Full Paper

A Downunder Approach to Oiled Wildlife Preparedness

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Abstract: The New Zealand Wildlife Health Centre (NZWHC), Massey University, has a contractual agreement with Maritime New Zealand for oiled wildlife preparedness and response in the event of a marine oil spill affecting wildlife. Development and maintenance of the National (Tier 3) Oiled Wildlife Response Plan has been refined over the past ten years. More recently, changes to this agreement have seen an extension of capability provided by the NZWHC to include oiled wildlife response preparedness at a regional (Tier 2) level. The most significant change to the previous system has involved the formation of a National Oiled Wildlife Response Team (NOWRT). This team will be mobilised in response to spills at risk of or affecting wildlife at both a regional and national level. NZWHC staff and several external technical advisors form core members of this team, in addition to two responders from each of the designated regions within New Zealand. This paper will outline New Zealand's Oiled Wildlife Contingency Plan, including personnel training, equipment repositories and rehabilitation facilities available.

Introduction

The NZWHC is situated within the Institute of Veterinary, Animal and Biomedical Sciences at Massey University, New Zealand's only veterinary school. Oiled Wildlife Response (OWR) sits well with the NZWHC's wider mission to "promote and implement collaborative investigation and management of wildlife in support of the welfare and conservation of New Zealand native fauna". In addition to OWR, core functions of the NZWHC include the provision of a wildlife clinical service and a wildlife diagnostic service, post-graduate and under-graduate teaching, and the advancement of knowledge of wildlife disease through collaborative research.

The relationship between the NZWHC and Maritime New Zealand (MNZ) has spanned more than a decade, providing OWR preparedness and response at a Tier 3 level. Prior to 2008, the NZWHC did not have a contractual responsibility to provide assistance for oiled wildlife preparedness and response for Tier 2 category spills. In the New Zealand system, regional councils (and those unitary authorities acting as regional councils) make up the Tier 2 capability, with resources and training provided by MNZ. These agencies are required to maintain a regional marine oil spill contingency plan for their region, including an oiled wildlife response plan. Recent changes to the arrangement between the NZWHC and MNZ have now seen an extension of the capability provided by the NZWHC to include oiled wildlife preparedness and response at a regional (Tier 2) level. There is a continued regional involvement in this response planning. However,

there is now a greater emphasis on a smaller but more highly trained regional oiled wildlife response, with a guiding and supervising stance being adopted by the NZWHC.

Personnel

Development of a National Oiled Wildlife Response Team (NOWRT) was initiated in 2008. This is modelled on MNZ's oil spill National Response Team (NRT) (Lilley et al 2009), and replaced the previous system whereby a large number of regional responders were trained every 4-6 years with a broad focus on OWR. In this previous system, responder attrition had a significant impact on the oiled wildlife preparedness (Norman, unpublished). Responder interest and enthusiasm was difficult to maintain due to a combination of large time lapses between training courses, lack of their skill recognition by regional councils, and infrequent response scenarios in New Zealand - there have been no spill events in New Zealand with large numbers of oiled wildlife since the initiation of the service contract between MNZ and the NZWHC in 1998 (Norman, unpublished). Indeed, New Zealand's oil spill response capability has been based on risk assessment undertaken by MNZ (in 2004 by URS Limited), which predicts a spill of significicant magnitude (>3,500 tonnes of oil) every 100 years (MNZ 2009).

Success of the NOWRT relies on a very strong central core of oiled wildlife responders available to provide planning, supervision and training during a spill event. The NOWRT is structured around a nucleus of NZWHC staff and subcontracted technical advisors (see Table 1). In addition, there are two 'hand-picked' personnel from each of the 16 regions within New Zealand, including a Regional Council representative and a Regional Wildlife Advisor. The broad intent of this structure is to provide each region with two highly trained responders for immediate response supported by the core NOWRT within a very short timeframe. In addition, Regional Council representatives and Regional Wildlife Advisors would assist in spill responses in other regions, widening the footprint of available and trained responders for the whole of New Zealand.

