Guideline

District Operational Plan for Marine Mammal Incidents

Contents

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Department of Conservation
Te Papa Atawhai

Te Kāwanatanga o Aotearoa
New Zealand Government

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1. What you need to know

1.1. When you should use this guideline

The purpose of these Guidelines is to provide consistent and high-quality response both on and off site to marine mammal incidents. The objective of this document is to provide staff with all the tools needed to respond to an incident when in the field.

These guidelines 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 relevant Regional Operations staff should be familiar with these procedures.

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)) to create District Operational Plans. Copies should be kept in easily accessible places.

This guideline is relevant to any DOC District with a coastline.

This guideline does not apply to:

- Entangled whales and dolphins – see the 'Whale entanglement SOP (doc-6748776)
- Oiled wildlife response – these incidents are managed by Massey University's Wildbase Oiled Wildlife Response

1.2. Where this guideline comes from

Marine mammal strandings are often highly publicised events. This plan sets out the standards for managing marine mammal incidents, strandings, and emergencies as per the relevant legislation and policies.

Marine Mammals Protection Act 1978

All species of marine mammal occurring within New Zealand and New Zealand's fisheries waters are absolutely protected under the Marine Mammals Protection Act 1978 (legislation.govt.nz)(MMPA). The Department of Conservation is responsible for enforcing this Act.

At a stranding the Department is responsible for:

- the welfare of the stranded animals,
- the disposal of any dead marine mammals (including any part of a marine mammal),
- the health and safety of its staff and any volunteers under its control, and the public, and
- enabling any cultural protocols or actions.

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Marine and Coastal Area (Takutai Moana) Act 2011

According to the Marine and Coastal Area (Takutai Moana) Act 2011, when making decisions about managing a stranded marine mammal, DOC must:

- ensure that the welfare of the marine mammal and public safety are the primary considerations, and
- have particular regard to the views of any affected iwi, hapū, or whānau.

Conservation General Policy 2019

The Conservation General Policy 2019 (doc.govt.nz) outlines how DOC will implement the Acts that we are responsible for, including the MMPA. It provides guidance for the administration and management of marine species, habitats, and ecosystems.

The Policy specifies that tangata whenua, as kaitiaki, will be:

i. invited to participate in the protection of marine species of cultural importance to them;

ii. provided with access to the remains of dead marine protected species for customary use, including those incidentally caught in commercial fishing, consistent with relevant legislation and agreed protocols;

iii. provided with immediate notification of strandings where possible; and

iv. involved in the management of stranded marine mammals, in accordance with agreed protocols.

Additionally, the General Policy stipulates that:

- carcasses of stranded marine mammals should be left unburied if they are lying in remote places where this does not give rise to a public nuisance, and
- whales and dolphins should not be brought into or bred in captivity in New Zealand or exported to be held in captivity, except where this is essential for the conservation management of the species.

1.3. Glossary

Relevant terms and definitions are listed in a glossary in Appendix I.

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2. Getting started

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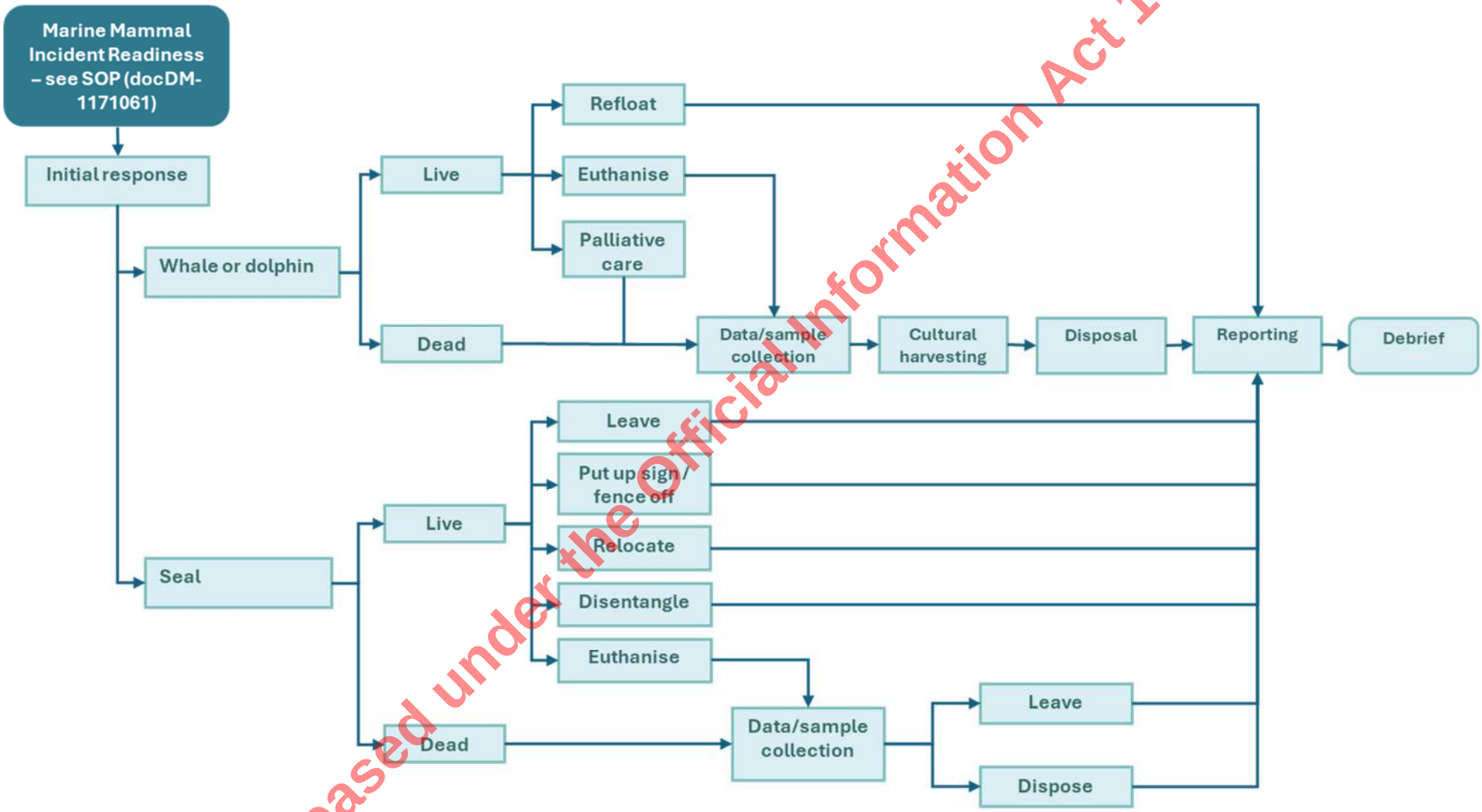
2.1. How this all works



