DESIGNING AND IMPLEMENTING A MEANINGFUL TIER 3 WILDLIFE RESPONSE ELEMENT IN A LARGE-SCALE INDUSTRY OIL SPILL EXERCISE IN AFRICA

AUTHORS

Franchesca Rouse, Oil Spill Response Limited, <u>franchescarouse@oilspillresponse.com</u> Miguel Cordeiro, ExxonMobil, <u>miguel.cordeiro@exxonmobil.com</u> Saskia Sessions-Puplett, Sea Alarm, <u>saskia@sea-alarm.org</u> Viviane Barquete, Aiuká | GOWRS, <u>viviane.barquete@aiuka.co.br</u> Nicky Stander, SANCCOB | GOWRS, <u>nicky@sanccob.co.za</u> Claude Velter, Wildlife Rescue Centre Ostend | GOWRS, <u>claude.velter@vogelbescherming.be</u> Paul Kelway, Oil Spill Response Limited, <u>paulkelway@oilspillresponse.com</u>

ABSTRACT

The profile of emergency wildlife response continues to grow within the energy industry, while authorities and regulators are taking more interest in wildlife preparedness activities. Operators are increasingly looking to include wildlife related objectives in their oil spill response exercises, which usually serve to test established response plans. However, in regions with limited wildlife preparedness such as Africa, established wildlife plans may be absent or lacking operational detail. In such cases, Operators must seek a novel approach to wildlife-related exercises by using them as a tool to understand the risk to wildlife, assess gaps in capability and as an engagement opportunity to establish relationships with stakeholders PAPER335

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who may provide support an incident. Integration of Tier 3 wildlife response experts into exercise design from the outset increases the likelihood of meaningful outcomes for integration into future preparedness activities. By shaping exercise objectives to assess risk and determine feasible wildlife response options, the technical input developed the wildlife section of an Incident Action Plan (IAP) during an exercise can be carried forward into future planning and preparedness efforts. This paper will describe the planning and implementation of the wildlife response component of a large-scale Tier 3 exercise in Angola. The insights presented here by Tier 3 wildlife response experts may be carried forward by any operator, authority or wildlife organisation to aid design of exercises as a meaningful tool to identify gaps in their own wildlife preparedness capability. The overarching aim is to inspire organisations to undertake holistic wildlife preparedness programmes based on established good practice (Ipieca, 2014).

INTRODUCTION

Oiled wildlife response is recognised by the oil industry and other stakeholders as an integral part of oil spill preparedness, with well-established good practice guidance that defines the multi-annual, multi-stakeholder journey to implement in-country (Tier 1 and 2) preparedness for wildlife incidents. International (Tier 3) experts can support both preparedness and response activities as part of this process (Ipieca, 2014). The Wildlife Response Preparedness Wheel developed at the Ipieca Cyprus Workshop in 2019 depicts a visual model to aid implementation of tiered preparedness (Figure 1). This tool identifies two crucial phases, the first sets objectives and assesses risk to ultimately develop a plan. The second phase defines a multi-year implementation programme to train and equip Tier 1 and 2 personnel and conduct exercises alongside Tier 3 experts to build competence and resilience.

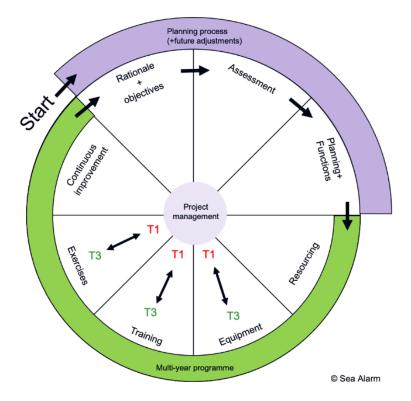


Figure 1: The Wildlife Response Preparedness Wheel (Ipieca, 2019).

