Area Operational Plan for Marine Mammal Incidents

Guidelines

Contents

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I. Purpose

The purpose of these Operational Procedures is to provide consistent and high quality response both on and off site to marine mammal incidents.

These procedures are to be used by all Department of Conservation staff that may be involved in responding to a marine mammal incident. This is to be used as a field guide and tools to step through the response of a range of incident types. All Conservation services and partnerships staff are required to be familiar with these procedures.

This document provides the template for key contacts and equipment lists, as well as initial response, response and wrap-up for all marine mammal incidents from dead/beachcast animals, to live animals in distress.

The objective of this document is to provide staff with all the tools needed to respond to an incident when in the field. This template document should be updated with local contacts and procedures (eg, iwi and media protocols as mentioned in the Marine Mammal Incident Readiness and Response SOP docdm-1171061), copies printed off, and kept in easily accessible places.

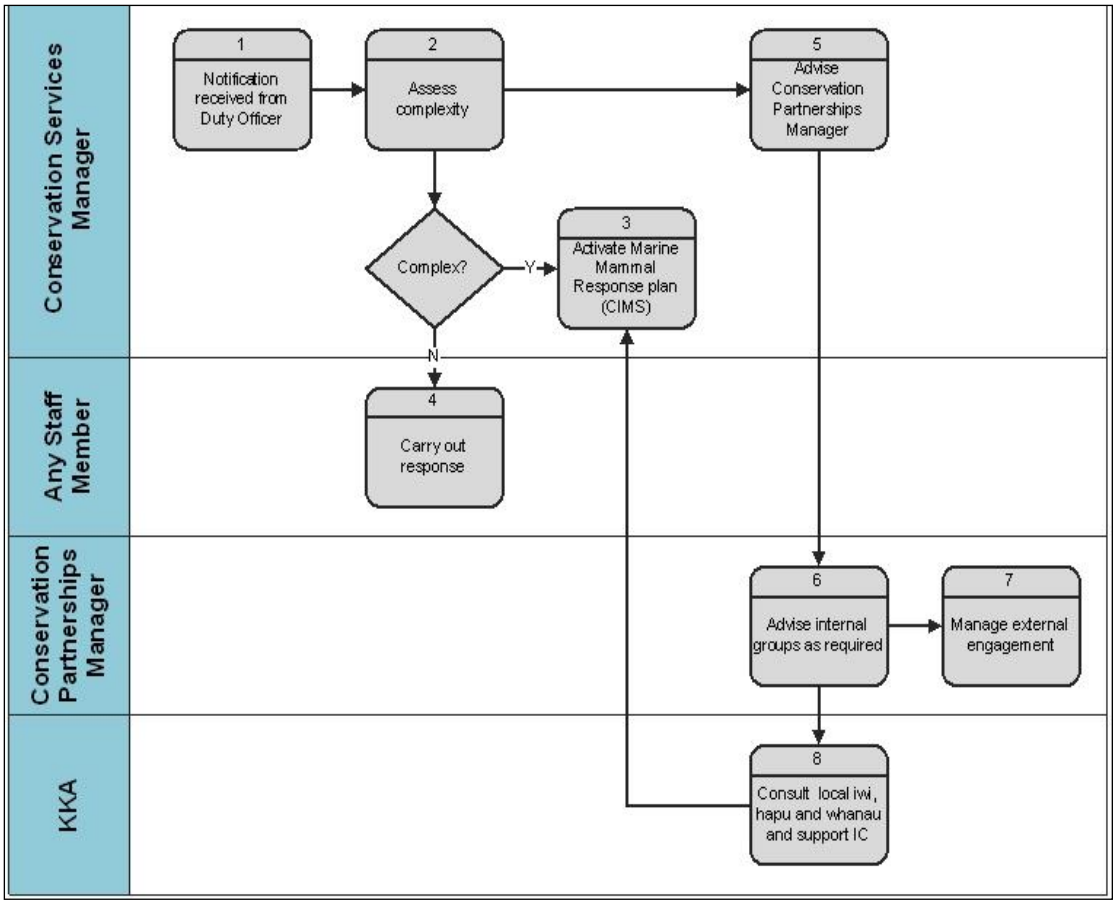
This SOP contains information on the following:

Guidelines for Attending Marine Mammal Strandings	Other Documents / links
Initial Response • Information gathering • Assess scene/safety • Assess animals	Initial Response Form docdm-870561
Notification • Notify mandatory contacts • Consult contacts needed to implement response	Staff training and capability register docdm-831790 DOC National Contacts docdm-997393 External Contacts for Stranding Protocols docdm-824399
Decision Making • Prepare and plan	Decision Making for Live incidents
Response • Develop a Coordinated Incident	CIMS forms: docdm-788833

Management Structure (CIMS) • Follow response according to incident type and decision	Whale/dolphin stranding response Large whales stranding response Orca stranding response Entangled whales and dolphins response Dead whale/dolphin response Live seal response Dead seal response Other Species [non-mammals] response
Data collection • Fill in appropriate form • Photos and measurements collected • Genetics sample collected • Any other samples needed (including marine mammal parts OR their parasites)	Whale and Dolphin Incident Form docdm-870555 Seal and Sea lion Form docdm-870560 Sighting Form docdm-870477 Mass stranding Measurements Form docdm-1007957 Sample and Permit Register 2011 docdm-855696 Instructions for genetics samples docdm-892499
Wrap-up • Euthanasia (if required) • Disposal or Freight of carcass • Clean-up • Submit forms • Debrief	Euthanasia Sample Consignment Form Use of machinery to move dead whales Instructions for submitting forms on DOCCM Example Debrief from a whale stranding in Golden Bay docdm-914291

II. Process

The diagram below describes how to respond to a marine mammal emergency. This document is to be used by all Department of Conservation staff who may be required to respond to stranded or distressed marine wildlife, other than during an oil spill.



The table below describes some of the new responsibilities and accountabilities for the roles involved in this process.

Role	Responsibilities	Accountabilities
Operations Manager	Assess complexity of response Direct staff member to carry out response, or Activate Marine Mammal Response plan Advise KKA & Marine Species Manager Manage external engagement	Ensure appropriate level of response and manage process to its completion. Ensure SOPs followed
Pou Tairangahau	Manage all engagement with whänau, hapü and local iwi. Provide advice in accordance with cultural and tikanga values in response to the plan e.g. what samples can be taken	
Marine Species Team	Provide advice during response	

III. About this document

Owner

DDG, Operations

Approved for use

DDG Operations

Signed

Date

Amendments

Amendment date	Amendment details	DOCDM version	Amended by

1. Initial Response

On the receipt of a report the local DOC office needs to manage a process to confirm the report. This will help to inform a decision on whether a response is needed, and if so to enable the response to be enacted efficiently. The initial contact should collect as much information as possible and fill in the INITIAL RESPONSE FORM. You may also wish to keep a "whale log", similar to a fire log, for these incidents.

Please note in addition to all the key items of information we require, it is very important to get an accurate estimate of length, as this will indicate what equipment and/or machinery will be required.

2. Response - Whales/Tohora and Dolphins/Aihe

2.1 Live incidents - decision making

In the event of a whale stranding, a decision on the most appropriate response must be made as soon as possible. The Department's maximum response target time is six hours. Every attempt should be made to attend, the exception being when it is so remote as to be unrealistic.

If the response decision is not to respond then this and the reasons why should be noted for file in the Initial Response Form. The person reporting the stranding should be fully informed as to what action will be taken as a result of their report.

Response Checklist

The basic response for any live stranding should follow a simple 6 step process.

1. **Scene/Safety** – what are sea and site conditions, is it safe to proceed?
2. **Animals –** Check animal species/size, number, and condition, begin stabilisation/first aid.
3. **Call –** make contact with all the appropriate people.
4. **Prepare and Plan –** Decide on response (see criteria for response below and decision table and matrix) and set up CIMS structure as appropriate. Note - CIMS may not be needed in all cases.

5. **Response –** Carry out response according to the appropriate sections of this plan. This will include Media and communications plan if needed.
6. **Data –** collect any data/samples required. Regardless of the chosen response, fully document the incident. Photograph the animal and collect measurements as per the Cetacean incident form, and photograph any unusual markings etc.
7. **Wrap-up –** clean up, disposal, paperwork, debrief. See the next section of the Operational Plan for detail on all of the elements of the Wrap-up.

Criteria for response

A number of factors should be considered when deciding on the appropriate response. It is important to note that they do not all carry the same weight in a decision. The two most important considerations are always:

- Human Safety, and
- Animal Welfare

The other factors include;

- Environmental Conditions
- Resources Available
- Site Access
- Iwi support
- Public Perception
- Estimated Cost (*if estimated cost likely to be large discuss this with Technical Advisor Marine Species in advance)
- Priority species (e.g. Bryde's, Hector's, Māui dolphins, etc.)

The possible options for response:

1. Monitor situation/ Palliative care
2. Rescue
3. Complex rescue – e.g. relocating to a different site
4. Euthanize

See Decision Table to assist in making this decision.

If the decision is to monitor the situation – do so until a further decision is made to rescue, euthanize, or the animal dies naturally. In the latter cases, proceed with the response as for a beachcast cetacean.

If the decision is to rescue follow more detailed instructions in the Rescue Response.

If the decision is to euthanize see detail in section Euthanasia, and then proceed as for a beachcast cetacean.

Animal assessment

A number of characteristics about whales and dolphins make them susceptible to injury or illness when they become stranded. These include body size, presence of a blubber layer, skin pigmentation and the absence of sweat glands. In the event of a stranding several factors may be life threatening even in the absence of any pre-existing pathological state that may have caused the animal(s) to strand. For more information on the physiological effects of strandings on cetaceans please see Geraci 2005**.**

To monitor animals and assess their suitability for rescue consider the following:

- Breathing rate history and trends
- Signs of respiratory compromise such as laboured breathing
- Changes in: heart rate, temperature, physical responses, jaw tone (slackening), and gum colour (pale colour)
- Injuries
- Blistering or sloughing of the skin
- Emaciation
- Dependent animals (socially dependant and **c**alves), solitary males, or aged animals

Important: If you are dealing with a solitary mother-calf pair, i.e. not at a mass stranding, dependent calves will not survive without their mother. If the cow is dead or has to be euthanised, the calf should also be euthanised if it is less than 50% of adult size. If the cow is not lactating, and the calf and companion animal are healthy then only the cow should be euthanised. In addition, solitary males or old animals may have health problems that contributed to their stranding and are not good candidates for refloating.

Baleen whales average 48% maximum length (range 41-56%) at weaning. To survive without its mother a juvenile baleen whale must have fully developed baleen.

