contaminated sites.

Hazing/deterrence is better undertaken by trained and experienced personnel as there are many factors to be considered. These include the geographical area (e.g. the suitable and the habitat that not polluted by oil) and wildlife species variation.

Pre-emptive capture

This response option aims to prevent wildlife from becoming oiled in the first instance. Here, wildlife is captured before becoming oiled, and is either:

- held in captivity until the risk of oiling has passed; or
- relocated to an alternative habitat where no risk exists, or far enough away so that species with site fidelity only return after the risk has been eliminated.

The difficulty of capturing wildlife safely and maintaining their health in a captive environment or during relocation must not be underestimated. In Malaysia, there are certain species which may pose risk the health and safety of responders and volunteers.

Decisions should be based on the likelihood of wildlife becoming oiled—in situations where the probability of oiling is high, the advantages of pre-emptive capture may outweigh the risks.

The risks of oiling must be weighed against the risks of injury, disease or death of the wildlife during preemptive capture activities.

Collection of oiled wildlife

Both live and dead oiled wildlife will need to be collected during an oil spill response operation. Live oiled wildlife is collected for subsequent assessment, treatment, rehabilitation or euthanasia. Collection techniques for live wildlife vary with species, habitat type, life history stage, access to specialist equipment/personnel, and the degree of oiling. Refer to individual government agencies for method of capturing live animals. -

Euthanasia

The operational requirements for euthanasia as a strategic tool to be used in conjunction with, or as an alternative to, rehabilitation is often underestimated in the planning stage.

Euthanasia must be used within the laws and regulations governing the location of the incident, and methods should conform to international veterinary medical, wildlife welfare standards as well as local religious and cultural values.

Rehabilitation

The process of rehabilitation is, in technical terms, probably the most complex aspect of the whole array of wildlife operations, as many factors must be brought together in a specific combination and setting.

In Malaysia, Malaysia Oiled Wildlife Response Committee (MOWRC) will utilize the existing wildlife care facilities established by respective regional wildlife agencies.

Clinical assessment - Triage

Triage is the process whereby the wildlife is prioritized for treatment based on medical requirements, and/or conservation status, and/or life stage (i.e. breeding adults may be prioritized over juveniles). Wildlife that are determined to be candidates for euthanasia are also identified at this stage based on the recommendation of the response veterinarian, and according to wildlife welfare needs and/or triage protocols.

Stabilization

Stabilization will address thermoregulatory distress, dehydration, nutritional support and the superficial removal of contaminant from sensitive mucous membranes (around the eyes, nostrils, mouth and vent). Stabilization will also allow oiled wildlife a period of rest, during which it is important that potential stressors are eliminated, or at least minimized. For some species (including marine mammals and turtles) this phase may be short, or completely eliminated. The stabilization process will take place at the identified Wildlife Command Post (WCC)

Decontamination

Once stabilized, external oil is removed from the wildlife. The specific decontamination process varies somewhat between species but typically consists of individuals being washed in a succession of baths of warm fresh water and a suitable detergent /soap. Once all traces of oil have been removed, depending on the species, the wildlife is dried with warm air blowers or heat lamps, or is allowed to air dry.

Conditioning

Conditioning is a process preparing wildlife for a successful return to the wild, ensuring that they are biologically and behaviourally normal, and as physically fit to survive and reproduce as they were (or as close as possible) before the oiling incident. It is essential that these wildlife have access to suitable rehabilitation pools, pens or aviaries during this phase.

Prepare for release

The aim of the process is to release wildlife in the vicinity of their habitat and have adequate resources to support them. Other considerations when planning a wildlife release include:

- banding/marking requirements;
- post-release follow-up measures;
- suitable release location (i.e. food sources, territoriality, conspecifics etc.);
- transport logistics, weather and time of day;
- media / public involvement.

Collection of dead wildlife

The process involves a systematic collection, evaluation and storage of dead oiled wildlife. Dead wildlife is collected to help evaluate the impact of the spill on affected populations, for veterinary and pathological information, and to remove contaminated carcasses from the environment/food chain. Necropsies of dead wildlife should be undertaken by respective agencies to assess pathological findings and enable a thorough documentation of oil-related mortalities.

Appendix K : Notification Procedure Form

<table>
<tr><th colspan="2">Date</th><th>Time</th><th>Name and Company:</th></tr>
<tr><th colspan="2">Reporter Information</th><th colspan="2">Wildlife Information</th></tr>
<tr><td colspan="2">Name</td><td colspan="2">Date/Wildlife Seen:</td></tr>
<tr><td colspan="2">Phone Number</td><td colspan="2">Number of Wildlife Seen:</td></tr>
<tr><td colspan="2">E-mail</td><td colspan="2" rowspan="2">Species (if known) or description (size/shape/ characteristics)</td></tr>
<tr><td colspan="2">Photo attached ☐ YES ☐ NO</td></tr>
<tr><td colspan="2">Location (GPS/address/landmarks)</td><td colspan="2">Appear oiled? Degree (light/heavy)?</td></tr>
<tr><td colspan="2">Remarks</td><td colspan="2">Wildlife behavior observed</td></tr>
</table>