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3. What you need to do for responding to whale and dolphin incidents

3.1. Initial response

On receipt of a report, the local DOC office should record as much information as possible using the Initial Response Form (docDM-870561). Obtain photos or videos where possible.

Contact Technical Advisors if required for species identification help.

The following information should be known before a response can be planned:

1. Sea and site conditions (tide, environment type, weather, access) - is it safe to proceed?
2. Animal type and species, size, number, condition.

At this stage you might wish to start an Incident Log (doc-10219511) to keep track of information, communications, and decisions.

A decision on the most appropriate response must be made as soon as possible. Every attempt should be made to attend, the exception being when it is so remote as to be unrealistic.

If the incident is a **false alarm**, or the decision is to **not respond** then this and the reasons why should be noted on the Initial Response Form and/or Incident Log. The person reporting the stranding should be fully informed as to what action will be taken as a result of their report.

If the incident **requires further response**, continue to the relevant section to find the appropriate response process:

- Live incidents – go to section 3.2
- Dead incidents – go to section 3.3
- Entanglement – use the SOP for Whale and Dolphin Entanglement (doc-6748776)
- Seal or sea lion – go to section 4

3.2. Live incidents

3.2.1. Decision making

Response checklist

The basic response for any live stranding should follow a simple 7 step process:

1. **Scene/Safety** – what are sea and site conditions, is it safe to proceed?

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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 Whale and Dolphin Incident Form (docDM-870555), 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:

1. human safety, and then
2. animal welfare.

The other factors include:

- environmental conditions
- resource availability
- site access
- treaty partner support
- estimated cost
- threat status of species.

Options for response

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

See Table 1 to assist in making this decision.

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

If the decision is to rescue, follow more details instructions in the rescue response section.

If the decision is to euthanise, see detail in euthanasia section, and then proceed as for a beach cast 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 conditions that may have caused the animal(s) to strand.

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 (calves) – see next section.

Mother/calf pairs

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. Generally, if the mother is dead or has to be euthanised, the calf should also be euthanised if it is less than 50% of adult size, see more info below. If the mother is not lactating, and the calf and companion animal are healthy then only the mother should be euthanised.

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 foetal folds and/or a papillated (feathered) 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. Use the flowchart in Figure 1 to assist in decision making about calf dependence.

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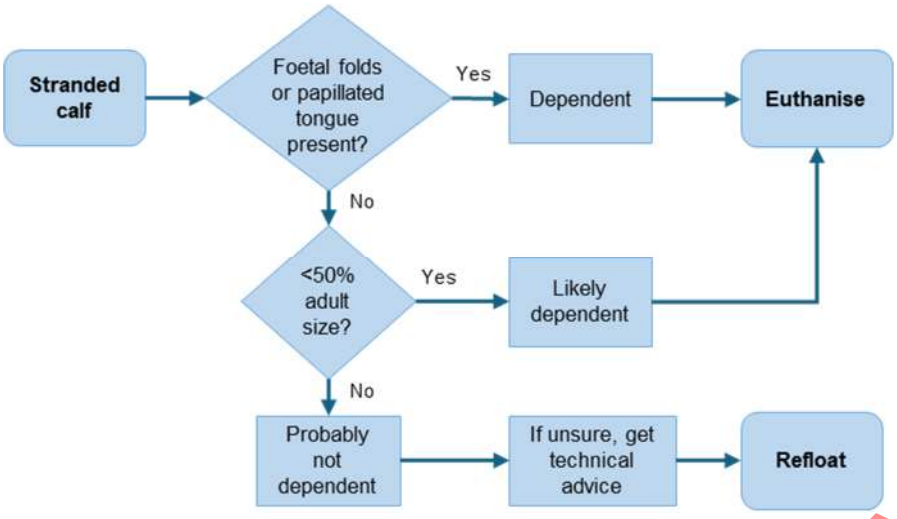

Figure 1. Use this flow chart to help determine if a calf is likely to be dependent on it's mother for survival.

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).
- Keep whale cool by maintaining a steady flow of water over the body, focusing on the flukes and flippers – do not pour water down the blowhole.
- 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 Table 1 to determine the possible actions taken depending on the condition of the animals, the site conditions, and the type of stranding.

Table 1. Decision table for deciding on the appropriate response to whale and dolphin incidents.

Condition*	Site conditions	Stranding type	Possible action
Good	Conditions favourable and site suitable	Single animal or mass stranding	Release at site possible (section 3.2.4).
		Large animal >6m	Assess the tides for possibility of natural floatation. If natural floatation not possible, provide palliative care.

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	Conditions unfavourable	Single animal or mass stranding	Consider a delayed response or an alternative location. If conditions do not improve, consider euthanasia (section 5), palliative care, or no response.
		Large animal >6m	Consider a delayed response. Assess the tides for possibility of natural floatation. If natural flotation not possible, provide palliative care, or no response.
	Site unsuitable	Single animal or mass stranding	Consider transporting animal to alternative site. If transportation not possible, consider euthanasia (section 5) or palliative care.
		Large animal >6m	Palliative care.
Poor	Any condition	All stranding types	Consider euthanasia (section 5) or palliative care.