Toothed Whales are harder to determine average length at weaning because in many species the calves remain with their mothers and suckle intermittently for several years. Generally toothed whale calves are dependent on their mothers for at least a year and the presence of a papillated tongue will confirm a calf's dependence. Consequently, juvenile toothed whales should be 50 -60% maximum length if they are to be refloated without an attendant adult.

General first aid, palliative care

- right all whales by digging a shallow trench parallel to the belly, and rolling the animal into it. Make sure the flippers are held flat against the body when rolling to prevent injury. Never lift or pull whales by their flippers, or dorsal fins.

- cover whale with wet sheets to prevent blistering (keep the blowhole and eyes clear of sheets, water and sand, but ensure the blowhole is kept moist);
- keep whale cool by maintaining a steady flow of water over the flukes and flippers;
- dig a shallow moat around the flippers and tail to help keep the whales cool (not too deep as this will make subsequent shifting of whales difficult).

Decision Table

Use this table to determine the possible actions taken depending on the condition of the animals, the site conditions, and the type of stranding.

Animal condition*	Site conditions	Stranding type	Possible Action:
Good	Conditions favourable and site suitable	Single animal or mass stranding	Release at site possible
		Large animal >6m	Assess the tides for possibility of natural floatation If natural floatation not possible consider euthanasia, palliative care or leave as is
	Conditions unfavourable	Single animal or mass stranding	Consider a delayed response or an alternative location If conditions do not improve consider euthanasia, palliative care or leave as is
		Large animal >6m	Consider a delayed response Assess the tides for possibility of natural floatation If natural floatation not possible consider euthanasia, palliative care or leave as is
	Site unsuitable	Single animal or mass stranding	Consider transporting animal to alternative site If transportation not possible consider euthanasia or palliative care
		Large animal >6m	Euthanasia, palliative care or leave as is
Poor	Any condition	All stranding types	Consider euthanasia, palliative care or leave as is

*Note: animals in poor condition include vagrant species and maternally or socially dependent animals

2.2 Preventing a mass stranding

Prevention is a far better option than dealing with beached animals. It is worth your effort to attempt anything that might avert a mass stranding. Suggestions include:

If a pod is observed milling about close to shore, stranding may be about to occur. Send an experienced observer to identify the whales (from the air if necessary). At the same time dispatch three officers by vehicle to the scene. They will need – wetsuits, surf boat, radios, binoculars, camera/video. You may additionally want some objects to strike underwater to generate noise, if needed above the noise of the boat.

If the whales are sperm whales, pilot whales or false killer whales every effort should be made to prevent them stranding. If sea conditions permit, line people up in the surf and make a noise by banging metal objects together or better still, by running power boats noisily between the whales and the shore and herding the animals back to sea. If a whale has already stranded, and it is obviously injured or ill, it should be euthanised immediately to prevent the rest of the pod stranding. If it is a pilot whale or false killer whale and not obviously ill or injured make two or three attempts to refloat it. If this fails and there is a risk of the rest of the pod stranding, it should be euthanised immediately. Once grounded a sperm whale has little chance of survival.

If possible, the first stranded animal should be euthanised to prevent the rest of the pod stranding, with the exception of sperm whales (which are too big to euthanise except with the purpose built Sperm whale euthanasia device SWED), pilot whales, false killer whales, orca or bottlenose dolphins (as these are species that are prone to strand by accident rather than through sickness and are capable of being refloated). Craig Bamber should be contacted immediately when sperm whales are noted milling around close to shore.

Animals can survive for many hours out of water with the proper care. However animals that are suffering from severe skin blistering may be candidates for irreversible organ damage. Individual animal assessments need to be made to determine whether the individual is a candidate for refloating. Therefore serious consideration should be given to the decision to refloat when you know animals have been out of the water for a sustained period of time.

2.3 Whale/dolphin stranding response

The key steps in the response of any whale or dolphin stranding are the same, however, for a mass stranding due to the number of animals, it becomes more complex, requiring more people to be mobilised. Therefore key steps may take place in a different order to ensure an adequate response arrives quickly.

The staff member that forms the initial point of contact notifies key staff and initiates a CIMS structure.

1. Designate an Incident Controller – refer to your OFFICE CONTACTS LIST. The Incident controller then notifies all others needed and takes responsibility for co-ordinating all subsequent operations. The Incident Controller also designates other CIMs roles to appropriate staff (see the CIMS section of the Response and Readiness SOP).
2. Initiate a reconnaissance or intelligence gathering team to assess site and resource needs. These officers shall:

- assess the situation and advise the Stranding Incident Controller
- evaluate the site for hazards; interview eye witnesses; determine number, size, species and condition of stranded animals.
- assess whether a rescue attempt should be instigated. See Decision Table and Matrix.

3. Managing Office begins a stranding log (see CIMS forms), and establishes communications with crews responding to the stranding and Region.
4. Managing office sends two officers with Initial Response Equipment to:

- secure the site and establish a Staging Area (onsite support base)
- if a rescue is to be attempted, a start should be made on stabilising and triaging animals and the response structure be implemented.
- if the stranded animals are larger than 6m a rescue operation or even euthanasia could be difficult. See Large Whales section and contact the Marine Species team to discuss response options.

5. Regional office may contact the Civil Aviation Authority and establish a restricted fly zone over the stranding site if necessary (See Response and Readiness SOP), Police, and regional or local authorities if needed.
6. Organise an aerial sweep of the adjacent coastline and offshore area to locate any other groups of whales should be conducted as soon as possible.
7. Managing Office assembles additional staff and sends them to the stranding site with any additional or extra equipment that may be required.
8. Managing Office organises remaining staff to prepare the following equipment and transport it to the stranding site:

- Food and basic kitchen equipment
- Extra drinking water and drink containers
- Dry bags
- First Aid kits
- High visibility vests
- Mini repeater
- Radio and mobile phone batteries and chargers
- Generator and lights
- Fuel for 4WD bikes, boats, fire pumps and generator

- Boats: inflatable or rigid pontoon boats
- Shelter from elements

9. If it is not possible to mount a rescue operation due to the location, sea conditions, type or condition of the animals all surviving whales may need to be euthanised. If this course of action is chosen ensure clear communication with the public as to why the decision is being taken. Ask for Police assistance to clear the beach of spectators for health and safety purposes.
10. If it is not possible to mount a rescue immediately due to time of day, tides etc. consider monitoring the situation and delaying the rescue.
11. A media response should be initiated as per your Office's Media Plan. If at all possible alert the Minister of Conservation. Strandings present a good opportunity for a statement from the Minister, especially if the stranding occurs close to their home town.

Rescue Response

STAGE ONE RESCUE: HOLDING

Aim: To prevent more animals dying, reduce stress and increase the animals' chances of survival once returned to the sea, by helping the whales to regain equilibrium.

Method:

- Cover the whales with wet sheets and begin bucketing water onto them. Concentrate on the flipper and fluke area as most heat is lost from these areas. Do not cover the blow hole but ensure it is kept moist. It is important to protect the blowhole from being swamped as the tide comes in.
- Right all whales by digging a shallow trench parallel to the belly, and rolling the animal into it. Ensure that the flippers are held flat against the body when rolling to avoid injury. When rolling whales upright ensure sheets do not become trapped under whales as these can be very difficult to remove. This task requires 4-6 people per whale.
- Dig a shallow moat around the flippers and tail to help keep the whales cool. This should not be too deep as this will make shifting the whales difficult.
- Ideally two people are assigned to each whale to keep them comfortable and reduce stress until they can be moved by the incoming tide.
- Set up fire pumps if required.

Note: If the use of channels is an option for re-floating the live animals (see Stage Two Rescue – Moving), digging should begin as early as possible during STAGE ONE of the rescue operation.

- Assess the condition of all whales and mark according to the guidelines below.

Note: It can be very difficult to ascertain death in cetaceans as they are capable of holding their breath for very long periods and tend to go into 'diving reflex' when stranded. Sometimes you can see the heartbeat visible just in front of the pectoral fin, or it can be found with a stethoscope.

The simplest way to establish whether a whale is dead is to very gently touch the edge of the eye ball, if no response is noted the whale is most likely dead.

Based on the condition assessment place all animals into one of the following categories with coloured tape:

- Green: Healthy live animals, good to be released.
- Yellow: Suspected lead animals of the pod. This will help to identify key animals in the event of their re-stranding and assist with prioritising the order of rescue.
- Blue: Minor incapacity, e.g. minor injury, could be released but requires some monitoring/treatment.
- White: Major incapacity, e.g. severe injury, euthanasia required.
- Red: Dead animals. Dead whales can be moved if they are congesting the operational area – ideally use machinery.
- Mark ALL dead whales with a number, so samples can be later linked to individuals if necessary. A brief site map, showing approximate location of each whale (with a note of its number, for dead whales) can be useful to track samples following the event, and to provide insight into stranding pattern.

Biodegradable tape in a variety of colours can be purchased from 'Geosystems'.

Note: marking animals in a permanent or semi-permanent way prior to release has potential benefits; however, there is no technique that can be currently recommended for use. DOC hopes to investigate the use of T-bar (floy) tags or other temporary marking for identification of whales post release. Floy tags are small and easy to apply and allow some tracking of the success of rescue attempts. If successful this will be added to the potential equipment required.

STAGE TWO RESCUE: MOVING

Aim: To move whales to deeper water, to bring scattered animals together, and to shift whales to a safe release area.

Method:

Unless trucking animals, this stage of the operation begins normally when the water is about knee deep around the whales. If predicted tide levels are relatively small, consider using earth moving equipment to dig a channel from the whales toward low tide.

Moving whales to deeper water

- In some circumstances you can try moving whales to deeper water once they are securely placed in tarpaulins or slings as described below. This is easier if water is already knee-deep, and whales have some buoyancy.

- If the effort is timed to coincide with waves, the whales will become more buoyant and be easier to move. In addition, with large whales in a reducing tide, it can be helpful to rock the whales, as alternate positions may require less water depth to get them floating.
- Be aware that moving a whale over rough or rocky substrate without buoyancy will cause injury. This should be avoided.
- Make sure that all people are aware of the danger from the tail, and that they work along side and to the front of the animal to avoid being hit.

Tarpaulin

- Roll up half of the tarpaulin and place it parallel to the whale.
- Roll the whale onto its side while making sure that the flippers are held flat against its body to prevent injury, and push the tarpaulin as far under the whale as possible.
- Roll the whale onto its opposite and unroll the tarpaulin.
- With 4-6 people holding the tarpaulin, shift the whale into the water.

Slings

- Place slings under the head of the whale. Use the same technique as that used for the tarpaulin or, if the whale is buoyant and there is adequate space between the whale and the sand, two people can work the sling along the body with a seesaw action to the place required.
- Use a minimum of four slings on a large pilot whale.
- When moving the whale take care that the sling does not cut into the flipper.

