

Incorporating wildlife effectively into oil spill exercises – An Australian Story

AUTHOR

Michael Short

Queensland Department of Environment & Science

400 George St, Brisbane Qld 4000 Australia

ABSTRACT:

Australia holds regular National oil spill exercises through the National Plan for Maritime Emergencies. Two National Plan exercise activities that have taken place include Exercise Northerly held in Darwin (Northern Territory) in 2014 and Exercise Torres focussed on the Torres Straits (Queensland) in 2018. The overall aim of the two exercises were to implement and review the effectiveness of a combined Commonwealth (Federal), Territory/State and industry marine pollution response to a Level 3 pollution incident. Both Exercise Northerly and Exercise Torres included oiled wildlife response actions to practice and test. Exercise Northerly for wildlife was principally a desk top activity that included a number of injects relating to wildlife threatened and impacted by an oil spill event. Wildlife considered in Northerly included cetaceans, dugong, marine reptiles and seabirds. The key wildlife objectives for Northerly were to establish and maintain a wildlife Incident Management Team under the broader Incident Command structure and develop wildlife incident action plans for hazing wildlife and responding to oil impacted wildlife. Exercise Torres incorporated both planning and field based operational activities and considered cetaceans, dugong, marine reptiles and seabirds both threatened and impacted by oil pollution. Wildlife planning during exercise Torres was principally held in Cairns at the established Incident Control Centre where incident action plans were developed to haze oil threatened wildlife, collect oiled impacted wildlife and then rehabilitate wildlife considering the strict quarantine restrictions

imposed on wildlife movements through and out of the Torres Strait Protection Zone. The field deployment activities for Torres were then managed and undertaken through a forward operations base established on Waiben Island, some 800 kilometres or 500 miles north of Cairns that borders Papua New Guinea. The wildlife field teams were required to establish an oiled wildlife response centre making it fully operational with pre-deployed equipment, manage responder safety for actual dangerous wildlife in the area, respond to reports of impacted wildlife, transport impacted mock wildlife through the different contaminant hazard zones (i.e. hot, warm and cold zones) and then to the wildlife care centre, undertake wildlife assessment using narrative techniques, triage wildlife based on provided wildlife assessment data, decontaminate mock wildlife and then provide basic wildlife rehabilitation practices. Both of the National exercises provided effective opportunities to practice the skills necessary to support oiled wildlife response actions and to identify key learnings for better practices when responding to oiled wildlife threatened and impacted in remote areas.

INTRODUCTION

Australia's contingency planning system for managing oil spills is managed at the national level through the [National Plan for Maritime Environmental Emergencies](#) (the National Plan). The National Plan is administered by the Australian Maritime Safety Authority (AMSA) with each state or territory then having their own local administrative processes for managing spills under the National Plan framework (e.g. Queensland's Coastal Contingency Action Plan, (QCCAP)).

Within most states and the Northern Territory jurisdiction exercises are run on a regular basis (e.g. annually in Queensland), except where there are major oil spill events that occur within the planned exercise timeline (e.g. Pacific Adventurer oil spill, Queensland 2009). These local exercises provide the opportunity to practice and test response capacity generally with

the learnings used to strengthen response capacity in the longer term. These exercises tend to be developed and managed using internal state or territory resources.

AMSA through the National Plan framework also provides the opportunity to support a national run exercise program. Under this situation privatised exercise planning companies are contracted to deliver the oil spill exercise with the overall exercise being managed by a working committee under AMSA and with state and territory representation and subject matter experts supporting the process.

Exercises within Australia have historically focussed more on marine, aerial and shoreline response type demands and activities. More recently this has been expanded to better include wildlife matters given the need to engage and support wildlife activities across incident control management and operational processes.

In 2014 Exercise Northerly was held in Northern Territory waters and then in 2018 Exercise Torres focussed on the Torres Straits Protected Area (Queensland's oil spill response jurisdiction). These two exercise were run as National Plan exercises and both included wildlife matters. The focus of this paper on these two exercises and not others that included wildlife special ideas is because of the role of the author as the wildlife exercise planner, wildlife exercise controller and evaluator for Exercise Northerly and Torres.

The overall aim of these two national exercises was to implement and review the effectiveness of a combined Commonwealth (Federal), State or Territory and industry marine pollution response to a Level 3 pollution incident.

Exercise Northerly was a functional exercise, though the wildlife component was run principally as a desktop type activity, in Darwin on 4-5 June 2014.