*Note: animals in poor condition include vagrant species and maternally dependent (Figure 1) animals.

3.2.2. Preventing a mass stranding

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

Confirm offshore pod

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.

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In-water deterrent

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.

Preventative euthanasia

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. Jim Campbell should be contacted immediately when sperm whales are noted milling around close to shore.

3.2.3. Stranding response

The key response steps for any whale or dolphin stranding are the same, but mass strandings are more complex and may need more people. 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. The Incident Controller then notifies all others needed and takes responsibility for coordinating all subsequent operations. The Incident Controller also designates other CIMS roles to appropriate staff, see the Guide to CIMS IMT roles for marine mammal incident response (doc-7340423).
2. Initiate a reconnaissance or intelligence gathering team to assess site and resource needs. These staff shall:
    a. Assess the situation and advise the Incident Controller.
    b. Evaluate the site for hazards; interview eyewitnesses; determine number, size, species and condition of stranded animals.
    c. Assess whether a rescue attempt should be instigated, see Table 1.
3. District Office begins an incident log (doc-10219511) and establishes communications with crews responding to the stranding.
4. District office sends two staff with initial response equipment to:
    a. Secure the site and establish a Staging Area (onsite support base).
    b. If a rescue is to be attempted, a start should be made on stabilising and triaging animals and the response structure be implemented.
    c. If the stranded animals are larger than 6m a rescue operation could be difficult. See section on special considerations for large whales and contact the Marine Species team to discuss response options.

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5. District office may contact the Civil Aviation Authority and establish a restricted fly zone over the stranding site if necessary (see section 3.2.6), as well as 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.

7. District Office assembles additional staff and sends them to the stranding site with any additional or extra equipment that may be required.

8. Contact Project Jonah for advice or to mobilise trained volunteers (see section 3.2.3 for information about working with volunteers). The media team can assist with a call to action if additional manpower is required (see details in the marine mammal stranding media messages (doc-2598638).

9. District 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

10. Establish a staging area (may be called 'Stranding Base') for site coordination and to introduce volunteers to the site.

11. 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.

12. 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.

13. A media response should be initiated with comms advisors.

3.2.4. Rescue response stages

Stage one: 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.

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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.
- Optional: The use of channels is an option for re-floating the live animals (see Stage Two – Moving) – digging should begin as early as possible during Stage One of the Rescue Operation.
- Assess the condition of all whales and triage – use marking tape or paintstiks if available[1]. Semi—permanent marking allows tracking of individuals during restrandings, or when whales wash up elsewhere. Suggested categories are:
    - White: Healthy live animals, good to be released.
    - Blue: 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.
    - Yellow: Minor incapacity, e.g. minor injury, could be released but requires some monitoring/treatment.
    - Orange: 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.

[1] Biodegradable tape is available in pink, blue, and orange from KiwiCare Corporation Ltd or Paintstiks are available in blue, red, black, orange, yellow, and white from NZ Safety Blackwoods (as at 26/03/2025.

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How to tell if a whale or dolphin is alive or dead

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/stressed. If a whale or dolphin has not been observed breathing, you can determine if it is alive by:

- Touching the corner of the eyelid
- Touching the edge of the blowhole
- Touching the eye itself.

If there is no response to any of these then it is likely the animal is deceased.

Stage two: 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.

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 alongside and to the front of the animal to avoid being hit.

While in shallow water, people should remain on their knees to mitigate the risk of whales rolling onto people in the waves.

Whale moving options:

- Manpower and tides/self-refloatation
    - Support whales in place as the tide comes in around them and they become buoyant.
- 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 side and unroll the tarpaulin.

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    - 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.
- Translocation – if planning to relocate whales to another site you should be aware of the Animal Welfare Code for Transportation (mpi.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. Maintain appropriate H&S and PPE when using machinery. 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.
        - Consider health and safety if anyone is to ride with the whale during transport – keep away from the tail.

Stage three: Reorientation

Aim: To prepare the whales for release by allowing them to regain their balance/equilibrium 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.

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- 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). Don't rush this process.
- 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 breathe unassisted
    - Ability to orientate and stay upright in the water
    - Ability to self-right if rolled onto side

Stage four: 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 Lead.
- 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, you can allow the pod to sort itself out. Once the pod has properly reformed it will usually make its own way and is less likely to re-strand.

Monitoring and preventing re-stranding

- 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.

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- 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:
    - Only use good boat operators.
    - Ensure good communication and co-operation between ALL the boats present.
    - 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.
    - Work the boats at a distance from the whales preferably, however, you may need to be very forceful with boat use to change the direction that the whales are travelling. Herd the whales to a 'collection point' 1-2 km offshore where they can settle and reform their group.
    - Once offshore follow the whales for as long as possible to monitor rehabilitation.
    - Note that some whales may continue to re-strand; 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.

Special considerations for 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 (NZWDSD) there have not been many records of live strandings of large baleen whales so our experience with euthanasia of these animals is minimal.

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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.

Special considerations for orca

Contact Ingrid Visser at the Orca Research Trust.

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 placed 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 body 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 for the rescue of a stranded individual. If possible, photograph the other individuals for identification.

3.2.5. Working with volunteers

Where volunteers are involved and DOC is leading the response, we must, as far as reasonably practicable, provide a safe work environment and ensure all volunteers are safe home at the end of the day. Refer to the Volunteers and Legislation factsheet (doc-2675362) and the Health and Safety at Work Act Factsheet 2 – Volunteers (doc-2632093) for more information about our responsibilities when it comes to volunteers.