Pontoon

- Pontoons should only be used by staff trained in their use.

Lifting frames

- Some Offices may have access to lifting frames, as developed by William Macrae in Kaitaia.
- More information and documentation on these will be made available.

Translocation (complex rescue)

- If planning to relocate whales to another site you should be aware of the Animal Welfare Code for Transportation: http://www.biosecurity.govt.nz.
- Consider:
- the amount of equipment available
- the amount of time available
- sea and weather conditions at the proposed release site
- the risks to humans and whales

- costs

If trucking, use earth moving equipment and either lifting mats, lifting frame, or the mats from the pontoon kit to lift whales onto trucks. Ensure:

- the pontoon mats overlap each other by at least half along the length of the whale
- strong poles are attached to the edges of the mats, parallel to the whale's body
- the whale is lifted from the four corner points
- the whale is transported on suitable padding (wet foam mattresses are ideal)
- whales are kept cool and wet during transport

Another option is specially designed trailers that are long enough for pilot whales and have a tilting mechanism so that animals can be released straight back into the sea with minimal lifting. The Department does not currently have any of these trailers, but if you are in an area where these would be useful and a complex refloat is common, then consideration could be given to developing some.

N.B. Ensure all personnel assisting during lifting are either DOC staff or experienced volunteers and that adequate safety equipment is provided, e.g. helmets etc. Nominate one person to be in charge. That person is to co-ordinate closely with the heavy equipment operators.

Helicopter

- This method is only useful for dolphins and small whales up to about 3 m in length. Ensure a heavy plank (200 mm x 50 mm) is placed between the mattress and the sling to protect the animal's backbone. You must carefully consider the added stresses to the animals before using this technique. Please also consider the cost of such an operation.

STAGE THREE RESCUE: REORIENTATION

Aim: To prepare the whales for release and decrease the chances of re-stranding.

Method:

- Once in waist deep water begin rocking the whales from side to side. Work in groups of at least two people per whale. As the whales become stronger and you are nearly ready to release you can rock forward and backwards and the rocking can become more vigorous.
- Bring all the whales together into one group. This may mean bringing whales that have been re-floated near low tide mark closer to shore where they can still be controlled. It is important that you make people understand this.

- Reorientation time will vary depending on the condition of the whales, but can regularly take at least an hour. The better orientated the whales are at release the less likely they are to re-strand (try to keep the whales together until the last whale has had at least 30 minutes reorientation time).
- To test if an animal is ready for release after reorientation a free swim trial in an enclosed area provides a good test. However, this is often not feasible, so other criteria to consider include:
- Ability to surface to breath unassisted
- Ability to orientate and stay upright in the water
- Ability to self-right if rolled onto side

STAGE FOUR RESCUE: RELEASE

Aim: To release all of the whales in one group.

Method:

- Release the whales in water deep enough for them to swim but still shallow enough to allow people to walk (for pilot whales this is about waist deep). Place rescue crew with waterproof radios in position, and then move the whales to them. The whales are then held until the instruction to release them is received by the rescue crew from the Operations Manager.
- If using pontooned whales as a stimulus to get free swimming whales back to sea, the pontooned whales should be located 150 - 200 m offshore facing the animals being re-floated.
- Once the whales are well offshore, then you can allow the pod to sort itself out. Once the pod has properly reformed it will usually makes its own way and is less likely to restrand.

MONITORING AND PREVENTING RESTRANDING

- To prevent re-strandings get volunteers to form a line between the whales and the shore. A wall of people striking metal objects together or slapping the surface of the water can help to deter the whales from re-stranding. Care should be taken and volunteers fully briefed on the dangers as whales can often be very determined to return to shore.
- Preventing any re-strandings during the first twelve hours following an initial stranding appears to be a critical factor in reaching a successful rescue attempt. During this period the whales' behaviour can best be described as "groggy" and disorientated. They can move relatively slowly, stopping frequently to apparently reaffirm bonds within the pod. At other times they will split into small groups and move quickly in all directions – including back toward the beach.
- There is still a lot to learn about directing whales to safety once they have been re-floated. Included here are some guidelines that may assist you in this situation. The key points to note are:

    1. Only use good boat operators.

2. Ensure good communication and co-operation between ALL the boats present.
3. Be flexible. No one technique will work all the time. Be prepared to think laterally and try something new. You may have to be forceful to stop re-strandings.
4. Work the boats at a distance from the whales preferably, however,
5. You may need to be very forceful with boat use to change the direction that the whales are travelling. Southland staff have needed to work boats within 1-2 metres of pilot whales to drive them away from re-stranding when they tried to re-beach. Herd the whales to a 'collection point' 1-2 km offshore where they can settle and reform their group.
6. Once offshore follow the whales for as long as possible to monitor rehabilitation.
7. Note that some whales may still continue to restrand, euthanasia of some individuals may need to be considered for the survival of the rest of the pod.

Options with multiple boats

- Bubble Nets: Work the boats in a line (approx. 150 – 200m apart) between the whales and shore, starting the first boat slightly ahead (but toward shore) of the pod. Get the boats to complete several tight circles one on top of the last. This forms a cone of air bubbles down into the water. By forming a series of these cones of air bubbles in a line you can create a “bubble net” which whales will sometimes avoid. As the whales approach the boat closest to them it moves off and comes in at the other end of the “net”.
- Nets: Large nets if available can be strung between two boats creating a physical barrier to them coming back to shore or can help to herd the whales out to sea.
- Noise: Banging metal against the side of an aluminium boat will sometimes change the direction of whales. Lifting the propeller, cavitating it or revving the motor in neutral are good techniques for producing noise also. Remember to always try to work at a distance from the pod.

2.4 Large whales

Currently the Department of Conservation does not attempt to refloat large whales (>6m), mainly due to the difficulties in refloating such large animals. In the past the main large species to strand has been sperm whales. In the event of these strandings the options have been either leaving nature to take its course or euthanasia. The Sperm Whale Euthanasia Device SWED is used for euthanasia of sperm whales; however, its applicability to other species has not been trialled.

In the New Zealand Whale and Dolphin Stranding Database (NZW&DSD) there have not been many records of live strandings of large baleen whales so our experience with euthanasia of these animals is minimal. With recovering populations of humpbacks and Southern right whales this is something that we will need to address. We have some options to trial for euthanasia of large whales. Euthanasia is a sensitive issue and can be dangerous if not carried out by appropriately trained staff. For these reasons, only those personnel trained in large whale euthanasia will be able to carry this out.

It is important that when a large whale strands live or dead, we assess the potential for trialling methods so we are better prepared in the future. For any whale stranding >6m contact the Marine Species team for advice.

2.5 Orca

If dealing with a live Orca/killer whale stranding, there are a few key differences to be aware of due to their very different body shape:

- If the animal(s) are found on their side, right them as soon as possible. Ensure that a hole is dug for each pectoral fin. These are large, and naturally hang at a 45° angle, so the hole should be deep enough for this posture to be maintained.
- When keeping the animals cool, do NOT cover the dorsal fin with a sheet as the weight of the wet sheet can cause permanent distortion of the dorsal fin. If the fin is small a pillowcase or a similar small, lightweight item can be used.
- If using rescue equipment ENSURE that the pectoral fins are NOT places inside lifting-mats, slings, frames or pontoon systems. They will dislocate or break. To ensure pectoral fins are not damaged, two mats can be used, one for the thorax and tail stock, the other for the head. These mats are placed in such a manner that the pectoral fin lies between the mats. Care must be taken when using this method.
- Orca are highly social animals and other individuals may be waiting offshore. Monitor these animals, but they do not need to be actively deterred from the area. They will frequently come into shallow water while waiting the rescue of a stranded individual. If possible, photograph the other individuals for identification.

2.6 Entangled whales and dolphins

It is important to note that the removal of entanglements from whales is a very dangerous task and should only be undertaken by staff who have had the appropriate training, equipment, and resources. The Department has two trained disentanglement teams, one on the South Island and one on the North Island. For contact details see the contacts lists. A CIMS structure must be in place for an entanglement response. For more detail on how a response works see Coughran 2010.

The following text gives a brief outline of the principle and questions to be asked when deciding whether or not to undertake a rescue.

Remember that the first priority is human safety, followed by animal welfare. At no time should anybody enter the water.

In determining whether a rescue should proceed be sure to answer the following questions:

1. Is the entanglement immediately life-threatening to the whale?
2. Is the entanglement life-threatening to the whale over time?
3. How dangerous is the disentanglement for the team and the whale? E.g. what are the sea conditions, how complex is the entanglement (number and location of wraps).
4. What species of whale (conservation status)? E.g. humpback, southern right whale, Hector's dolphin, etc.
5. Is there enough time left in the day to safely mount a rescue effort?
6. Are weather and sea conditions suitable for a rescue effort? What is the weather forecast for the next 24 hours?
7. What resources are available (how remote is the site)?

The possible responses are; immediate disentanglement; no immediate disentanglement but tag and monitor; or monitor. In both of the last two circumstances a disentanglement may later be mounted if conditions are suitable.

The operational strategy is known as "Kegging". It describes the process of attaching a series of trail lines to the entanglement. These lines, along with a series of large floating buoys slow the whale down and accelerate fatigue. This allows the entanglement team to try to safely and effectively remove the entanglement. Each scenario may be treated slightly differently depending on the species, conditions and nature of the entanglement. Not every attempt is successful.

Response

If there is an entanglement in your area:

1. Fill in an INITIAL INCIDENT REPORT
2. Gather details to answer the questions listed above
3. Contact the Disentanglement team: see contacts lists
4. Notify the Marine Species team
5. If advised and the appropriately trained staff, equipment and resources available, mount a rescue
6. Debrief

2.7 Dead whale/dolphin

Response

Health and safety issues are extremely important when handling cetaceans - remember to check your health and safety plan appended to this document.

1. Fill in INITIAL RESPONSE FORM
2. Plan the response:
    a. Notify Hannah Hendriks in the Marine Species team, Wellington
    b. Identify the species - depending on the species and carcass condition there may be special instructions.
    c. See also SAMPLE REQUEST REGISTER 2011 to determine if there are any special instructions or additional people to contact. If still unsure, contact the Marine Species Team in Wellington.
    d. Consult with whänau, hapü and iwi - Before collection of samples, or removal of the carcass for burial or transportation, all practical steps should be taken to ensure your local protocols (appended to this plan) with whänau, hapü, and iwi have been followed.
3. Secure the carcass
    a. If necessary, cordon off the area to public with barrier tape.
    b. If the carcass is below the high tide line, you should consider moving it up the shore to reduce the chances of it being washed back out to sea on the rising tide.
    c. If this is not possible, you may want to try securing it to a long stake driven firmly into the ground.
    d. For dead sperm whales you may need to post a guard to ensure the jaw is not removed illegally.
4. Special instructions, if the species is:
    a. **Hector's or Māui dolphin** - These are priority species and the Department has a contract with Massey University for the necropsy of Hector's and Māui dolphins. Contact the Marine Species team to determine if the carcass is fresh enough to send to Massey (Code 3 carcasses to be assessed on a case by case basis, see Table 4 in Freighting).
    b. **Sperm whale** - you may need to post a watch for this species. The jaw bone is highly prized as is fresh ambergris. While a permit is not required for having naturally found ambergris, it is illegal to obtain it by cutting it out of a sperm whale. For information on how to remove a sperm whale jaw bone see Sperm whale jaw removal and preparation - Hans Rook April 1992.
    c. **Large baleen whale** - contact the Marine Species team, it may be an option for training on euthanasia of large whales, or in the case of a Bryde's or possible ship strike incident, a post mortem will need to be carried out.