NZWHC staff are constantly involved in Tier 2 and Tier 3 marine oil spill training and in the event of a spill, most staff would be available to attend, leaving a skeleton staff to run the wildlife clinic.

Subcontracted technical advisors are involved in various aspects of wildlife response planning, training and implementation, depending upon their specialist skills. For example, field assessment technique training, planning advice and response execution are led by one or both of our ecology/ornithology technical advisors. Facility and equipment advice, training, and set-up and management during a spill is undertaken by our facilities technical advisor.

In a Tier 2 event involving or potentially involving wildlife, the Regional Council Representative is the first point of contact for the Regional On-Scene Commander. This person acts as initial liaison between the regional council, who is responsible for dealing with a spill at this level, and the NZWHC, local wildlife advisor and regional responders. In addition, the 'peacetime' role of the Regional Council Representative is to maintain a list of regional responders, and to assist in response planning and exercising for their region.

The primary role of the Regional Wildlife Advisor is to provide advice to the regional council and/or the NZWHC regarding local wildlife populations that may be at risk of

contamination or affected by oil pollution. This advice is will be utilised during contingency planning, exercising, or during an actual oil spill event. This role may also extend to facilitation of a field assessment with search and capture of oiled wildlife. This position requires an excellent knowledge of local wildlife populations, including species present, seasonal distribution and life history information. For this reason, many of the Regional Wildlife Advisors are from organisations such as the Ornithological Society of New Zealand. Alternatively, many are independent ecological contractors.

Both regional members of the NOWRT are required to attend biennial training at Massey University and to participate in annual regional oil spill exercises. As a member of the NOWRT, they are also required to be able to assist in national (Tier 3) oil spills if necessary.

Of course, the NOWRT cannot mount an oiled wildlife response in isolation. Regionally-based teams are vital to this system, and a list of up to 20 regional responders from each region is maintained by the Regional Council Representative, and is included within the appropriate region's Tier 2 plan. Some of these personnel may or may not have been trained through the previous system. In addition, recruitment and in-spill training of responders are fundamental to increasing capacity during a response.

The importance of local knowledge cannot be underestimated, both at a Tier 2 and Tier 3 level. The inclusion of local responders during planning and response, in particular the Regional Wildlife Advisor, is key to providing seasonal information regarding wildlife presence, movement and activity. Local knowledge also facilitates logistical requirements of an on-scene response.

Further back-up for a large scale response may require international assistance from overseas oiled wildlife response groups.

Training

Training of regional NOWRT members consists of a two-day training course which responders must attend every two years. The training courses have been refocused to concentrate on management aspects of OWR. Each course includes a shortened basic course updating responders on current techniques in field survey and capture; triage and stabilisation; washing; rehabilitation and husbandry; release and monitoring. Each course also includes an advanced workshop using guest speakers, including international lecturers, to increase national expertise. Topics to be progressively covered include: facility and site evaluation; survey and capture techniques for shore birds and waterfowl; marine mammal oiled wildlife response; communications; health and safety; ecological impacts; media liaison; and training volunteers. Desktop scenarios are incorporated into training in order to consolidate learning. This enables an increase in depth of training and knowledge of response personnel.

All costs of training of response personnel, as well as exercising and response costs, are covered by MNZ through the Oil pollution Levy gathered from vessels carrying persistent oil around the New Zealand coast. As an aside, this levy will very soon be based on a risk based methodology; the first of its kind in the OPRC 90 world. Costs include responder's professional time at commercial rates. Additionally, personnel recruited at the time of the response become employees of MNZ and are paid accordingly. This is necessary to enable workplace Accident Compensation Corporation

(ACC) cover, New Zealand's personal injury cover system. Volunteers are not covered by ACC.