Key actions:

1. Brief all volunteers on the task and JSA
2. Lead the volunteers during the task – monitor safety
3. Ensure all volunteers are safely out of the water at the end of their task

Enlisting volunteer help

Volunteers can be categorised into two groups:

- **Spontaneous volunteers** – people who show up because we asked for help or because they heard about the stranding, levels of experience are likely to vary, and their participation is likely to be shorter in duration.

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- **Organised volunteers** – requested to assist because they have skills and experience to support (e.g. Project Jonah Marine Mammal Medics) or are supporting an event of longer duration and rostering of people/structuring of tasks is occurring. More likely to come prepared for longer duration events and have the appropriate gear and ability to be self-sufficient.

DOC's key source of 'organised volunteers' for strandings is Project Jonah. If you need additional help or manpower at a stranding, ask Project Jonah to mobilise their trained medics in the area (for more information about Project Jonah, see section 3.1.5 in the SOP (docDM-1171061).

If additional manpower is required on top of the available Project Jonah medics, the media team can put out a call to action. Information regarding this is available in the marine mammal strandings media messages (doc-2598638). The public can also be directed towards our website[2] for information about how to stay safe at a stranding and what kind of equipment they will need.

Briefing volunteers

Before a volunteer begins a task, we must ensure that they have been provided with a briefing that enables them to keep themselves and others safe whilst performing this task.

In providing the briefing we need to:

- explain the task and how to do this safely (cover off the JSA),
- assess if the volunteer is fit to undertake the task (this includes asking for medical conditions) and has suitable gear,
- ensure they understand DOC is in charge and they must follow our instructions, or we may have to ask them to leave,
- make sure they will speak up if they observe safety issues or feel unsafe at any time,
- explain to parents with children that they must supervise their child at all times,
- explain that DOC isn't liable for damage to their gear or loss of gear while they are helping.

It is likely that this briefing will be given by a team/sector lead, these people need to be identifiable within the response so that people showing up can see them and know they have authority. The team/sector lead must be clearly tasked by Operations to ensure the people involved in assisting with the event are supported to do so, this includes monitoring their safety.

It might be possible to direct potential volunteers to DOC staff (or other appointed persons) on site for a briefing and to assess their suitability before they are tasked to an activity and handed over to a team/sector lead. For example, white boards saying "speak to a person wearing a bright pink vest if you want to volunteer" could be placed in locations where they can be read before the volunteer is able to approach the action.

Tagging volunteers who have been briefed (wax paper bracelets are a good approach) is helpful where you have different people briefing and leading or team leads changing about.

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[2] https://www.doc.govt.nz/nature/native-animals/marine-mammals/marine-mammal-strandings/how-to-stay-safe/

Assessment of potential volunteers' experience, fitness, and capability

Talk to the volunteer to determine if they have relevant experience, or are willing to learn, they are fit to be deployed for physical activity and they are likely to listen and follow directions. It isn't a tick box, but ask them about their experience and what other tasks they could help with (e.g. catering, sitrep writing), explain the mahi to them and ask if they feel that they can do this physical work, manage in the cold etc.

If through this briefing, we have concerns that the potential volunteer will not be able to undertake the task we need to direct them to a more suitable task or politely decline and explain our concerns.

If children wish to participate, they must be supervised by their parent. Younger children are more likely to be a risk, and if parents may not provide sufficient supervision, consider politely declining their help or identify tasks where they can help with little risk.

Registering of volunteers

Where volunteers may be assisting for a prolonged period and/or rostered into shifts to support the activity the Department should take the name and contact details of these individuals to schedule their involvement during the response and allow us the ability to follow up with them afterwards for review or support. A Volunteer Check-in Form (docDM-1007942) is available if required. Ensure volunteer details are stored securely.

During the response

Ensure that spontaneous volunteers take breaks and remain fit to complete the task, the team/sector lead will need to monitor their team members and direct them for the duration. Team/sector leads need to be alert to fatigue, hypothermia, heat stroke, dehydration and back injury. The team/sector lead is there to supervise and support the team, this is their primary task.

The team/sector lead must ensure that all team members are out of the water by the end of the day or end of their task. DOC must ensure that all people are accounted for and safe on dry land before they depart the field site. Team/sector leads need to know who they are directly responsible for and be able to confirm to Operations/Health and Safety leads that all people are safe and accounted for.

Poor or unsafe behaviour

If a volunteer is observed being unsafe this must be raised immediately with them by the team/sector lead, and if this continues the team/sector lead should remove them from the task, explain why they have been relieved from the task and thank them for their help.

If the volunteer is not responding and continues to cause problems raise this with the Incident Controller. The Department has powers under the Conservation Act to trespass people or the situation may need to be elevated to the police.

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3.2.6. Establishing temporary restricted airspace

It can be necessary to establish a temporary restricted airspace over the area where a stranding has occurred. The Department can request (and be granted) temporary restricted airspace but it must be justified. Requests are only likely to be granted if they meet the criteria laid out in the CAA Aeronautical Service Airspace Policy that a conservation operation (such as a marine mammal stranding) requires the intrusion of aircraft to be restricted due to a major and significantly adverse effect on the operation. You can view the full guidelines for the establishment of a temporary restricted airspace.

To put one in place follow this process:

1. Ring: Civil Aviation Authority on s9(2)(a) (24 hours).
   During normal office hours ask for the Aeronautical Service Unit and the Air Traffic Service Officer.
2. Request that a temporary restricted airspace is established over the site of a marine mammal stranding.
3. Provide them with the following details:
   - Location (WGS84 Lat, Long in Degrees, Minutes, Seconds to two decimal places)
   - Required radius (prefer as small as possible)
   - Required height
   - Period of time
   - Controlling authority - This will be DOC, and allows us to authorise aircraft to enter the zone if necessary and as required for our purposes
   - Contact Information - Phone number etc.

CAA will immediately issue a NOTAM (Notice to Airmen) that restricts aircraft entering this airspace.