For Exercise Northerly the specific objectives for the exercise included:

1. Establish and maintain an Incident Management Team (IMT) that functions effectively
2. Develop an effective Incident Action Plan (IAP) in response to the situation
3. Establish effective incident communication
4. Develop and implement an effective public communication and media strategy
5. Develop and notionally implement an effective Wildlife Incident Action Plan.

The wildlife targeted in Exercise Northerly included whales, dolphins, dugong, sea turtles, sea snakes, crocodiles and seabirds. The key wildlife output from Northerly was to establish and maintain a wildlife Incident Management Team under the broader Incident Command structure and develop wildlife incident action plans for hazing wildlife and responding to oil impacted wildlife.

For Exercise Torres this was run over two phases. Phase one was a two-day strategic discussion exercise held in Cairns 1-2 August, 2018. Phase two was a two-day operational (field) exercise run in Cairns, the Torres Strait and Kaiwalagal Region during the week 17–21 September 2018.

Phase two of Exercise Torres is principally being addressed by this paper given its wildlife focus but it must be noted that Phase one was imperative in the lead up to the effective outcomes of Phase two.

The Exercise Torres Phase two objectives included:

1. Exercise the safe operational management of a Level 3 incident involving a multi-agency, multijurisdictional and cross sector Incident Control Centre (ICC)
 - 1) Practice the management of an ICC in Cairns
 - 2) Practice the establishment of an IMT using the Australasian Inter-Service Incident Management System (AIIMS-4)

- 3) Practice the establishment of a Forward Operating Base (FOB) on Waiben Island
 - 4) Establish control of the tactical response through the ICC and FOB – Maintain situational awareness of the incident response between the ICC, FOB and field teams
 - 5) Develop operable multi-directional communication and coordination arrangements between the ICC, Marine Pollution Controller, and Local and District Disaster Management Groups.
2. Exercise the safe tactical deployment of resources and response personnel to conduct shoreline protection and clean-up operations in geographically remote and dispersed locations:
 - 1) Coordinate the logistical support of tactical operations, including communication
 - 2) Demonstrate the ability to implement, manage and coordinate field response operations
 - 3) Practice the safe deployment and use of spill response equipment, technology and oiled wildlife response equipment
 3. Establish and maintain effective community liaison, engagement and inclusion with community members:
 - 1) Integrate trained community members into response operations
 - 2) Practice public engagement and coordinated communication and messaging

Exercise Torres for wildlife incorporated both planning in the ICC and field based operational activities through the FOB and included the wildlife dugong, dolphins, whales, marine turtles and seabirds both threatened and impacted by oil pollution.

To support the evaluation of the wildlife aspects of the exercise a specialised set of wildlife objectives were also applied as assessment tools and these included:

1. Establish & deliver wildlife functions within the ICC
2. Manage field risks
3. Manage, in real time, dangerous wildlife situations during field activities for all responders and exercise personnel
4. Establish a remote site wildlife rehabilitation facility
5. Apply best available oiled wildlife response practices
6. Monitor financial expenses

The focus of this paper is to demonstrate a model showing how wildlife can be effectively incorporated into oil spill exercises using Exercise Northerly and Exercise Torres as Australian examples.

DISCUSSION

Exercise Northerly Scenario

On Wednesday 4 June 2014, MV *Beagle Trader*, carrying cargo was transiting west from the Torres Straight towards Port Darwin.

At around 1000, the *Beagle Trader* was involved in a collision at latitude 12° 07' S, longitude 130°49' E, some 15 nautical miles north of Port Darwin. The Master reported the collision to the AMSA Joint Rescue Coordination Centre (JRCC) advising that there were no casualties on board but that her vessel appeared to have been holed and fuel oil was escaping. Subsequently the Master turned towards Port Darwin seeking a place of refuge. She estimated that some 400tonne of Intermediate Fuel Oil (IFO180) may have been lost.

Exercise Northerly Wildlife Injects

The Exercise Northerly planning and writing committee included a subject matter expert for wildlife (Michael Short) who developed the wildlife special ideas and injects and then provided support as a part of exercise control during the running of the exercise.

During the exercise the special ideas and injects were provided directly to the IMT and then managed or actioned by the appropriate functional area. The injects (Table 1) included specific times for when they were added to the exercise, where the information was sourced and then the anticipated actions that should be expected from the IMT that could be used for the exercise evaluation process.