Appendix L : Oil Spill Response Equipment

No	Category	Equipment / Supplies (Example)
1	Responder safety and health	• Coveralls, gloves, goggles/face shields, and boots/ wellingtons, Personal Flotation Devices (PFD)
2	Search and rescue	• Nets • Boxes and/or cages • Navigational aids (compass, gps, maps, charts) • Mobile phones and/or two-way radios • Quad bikes or four-wheel drive vehicles (for access to remote areas) • Boats (water rescue)
3	Stabilization and husbandry	• Electrolyte solution • Catheter tip syringes • Feeding tubes • Measuring cups • Buckets • Feeding tubs or bowls • Specialised cages/housing units (many bird species can be housed in small groups) • Disinfectant • Sponges, • Brushes • Refrigerators (for food)
4	Medical care	• Stethoscopes • Needles • Syringes • Injectable and oral vitamins, antibiotics, anti-fungals and other drugs • Blood collection tubes • Centrifuge • Hazardous medical waste containers • Dedicated refrigerators and freezers • Dedicated post mortem examination instruments
5	Wildlife Cleaning	• Washing liquid (proven effective for de-oiling birds) • Washing tubs (simple plastic bowls or larger metal tubs/sinks) • Hoses with adjustable nozzles • Drying cages (purpose-built net bottom pens are often used as they prevent birds from soiling themselves during the drying process and reduce the incidence of foot and chest damage to species who do not normally spend time on land) • Pet dryers and/or heat lamps
6	Rehabilitation pools and cages	• Bathing pools (children rubber pools) • Cages

List of Equipment required according to the response stage is listed below: -

Response Stage	Equipment Required
Initial Assessment	• Marine vessels, land vehicles, aircraft • Office and communication systems • GIS mapping resources • Oil spill trajectory modelling
Hazing and deterrence	Hazing and deterrence equipment: • pyrotechnics • cannons • biosonics • effigies • aircraft • boats • acoustic • exclusion devices
Pre-emptive capture and translocation	Capture equipment: • Remote site stabilization facility and equipment • Husbandry equipment for unoiled wildlife • Veterinary medical supplies • Transport vehicles and equipment • Communication systems • Office systems • Oil spill trajectory modelling
Dealing with live casualties	Capture equipment: • Transport vehicle, equipment and communication system • Field stabilization facility i. Husbandry equipment ii. Veterinary supplies • Rehabilitation centre i. Morgue necropsy ii. ICU iii. Laboratory iv. Stabilization/ pre-wash holding v. Wash room, drying room vi. Conditioning pools/pens vii. Post-wash stabilization/holding viii. Food preparation viv. Volunteer areas x. Administrative areas xi. Husbandry equipment xii. Wash equipment xiii. Veterinary supplies • Communication systems • Construction supplies • Waste and hazardous material disposal i. Medical waste disposal
Demobilization	All wildlife facilities, equipment and services in a staged manner
Post-release monitoring	Post-release monitoring equipment

Appendix M : Format of MOWReP Report

The report should contain the following information as a minimum:

i. Background of the incident (i.e. date, time, location of the incident, responding agencies, resources and duration)
ii. Description of the incident and Information on the oil spill, environmental impact and affected species
iii. Response operation details
iv. Operation cost, claims and compensations
v. Post operation species monitoring
vi. Area of improvement and way forward

Relevant Evidences and Additional Information

STATUS UPDATE: WILDLIFE STATUS							
WILDLIFE				Date/Time:			
Found				Held for Cleaning			
Species	Location	No. Alive	No. Dead	Species	Location	No. Held	No. Release

WILDLIFE RESCUE AND RELEASE FORM

Wildlife ID/Tag No.:_____

Instructions:

1. This form is to accompany the wildlife from the time it is rescued until it is released or euthanized.
2. Where an wildlife is cleaned, transported etc. multiple times, please complete additional forms and attach together with the main form.

Incident Name:

Rescue Details

Rescue Date/Time:	**Species:**
Location found (map GR (AMG/GDA) and name of area if known or Latitude/ Longitude):	Habitat type: □ Boat Ramp □ Beach □ Rock Platform □ In water □ Shoreline vegetation □ Other ……
Photo taken: Y / N Photo No: Name of Photographer:	Oil/Chemical sample taken: Y / N Sample No:
Comments:	
Name of Rescue Team Leader/Rescuer:	

Triage Piority

Priority: 1 / 2 / 3	Reason for priority:
Name of Examiner:	

Medical Examination and First Aid Treatment

Date of Examination:	Time of examination:
Respiration:	Musculo-skeletal:
Neurological signs:	Skin Condition:
Degree of oiling/chemical affect: None / light / moderate / heavy	Cloacal temperature: Weight: Oral fluids:
Other treatment given:	Examiner Name:

Transport Details

Date:	Pick up time:
Destination:	Distance:
Container details:	No of wildlife in container:
Comments:	
Time of arrival at destination:	Driver Name:

Cleaning/Drying Details

Cleaning date:	Time:
Detergent used:	Concentration:
Comments:	
No. washes:	Water Temperature
Drying Method:	Washer/Drier Name:

Release

Release Site:	Release date/Time:
ABBBS Band / Tag No:	Release authorised by:
Release weight:	Released by:
Comments (weather conditions, released with other wildlife etc.):	

Necropsy and carcass disposal details

Date of death:	Date of Necropsy:
Performed by:	
Provisional diagnosis (necropsy report be attached)	
Date of disposal: Authorised by:	
Method of disposal:	Location:

Sampling Details

Samples taken:

□ Pathology □ Blood chemistry □ Tissue

□ Histology □ Other – indicate ……

COORDINATOR:
DEPARTMENT OF ENVIRONMENT, MALAYSIA

RESPONSE LEAD AGENCY:

1. DEPARTMENT OF WILDLIFE AND NATIONAL PARK DWNP
2. SARAWAK FORESTRY CORPORATION (SFC)
3. SABAH WILDLIFE DEPARTMENT (SWD)

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