Levels of oil spill preparedness can vary considerably across the world for various reasons, e.g. socio-economic factors and competing response priorities. Wildlife response preparedness lags behind oil spill response preparedness in some countries and regions which presents a challenge when attempting to include wildlife response elements in a meaningful way in the design and implementation of industry exercises. The Wildlife Response Preparedness Wheel (Figure 1) depicts exercises as the penultimate step to test procedures, competence and equipment, so a traditional approach to exercise design is unfeasible in the absence of a wildlife plan or prior tiered preparedness capability to test.

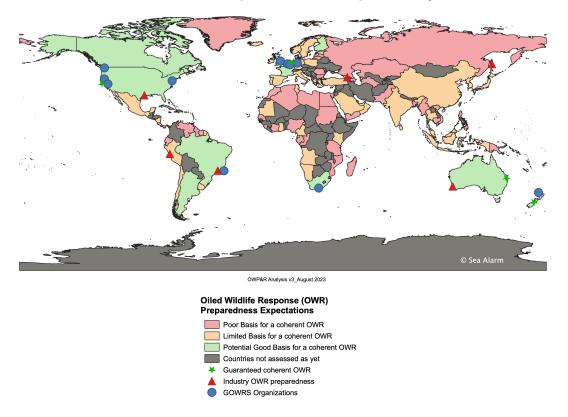
Oil spill exercises provide a valuable opportunity to bridge preparedness and response when designed effectively as part of holistic exercise programmes (Rouse and Parker, 2022) and to bring together resources from across the three response tiers. Wildlife preparedness can certainly benefit from integration into industry exercise programmes to reinforce the importance of its integration and consideration. However, it is important that exercise planners

take a considered approach to defining objectives and designing exercise scenarios in order to avoid tokenism to truly optimise the learning opportunities that a planned exercise may present. This is especially true when the onus should be on assessing the feasibility of wildlife response options in areas with limited to no response capability rather than on testing well-established response arrangements, as is the case in much of Africa. In such situations, involving Tier 3 wildlife response expertise can optimise the learning and legacy from exercise events (Kelway et al., 2018).

The role of Tier 3 Assessment in Oiled Wildlife Response

For many countries or regions, oiled wildlife response and preparedness remains a relatively new topic and a large gap has traditionally existed between the level of preparedness for oil spill response and that for oiled wildlife response (Kelway *et al.*, 2018). For Sea Alarm and GOWRS, as OSRL's 24/7 Tier 3 wildlife advisers and responders as described in Appendix 1, this means they could face the possibility of being mobilised into a situation where local wildlife response capabilities are absent, underdeveloped, not well resourced or not supported by local authorities. This is why Sea Alarm has been developing open-access Country Wildlife Response Profiles (CWRPs) since 2006 as part of its long-term partnership with OSRL (Sea Alarm, 2023).

Data from CWRPs allows an evaluation of the overall indicative level of preparedness in over 100 different countries around the world (see Figure 2). Angola, the setting for this exercise, is indicated as a country with 'limited basis' for a coherent oiled wildlife response (due to the lack of a specific regulatory framework for oiled wildlife response as well as the scarcity of resources), as are several other countries in the West African region.



Oiled Wildlife Preparedness and Response Analysis

Figure 2 – Global oiled wildlife preparedness and response analysis: Sea Alarm's interpretation of oiled wildlife preparedness and response expectations based on information collected from Country Wildlife Response Profiles (Sea Alarm, 2023).

Whilst they are not wildlife response plans, in case of an incident CWRPs provide Sea Alarm and other Tier 3 hands-on wildlife response experts with basic information and contact details of key identified stakeholders and their level of preparedness, and whether there are any sensitive species, useful preparedness arrangements, resources (responders, facilities, equipment etc.).