CAA is very strict in the observance of temporary restricted airspace and any infringements should be noted, if possible, for later possible action.

3.3. Dead incidents

Response

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

1. Plan the response:
   a. Notify the Marine Species team s9(2)(a).
   b. Identify the species - depending on the species and carcass condition there may be special instructions – see step 4.
   c. See the Sample and Permit Register (docDM-855696) to determine if there are any special instructions or additional people to contact. If still unsure, contact the Marine Species Team.

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d. Consult with treaty partners - 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 treaty partners have been followed.

2. 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.

3. Collect data and samples - Collect photographs, measurements and tissue samples for genetics and toxicology, as per the *Whale and Dolphin Incident Form* (docDM-870555).

4. Special instructions, if the species is:

    a. **Hector's or Māui dolphin** - 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 1 in the marine mammal carcass freight guidance (doc-3131307)).

    b. **Sperm whale** - you may need to post a watch for this species. The jawbone 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.

    c. **Bryde's whale or possible ship strike** - contact the Marine Species team as a necropsy may be carried out.

5. If the incident is a suspected law enforcement issue such as fishing bycatch or other human-related death - ensure you log the incident in MyCLE and contact the Marine Species team. 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

- Appropriate contacts notified?
- Iwi consultation undertaken for sample collection and disposal?
- Measurements taken?
- Photographs taken?

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- DNA sample collected and sent to Auckland University?
- Blubber sample collected and sent to Massey University?
- Other samples or whole animal collected and sent where necessary?
- Remains disposed of or allocated as per your iwi protocols and disposal protocols?
- Whale and Dolphin Incident Form (docDM-870555) completed and sent with photos and other relevant paperwork to Marine Species team?

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4. What you need to do for responding to seal and sea lion incidents

4.1. Live seals

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.

Community engagement with live seal incidents is particularly important to educate the public about NZ fur seals vs NZ sea lions, 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.

4.1.1. Response

1. Fill in Initial Response Form (docDM-870561)
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
4. Follow instructions in the decision table based on species and incident type
5. Notify Marine Bycatch and Threats Team or Marine Species Team
6. Fill in appropriate documentation and submit to marine teams

Decision table

Use Table 2 to determine the possible actions taken depending on the type of incident.

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Table 2. Decision table for deciding on the appropriate response to live seal or sea lion incidents

	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 (docDM-870560) and send to marinemammals@doc.govt.nz with photos. • If several calls e.g., in high public place treat as #3
2	Tagged	• Take photographs of tag • Record colour, shape, number, how many tags (left or right flipper) • Fill in seal/sea lion incident form (docDM-870560) and send to marinemammals@doc.govt.nz with photos.

3	At risk / public place / threatening safety / inappropriate location	• Ideally leave seal alone
		• Put up sign
		• Dogs pose a threat to young seals, consider comms with dog walkers
		  ○ Contact your local dog control officer for assistance if required.
		  ○ Under the Dog Control Act 1996, any warranted officer has the power to seize or destroy dogs; but this would be a last resort.
		• Consider relocating seal to a safe environment
		  ○ For large seals, you may need to consider cordoning off the animal rather than relocating the animal.
		  ○ For advice on herding, capture, safe transport, contact Jody Weir.
		  ○ If transporting live animals, be aware of the Animal Welfare Code for Transportation (mpi.govt.nz).
		  ○ For ice seals (leopard, crabeater, weddel, ross seals) 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 consider key messages about decision making.

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		• Fill in seal/sea lion incident form (docDM-870560) and send to marinemammals@doc.govt.nz with photos.
4	Public in possession (most likely a pup or juvenile)	• Make arrangements to collect the animal. • Explain that this is illegal under the Marine Mammals Protection Act 1978 and the health and safety risks 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 (contact Technical Advisors to discuss) • Fill in seal/sea lion incident form (docDM-870560) and send to marinemammals@doc.govt.nz with photos.
5	Seriously wounded / emaciated / diseased	• If animal is clearly suffering / moribund consider euthanasia (section 5). • If unsure, seek advice from marine teams or Massey University vets. • Fill in seal/sea lion incident form (docDM-870560) and send to marinemammals@doc.govt.nz with photos.
6	Entangled	• Capture and remove material • Collect photos of the entangling material. Note that some fishing vessels mark bycaught seals with twine or cable ties on the jaw. • Seek advice from marine teams. • Anaesthesia may be required if a large animal (contact Technical Advisors to discuss) • Fill in seal/sea lion incident form (docDM-870560) and send to marinemammals@doc.govt.nz with photos.
7	Oiled	• DOC does not have autonomy in an oil spill and works in support of Marine New Zealand and Massey University Oiled Wildlife Response Unit. • 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 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.

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		• Fill in seal/sea lion incident form (docDM-870560) and send to marinemammals@doc.govt.nz with photos.
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. • Log in MyCLE. • Contact the police if needed and notify the marine teams.

Checklist

- Initial Response Form (docDM-870561)
- 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 (docDM-870560) completed, filed and shared?

4.2. Dead seals

4.2.1. 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 (docDM-870561)
2. Confirm species ID – you may need to request a photos from the caller
3. Follow instructions in the decision table based on species and incident type
4. Notify the marine teams
5. Fill in appropriate documentation and submit to marine teams

Decision table

Use Table 3 to determine the possible actions taken depending on the type of incident.

Table 3. Decision table for deciding on the appropriate response to dead seal or sea lion incidents

Incident type	Possible action

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1	Not unusual event – NZ fur seal	• Leave or dispose of if needed. • You may choose to keep a local record or add to iNaturalist.
2	Not unusual event – Not NZ fur seal	• Photograph and measure • Fill in seal/sea lion incident form (docDM-870560) and send to marinemammals@doc.govt.nz with photos. • Notify the marine teams.
3	Unusual event – any species	• **All scenarios** - As per type 2 incidents • **Tagged** – photograph/record tag number, colour, and shape • **Diseased** – If there are signs of disease, contact Massey University and MPI. Signs may include skin lesions, unusual swelling, discharge from the nose and eyes. • **Human-related injuries** – photograph and investigate as possible offence. Log in My CLE. Notify the marine teams to send for necropsy if required.