Planning

Key to oil spill response in New Zealand are the 16 regional councils who make up the Tier 2 capability. These agencies are required to maintain a regional marine oil spill contingency plan specific for their region, including an oiled wildlife response plan. Since 2008, the NZWHC has been providing support and assistance to the regional councils, and in conjunction with the Regional Council Representative of the NOWRT, has been updating the Tier 2 regional oiled wildlife response plans. These revisions have included site visits by NZWHC staff to the majority of the regions (with the sole exception of the Chatham Islands to date) to evaluate potential pre-existing facilities which may be appropriate for use as either a temporary holding centre or a primary care facility for oiled wildlife. During these visits it has become apparent that, in the New Zealand setting, those facilities which are likely to be most useful are those under direct control by the regional councils. For example, various parks and recreational facilities which are council owned. Alternative sites with the ability to upscale significiantly include race tracks which are only utilised 2-3 times per year in rural areas, Agricultural and Pastoral showgrounds with similar low usage, and sports grounds with adjacent clubrooms. Each potential site is evaluated (Table 2), and appropriate sites are then listed within the regional Tier 2 plans. Information about the site is included in the plan, such as water supply and hardness, electricity, hard standing areas, pre-existing facilities including kitchen and bathroom amenities, truck access, car parking, etc . Where available, facility site plans have been included. Each regional OWR plan also includes regional specific information, including suppliers of equipment and logistics (e.g. hire centres, veterinary suppliers etc), and personnel who have been pre-identified as potential responders in the event of a spill. These include personnel from local organisations such as the Ornithological Society of NZ, Forest and Bird, and the SPCA, local veterinarians and Department of Conservation staff. In consultation with the Regional Wildlife Advisor, species lists have been drawn up for each region, and have been categorised into prioritisation for treatment (McConnell et al 2009).

These regionally specific plans are supported by two additional documents: the national oiled wildlife response plan (Tier 3) and the newly completed Oiled Bird Response Standard Operating Procedure (SOP). The national oiled wildlife response plan has been recently revised with an operational focus in mind. This document forms part of the National Oil Spill Response Contingency Plan as produced by Maritime New Zealand. The avian SOP is a living document, encompassing all phases of an oil spill response, and is available to all members of the NOWRT in an electronic format. Preliminary planning for a similar marine mammal SOP is currently underway.

For both Tier 2 and 3 responses, a pre-existing arrangement with the New Zealand King Salmon Company ensures the supply of one tonne of fresh salmon smoults within a two day timeframe, with the capacity for an on-going supply during a spill. This initial supply of fish is adequate to feed 500 oiled wildlife equivalents (one oiled wildlife equivalent is equivalent to one little blue penguin, Eudyptes minor) for approximately ten days.

Equipment

New Zealand has a large coastline of around 15,000km (MAF 2009), with each of the 16 regions having a major area of coastline of variable length and accessibility. For this reason, oil spill response equipment is stored in each of the regions with the capability to deal with minor spills and to mount a credible first response to more significant incidents. Equipment stores are dependent upon the anticipated risk and size of a spill. In keeping with this format, oiled wildlife response equipment is also stored in each of the 16 regions alongside the spill response equipment. Termed the "blue box", this oiled wildlife response equipment is geared to deal with the initial 24-48 hours of a response, being adequate to support 20 field staff to capture and provide initial stabilisation of up to 50 oiled birds. This equipment is under direct control of the regional council, although the contents are audited annually by MNZ staff. Due to the infrequent nature of usage of this equipment, there are no perishable items within the blue box. Instead, there is an associated 'shopping-list' of required items which can be readily purchased at short notice, e.g. electrolytes.

Supporting the blue box, the second wave of oiled wildlife response equipment is repositered at strategic locations within New Zealand's two main islands. Oiled wildlife response trailers are located at Invercargill, Christchurch (South Island), Palmerston North and Auckland (North Island). There is a trailer positioned no more than 8 hours drive from the any coastline in New Zealand, giving a back-up of equipment within a day's drive of a spill anywhere on mainland New Zealand and Stewart Island. These trailers are equipped to deal with an additional 50 oiled birds, and contain additional capture equipment and personal protection equipment for responders, further stabilisation equipment, veterinary supplies (including basic diagnostic equipment), and wash equipment for very small numbers of oiled individuals. Mobilisation procedures for the trailers mimic that of the MNZ oil spill response equipment located at the same site.