5. For all species - Collect photographs, morphometric measurements and tissue sample for genetics, as per the WHALE AND DOLPHIN INCIDENT FORM.
6. If the incident is a suspected law enforcement issue such as fishing bycatch or other human-related death - ensure you contact the Marine Species team straight away. If fishing related, also contact your local fisheries compliance officers. Make sure you completely photograph the animal in situ, as well as the scene and collect any potential additional information as evidence.

Checklist

- INITIAL RESPONSE FORM filled in?
- Appropriate contacts notified?
- Iwi consultation undertaken for sample collection and disposal?
- Measurements taken?
- Photographs taken?
- DNA sample collected and sent to Auckland University*?
- Other samples or whole animal collected and sent where necessary?
- Remains disposed of or allocated as per your areas iwi protocols and disposal protocols?
- WHALE AND DOLPHIN INCIDENT FORM completed, filed and along with photos saved to DOCCM?
- If submitting to Massey University, completed Wildlife Submission Form?

* Address for sample: Rochelle Constantine, Thomas Building, School of Biological Sciences, University of Auckland, 3A Symonds Street, Auckland 1010

3. Response - Seals/kekeno

3.1 Live seal

The Department's response for seals and sea lions is minimum intervention, with the aim in scenarios with live animals, to minimise intervention and minimise hazards.

Please note: The only considered exception to the aforementioned is possible in-situ management of female New Zealand sea lions. Please contact Laura Boren at National Office (VPN 8062, DDI 04 471 3062) to discuss.

Your office may have particular requirements relating to seal and sea lion responses in your Community Relations Plans, in particular for sea lions. Include these requirements as an appendix to this plan.

Community engagement with live seal incidents is particularly important to educate the public about the two species, the differences in behaviour, and how best to avoid negative interactions.

What to do if you are bitten

Clean the wound. If you carry Tetracycline spray, spray this on the wound. If it is a pup, just keep an eye on the wound for infection. If it is an adult, see your doctor for a course of antibiotics (preferably from the tetracycline family). Make sure you report the incident, and near misses, in Risk Manager.

Response

1. Fill in INITIAL RESPONSE FORM
2. Confirm species ID:
3. Confirm incident type;
    a. Healthy animal or only minor wound
    b. At risk, in public place, or threatening property
    c. Public in possession
    d. Seriously wounded, emaciated, diseased
    e. Entangled
    f. Oiled
    g. Tagged/Branded
4. Follow instructions from Table 1 based on species and incident type
5. Notify Marine Species team.
6. Fill in appropriate documentation and save to DOCDM

Table 1: Action for live seals dependent on incident type

	Incident Type	Possible Action:
1	Healthy / minor injury	• Leave seal alone • If other than a NZ fur seal fully document sighting including photographs • Fill in SEAL/SEA LION INCIDENT FORM and save to DOCCM along with photos. Send link to Marine Species team. • If several calls eg, in high public place treat as #3
2	Tagged / Branded	• Take photographs of tag • Record colour, shape, number, how many tags and location • Fill in SEAL/SEA LION INCIDENT FORM and save to DOCCM along with photos. Send link to Marine Species team • See Seal and Sea lion tag register information

3	At risk / public place / threatening safety / inappropriate location	• Leave seal alone
		• Put up SIGN saying date/time seal was checked
		• Consider relocating seal to a safe environment, for advice on herding, capture, safe transport contact Marine Species team, Kaikoura Field Centre staff, and/or NZWHC
		  ◦ For ice seals (leopard, crabeater, weddel, ross) we do not recommend attempting to relocate individuals. For the latter three species, animals in NZ are likely to be in bad shape which makes any kind of handling extremely stressful. Leopard seals are particularly dangerous and don't respond well to anaesthesia. In these situations, you might need to make extra arrangements to monitor or keep the seal safe and key messages about decision making will be important.
		  ◦ Dogs pose a threat to young seals - if dogs present request owners to put on lead and keep away from seals. If the matter becomes more serious contact your local dog control officer for assistance. Under the Dog Control Act 1996, any warranted officer (any person who is for the time

		being a warranted officer within the meaning of the Conservation Act 1987) has the power to seize or destroy dogs; however, this would only be a last resort. Be familiar with provisions of the Dog Control Act 1996. • If transporting live animals be aware of the: Animal Welfare (Transport within New Zealand) Code of Welfare 2011 • If a large seal you may need to consider cordoning off the animal to keep the public away rather than relocating the animal • Fill in SEAL/SEA LION INCIDENT FORM and save to DOCCM along with any photos. Send link to Marine Species team
4	Public in possession (most likely a pup or juvenile)	• Make arrangements to collect the animal • Explain that DOC does not condone this as it is illegal under the MMPA 1978 and the health and safety risks involved to humans and the seal • Relocate the animal to somewhere safe (as per #3) • If large animal additional help may be required including possible anaesthesia • Fill in SEAL/SEA LION INCIDENT FORM and save to DOCCM along with any photos. Send link to Marine Species team
5	Seriously wounded / emaciated / diseased	• If animal is clearly suffering / moribund consider euthanasia (see section on Euthanasia) • If unsure seek advice from Technical Advisor Marine Species and/or NZWHC • If diseased and euthanized contact NZWHC regarding sample collection • Fill in SEAL/SEA LION INCIDENT FORM and save to DOCCM along with any photos. Send link to Marine Species team
6	Entangled	• Capture and remove material, an appendix providing more detail will be made available in the Toolbox (TBA). • Collect photos and sample of the entangling material. Note that some fishing vessels mark bycaught seals with twine or cable ties on the jaw. • Seek advice from the Marine Species team, and/or Kaikoura Field Centre Staff

		• If a NZ sea lion advise Marine Species team. • Anaesthesia may be required if large animal • Fill in SEAL/SEA LION INCIDENT FORM and save to docCM along with any photos. Send link to Marine Species team
7	Oiled	• See Massey Oiled Wildlife Response Document for more detail, but in general: • Capture only if severely oiled (>1/3 of body) and is debilitated, e.g. excessive grooming, staggering, abnormally lethargic, vomiting etc. These animals would then be taken into the wildlife response facility for cleaning. • It is important to note that as capture and transport of seals is highly stressful and there are risks in keeping them in captivity even temporarily. A lot of seal work at an oil spill is community engagement, going to check on reports of oiled seals, assessing the situation, and education on when it is necessary to capture a seal, versus monitoring them in situ. • Important - DOC does not have autonomy in an oil spill and works in support of Maritime New Zealand and Massey University Oiled Wildlife Response Unit. • Fill in SEAL/SEA LION INCIDENT FORM and save to DOCCM along with any photos. Send link to Marine Species team
8	Reports of malicious behaviour	• Follow up on the report and gather as much information as possible. • Assess the scene. Collect photos, and document as much as possible. • Contact the police if needed, and notify Marine Species team.

Checklist

- INITIAL RESPONSE FORM filled in?
- Appropriate contacts notified?
- Photographs taken?
- Appropriate action taken IF required?
- Iwi consultation undertaken in the event of euthanasia and sample collection?
- In the event of euthanasia remains disposed of appropriately?

- SEAL/SEA LION INCIDENT FORM completed, filed and along with photos saved to docCM?

3.2 Dead seal

Response

Health and safety issues are extremely important when handling seals remember to check your health and safety plan appended to this document.

1. Fill in INITIAL RESPONSE FORM.
2. Confirm species ID - you may need to request a photo from the caller or else sight the animal to confirm species ID.
3. Follow instructions from Table 2 based on species and incident type
4. Notify the Marine Species team.
5. Fill in appropriate documentation and save to docCM

Table 2: Action for dead seals dependent on incident type

Incident Type	**Action**
Unusual event - ANY species	• **All scenarios** - Photograph, measure and complete the SEAL/SEA LION DATA SHEET and save to DOCCM along with photos. Notify Marine Species team • **Tagged** - collect tags and return to DOC A&RU Wellington. • **Branded** - record brand number on form and photograph. • **Sea lion** and evidence of tags ripped out - contact Marine Species team to locate a PIT tag reader. • **Diseased** - If there are signs of disease contact Massey University Palmerston North (NZWHC). Signs of disease may include skin lesions, unusual swelling, discharge from the nose and eyes. • **Human-related injuries** - photograph and investigate as possible offence. Contact DOC A&RU Wellington or NZWHC.
Not unusual event - NOT NZ fur seal	• Photograph and measure • Complete the SEAL/SEA LION DATA SHEET and save to DOCCM along with photos • Notify the Marine Species team
Not unusual event - NZ fur seal	• Leave or dispose of if needed

Checklist

- Initial Response form filled in?
- Appropriate contacts notified?
- Measurements taken?
- Photographs taken?
- Iwi consultation undertaken for sample collection and disposal?
- Other data, tags and/ or samples collected and sent?
- Remains disposed of or allocated as per iwi, and research protocols or your office's disposal protocols?
- SEAL/SEA LION DATA SHEET completed, filed and along with images saved to DOCCM?
- If submitting to Massey University, fill out a Wildlife Submission Form

4. Euthanasia

Issues

Euthanasia is a difficult decision but must be made purely for the welfare of the animal involved. The only person who can make that decision is a warranted marine mammals officer or a person authorised by the Minister. Generally you would ensure within your CIMS structure that your Incident Controller or Operations Manager has this ability. Depending on the sensitivity of the particular incident, the person making the decision may chose to seek advice from a higher level, e.g. Director Conservation Services. Information provided in this manual has been vetted by experts, so the decision maker can trust that s/he will be fully supported by the Department in the decision made, if based on this procedure.

Considerations prior to the euthanasia of any marine mammal:

The considerations outlined below provide some guidelines that may assist with the decision as to whether euthanasia is appropriate or not given different scenarios. Please note the considerations below are intended only as guidelines, and each stranding incident (and indeed each individual involved in a mass stranding incident) presents a different scenario and the decision to euthanase can only effectively be made on a case by case basis at the discretion of attending staff.