Checklist

- Initial Response Form (docDM-870561) filled out?
- Appropriate contacts notified?
- Measurements taken?
- Photographs taken?
- Iwi consultation undertaken for sample collection and disposal?
- Remains disposed of or allocated as per iwi, and research protocols or your office's disposal protocols?
- Seal/sea lion incident form (docDM-870560) completed and sent to marinemammals@doc.govt.nz with photos?

5. What you need to do for euthanising marine mammals

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 officer. Generally, you would ensure within your CIMS structure that an appropriate person has been identified to do this. Depending on the sensitivity of the incident, the person making the decision may choose to seek advice from a higher level, e.g. Ops Manager, Technical Advisors, appropriate scientists. 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.

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5.1. 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 euthanise 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.
- 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 bleeding, but do not rule out a 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 external parasites.
- prolonged 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 a dangerous location etc.
- inappropriate equipment for the task (see methods below).
- euthanasia likely to cause significant antagonism between DOC and public/bystanders/iwi.

5.2. 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:

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- 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 earmuffs to ensuring crowd control.

5.2.1. 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.

Shooting

Shooting is the preferred method of euthanising 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:

1. Seals - .22 standard rifle for small seals; or .222 or .223 for larger seals.
2. Small whales or dolphins up to 2 m – any high-powered rifle and standard sporting rounds, e.g. .260, 270, .303 or .308.
3. Dolphins or whales 2 – 6 m in length – high-powered hunting rifle with soft nosed ammunition, e.g. .303 or .30-06.
4. Baleen whales 6 m and above – **only people trained specifically for large whale euthanasia can undertake this.**
5. Sperm whales – the sperm whale euthanasia device (SWED) can be used by experienced operators.

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.

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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.

Signs of death

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

- complete dilation of the pupils;
- onset of unprovoked agonal convulsions (violent uncoordinated thrashing);
- absence of palpebral (closure of eyelid when corner of eyelid touched) and corneal (closure of eyelid if eye touched) reflexes;
- slack lower jaw.

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.

Peri-cranial implosion

This technique has been used in the USA, Western Australia and South Africa and has been recognised as a consistently more humane method for euthanising 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 in the Toolbox (docDM-1124455).

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 s9(2)(a) s9(2)(a) or s9(2)(a)

Sperm whale euthanasia

Their size, unusual skull anatomy, and the thickness and toughness of their blubber make sperm whales extremely difficult to euthanise. The Sperm Whale Euthanasia Device (SWED) is a specialised firearm developed by Craig Bamber (Belmont Ammunition) and Norm Marsh (Previously Wanganui Conservancy) specifically to euthanise 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 so we would prefer to use this in situations such as mass strandings.

There are additionally some staff around the country who are also trained to use the SWED in the event that Craig is not available, however, you will need to coordinate access to the SWED and travel for an operator. Think carefully before committing to requesting the SWED. If you are going to request the SWED contact Jim Campbell to plan and discuss transport arrangements.

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5.2.2. Euthanasia reporting

Information on euthanasia is compiled annually for a report to the International Whaling Commission (IWC). To make this process easier the required information is included in the Whale and Dolphin Incident Form (docDM-870555).

Please ensure if you euthanise a whale that the method used, number of shots, and time to death are recorded appropriately in this form.

6. What you need to do for data collection, sampling, and record keeping

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,
- 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 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. The DNA sample is particularly important in these situations. Identifying juvenile or female beaked whales to species is VERY difficult and may rely on the DNA results.

6.1.1. 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), see Figure 2.

6.1.2. Photographic documentation

A photographic or video record should be made of all stranding events. Recommended photos are listed on the incident form. 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)

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- 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.

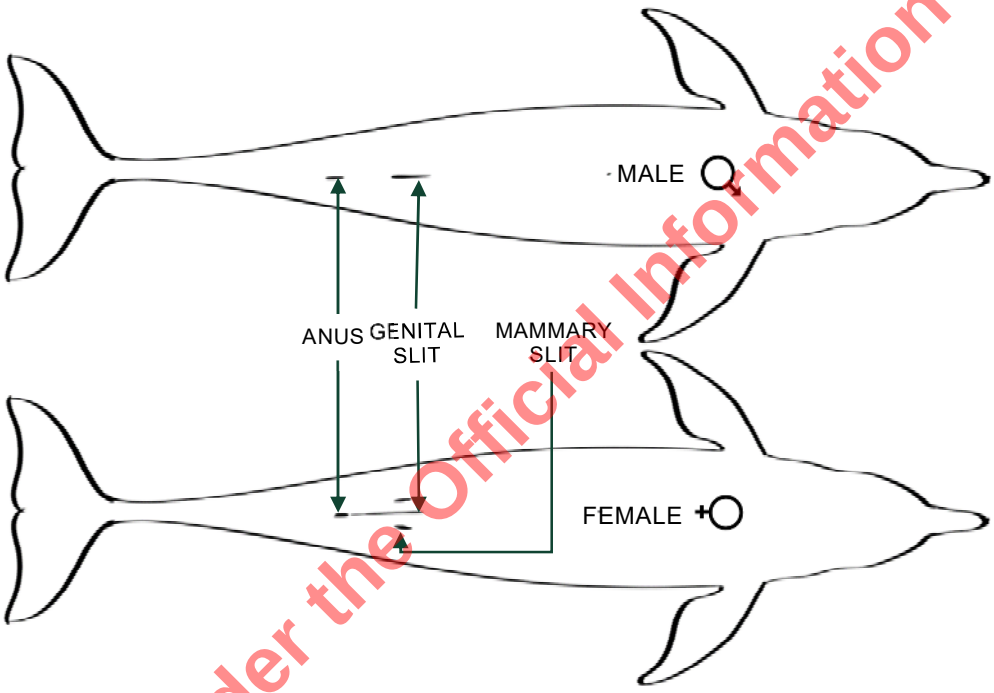

Figure 2. Diagrams illustrating the differences between male and female whales and dolphins

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6.1.3. Measuring animals

Single or small group: The measurements required are itemised on the Whale and Dolphin Incident Form (docDM-870555). 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 (docDM-870555), or if there are too many whales for this, on the Mass stranding Measurements Form (docDM-1007957)
- For animals that are dead or euthanised collect additional measurements as per the Mass stranding Measurements Form (docDM-1007957)..