Having this information collected in advance can save precious time during a real response to help shape expectations of how a response may play out in the affected country and what the starting point may be. CWRPs can provide overviews of regions where gaps should be anticipated and informs both industry and Tier 3 responders where Tier 1 and 2 resources may be absent or under-developed. In countries where wildlife response is fully dependent on

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mobilised Tier 3 expertise and their equipment, those responders will meet many unknowns. This is why Tier 3 providers have included in their mobilisation procedure an extra Assessment Phase, which was applied for this exercise, in which they can assess the availability of local resources and the feasibility of a meaningful wildlife response before they commit to taking responsibility for such a response.

The assessment phase allows to test and ground-truth the assumptions around an unfolding scenario (species at risk or impacted, scale of potential or visible impact), the support of local authorities (e.g. legislation, conditions and requirements, licences for responders to rescue, treat or euthanise animals – which may have protected, cultural or religious status) and availability of local resources (e.g. wildlife experts, facilities and critical local infrastructure such as access, roads, water and electricity). The Assessment Phase should provide a level of confidence to the Tier 3 responder on whether it is possible to make a difference – and if yes, via which objectives and at what scale. For a mobilisation to a better prepared country, an Assessment Phase can be very short.

METHODS

ExxonMobil's Exercise Giant Black Sable

On 15-18 May 2023, ExxonMobil organised a large-scale exercise (Exercise Giant Black Sable) in Angola to test and demonstrate its Regional Response Team's (RRT) ability to rapidly scale up an Incident Management Team to respond effectively to a Tier 3 incident. In doing so, the exercise planners sought input from OSRL in the design of wildlife response objectives for the exercise. In the absence of a national oiled wildlife plan and limited incountry integration of wildlife response resources, Angola would be entirely dependent on Tier

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3 wildlife response services in an incident. Therefore, Exercise Black Sable presented the following opportunities:

- Understand the role of Tier 3 experts, how they are mobilised and their role in relation to the IMT for a Tier 3 wildlife response.
- Understand what can be achieved in mounting a wildlife response in a location with limited preparedness and determine capability of local wildlife organisations to provide local support.
- Understand stakeholders' roles and responsibilities in mounting a wildlife response in Angola.
- Identify ways to improve wildlife response preparedness not only for ExxonMobil but explore willingness of other Operators in Angola to collaborate on future preparedness activities by sharing exercise learnings and outputs.

ExxonMobil proposed Exercise Black Sable be used to inform future preparedness activities by incorporating the following objectives:

- 1. Use the table-top exercise to train / inform RRT on wildlife incident management and role of the Wildlife Branch / Environment Unit and Tier 3 experts.
- 2. **Conduct an in-field GOWRS Assessment** on a chosen location to assess/recommend feasible response options and actions to add meaningful real-time contributions to the incident action-planning process of an exercise.
- 3. Develop a wildlife section of the Incident Action Plan (IAP) with input from a Sea Alarm Technical advisor and a GOWRS Assessment Team IMT Specialist.
- Improve future preparedness via lessons-learned/insights from above (via ExxonMobil Angola).

One Sea Alarm Technical Advisor and three GOWRS Assessment Team personnel from GOWRS members SANCCOB, Aiuká, Wildlife Rescue Centre Ostend were mobilised to Angola for the exercise by OSRL to provide wildlife response advice and technical assistance. To accurately mirror the 4-person GOWRS Assessment Team concept, which is a standard for response mobilisation, a fourth response specialist participated remotely from Massey University/Wildbase.

DISCUSSION

Pre-exercise

During the pre-exercise phase, Sea Alarm and the GOWRS assessment team prepared for mobilization to the exercise by obtaining visas, acquiring medications for malaria, and other necessary arrangements. The acquisition of visas and the coordination of experts' arrivals from various nations within a specified timeframe presented notable challenges as the stipulated visa category mandated a mere two-day lead time before departure. This demonstrates the importance to understand, anticipate and plan for complex immigration processes where response capability is reliant on Tier 3 expertise. Authorities could explore the feasibility of visa waiver programs to expedite mobilization of international personnel in emergencies. Development and continuous improvement of incident travel protocols should be included in emergency response plans and ongoing readiness activities.