If required, further equipment assistance is provided through mobilisation of the national stockpile of OWR equipment stored at the NZWHC in Palmerston North. Additional equipment is transported in the form of two 20 foot ISO shipping containers, one of which is fitted out as a complete bird wash room (Dwyer et al 2009). This unit will be utilised in conjunction with existing facilities pre-identified within the affected regional council's Tier 2 wildlife plan. Alternatively, additional space may be added in the form of marquees (Dwyer et al 2009). The second container acts as a storage and transportation unit for pelletised equipment, with an additional water heating capability in the form of four gas califonts. Situated in the lower North Island, transportation times from Palmerston North to Bluff (the furtherest away point within mainland New Zealand) may be up to 16 hours by road. This includes a three hour interisland ferry crossing. This national OWR equipment stockpile includes safety gear, surveillance kits, capture equipment, bird transport boxes, and cleaning and husbandry equipment. There are also ten 5-metre diameter KD pools supplied by Zodiac Australia through their Coast Care programme.

Facilities

In addition to the mobile facilities, the NZWHC has the capability to provide for the care of oiled birds within existing facilities.

Operated by the NZWHC, the Wildlife Ward exists within the Veterinary Teaching Hospital at Massey University. This is a fully operational wildlife hospital catering for

debilitated native wildlife, in particular threatened and endangered species. Because New Zealand's only mammals include two species of bats and various marine mammal species, the wildlife hospital provides care for primarily avian species and small numbers of reptiles. This hospital is operational 365 days a year, seeing 300-400 wild avian patients annually. It is equipped to deal with small numbers of oiled birds at very short notice, with existing and functional water heating and softening systems.

In addition to the Wildlife Ward, the NZWHC Annexe is situated within the Massey University campus. The purpose of this facility is to enable a scaleable OWR for up to 500 oiled wildlife equivalents, with the intention to provide a response capability for local spills within the lower North Island. It is also utilised for training purposes. The facility includes a permanent building, a large gravelled hard standing area, and is the storage area for the national stockpile of OWR equipment. The permanent building consists of a Skyline™ garage, with a concrete floor and an inbuilt floor drain system that runs to a large oil interceptor trap installed below ground level. This area is intended to be utilised as a wash and rinse area. A separate kitchen area provides for animal food preparation. Provisions for pools have been pre-established, including an 80mm waterline feeding the designated pool area with a series of drains and waterlines already laid to service assembled pools in pre-determined configuration.

Plans and funding applications are currently underway for construction of permanent aviaries on this site, including provisions to house aquatic birds. These aviaires would be utilised year-round for the purpose of rehabilitation of patients seen through the Wildlife Ward, but would also provide the capacity to be utilised in an oil spill response.

Conclusion

Oiled wildlife preparedness and response in New Zealand is well integrated into the both the regional and national oil spill response strategies. Although small, and with a historical background of few spills impacting wildlife, New Zealand, through the arrangement between Maritime NZ and the NZ Wildlife Health Centre, has a sound and continually improving capacity to respond to an oil spill involving wildlife.

References

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Table 1: The structure of the National Oiled Wildlife Response Team

Role		Pax:
Programme administrator (NZWHC staff)	Core NOWRT	1
Avian and wildlife permanent veterinarian (NZWHC staff)	Core NOWRT	2
Avian and wildlife resident veterinarian (NZWHC staff)	Core NOWRT	4
Wildlife technician (NZWHC staff)	Core NOWRT	2
Wildlife pathologist (NZWHC staff)	Core NOWRT	1
Technical advisor: Facilities	Core NOWRT	1
Technical advisor: Ecologist/ornithologist	Core NOWRT	2
Technical advisor: Operations	Core NOWRT	2
Regional Council Representative	Wider NOWRT	16
Regional Wildlife Advisor	Wider NOWRT	16
	TOTAL NOWRT	47

Table 2: Oiled Wildlife Recovery Course Site Survey (DWYERTech Services)

Oiled Wildlife Recovery Course Site Survey	
Date:	
Site Address:	
Sewer connection:	
Water main size:	
Power supply:	
Water flow:	
Hot water system: Water hardness:	
Amenities:	
Who owns the site:	
Who controls the site:	

Parking:	
Truck access:	
Security:	
Difficulties:	
Comments:	