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 should also be marked and the time of death noted. A data collection officer should be assigned.

6.2. Sampling

The basic samples to collect in all cases are:

- DNA sample
- Blubber and muscle

The instructions for these samples are included on the Whale and Dolphin Incident Form (docDM-870555).

6.2.1. DNA sample

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:

[redacted] [redacted]
Thomas Building
School of Biological Sciences
University of Auckland
3A Symonds Street
Auckland 1010
Cell: [redacted]

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6.2.2. Blubber and muscle sample

To support long term animal health assessments, including environmental contaminants (e.g., pesticides, flame retardants, pharmaceuticals, etc) and body condition markers (fatty acid, adiposity, hormone profiling, etc). This sample can be taken from quite decomposed animals, check in with the Marine Species Team.

Take from the side of animal, in line down from the dorsal fin, at least 8x8cm, blubber layer and muscle layer (at least 5cm muscle depth), with skin attached. Wrap in tin foil, seal in 2x zip lock bags, and FREEZE AS SOON AS POSSIBLE.

Package with icepacks, include copy of incident form (protected from moisture). Try to courier early in week to prevent weekend delays and sample thawing.

Address (Pre-filled label available: Massey Albany sample freight label (DOC-10315797)):

s9(2)(a)
Cetacean Pathology Unit
5 University Avenue
Massey University
Albany, 0632
Auckland
Ph: s9(2)(a)
ADVISE s9(2)(a) HEN SAMPLE IS COURIERED

6.2.3. Additional sampling

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 4.

6.2.4. Sample storage

Table 4. Recommendations for storage options of different tissue sample types

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	-

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

6.2.5. 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.

6.3. Data storage and reporting

- Set up a folder in your S drive, Q drive, or Teams Sharepoint where you will consistently save all the paperwork and photos from the District.
- Reference this location in your Operational Plan so everybody is consistent.
- Share the location with the Marine Species Team.

6.4. Freighting

All Information about packaging and freighting carcasses is outlined in the Marine mammal carcass freight guidance (doc-3131307).

7. What you need to do to dispose of deceased marine mammals

7.1. 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.

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7.2. 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. The whale's body cavity should be opened to release gases and minimise the chance they float off and re-strand on another beach.

Burial

Before burial commences, ensure that the site has been cleared by an archaeologist, and that appropriate consultation has occurred with landowners and tangata whenua.

Before the grave is filled in, 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.

Offal pits

Small carcasses can be disposed easily in offal pits.

At sea/tidal zones

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 a sperm whale to sea.

It is possible to anchor carcasses in the coastal zone for decomposition, this has been conducted successfully with pilot whales on Farewell Spit (DOC-6061271).

7.2.1. Use of machinery to move dead whales

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.

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Table 5 gives an idea of what size diggers may be required to move different whale and dolphin species.

Table 5. Average length and weights of common whale and dolphin species and recommended digger size required to move

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.

7.2.2. Cleaning up

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.

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- 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.

8. What you need to do to debrief an incident

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.

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

A template debrief is available (doc-7215153), or you can use the Fire debrief format if you are more familiar with it.

9. Document records

9.1. Other useful information

For a complete list of forms, protocols, templates, and technical documents, see the Marine Mammal Stranding Toolbox (docDM-1124455).

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Related protocols and documents

- Marine Mammal Incident Readiness and Response SOP (docDM-1171061)
- Guide to CIMS IMT roles for marine mammal incident response (doc-7340423)
- Renewed Service Level Agreement with Project Jonah (doc-7700909)
- Volunteer participation in marine mammal strandings (doc-7144409)
- Marine Mammal Competency Pathway (doc-7668262)
- Volunteers for Conservation SOP (docDM-1520340)
- Marine Species Incident Log template (doc-10219511)
- Responding to an emergency – CIMS at DOC (DOC Intranet)
- Marine mammal stranding media information (doc-2598638)
- External contacts list for marine mammal incidents (docDM-824399)
- DOC National Stranding contacts (docDM-1186392)
- SOP Whale and Dolphin Entanglement (doc-6748776)
- Massey University Wildbase Oiled Wildlife Response (massey.ac.nz)
- Transport within New Zealand Animal Welfare Code of Welfare 2011 - Transport within New Zealand – Animal Welfare Code of Welfare
- Temporary Traffic Management (Guidelines) (doc-625646)
- Marine mammal carcass freight guidance (doc-3131307)
- Genetic sample collection instructions and information (docDM-892499)
- Accidental Discovery Protocol for Archaeological Sites (doc-6096256)
- Sample and Permit Register (docDM-855696)

Forms

- Initial Response Form (docDM-870561).
- Initial Response Form (docDM-870561)
- Whale and Dolphin Incident Form (docDM-870555)
- Whale and Dolphin Entanglement Form (doc-7039170)
- Seal and Sea lion Form (docDM-870560)
- Marine mammal sighting form (doc.govt.nz/marine-mammal-sighting-form or docDM-870477)
- Mass stranding Measurements Form (docDM-1007957)
- Volunteer Check-in Form (docDM-1007942)
- Protected shark record sheet (doc-6803842)