Table 1 Wildlife specific injects and anticipated actions associated with Exercise Northerly

<i>Input (Wildlife)</i>	<i>Anticipated actions specific to Wildlife</i>
Inject 1 – General oil spill scenario idea	Activate the Northern Territories “Wildlife Response Plan for Marine Pollution Emergencies”
Inject 2 – 0800 Weather forecast	<p>Notify oiled wildlife response personnel/experts in the Northern Territory and nationally</p> <p>Begin the activation processes for mobilising oiled wildlife response equipment resources locally and nationally</p> <p>Develop Incident Action Plans (IAP) to mobilise wildlife assessment teams to identify wildlife at risk and wildlife directly impacted</p> <p>Activate the wildlife assessment IAP</p>
Request from Department of the Chief Minister, Northern Territory, for a full briefing at 1500 and media conference at 1630	<p>Develop wildlife briefing notes</p> <p>Develop wildlife media talking points</p>

<p>Indo-Pacific Humpback Dolphins seen swimming through the oil slick near the vessel collision point</p>	<p>Develop briefing notes</p> <p>Develop media talking points</p> <p>Direct wildlife assessment teams to investigate, report and to identify any wildlife impacts</p> <p>Begin developing the oiled wildlife response safety plans</p> <p>Develop IAP to support wildlife responses to stranded dolphins</p> <p>Activate the wildlife response for dolphins based on the wildlife assessment team reports</p> <p>Develop plans/guidelines to mitigate impacts from response activities generally (principally vessel operations and vessel strike risks) on wildlife (e.g. marine mammals, turtles etc.)</p>
<p>Reports of Brown Booby's and Crested Terns feeding in the waters where there is oil on the water near the primary point of the vessel collision</p>	<p>Develop briefing notes</p> <p>Develop media talking points</p> <p>Assess threats and direct impacts to wildlife using wildlife assessment teams</p> <p>Produce IAP to support Hazing practices (on water) for seabirds</p> <p>Activate Hazing IAP for seabirds for the marine (on water) environment</p> <p>Develop IAP to support the wildlife response for potentially impacted (oiled) seabirds</p> <p>Activate seabird wildlife response IAP based on assessment team reports</p>

<p>White Bellied Sea Eagle seen flying over beaches with what appears to be oil contamination on the underside of the animal near Casuarina beach, Darwin</p>	<p>Develop briefing notes</p> <p>Develop media talking points</p> <p>Confirm wildlife impacted using wildlife assessment teams</p> <p>Develop IAP to support wildlife response actions for impacted (oiled) raptors</p> <p>Activate wildlife response to the confirmed oil impacted Sea Eagle</p> <p>Based on confirmation of this information and other threatened wildlife reported earlier develop IAP for establishing a wildlife rehabilitation facilities and activate the IAP in a timely manner</p> <p>Develop waste management plans specific to wildlife considering contaminated biohazards</p>
<p>Adult Green turtles (2) covered in oil strand on local beaches – namely Mindil and Casuarina Beaches, Darwin</p>	<p>Develop briefing notes</p> <p>Develop media talking points</p> <p>Develop IAP to support wildlife response specific to oiled turtles</p> <p>Activate oiled turtle IAP</p>
<p>Report of a dead whale floating and drifting near the oil slick at the vessel collision site</p>	<p>Develop briefing notes</p> <p>Develop media talking points</p> <p>Gather situational awareness information using established wildlife assessment teams</p> <p>Develop IAP to investigate dead whale and to undertake necropsy to identify cause of death and any association with oil spill</p> <p>Make decision on whether to activate IAP response (fully or partially) to dead whale</p>
<p>Inject from Parks advising of turtle hatchings expected on Casuarina beach today and tomorrow and seeking advice</p>	<p>Develop media talking points for response actions to the turtle hatchlings at risk</p> <p>Develop IAP for response to the turtle hatchlings</p> <p>Activate turtle hatchling IAP</p>
<p>Oiled Silver Gulls (10) and Lesser Crested Terns (25) reported on oiled Darwin beaches</p>	<p>Develop briefing notes</p> <p>Develop media talking points</p> <p>Develop IAPs to support wildlife response specific to oiled seabirds (if not undertaken earlier)</p> <p>Activate seabird response IAP</p>