Veterinary Considerations – factors that may lead you to consider euthanasia:

- dependant calf with or without its mother.
- coastal species (unlikely to strand, therefore stranding often has a health related cause). If species unidentified – treat as oceanic).
- obviously thin or emaciated (unlikely to survive even if successfully refloated).

- deep penetrating injuries into red muscle layer, thoracic or abdominal cavities (note that superficial injuries to skin and blubber can look quite serious due to extensive haemorrhage, but do not preclude rescue attempt, an example is a bite from a cookie cutter shark, common and not life threatening).
- excessive skin sloughing and/or heavy burden of ectoparasites.
- protracted rapid breathing (normal breathing rate for dolphins 2-5 breaths per minute, over 10 breaths per minute indicates severe stress or physiological abnormality – respiratory rate in whales varies vastly, the normal respiratory rate for pilot whales is 8 – 18 breaths per 5 minutes).
- absence of reflex from the anus, genital opening, blow hole or tongue.
- sustained muscle tremors/lateral or ventral flexion.
- bright red blood from blowhole/mouth/anus not associated with superficial trauma.
- significant mucus discharge from blowhole.

Logistical considerations – factors that may lead you to consider leaving the animal to die of natural causes:

- danger to personnel; many factors may mean that euthanasia is impractical for safety reasons, these could include unfavourable weather or sea conditions, mobile animal in dangerous location etc.
- inappropriate equipment for the task (see methods below).
- euthanasia likely to cause significant antagonism between DOC and public/bystanders/iwi.

Response

Euthanasia of whales should always be carried out by, or under the instruction of, experienced personnel, refer to your contacts list.

Before euthanasia is attempted, a number of aspects MUST be satisfied.

- Counselling of bystanders: This is very important especially if people present have been assisting in the care for the stranded animals. Police or fire service can assist with this.
- Public relations addressed: Invest time in explaining why the decision was made. The reason for euthanasia is always for the animal's welfare.
- Public safety has been ensured: this may involve crowd control. Involve the Police especially if the stranding has drawn a lot of public bystanders.
- Appropriate equipment and trained staff available: It is very important to ensure that trained and experienced people are available for this procedure and that they have the right equipment and support. Experience pertains not just to firearms, but also an understanding of marine mammal anatomy and having had experience with post-mortems or boning out of marine mammals. If not, it is more humane to do nothing.
- Safety measures for staff in place: Ranging from ear muffs to ensuring crowd control.

Methods

As euthanasia is such an emotive issue it is important to remember the option of a natural death. Whales have been stranding for thousands of years and where euthanasia is not possible for practical reasons then it is entirely okay to let nature take its course. In some cases it may be more humane to let nature take its course. Palliative care to relieve suffering can be administered if time and resources allow.

1. Shooting

Shooting is the preferred method of euthanasing stranded seals, whales and dolphins. The Police should always be informed before discharging a firearm in, or close to a built-up area. The appropriate rifle calibre and ammunition are as follows:

(a) Seals – .22 standard rifle for small seals; or .222 or .223 rifle for larger seals.

(b) Small whales or dolphins up to 2 m - any high powered rifle and standard sporting rounds, e.g. .260; .270, .303, .308

(c) Dolphins or whales 2.0 – 6.0 m – high powered hunting rifle with soft nosed ammunition; e.g. .303, .30-06

(d) Baleen whales 6.0 m and above and Sperm whales –**Only people trained specifically for large whale euthanasia can undertake this.** See the DOC National Contacts for advice on who to contact.

Due to recent live strandings of large whales and the inconsistency in results of euthanasia with firearms it is no longer recommended to use firearms for whales over 6m in length. This is now being recognised by the IWC. Options for euthanasia of these animals include the SWED, and implosion detailed below.

The Department is currently looking to increasing the number of staff trained to use the SWED to minimise reliance on one persons availability. We are also exploring the potential to employ the peri-cranial method specifically for the case of large humpbacks, and potentially Southern right whales should they strand live. Note both of these methods require trained experts. As these methods are worked through, this section of the protocols for marine mammal strandings will be updated accordingly.

Target area:

The preferred target area is the rear of the brain. Location of the target area is done by finding the point one/third of the way between the eye and the origin of the pectoral flipper, or a hand span behind the blowhole. As noted, this may be accessed by a shot fired dorso-ventrally (from above or below) and angled backwards to ensure bullet retention.

Consider your firing zone and watch for ricochet when dealing with the smaller animals, especially around rocks.

NOTE: If you have any uncertainty about hitting the target with one shot, then you should consider firing three carefully placed shots in a line through the target area. If you are doing this with onlookers present then it is vital that you explain BEFOREHAND this is standard practice to ensure a humane death – this way bystanders will not think an error has been made.

For a series of draft diagrams from different sources to aid in determining target area for different species, see DOCDM-1125208.

2. Peri-Cranial Implosion

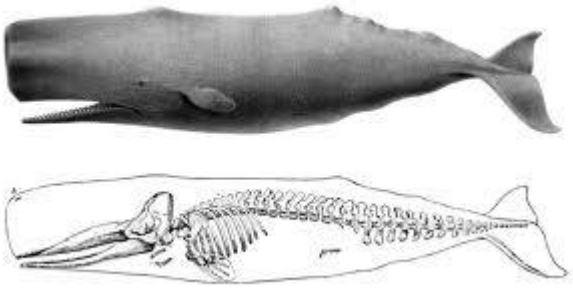
This technique has been used in the USA, Western Australia and South Africa and has recently been recognised as a consistently more humane method for euthanizing larger whales. It has primarily been used and refined on humpback whales, but also has been successfully employed on Southern Right Whales. For details on the implosion method see: Coughran 2012, and Moore 2010.

If there is a local mine in your area with a licensed 'shot firer' consider setting up a contingency plan with the mine to carry out this method. If you would like to explore this option, contact the Technical Advisor Marine Species and Jim Campbell.

There have been very few cases of baleen whales over 6m in length live stranding in New Zealand. However, given recent stranding records both in New Zealand and Australia there may be an increase in these incidents, giving rise to the need to be better prepared. In order to develop improved protocols we need to take advantage of training opportunities. Should **any large baleen whale strand**, live or dead, contact the Marine Species team to discuss potential options.

3. Sperm whale euthanasia

Their size, unusual skull anatomy, and the thickness and toughness of their blubber make sperm whales extremely difficult to euthanase. The Sperm Whale Euthanasia Device (SWED) is a specialised firearm developed by Craig Bamber (Belmont Ammunition) and Norm Marsh (Previously Wanganui Conservancy) specifically to euthanase sperm whales. In addition to its calibre the SWED uses ammunition specifically designed for this purpose. Currently Craig Bamber stores and operates the SWED. All costs (such as travel and accommodation) associated with Craig attending sperm whale strandings need to be absorbed as an operating cost. This is an expensive exercise and we would prefer to use this in situations such as mass strandings.



country who are also trained to use the however, you will need to coordinate . Think carefully before committing to test the SWED contact Craig Bamber to plan full cost recovery for him so before

Signs of death

The following when taken together provide a good indication that a euthanised animal is dead:

(a) complete dilation of the pupils;

(b) onset of unprovoked agonal convulsions (violent uncoordinated thrashing);

(c) absence of palpebral (closure of eyelid when corner of eyelid touched) and corneal (closure of eyelid if eye touched) reflexes;

(d) slack lower jaw;

(e) in the case of pilot whales you can also see, near the pectoral fin, lack of a heartbeat.

Note that as many indicators as possible should be used to judge time to death, decisions on presence or absence of a single feature should be avoided.

Recording information for IWC report

Information on euthanasia is compiled annually for a report to the IWC. To make this process easier the required information is now included in the Whale and dolphin incident report form. Please ensure if you euthanase a whale that the method used, number of shots, and time to death are recorded appropriately in this form.

5. Other Species [non-mammals]

This section is in the process of being updated. In the event of a turtle or sea snake (live or dead), contact a member of the Marine Species team for advice. For turtles in particular, also contact Dan Godoy (Massey University). For sea snakes see the external contacts lists, as various museums may be interested in specimens. A data collection form is currently in progress.

For reptile sightings or incidents, use the Amphibian and Reptile Distribution Scheme (ARDS) cards. Fill in the form and submit to National Office Marine Species as well as herpetofauna@doc.govt.nz.

6. Data Collection and Sampling

6.1 Data collection

Each incident type should have its own documentation including an initial response form, a relevant incident data collection form (see forms in Appendices), associated images and possibly a map. In some instances there may be additional documentation that you wish to include or extra samples to collect, including;

- Any external parasites (collect and label),
- Indications of unusual disease,
- Indications of vessel strike trauma, especially with large baleen whales found dead near areas of regular shipping,
- Indications of entanglement or entangling debris present (photograph and collect),
- It can also be useful to record the weather and sea state conditions leading up to the stranding, and also the lunar phase.

If you cannot positively identify the animal to species tick the appropriate “Animal Type” box on the stranding report, and write “unidentified” beside “Species Identification”. Collect as much information as possible in measurements and photographs as this will help with the identification process. Identifying juvenile or female beaked whales to species is VERY difficult and it will be necessary to recover the skull, jaws and teeth.

6.2 National Stranding Sample Request Register 2011

This register has been updated and is designed to clearly outline what samples are requested by whom, whether they hold a current permit for the request, and sample collection instructions.

If you are approached by a researcher with a request that they receive samples from stranding events please forward them a copy of the application form that they will need to complete (SAMPLE REQUEST FORM) for inclusion on the national stranding sample register.

Check the Sample Request Register 2011 for advice on the sample needs of Te Papa and other institutions and for details on who to contact in each instance, if unsure, contact a member of the Marine Species team. Once you know what needs to be collected, use the associated sample collection instructions saved to the Sample Request Register 2011. For information on Freighting instructions see the later section.

6.3 Sexing animals

Female genital and anal apertures are much closer together, compared with males, and form one continuous slit. They are also flanked by small mammary slits on each side (some males also have mammary slits – but in males they are redundant).

6.4 Photographic documentation

A photographic or video record should be made of all stranding events. In particular the following photographs should be taken:

- side view of the entire animal
- detail of any entangling marine debris (prior to removal)
- the head (in particular for Southern right whales)
- the jaw, including teeth or baleen
- the dorsal fin and saddle patch (in particular for orca, pilot whales, Hector's/Māui dolphins)
- the tail fluke (in particular for sperm whales at Kaikoura, humpback whales)
- any unusual lesions or wounds, changes in skin colour that could indicate trauma and bruising (in particular species of baleen whale found dead near regular shipping lanes i.e. Hauraki Gulf, several photos and all angles in these cases)
- the stranding pattern and locality

In the case of a mass stranding photograph the head, jaws, dorsal fin, tail and flanks of a selection of animals that are representative of the stranded pod. Include photographs of any unusual lesions or wounds on individuals.