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9.2. Document history

Date	Details	Document ID and version	Amended by
26/05/2025	Updated in new template, removed out-of-date information and made minor improvements.	Draft 1	s9(2)(a)
29/05/2025	Minor formatting changes and quality check completed	Draft 2	s9(2)(a)
19/06/2025	Final draft submitted for review and approval to manager	Draft 3	s9(2)(a)
23/06/2025	Minor typos amended, submitted for approval and endorsement	Final draft	s9(2)(a)
30/06/2025	Approved document uploaded to docCM	docCM Version 21	s9(2)(a)

About this document

Disclaimer	This document has been written for Department of Conservation (DOC) staff. As a result, it includes DOC-specific terms and refers to internal documents that are only accessible to DOC staff. It is being made available to external groups and organisations to demonstrate departmental best practice. As these procedures have been prepared for the use of DOC staff other users may require authorisation or caveats may apply. Any use by members of the public is at their own risk and DOC disclaims all liability for any risk.
Document Coordinator	s9(2)(a) **Technical Advisor**
Document Owner	s9(2)(a) **Director Biodiversity Systems and Aquatic Unit**
Approved for use by	s9(2)(a) **Biodiversity Group** Date: 28/06/2025 *docDM-10355984*
Last reviewed	**27/06/2025 (please check this document within three years to ensure it is up-to-date)**
Classification	IN-CONFIDENCE

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10. Appendix I – Glossary

Acronyms/initialisms used	
CERG	Cetacean Ecology Research Group
CIMS	Coordinated Incident Management System
EMS	Emergency Management System
MHWS	Mean high water springs (high tide line)
MMPA	Marine Mammals Protection Act (1978).
MST	Marine Species Team
NZCeTA	New Zealand Cetacean Tissue Archive
SoVS	School of Veterinary Science

Definitions	
Baleen	Course hair-like plates in the mouths of baleen whales in the place of teeth. Used like a sieve to filter food from seawater.
Beach cast	An animal washed up on the beach already dead.
Beaked whale	A group of whales that are one of the least-known groups of mammals due to their deep-sea habitat, reclusive behaviour and apparent low abundance. They are generally bigger than dolphins and the dorsal fin is further back rather than centred.
Blowhole	The hole/s in the top of the head of all whales and dolphins which they breathe through (called a blow). A whale equivalent of a nostril. Whales do not expel water from their blowhole, the mist that is visible when a whale breathes (blows) is vaporised air, mucus, and water that was on top of the blowhole. Water should not be poured down the blowhole of a stranded whale or dolphin.
Bull	An adult male whale.
Bycatch	The incidental capture of non-target species in fishing gear.
Calf	A young whale or dolphin, usually defined as being less than half the length of the adult and staying in the slipstream of an adult.
Carcass/cadaver	The remains of a deceased animal; the dead body of an animal.
Cetacean	All whales, dolphins, and porpoises.
Cow	A female whale, usually referring to mothers, e.g. a cow-calf pair.
Dissection	A post-mortem examination of an animal to study its internal parts, the goal of which is not necessarily to determine cause of death.

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Dorsal fin	The fin on a whale or dolphin's back.
Entanglement	Generally means an animal tangled in rope, net, fishing line or other rubbish, can include animals hooked by fishing hooks.
Euthanasia	The humane killing of an animal to reduce suffering.
Flukes	The lobes of the tail of a whale or dolphin.
Foetal folds	Visible creases or lines on the side of a calf from being folded in the womb, can last for weeks or months.
Incident	Any event other than a live sighting of a healthy individual in its natural habitat e.g. stranding, beach cast, entanglement
Large whale	Usually refers to the baleen whales and the sperm whale.
Marine mammal	Any whale, dolphin, porpoise, seal, or sea lion.
Marine Species Team	Team that leads on whales and dolphins within the Biodiversity, Heritage, and Visitors Group and administers the SOP. Two Technical Advisors provides coordination of the national strandings programme: s9(2)(a) and s9(2)(a)
Marine teams	The Marine Species Team and the Marine Bycatch and Threats Team. The latter leads on seals under s9(2)(a)
Necropsy	A post-mortem investigation to try to ascertain the cause of death (an autopsy for animals).
Neonate	A new-born whale or dolphin.
NZ Whale and Dolphin Stranding Database	DOC's national database of marine mammal incidents, curated by the Marine Species Team.
Palliative care	Providing assistance to stranded whales to make them more comfortable if they are unable to be refloated or euthanised.
Pathologist	A veterinary pathologist is someone who is trained in animal disease surveillance, prevention, diagnosis and treatment.
Pectoral fins	The pair of fins situated on either side of a dolphin or whale.
Rostrum	A whale or dolphin's beak.
Sector lead	In larger strandings, staff and volunteers will be split into sectors to manage a small group of whales. Each sector will have a lead.
Staging area	A point back from the main action where people filter through to enter a stranding site. People should be briefed before going past the staging point.

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Stranding	Technically means live stranded animals but some may use it to refer to incidents in general.
Stranding base	Interchangeable with staging area. Where equipment is stored and briefings occur.
Team lead	If working out of a CIMS structure, the team lead is responsible for the work being carried out.
Throat grooves	Beaked whales have two grooves under their mouths, they are thought to have a function in the whales' suction feeding method.
Throat pleats	Lines along the throat of baleen whales, allowing their throat to expand drastically to accommodate large volumes of water while filter feeding.
Whale	All cetaceans, though usually used to refer to large cetaceans Under the MMPA: All species known as whales, e.g. killer whales and pilot whales, but not species colloquially known as dolphins.

11. Other appendices

This part of the Guidelines should include all locally specific protocols and should include your District iwi protocols, health and safety plan, map of coastal access points, local contacts lists etc.

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