Incident Command Post activities

The table below provides a summary of main activities (not in chronological order) undertaken over two days within the Incident Command Post by the Sea Alarm technical adviser and the GOWRS IMT Specialist.

Category	Activity	
Planning for operations	1.	Discussed timeline for wildlife response activities with the Wildlife Branch Director (WBD) based on the modelled trajectory of the oil spill; anticipated potential wildlife impacts, identified potential locations to set up temporary wildlife rehabilitation facilities and indicated how long it could take before wildlife rehabilitation operations could begin.
	2.	Identified resources required for inclusion in the Incident Action Plan (IAP).
	3.	Discussions with another in-country Operator determined a willingness to support and facilitate setup of a wildlife rehabilitation facility within their camp. Potential facilities were identified based on requirements such as water, electricity, accommodation and transport. Simulated mobilisation of OSRL's stockpile of wildlife response equipment and
	ч.	tracked its progress.
IMT	5.	Attended meetings of Operations and Planning Sections and provided information on needs for wildlife response for the next operational period.
	6.	Liaised with focal point in the IMT to enter preliminary requests for equipment and resources into the IAP software. The IAP software was used to log activities, complete ICS forms including requests for resources and house the Common Operating Picture of the incident.
	7.	Drafted the Wildlife section of the IAP to start defining objectives and strategies for the eventual wildlife response operations to be mounted.
NGOs	8.	Established if a local NGO could support the wildlife response by understanding their
engagement		experience, specialism and personnel available that could assist (with training) in an oiled wildlife incident. The NGO expressed its interest and willingness to help in principle in case of an incident and provided contacts for other NGOs that could potentially support.
Reputational	9.	Discussed legal framework for wildlife response activities with ExxonMobil's legal
issues and		affairs department on the need for permits (capturing animals, rehabilitation and
external		euthanasia, moving animals across regional borders). Draft request for permits
communications		submitted to the Angolan authorities.
		Drafted initial messages to the Public and Government Affairs (PGA) Team to be shared with field response teams and public on what to do if they find oiled wildlife. Liaised with the PGA Team to help them respond to wildlife-related injects.
	11.	Liaised with the PGA feam to help them respond to withine-related injects.

Table 1 – Main exercise activities within the IMT by Sea Alarm, GOWRS and the Wildlife Branch Director.

Field Assessment Team Activities

The table below provides a summary of main activities (not in chronological order) undertaken by the in-field GOWRS Assessment Team (GOWRS Facility Specialist and Field/Capture Specialist) over two days in Soyo, the location of ExxonMobil's facilities some 315km to the north of the IMT in Luanda.

Category	Activity	
Assessing Risk	1. GOWRS field team flown to Soyo to evaluate several beaches and sensitive sites.	
of Oiled	2. Location deemed low risk due to low wildlife numbers observed on shorelines.	
Wildlife	3. Absence of wildlife attributed to season; spill during egg-laying season could have	
	disastrous impact on nesting turtles.	
	4. No marine mammals observed, sparse local knowledge. Deterrence efforts needed to	
	prevent oil exposure to manatees and/or cetaceans if present.	
Surveillance	5. Field team requested additional surveillance via Incident Command Post, including	
	offshore vessel and aerial surveillance, as such surveillance may have revealed wildlife	
	offshore.	
Facilities	6. Field Assessment team inspected Operator facilities in Soyo as a potential rehabilitation	
	facility.	
	7. Lack of specialized care facilities requires emphasis on prevention; advised reducing	
	other stressors during the period.	
	8. Oil trajectory modelling predicted impact in another location further north, subsequent	
	discussions with another operator concerning the potential establishment of a	
	rehabilitation facility were positive. The camp possesses facilities suitable for a wildlife	
	rehabilitation centre, including large warehouses, vehicles, and a medical team.	
Future	9. Integrate Wildlife Assessment Team into oil spill surveillance activities or provide	
Considerations	additional vessels or aircraft, where required.	
	10. Development of any future wildlife response plan should include seabird and turtle	
	rehabilitation contingency.	
	11. Though not observed during assessment, marine mammals are known to be present in	
	the area, then hazing and deterrence are the best strategies.	