6.5 Measuring animals

Single or small group: The measurements required are itemised on the WHALE AND DOLPHIN INCIDENT FORM. Please note: these measurements should be taken in a straight line not around the curve of the body.

Mass stranding: At a live mass stranding, the priority should be to refloat the whales. However, if time permits, valuable data and samples can and should be gathered which may assist our understanding of this phenomenon and the species concerned. All samples and data collected should be cross referenced to an individual whale number (number on tail tape). This will allow samples to be tracked easily following the response effort itself.

- At a minimum record the total length and sex for each individual in the pod. These can be recorded on individual Whale and dolphin incident forms, or if there are too many whales for this, on the Mass stranding measurements form.
- For animals that are dead or euthanised collect additional measurements as per the MASS STRANDING MEASUREMENTS FORM.

First officers on site at a mass stranding site should attempt to mark all dead whales so that any intensive sampling can be directed toward these individuals. Any whales that die during the rescue attempt must also be marked and the time of death noted. A data collection officer is included in the CIMS structure to coordinate this; they may wish to liaise closely with one of the researchers onsite.

6.6 Genetic Sampling

The basic samples to collect in all cases are:

- Genetics: If possible, collect a sloughed skin sample (from live animals), or a skin sample (dead animals) Note: When collecting samples, ensure that the sample is carefully labelled and cross-referenced to the animal from which the sample was collected.
- Complete a sketch map or aerial photo of the stranding site including position of whales (dead and alive), location of nearest channel and any other relevant geographic or marine features. This can be used in the genetic analysis to investigate the composition of the pod and how they came onshore, e.g. do related animals actually strand together. This should be done before animals are moved by staff or additional tidal cycles.

For genetic analysis only a small amount of tissue is required. One small piece of skin and blubber about 2 x 0.5 x 0.5 cm is more than enough. Please label the sample using the waterproof paper tags provided in the sampling kit. Write in pencil and place the tag in the vial with the sample (& 70% ethanol). Seal the vial lid with a strip of parafilm.

Note: Take the sample from areas where the skin is still relatively intact, preferably from the leading or trailing edge of the tail flukes, flippers or dorsal fin – though do not damage any areas that have markings from netting, etc. Ensure that the sample is no thicker than 0.5 cm at any point. If samples are thicker than this, the ethanol will not preserve the sample all the way through to the centre, and the sample will rot. Send the vial by courier to Auckland University (see Sample Request Register 2011 for more detailed instructions).

Address:

Rochelle Constantine

Thomas Building

School of Biological Sciences

University of Auckland

3A Symonds Street

Auckland 1010

Cell: 0274574909

6.7 Additional sampling

With all live strandings the animal's welfare is paramount. If the decision has been made to attempt a re-float, all sampling must take second priority. In these circumstances, sampling should only occur if time and circumstances permit.

You may be asked to collect extra samples for different species, e.g. a rare species may require more intensive sampling than a common one. Your key contact to determine sampling regime is the Marine Species team or you can check the Sample and Permit Register.

Care must be taken with all tissue and organ samples to prevent contamination. Do not directly handle samples. Use sterile instruments to obtain samples. Preserve all samples separately according to Table 3.

Table 3: Method of storing samples

Sample	**Preferred method**	**Alternative method**
Skin (genetics)	70% Ethanol	Wrap in tinfoil & freeze
Blubber (toxicology)	Wrap in tinfoil & freeze	-
Tooth (ageing)	70% Ethanol	Freeze
Baleen	Saline	-
Blowhole discharge	?	
Blood	Freeze	-

Tissue samples such as spleen, liver, lung, heart, gonads etc	10% Formalin	Freeze
Stomach contents	70% Ethanol	Freeze
Parasites	Freeze	70% Ethanol
Skeleton	Freeze	-

6.8 Saving documents to docCM

Select all of the files that you want to submit, such as:
Incident/stranding form (either scanned or word version)
Photos
Maps
And put them into a new folder together on your computer/local S drive somewhere.
Note the folder should not exceed 100MB, if it does please make multiple folders or reduce the size/quality of the images (preferable; see this website for options on how to do this). For future, you can reset the settings on the camera to take smaller images.

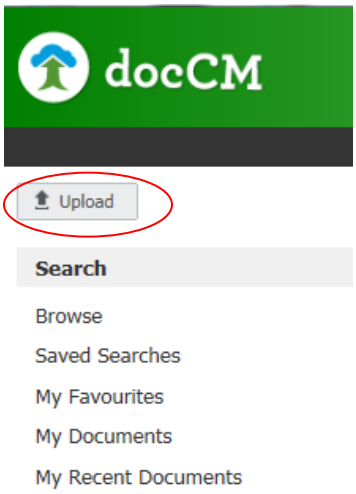
Name the folder:
Species, observation type, DD-MM-YYYY, location, Eg. Hector's dolphin, Entanglement incident, 19-01-2015, Nelson
Or, Māui dolphin, Sighting, 29-02-2015, Hamilton's Gap

Note: In docCM there is no file structure, therefore naming conventions must be good enough that you and others can find your file without knowing exactly what it is called. Using the above naming convention, you should be able to search for 'Hector's dolphin incident' and find all beachcast, stranded, and entangled Hector's dolphins. It will be helpful to include the type of incident, as well as the word 'incident' so that there is an ability to search for all incidents, or all entanglements etc.

Right click with the mouse on the folder you created on your computer and hover over the "send to" option.
The top option should be, "compressed (zipped) folder".
This will automatically make a copy of the folder that is compressed and can be saved to docCM.

Open docCM using the icon on your desktop (see image to the right). Click on the Upload button, click 'Browse' twice. Navigate to where your zipped folder is stored and click on it once. Click 'open'. Click 'upload'. Alternatively: after you click Upload and the upload screen opens, you can drag your folder in here.

Send an email with the docCM link to those within DOC who need to receive copies of the forms. Someone in the Marine Species team will need to receive a copy. Your first port of call is Hannah Hendriks (Marine Species Technical Assistant, hhendriks@doc.govt.nz). An alternative is to send it to marinemammals@doc.govt.nz and it will get distributed appropriately but potentially not as urgently.



7. Freighting

The Department of Conservation has a contract with Massey University Palmerston North (contact: Wendi Roe, W.D.Roe@massey.ac.nz , 027 270 8982) to perform post-mortem examinations on all† Hector's and Māui dolphins.

These carcasses should be transported chilled not frozen as this can damage tissues and obscure important details about cause of death.

Preference for Hector's/Māui dolphins is that only Code 2 carcasses will be sent to Massey, Code 3 will be assessed on a case-by-case basis (see Table 1). If unsure on what condition it is in and if it should be sent for post-mortem, take photos and contact Wendi Roe directly for advice. Other researchers will advise on what carcass conditions they can accept and whether they want to receive it fresh or frozen.

Ensure you take plenty of photos before the dolphin is wrapped up as the packing material can cause superficial markings during transport.

Table 4: Carcass Code 1 – 5 (as listed below)

Code	**Type**	**Characteristics**
Code 1.	Live Animal	Breathing
Code 2.	Fresh Carcass	Normal appearance, little scavenger damage, fresh smell, little drying or wrinkling of the skin, eyes clear, no bloating, penis & tongue not protruding, blubber firm & white
Code 3.	Fair	Carcass intact, bloating evident, tongue & penis protruding, skin cracked & sloughing, eyes dry & sunken, possible scavenger damage, blubber oily & blood-tinged
Code 4.	Poor	Carcass partially intact, skin sloughing or missing, blubber soft often with pockets of gas &/or oil, much scavenger damage, eyes missing, muscle almost liquid & easily torn, putrid smell, bubbling
Code 5.	Skeletal	Dry skin overlaying bone. All tissue desiccated

† Except if decomposition is so far along that determining cause of death is unlikely. See Carcass Codes (Table 4) and seek advice.

Note that all researchers will acknowledge receipt of samples and will update preliminary findings via email as soon as they are able. If a CONTRACT animal, we should receive the findings within 2 weeks of receipt of specimen. If not a contract animal, the findings will be dependent upon when the researcher is able to process the samples/specimen. They will advise as to the likely turnaround time for this on an individual basis.

7.1 Method of transport

Your two options for transport are a refrigerated freight service, or a flight with Air New Zealand.

Traditionally we have used Halls Refrigerated to send chilled dolphins to Massey, however Halls have become concerned with potential for contamination and may not accept a chilled carcass. If Halls refuse to ship a specimen, you can use Air New Zealand instead (this is also faster), or another refrigerated freight company. We are investigating alternative freight companies.

Halls Refrigerated

Log a job online: https://my.halls.co.nz/

Username: marine@doc.govt.nz

Password: DOCmarinestrandings1

We have an account with Halls specifically for contract species (Hector's/Māui dolphins, NZ sea lions, and other species for law enforcement purposes on a case by case basis). The DOC Marine Strandings Account is 'DOCMARIN'. If you are using Halls for any other reason, please do not use this code. If a researcher or museum requests a carcass or large sample to be sent to them, either use their own account or ensure that you indicate 'charge to receiver'.

http://www.halls.co.nz/about/services/refrigerated-containers.aspx

North Island: 09 269 1100 Fax: 09 269 4277

South Island: 03 344 0586 Fax: 03 344 2634

Air New Zealand

https://www.airnewzealand.co.nz/national-cargo-products-and-services

- Find a flight from your location to Palmerston North. Liaise directly with Wendi regarding timing of arrival of flight. Wendi will pick the dolphin up from the airport.
- Pay for the freight on a p-card.
- Confirm with Wendi what time the flight will arrive in Palmerston North.
- Contact Marine Species team for the code to charge the costs to.

7.2 Packaging protocol

Ensure the following protocol is observed when packing a dolphin or other specimen:

- Bodies should be chilled down if there is any delay between recovery and shipping (e.g. placed in a bath with bags of ice overnight).
- Double-bag in thick polythene 'body bags' tied with cable ties (dolphin body bags can be requested from National Office - hhendriks@doc.govt.nz or marinemammals@doc.govt.nz)
- Include a paper copy of the incident form (DOCDM-870555) inside a ziplock bag, taped to the bagged body - ensure you fill out the disposal section so the researchers know whether they need to return the body.
- Pack all of this inside a tuna coffin if you have one.
- Label for delivery should include:

  Wendi Roe

  PM Room 101

  IVABS

  Massey University

  Tennant Drive

  Palmerston North 4474

  Contact: 0272708982
- Last step once transport is organised is to call or email Wendi and let her know who is transporting it (e.g. Halls or Air New Zealand), when it left, and when it is due to arrive (important for flights).