<p>Associated with the oiled Silver Gulls and the Crested Terns are non-oiled Lesser Crested Terns (50) and Crested Terns (15)</p>	<p>Develop briefing notes</p> <p>Develop media talking points</p> <p>Produce IAP to support the activation of land based Hazing practices for seabirds</p> <p>Activate the seabird land based Hazing IAP</p> <p>Failing Hazing effectiveness develop IAP for Pre-emptive Capture for seabirds</p> <p>Activate pre-emptive capture seabird IAP</p> <p>Where wildlife impacted (oiled) activate the seabird response IAP</p>
<p>Reports of dugong carcasses at Casuarina Beach received</p>	<p>Develop briefing notes</p> <p>Develop media talking points</p> <p>Activate stranding and necropsy response IAP (developed earlier for whale inject) to determine cause of death and any association with the oil spill</p>
<p>Sea snakes (3) oiled strand on Casuarina Beach</p>	<p>Develop briefing notes</p> <p>Develop media talking points</p> <p>Develop IAPs to support wildlife response specific to oiled sea snakes</p> <p>Activate sea snake IAP</p>
<p>Oiled Kingfisher (1), Eastern Reef Egrets (5) reported at mangrove edges near East Point, Darwin</p>	<p>Develop briefing notes</p> <p>Develop media talking points</p> <p>Activate seabird response IAP</p>
<p>Woolly sea hares with what appears to be oil on them are reported as stranded on Casuarina Beach</p>	<p>Develop briefing notes</p> <p>Develop media talking points</p> <p>Assess threats and direct impacts to sea hares using wildlife assessment teams</p> <p>Develop IAP to remove stranded woolly sea hares and dispose of appropriately (noting they are likely to be a contaminated biohazard)</p> <p>Activate sea hare IAP</p>

Crocodile sighting – animal swimming in the vicinity of the oil slick near vessel collision site	<p>Develop briefing notes</p> <p>Develop media talking points</p> <p>Assess threats and direct impacts to crocodile using wildlife assessment teams</p> <p>Produce IAP to support the activation of hazing practices for crocodile at risk</p> <p>Activate hazing IAP for crocodile</p> <p>Failing effectiveness of hazing develop IAP to support pre-emptive capture of the crocodile</p> <p>Activate pre-emptive capture hazing IAP</p> <p>If crocodile impacted (oiled) develop IAP to support oiled crocodile response</p> <p>Activate oiled crocodile response IAP</p>
Northern Territory Work Safe Inspector arrives to be briefed by Safety Officer	<p>Safety Officer provides briefing with input from Wildlife Operations Officer</p> <p>Noting that wildlife aspects are a key feature for Safety Officer actions during the response/exercise activity</p>
Volunteer wildlife group establishes Facebook page to ‘take action where government doesn’t’	<p>Develop volunteer management and public information including a program addressing community concerns</p>

To support the creation of a simulated environment for Exercise Northerly a number of photos of wildlife at risk and impacted were provided to the Intelligence Function of the IMT as a part of their situational awareness role.

Exercise Torres (Phase two) Scenario

On Monday 17th September 2018, the bulk carrier, MV Noble Tasman, was transiting through the Torres Strait on a voyage to Singapore. At approximately 1100hrs, whilst undertaking an internal transfer, the MV Noble Tasman discharged a quantity of intermediate fuel oil into the sea north of Poruma (Coconut) Island. The vessel immediately contacted the Reef Vessel Traffic Service (VTS) and AMSA JRCC. Following notifications and inspection of the vessel, the Master continued on the planned voyage.

On the morning of Tuesday 18th September 2018, a second discharge occurred near the entrance to East Strait. The master reported the second discharge to Reef VTS and AMSA JRCC. AMSA subsequently detained the vessel and directed it to Darwin. Over the ensuing days shoreline impacts were reported on Poruma (Coconut), Warraber (Sue), Keriri (Hammond), Ngurupai (Horn), Waiben and Muralug (Prince of Wales) Islands.

The field exercise was conducted on the 19th and 20th of September with an ICC established in Cairns coordinating a simulated field response on Waiben, Warraber and Poruma Islands. The exercise notionally started on day three of the incident with the IMT receiving a handover from the outgoing team at the commencement of the exercise. This allowed the IMT and field teams to have an accelerated start to the response by inheriting an initial IAP and field orders. This also allowed the IMT to plan a response based on modelled impacts including prepositioned equipment and personnel. Attendance at Phase two exceeded two hundred personnel each day including exercise participants, observers and exercise control staff.

Exercise Torres Wildlife Injects

The exercise planning and writing committee for Torres included a subject matter expert for wildlife (Michael Short) who developed the special ideas and injects and supported the exercise evaluation team during the running of the Phase two exercise.

The special ideas and injects (Table 2) were provided directly to the IMT and then managed or actioned by the appropriate functional area.