Table 2 – Main exercise activities within the IMT by Sea Alarm, GOWRS and the Wildlife Branch Director.

Lessons learned

Exercise Black Sable was a valuable opportunity to explore and exercise assistance from OSRL's wildlife SLA services (Sea Alarm's technical advice, GOWRS Assessment Team) in Exxon's Wildlife Branch and wider IMT setup. Insights gained from including wildlife capture and rehabilitation in the exercise objectives could have far reaching impacts if other Operators emulate this approach.

Considerations for the exercise design process to maximise learning opportunities:

• Consider expected trajectory of the pollutant when selecting the location of the Assessment, to provide a more realistic setting. Assessment Team activities should focus on checking some specific unknowns, for example if animals can be safely collected from a given stretch PAPER335

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of coastline or is a given facility suitable for rehabilitating 300 seabirds. However, even if an Assessment must be carried out in a different location during an exercise (due to logistical or practical limitations), valuable practical information can still be passed from the Assessment Team to the Wildlife Branch.

- GOWRS Assessment Team activities in the field could be conducted as a standalone exercise, without necessarily being linked to the main IMT exercise. This would allow more flexibility in organising the Assessment and potentially more time to carry it out, thereby maximising the educational benefits for both the Assessment Team and the Operator. However, if the Assessment is linked to a scenario, it would be beneficial to 'pre-mobilise' the Assessment Team a few days before the exercise starts. Their observations can then be fed simultaneously into the timeline of the exercise. The IMT exercise can then focus on how to move forwards following an informed Assessment Team decision, on whether the decision to respond is go (proceeding with mobilisation of further resources) or no-go (dealing with a situation where GOWRS would not get involved and would demobilise).
- Wildlife impacts in this exercise were limited as it was played out in real time and wildlife risks are lower at that time of the year. Involving wildlife experts from SAF / GOWRS in exercise design is beneficial to provide tailored wildlife injects. Exercise organisers should not rule out the possibility to simulate maximum impact scenarios in exercise design, for educational purposes, even when not matching reality at the time the exercise is held.

In general, maximum benefit can be gained through creation of a dedicated wildlife module with detailed (SMART) objectives, as part of the overall exercise design. Many different wildlife response exercise methods can be implemented, including both tabletop and field elements, and a range of different objectives can be combined within one exercise or a set of sub-exercises, see Figure 3 (EUROWA, 2023). GOWRS has also defined several modular exercise types that oil industry can consider (Kelway *et al.*, 2018).

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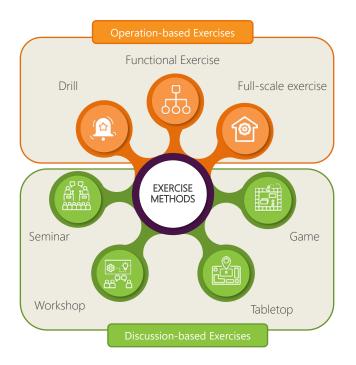


Figure 3 – Different types of exercise methods which can be applied to oiled wildlife response, including operations-based and discussion-based exercises (EUROWA, 2023).