Hygiene

You need to pay particular attention to hygiene when freighting marine mammal carcasses and samples. Halls carry other products and we must take all care not to provide potential sources of contamination. Double bagging or use of body bags should be regarded as a minimum requirement, and the bags sealed using zip ties. There is a supply of body bags in National Office. Contact the Marine Species team if you need more.

Labelling

Attention to labelling is important. At the very least include the date, species, what the specimen is, collector's name and the location. If possible, include a copy of the stranding form.

8. Disposal

8.1 Protective Clothing Suggestions

Disposal of marine mammals can be a messy job. Refer to your health and safety plan and ensure the proper PPEs are worn and good hygiene is practiced to minimise the risk of infection. PVC bib leggings and parka is preferable to disposable overalls. A PVC apron, gumboots gloves and a hat should all be worn.

Nitrile medical gloves are excellent, but double them. If the carcass is decomposing use a barrier cream under the gloves. It is also a good idea to use old disposable clothing under the protective clothing.

8.2 Options for disposal

- Leave - In remote locations where there is no risk to public health, and decomposition of the carcass will not affect residents, burial is unnecessary. Consider contacting the Ministry of Health to erect signs regarding the collection of shellfish.
- Offal pits - Small carcasses can be disposed easily in offal pits.
- Before Burial commences, ensure that the site has been cleared by an archaeologist, and that appropriate consultation has occurred with landowners and tangata whenua.
- Burial - Before the grave is filled in, the upper most aspect of the whale's body cavity should be opened. This promotes decomposition and reduces the chance of gases distending the carcass and opening the grave. Graves of large whales should be fenced off because there may be considerable subsidence as a result of decomposition. Ensure your District has the proper consents for burial sites through RMA, Coastal Plans.
- Append any guidance on this for your District to this plan.
- Burning – This is most successful when the carcass is fresh, sufficient fuel must be available to ensure it burns completely. Burning is not an option where there is any risk of igniting nearby vegetation, or of the smoke plume adversely affecting local residents; this technique is to only be considered as a last resort.
- Composting – This has been successfully employed with small carcasses. See Preparation of Marine Mammal Bone - Composting (DOCDM-894714) for more detailed instruction.
- At sea – whales and dolphins can be disposed of at sea; however, consideration must be made to currents and possibilities of the carcass washing up on another section of coastline. Example of towing sperm whale to sea: DOC-6061290, also see following link for towing three sperm whales a short distance.
- It is possible to anchor carcasses in the coastal zone for decomposition, this has been conducted successfully with pilot whales on Farewell Spit (see this powerpoint presentation for images showing the decomposition rate, towing etc: DOC-6061271).

8.3 Use of machinery to move dead whales

Whales are very heavy and difficult to move. The table below gives an idea of sizes to expect.

Table 5: Estimated maximum lengths and weights of whales stranded in NZ
Taken from Baker (1987)

Species	**Average Length (m)**	**Average Weight (kg)**	**Maximum Weight (kg)**	**Approximate Digger Size needed‡**
Common dolphin	2.1	80	136	1 tonne
Dusky dolphin	1.8	115	140	1 tonne
Bottlenose dolphin	3.5	200	650	2 tonne
Pilot whale	6.0	1500	3800 (M) 1800 (F)	10 tonne
False killer whale	5.0	1200 – 1400 (M) 900 (F)	2200 (M) 1100 (F)	5 tonne
Killer whale	8.0 (M) 7.0 (F)	5600 (M) 350 (F)	7200	17.5 tonne
Pygmy sperm whale	3.0	360	408	2 tonne
Gray's beaked whale	5.0	1000	1200	5 tonne
Sperm whale	15.0 (M) 11.0 (F)	40,000 (M) 22,000 (F)	42,000	100 tonne
Minke whale	8.0	6000 –7000	9000	22.5 tonne

‡ If using a digger the rule of thumb is that "the size of digger will lift about 40% of its own weight" i.e. A 20 tonne digger will handle an 8 tonne load. This will vary with the age of the machine, the type of bucket, the experience of the operator and the terrain in which the whale is stranded. On soft sand or shingle, heavy machinery will have considerable difficulty manoeuvring and performance will be adversely affected.

The most useful machine to deal with a dead whale on the beach is a digger. They can dig a deep hole, drag, lift, tow, or roll a whale. Wheeled diggers have the advantage of a much higher ground speed but are unsuitable if the beach is soft. They will go where a 4x4 Ute will go. Bulldozers are limited to pushing and towing and are not efficient at digging holes. They could be used with the help of 2 or 3 diggers to move a large whale. Most Port companies should be able to help with large hawsers and chain. When lifting whales onto trucks using a digger, ensue there is a forestry cage on the cab to protect the driver in the event the whale slips.

Burial of sperm whales and larger baleen whales will require a well-planned operation with a number of machines. It is essential to have one person co-ordinating all the machines. Note: burial of many or large whales can be expensive. Consider other disposal options first. Costs associated with responding to large events like this need to be absorbed by local operating budgets or otherwise can be escalated to DDG Operations.

8.4 Cleaning equipment

All equipment and gear should be cleaned thoroughly after every stranding. The following method of cleaning gear is recommended:

- Tools - Soak in a bucket of Virkon or Trigene (disinfectant available from local vet) and scrub clean with a brush and dry with a rag.
- Clothing - Soak in Virkon/Trigene, rinse with freshwater and dry. Then put clothing in the washing machine with a hot wash (separate from other clothing). Eucalyptus fabric softener helps reduce the smell and helps protect clothing.
- Vehicles - Use strong thick polythene or tarps to protect trucks or trailer decks when transporting marine mammals. Use polyethylene tubs for smaller things such as skulls or small seals or dolphins. Ropes used need to have sand and grit rinsed off to avoid damage to the rope.

9. Debrief

A debrief should be held within seven days of the completion of any marine mammal stranding operation. Key personnel connected with the operation should be invited to attend. In some situations it may be appropriate to open the debrief to all who participated.

The purpose of a debrief is to build up a full picture of the operation and to examine all aspects so that lessons learnt can be applied to future incidents. Suggestions for improvement in procedures and the suitability of equipment and logistics should be recorded. In some circumstances it may be useful for a staff member not engaged in the actual operation to chair the debrief.

The debrief is a domestic matter but, if it is in the public interest, a release of all or part of it may be released by the Conservator.

Table 6: Suggested Debrief Agenda

1. Callout
2. Initial Information Gathering
3. Initial Response
4. The Operation
5. Stakeholders
6. Iwi
7. Log/Record Keeping
8. Equipment
9. Media
10. Aircraft – use, exclusion zones etc
11. Command Structure
12. Personnel/operational resourcing
13. Internal communications
14. Other Communications
15. Sampling
16. Training
17. Summary and Conclusions

You can use the Fire debrief format if you are more familiar with it.

10. Appendices

This Part of the plan documents all locally specific protocols and should include your Office's; media plan, iwi protocols, health and safety, map of coastal access points, etc. Ensure that you provide information on the following:

- Fragile areas or Areas of Significant Conservation Value (ASCV's), available from your conservancy planner;
- Areas significant to iwi, e.g Maori burial sites, historic/cultural sites;
- Contact details of any landowners whose permission may need to be sought;
- Designated, or recommended marine mammal burial sites.

This information will be useful in other events that do not relate to marine mammals so should be readily available.

10.1 Forms

Follow the links below and print copies to append to your Office Plan.

CIMS forms: docdm-788833

Annual Report Form: docdm-892618

Initial Response Form: docdm-870561

Whale and Dolphin Incident Form: docdm-870555

Seal and Sea lion Form: docdm-870560

Sighting Form: docdm-870477

Volunteer check in form: docdm-1007942

Mass stranding Measurements Form docdm-1007957

Wildlife submission form for Massey University

10.2 Species Identification Tools

There are a number of tools available for species ID.

- Whale identification cards and posters
- Whales & Dolphins of NZ & Australia – an identification guide, By Dr Alan Baker – Victoria University Press – 133 pages Published 3rd edition 1999. ISBN 0-86473-338-0), BAKER 1999
- ftp://ftp.fao.org/docrep/fao/009/t0725e/t0725e00.pdf
- Whales Dolphins and Porpoises, By Mark Carwardine - Details on Google Books
- IFAW guide: docdm-1181177

Table 7. Lengths at critical life-history stages of whales and dolphins recorded from New Zealand. Note: length at weaning expressed as a percentage of maximum length is given in brackets. Use when considering whether to refloat whales or not.

Common name	**Scientific name**	**Maximum length (m)**	**Length at birth (m)**	**Length at weaning (m)**	**Length at sexual maturity (m)**	**Approx Adult Weight**
BALEEN WHALES						
Blue whale	*Balaenoptera musculus*	31	7	12.8 (41%)	22.6 male 24.0 female	160 tonnes
Bryde's whale	*Balaenoptera edeni*	15.6	3.95 - 4.15	7.1 (51%)	11.6-12.4 m 12-12.8 f	20-25 tonnes
Fin whale	*Balaenoptera physalus*	24	6.4	11.5 (48%)	19.0 male 20.0 female	75 tonnes
Humpback whale	*Megaptera novaeangliae*	16	4.3	7.5-9 (47-56%)	11.5 m 12 m	35 tonnes
Minke whale (dark shouldered)	*Balaenoptera bonaerensis*	10.7	2.8	?	7.2 m 8 f	14 tonnes
Minke whale (dwarf)	*Balaenoptera acutorostrata*	9.2	2.2-2.6	4.5 (49%)	6.9 m 7.3-7.45 f	<14 tonnes
Pygmy right whale	*Caperea marginata*	6.4	2	3.5 (55%)	?	3200 kg
Sei whale	*Balaenoptera borealis*	18	4.5	8 (44%)	16.6-17	30 tonnes
Southern right whale	*Eubalaena australis*	18	4.5-6	?	12.5-13.5 f	100 tonnes
TOOTHED WHALES						
Andrew's beaked whale	*Mesoplodon bowdoini*	4.7	2.2	?	4.2 f	?
Arnoux's beaked whale	*Berardius arnouxi*	9.7	(4)	?	?	?
Bottlenose dolphin	*Tursiops truncatus*	4	1-1.3	?	?	650 kg
Common dolphin	*Delphinus delphis*	2.6	0.8-0.85	?	1.7-2 m 1.6-1.9 f	140 kg