Table 2 Wildlife specific injects and anticipated actions associated with Exercise Torres

<i>Input (Wildlife)</i>	<i>Anticipated actions specific to Wildlife</i>
Australian snubfin dolphins (2) have been seen swimming through the oil slick near the point of oil release	Develop briefing notes Develop media talking notes

	Develop IAP to support wildlife response for stranded dolphins
Turtles, Dugong and Pilot Whales have been observed near on water operations associated with the Marine Unit supporting the response	Develop briefing notes Develop media talking notes Develop plans and guidelines to mitigate the impacts from response activities (principally vessel operations and vessel strike risks) on wildlife (e.g. marine mammals and turtles)
Reports of a large dead whale floating and drifting in and near the oil slick have been received from the local island community	Develop briefing notes Develop media talking notes Develop IAP to investigate the dead whale and to undertake necropsy to determine cause of death and any association with the spill incident
Turtles have been reported swimming adjacent to the oil slick	Develop briefing notes Develop media talking notes Develop IAP specific to the pre-emptive capture of marine turtles at risk of contamination
Lesser crested terns (2), Reef Egrets (10), Silver Gulls (25), Cormorants (species unknown) (5), Pelicans (2) and Osprey (1) have been seen by local community members frequenting the beaches contaminated with oil at Waiben Island	Develop briefing notes Develop media talking notes Develop IAPs specific to hazing seabirds at risk of contamination
Activate wildlife rehabilitation facility (MSQ Hastings Street, Waiben Island)	Develop a risk assessment for establishing and operating a wildlife rehabilitation facility Establish the rehabilitation facility including the AMSA wash container for receiving and managing oiled wildlife
Oiled Pelican (1), Silver Gulls (3) and Reef Egrets (4) have been reported by Shoreline Clean-up and Assessment Teams (SCAT) at Waiben Island	Develop briefing notes Develop media talking notes Develop IAPs specific to collecting and rehabilitating oiled birds
Collect SCAT reported oiled birds from Waiben Island, stabilise wildlife and transport to the wildlife rehabilitation centre	Activate wildlife collection teams Wildlife collection team to develop risk assessment prior to mobilisation

	<p>Communicate with SCAT teams for actual location of oiled wildlife</p> <p>Mobilise wildlife collection team</p> <p>Apply stabilisation processes to wildlife prior to transport</p> <p>Transport wildlife to established wildlife rehabilitation facility (Maritime Safety Queensland (MSQ) Hastings Street, Waiben Island)</p>
Oiled birds received at wildlife rehabilitation facility (MSQ Hastings Street, Waiben Island)	<p>Assess & Triage oiled birds received</p> <p>Stabilise birds</p> <p>Decontaminate oiled birds including drying activities</p> <p>Continue stabilisation processes</p>

For Exercise Torres wildlife intelligence, wildlife planning and high level wildlife management were undertaken in Cairns at the established ICC where IAPs were developed to haze oil threatened wildlife, collect oiled impacted wildlife and then rehabilitate wildlife considering the strict quarantine restrictions imposed on wildlife movements through and out of the Torres Strait Protection Zone.

The field deployment activities for Exercise Torres were then locally managed and undertaken through a FOB established on Waiben Island, some 800 kilometres or 500 miles north of Cairns that borders Papua New Guinea. The wildlife field teams were required to establish an oiled wildlife rehabilitation centre making it fully operational with pre-deployed equipment, manage responder safety for actual dangerous wildlife in the area (e.g. crocodiles), respond to reports of impacted wildlife (plush toys contaminated with a mix of coconut oil and food colouring), transport impacted mock wildlife through the different contaminant hazard zones (i.e. hot, warm and cold response zones) and then to the wildlife rehabilitation centre, undertake wildlife assessment using narrative techniques to describe their actions, triage wildlife based on provided wildlife assessment data, decontaminate mock

wildlife using the AMSA wash container and then provide basic wildlife care practices using narrative to describe the applied and proposed actions.

CONCLUSION

From the two exercises the evaluations showed that there were learnings and improvements to be made to the IMT supporting the wildlife function and that for the field activities (associated with Exercise Torres) the deliverables met the evaluator's expectations.

In summary the learnings associated with the wildlife IMT activities identified the need to review and update the contingency plans for oiled wildlife response and to provide more training specifically for wildlife IMT staff to better prepare their capacity to support oiled wildlife responses at this level.

Wildlife is an integral part of oil spill responses. Exercises are an essential contingency planning tool to strengthen response capacity. Like all oil spill response functions wildlife needs to be formally integrated into exercise opportunities. The involvement of wildlife into exercises in creating a simulated environment does have complications. The Australian national exercises Northerly and Torres demonstrated effective tools to practice and test the skills necessary to support oiled wildlife response actions and to identify key learnings when responding to oiled wildlife threatened and impacted in remote areas.