In countries or regions with limited levels of preparedness to mount an oiled wildlife response operation several observations can be made regarding delays in several areas in the event of a real response:

- Assuming the recommendations from the GOWRS Assessment Team were to move to response phase, it may not be possible to begin the rehabilitation of oiled animals until day 10-12 of the incident. That is the approximate time needed to mobilise a larger GOWRS Response Team, to prepare and equip a facility and to identify and train local responders. For example, where a scenario indicates impacts to wildlife after 7 days, there could be a period in which oiled animals were coming ashore and resources were not in place to deal with them, leading to potential reputational issues for responsible party and for authorities. This serves to demonstrate why implementing tiered preparedness for wildlife response and having a detailed wildlife response plan is so crucial.
- Discussions among external organisations (such as other Operators and NGOs) on their potential contributions to an oiled wildlife response, who would be key partners for the

response and the potential facilities available were positive. But GOWRS would need more time to carry out a thorough assessment of the most promising facilities to ascertain their suitability, according to international best practice standards, to support a wildlife rehabilitation operation.

• The need for permits to capture and handle wild animals, in the absence of any pre-existing plans or legislative arrangements must always be checked with national and/or local authorities. By simulating the process to obtain the necessary approvals and permits within an exercise, potential gaps or delays in getting wildlife rehabilitation operations started in a real incident can be identified and understood.

The potential risk s to operator reputation from wildlife impacts from an oil spill in Africa is considerable, especially since wildlife is abundantly present in coastal and marine waters and in-country preparedness response plans and structures for integrating wildlife response are limited. This exercise highlighted the need for an Assessment Phase to precede a decision by the Tier 3 responders to take responsibilities in a response.

The observations and insights above provide food for thought, from the point of view of experienced wildlife responders, for Industry and authorities facing oil spills in other regions of Africa with remote access and limited levels of local preparedness.

It recommended that oil industry operators in Africa develop an Oiled Wildlife Response Plan (OWRP) for their respective regions, according to the good practice recommendations of IPIECA/IOGP 2014. This would allow a thorough assessment of the risks and resources in the country and a well-developed strategic approach for dealing with the various challenges over the course of time. The development of such plans and associated preparedness could be explored via a joint Industry programme for oiled wildlife preparedness and could include the following:

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- Development of wildlife response Tier 1 and 2 capabilities as a collaboration between all oil and gas operators, local Government bodies, NGOs and other stakeholders to determine what capacity and expertise they can provide to assist with a response and to cement this cooperation through formal agreements, to create a strong base level of trained local work force and communities that can be activated in case of an incident.
- Creating a regional or country-wide equipment stockpile, based on a thorough assessment of any existing equipment stockpiles and examination of logistical supply chains. Stockpiles should be shared between the different Operators so that there is equipment at the various pre-determined locations that may be used for setup of a rehabilitation facility.
- An assessment should be made of a range of all potential facilities to determine their suitability as potential wildlife rehabilitation facilities (e.g. operator bases, harbours, logistical hubs and animal care facilities, if available). Shortcomings should be identified and rectified as part of the preparedness programme.
- Development of a joint programme should give due consideration to transboundary impacts determined from oil spill risk assessments and subsequent oil spill modelling, raising important questions with regard to the chosen wildlife response strategy (and its logistical and financial implications) in the different jurisdictions.

A joint approach between operators would avoid each company having to invest into their own preparedness and would be beneficial to cover the large areas of coastline at risk, particularly in areas where wildlife impacts are likely.

CONCLUSION

Exercise Black Sable provided the first opportunity to practice the mobilisation of Tier 3 wildlife response experts since the inclusion of the Wildlife Assessment Service into the OSRL Service Level Agreement. It demonstrated how Sea Alarm and the GOWRS Assessment Team complement each other in an IMT with feed in of real-time in-field observations. It also showed how Tier 3 experts should be integrated to assess risk to wildlife and determine the feasibility of response options. Black Sable served to demonstrate that wildlife response can be exercised in a meaningful way in the absence of an oiled wildlife plan and limited in-country response capability by shaping exercise objectives towards training RRT personnel on the role of the Wildlife Branch and exploring local resource availability. Oil and gas Operators invest a lot of time, money and energy into large scale oil spill response exercises, and to obtain adequate return on that investment the lessons and recommendations must be taken forward to realise the full preparedness and strategic benefits. In this instance, by inviting other Operators and NGOs in Angola, ExxonMobil made a great leap forward in initiating conversations with stakeholders to potentially develop meaningful wildlife response preparedness in Angola and beyond, not in isolation but as a collaborative effort, which is at the heart of wildlife emergency response good practice.