Common name	**Scientific name**	**Maximum length (m)**	**Length at birth (m)**	**Length at weaning (m)**	**Length at sexual maturity (m)**	**Approx Adult Weight**
Cuvier's beaked whale	*Ziphius cavirostris*	7	2.7	?	5.5 m 5.1 f	3 tonnes
Dense-beaked whale	*Mesoplodon densirostris*	4.9	1.9-2	?	?	?
Dusky dolphin	*Lagenorhynchus obscurus*	2	0.7	?	1.7 f	40-80 kg
False killer whale	*Pseudorca crassidens*	5.5	1.8	?	3.96-4.57 m 3.66-4.27 f	2 tonnes
Ginkgo-toothed Whale	*Mesoplodon ginkgodens*	4.9	2-2.5	?	?	?
Gray's beaked whale	*Mesoplodon grayi*	5.64	< 2.4	?	5.1f	1 tonne
Hector's beaked whale	*Mesoplodon hectori*	4.5	< 2.1	?	3.9 m	?
Hector's dolphin	*Cephalorhynchus hectori*	1.6	0.6-0.7	?	1.2-1.3 m 1.35 f	60 kg
Killer whale	*Orcinus orca*	9	2-2.5	?	5.8 m 4.6-4.9 f	10 tonnes m 7.5 tonnes f
Long finned pilot whale	*Globicephala melas*	6.5	1.75-1.8	?	5 m 3.8 f	2 tonnes
Pantropical spotted dolphin	*Stenella attenuata*	2.5	0.86-0.89	?	1.94 m 1.82 f	120 kg
Pygmy beaked whale	*Mesoplodon peruvianus*	3.7	1.6	?	?	?
Pygmy sperm whale Dwarf sperm whale	*Kogia breviceps* *Kogia simus*	3.3 m 2.7 f	1.2 ?	2 (61%) ?	2.7-3	400 kg 210 kg
Risso's dolphin	*Grampus griseus*	3.85	1.2-1.5	?	2.6-2.8	4-500 kg
Shepherd's beaked whale	*Tasmacetus shepherdi*	7	(3)	?	?	?
Short finned pilot whale	*Globicephala macrorhynchus*	5.9	1.4	?	4.2 m 3.16 f	3.6 tonnes

Common name	**Scientific name**	**Maximum length (m)**	**Length at birth (m)**	**Length at weaning (m)**	**Length at sexual maturity (m)**	**Approx Adult Weight**
Southern bottlenose whale	*Hyperoodon planifrons*	9	< 2.9	?	≤ 5.7 f	?
Southern right whale dolphin	*Lissodelphis peronii*	3	?	?	?	120 kg
Spectacled porpoise	*Australophocaena dioptrica*	2.2	?	?	2 m 1.86 f	?
Sperm whale	*Physeter macrocephalus*	18 m 12 f	4		11-12 m 8.3-9.2 f	57 tonnes
Strap-toothed whale	*Mesoplodon layardi*	6.2	3	?	?	?
Striped dolphin	*Stenella coeruleoalba*	2.6	1	?	2.19 m 2.16 f	160 kg

10.3 Contacts lists

There are a number of people within the Department of Conservation and externally, who need to be contacted in the event of a marine mammal incident. Use the following Excel based spreadsheets to develop your four key contact lists, print them off and append them here. The four lists are:

National Expertise within DOC

(DOC National Contacts Spreadsheet [docdm-1186392] - print "DOC Expertise" and attach to your plan here). This will be updated as needed so make sure to check this and append an updated version when updating local plans.

National External Parties

External contacts list for stranding protocols [DOCDM-824399]. There are two tabs on this file. The National one will be updated as needed, print and append to your local plan. The other tab is a template to help you build your local area contacts. This may be adapted to your purposes as needed.

Local DOC Staff

Staff Capability and Training Register [DOCDM-831790]- find the tab for your region, ensure it is up to date, print, an append to your plan. Note: we encourage the use of Risk Manager for training and competency logs. This spreadsheet is designed to be printed when plans are updated to show at a glance who can be called upon for certain skills. You can use the template builder in the last tab of the spreadsheet to build a shorter version with contact details included.

The people that you need to contact in the event of any stranding (see contacts lists in Toolbox):

- Iwi, and local managers, local community as per your community engagement protocols.
- Notify the Marine Species team and submit forms

For particular species or scenarios also contact:

- Hector's or Māui dolphin: Wendi Roe, Stuart Hunter (Massey University)
- Live Orca: Ingrid Visser (Orca Research Trust; 0800 733 6722)
- Possible fishing related incident: Kris Ramm (Marine Species, CSP)
- Common/dusky/rare dolphins: Karen Stockin (Massey University)
- DNA sampling: Rochelle Constantine (Auckland University)

10.4 Equipment lists

Stranding equipment should be thoroughly cleaned and checked after each use to ensure it is in good working order for the next event. Any item that needs repair or replacing should be fixed as soon as possible after the event.

Regular gear checks should be organised and can be done in conjunction with gear maintenance for fire, training sessions, or on a rostered schedule of every 2-3 months. All staff should know the location of the stranding equipment and be familiar with its use.

Below is a general list of the basic equipment required for attending a marine mammal incident. This can be organised into Initial Response Kits, and Full Kits. The following are examples of the type of gear you should have. Your office's gear list might differ slightly, please insert YOUR equipment list in this section and note the location it is stored.

Additional lists follow that detail gear that is required or may be useful for specific scenarios. Images are included for some of the specialist equipment in the following sections.

Recommended 'Initial response' equipment for all incidents

- A copy of your Office's "Operational Procedures for attending marine mammal incidents" including;
    6. Identification Guides (eg, Baker 1999, FAO guide, DOC ID Guide)
    7. Printed copies of relevant forms;
    8. Note book, water proof paper, pens, pencils
    9. Tide tables / maps etc.
- PPEs, eg;
    10. Overalls, disposable overalls or PVC leggings and coat,
    11. gloves (rubber, latex, leather),
    12. waterproof gear,
    13. boots/gumboots,
    14. earplugs
    15. Torch and batteries;
- Portable radio and/or mobile phone (and drybags);
- First Aid kit (you should consider);
    16. Betadine gel
    17. Vicks VapoRub (you can stick some under your nose for decomposed specimens)
    18. Barrier cream
    19. Antibacterial soap
    20. Face masks / respirator / safety glasses
    21. Disinfectant for clean up, eg Virkon;

- Sampling tools;
    22. Tape measure;
    23. Camera, photo scales and labels;
    24. Tinfoil,
    25. Ziploc bags,
    26. Vials with 70% ethanol, labels and pencils (contact Rochelle Constantine for DNA sampling kit),
    27. Tape measure (20m),
    28. Tag pen/ Spirit pen / Vivid
    29. Pliers, scissors, knife, scalpel etc;
- For stabilising live animals
    30. Buckets,
    31. Sheets,
    32. Restricted Area Tape,
    33. Rope/ String,
- Moving or clean up
    34. Shovels,
    35. Large body bags;

The initial response kit should have all the basics you need for any event. For a mass stranding it will be enough to get the first on site started, while a second team pulls together additional equipment. This may be from a secondary kit with additional buckets, sheets, slings, shovels, body bags etc., or through sourcing more equipment from local contacts.

Additional specialist equipment

Seal / Sea lion

- heavy leather or canvas gloves, facial mask;
- nets, e.g., hoop net with open cone at end (see images for options);
- sacks (old seed/grain sacks cleaned). Cut one corner cut out and duct tape edges to stop fraying. Small seals can be easily restrained in these, their flippers are held down at their sides and they can get their noses through the hole for fresh air;
- plywood full-length shields for driving seals;
- scissors, knife, or pole with curved blade on the end (blunted tip, sharp inner curve) for cutting debris off entangled seal;
- noose pole / dog-catcher's pole (*optional - enables catching smaller animals from deep rock crevices or to catch from dense groups of animals from a distance);
- pole with loop fastened at the centre (*optional - allows two people to control a large animal when noose is wound up on pole);

Entanglement/cetacean

Note that not every Office needs to have this equipment list. A set is held by the disentanglement team in Kaikoura, and two sets are being established for access on the North Island. This list is to familiarise staff with the procedure should you need to assist in a whale disentanglement.

Delete the sentence that does not apply for your Office:

[The XXXXX Office holds a whale disentanglement kit and it is located XXXXXXX.]

OR

[The XXXXX Office does NOT hold a whale disentanglement kit. In the event of an entangled whale contact Mike Morrissey. Do not attempt release.]

- 3 x grapple with trace;
- 3 x 10 m grapple throwing line;
- 1 x 10 m main line;
- 2 x 30 m main line;
- 2 x 30 m silver rope, Floating line;
- 3 x personal safety knives;
- 3 x end of line floats;
- 6 x large buoys (A4, A5, A6 type floats);
- 2 x extendable pole sections with rope cutting blade attachment;
- 2 x additional cutting tools, with extendable pole attachment (capable of cutting light, medium and heavy line);
- 1 x carabiner clip (non-locking) and pole adaptor;
- 1 x 20 cu/ft pony bottle with regulator (*optional);
- 1 x mask/snorkel (for over bow assessment);
- 1 x dive slate and pencils;
- 1 x buoy (float) inflation device;
- 1 x helmet camera (on loan M. Morrissey);
- 1 x pole camera;

Staff on the point boat require full wetsuit, buoyancy vest, gloves, diving boots and helmet.

Live Stranding (single and mass)

For an example of what you might have in a trailer for mass strandings see:

Example Stranding trailer and kit bag contents: Golden Bay olddm-613074

Example Stranding trailer and kit bag contents: Hauraki Area docdm-1104145

Note that the number of each item will depend on what is needed in your area, therefore treat numbers in this list as an example. Food and drinking water;

- Sunscreen, towels, appropriate PPE including wetsuits;

- Binoculars;
- High vis vests (coded - DOC), and a set of CIMS coded vests for CIMS roles;
- Powerful torch and batteries;
- Cyalume sticks;
- Biodegradable tape, coloured cotton, marking tape etc for marking whales (3 colours for triage);
- "Do not cross" barrier tape;
- Rope for tying carcasses (cattle tags and tag pen for ID);
- Old sheets (a lot, contact hotels for more sheets);
- Buckets x 20;
- Slings x 6;
- Dolphin stretcher;
- Stranding pontoon (optional);
- Lifting frame (optional)
- Spare tape measures;
- Wajax pumps, hoses, intake sieve, branches and dams;
- 4WD/ ATV;
- Appropriate calibre rifle, ammunition and ear-muffs;
- Hook slasher - sharpened on the outer edge to open animals prior to burial
- Mega-phone
- Dive cylinders

The Department is looking for ways of improving our techniques as well as monitoring the successfulness of refloating attempts. Specialist gear will be required for these initiatives. You are not required to have these items; however, these are things we would like to investigate, so are optional. If you would be interested in trialling this equipment in your area please contact the Marine Conservation Team to discuss.

- T-bar/Floy tags and tag applicator for marking whales to be refloated; www.hallprint.com
- Specialised trailers for relocating whales;
- Satellite tags.

10.5 Marine mammal stranding media information

See DOC-2598638 for national media messaging