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APPENDIX 1: Tier 3 Wildlife Response Services available through OSRL's Service Level

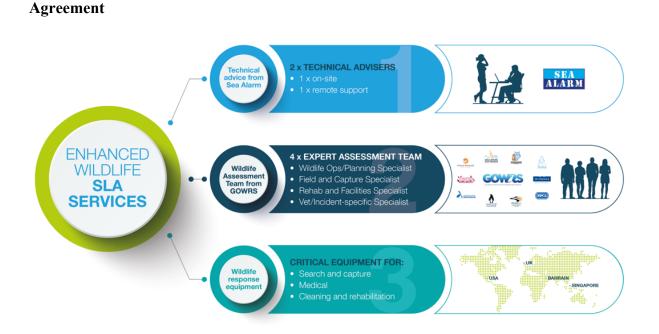


Figure 4: OSRL offers three guaranteed Tier 3 services to its members; Technical Advice from Sea Alarm, Wildlife Assessment from GOWRS and wildlife response equipment.

OSRL has an established history as a connector between industry and wildlife experts. Under the OSRL Service Level Agreement (SLA), a Member of Oil Spill Response Ltd (OSRL) has access to the following guaranteed wildlife response services 24/7:

- Technical Advice from Sea Alarm: Two personnel from Sea Alarm a nongovernmental organisation that works to improve global preparedness for oiled wildlife incidents.
- 2. **Oiled Wildlife Assessment Service from GOWRS**: A four-person team delivered by a global network of leading wildlife response organisations.
- 3. **Tier 3 Wildlife Response Equipment**: Critical equipment to support the first 48 hours of a response.

Technical Advice from Sea Alarm

Sea Alarm provide one expert for strategic and tactical advice, if necessary on-site and one additional technical advisor to provide remote advice and support. Sea Alarm bring a comprehensive understanding of how to bridge information gaps during a response equipped with information gathered in peacetime such as their Country Wildlife Response Profile database (described in this paper). As advisors to the Planning Section (Environmental Unit), they support planning and resource requirements, IAP development and advising the Operator's Wildlife Branch on operational and reputational issues, as well as resource needs. They are experts in multi-stakeholder integration by assessing capabilities and preparedness levels to maximize utilisation of tiered resources into the Incident Management System.

Oiled Wildlife Assessment Service from GOWRS

The Global Oiled Wildlife Response System (GOWRS) comprises a group of ten affiliated wildlife emergency response organizations that provide professional Tier 3 oiled wildlife services to any interested client, industry and government alike, through the utilisation of experienced and trained wildlife response personnel working to agreed international standards. GOWRS provide an Oiled Wildlife Assessment Service comprising a team of four experts, mobilised from a global pool of expertise, deployed on site for an initial four-day period, including:

- An IMT Operations and Planning specialist;
- A Field Capture specialist;
- A Rehabilitation/Facility specialist; and
- An incident-specific specialist or veterinarian.

The team provide recommendations and reasonings to the Operator for the most effective response option(s) as well as potential providers of operational wildlife response services. Operational wildlife response services are outside the scope of the OSRL Service Level Agreement and would be contracted by an individual wildlife response service provider.

Tier 3 Wildlife Response Equipment

OSRL's Tier 3 wildlife response equipment packages are standardised across our four operational bases (Southampton, Singapore, Bahrain and Fort Lauderdale) with a focus on birds to help support the first 48 hours of a response. This critical equipment aims to support search & capture, medical, cleaning & rehabilitation. While not exhaustive, the equipment supports initial wildlife response operations in situations where local supply chain logistics are not yet fully functional.