

## Marine Mammal Strandings

Brent Vincent  
Department of Environment and Heritage  
PO Box 2066, CAIRNS QLD 4870

This guide is intended to help the uninitiated and those with some experience in the best ways to handle strandings of cetaceans. The notes are designed primarily to give direction about crowd control and live animal strandings. Much information is available on the collection, measuring and sampling of data from dead specimens.

In addition to information in this paper those interested in cetacean strandings should be conversant with the "**National Contingency Plan For Cetaceans Strandings**", and the "**Queensland Contingency Plan For Dealing With Stranded Marine Mammals**". The Queensland Fisheries Management Authority is responsible for marine mammal strandings in this State.

Phone numbers for district offices and after hours numbers are given on the back of the Queensland plan.

### Introduction

Biologist William Conway said (and I quote) "**In my lifetime, the world has changed drastically. From a place where the people were surrounded by wild animals, the world has become a place where wild animals are surrounded by people.**"

In July this year, Sir Crispin Tickell a noted British environmentalist, delivered a paper entitled "The Human Species A Suicidal Success".

There is a clear message in Conways quote and the title of Sir Crispin Tickell's paper.

As we become more environmentally aware and better educated we realise the importance of cetaceans and all the other creatures in assisting in the natural balance of life, may well govern our own survival chances in an ever-diminishing world.

The stranding of cetaceans is an emotive issue for many people. The empathy which people feel for these creatures goes beyond the normal human animal relationship. In all decisions relating to cetacean strandings this should be a consideration.

Strandings fall into two general categories.

### Stranding Categories

- (A) **Single strandings:** Non-social species are most commonly involved in single strandings, especially Baleen Whales (Mysticeti), although Pygmy and Dwarf Sperm Whales and many species of Beaked Whales may strand singularly. For reasons such as old age, gregarious species of toothed whales also strand individually when they are no longer able to keep up with their pod. This category "Single strandings", may include up to three animals such as a female with calf and could include an attendant aunt.
- (B) **Mass strandings:** Usually involve gregarious species of the Odontoceti such as Pilot Whales, False Killer Whales, Orca, and Great Sperm Whales and occasionally Bottle-nosed Dolphins.

## Why do whales strand?

There has been much conjecture about the reasons for this phenomenon. A list of possibilities was published in book form by the late Mr Frank Robson of Taradale in New Zealand. (STRANDINGS, Ways Top Save Whales, by Frank D Robson)

He suggested one or more of the following factors may be involved in strandings:

- (1) In old age they may no longer be able to keep up with the pod. Like all other mammals they may have a fear of drowning. When the end is near they move into shallow water to reduce this fear.
- (2) Animals escaping from predators may enter water too shallow to support their bulk. On a receding tide this will invariably lead to a stranding.
- (3) Parasitic worms boring in sensitive areas around their ears and brain cavities may cause great discomfort and disorientation.
- (4) Calving where the foetus is ejected head first would be cause for concern by the mother. In normal births the calf appears tail first so that the blowhole is one of the last things exposed to the new environment. In shallow water the parent has plenty of time to assist the newborn calf to the surface. A breach birth calf may be close to the surface and less likely to drown.
- (5) Land forms close to migratory routes have altered, due to earthquake, storm or tempest.
- (6) Severe electrical storms may interfere with magnetic lines of parallel. Areas where there is known magnetic anomaly may also interfere with the whales ability to navigate.
- (7) Gently shelving sea floors with soft mud or sandy substrates may interfere with the whales echolocation.
- (8) Some areas are natural whale traps that work so successfully that cetaceans entering are unable to find their way out.
- (9) A member of a gregarious species may be rejected from its herd. Normal functions break down as a result of the fear experienced at finding itself alone. Such animals may beach, unable to survive in this predicament.
- (10) Lightning strikes and severe sea conditions may also be an important factor.

As research throws more light on cetacean ecology, the reasons for whale strandings may become clearer.

It is important to remember that many species are endangered because of human exploitation on this planet. The animal's environment, their food sources and such things as pollution, drift nets, purse seiners and other fishing efforts by man, all interfere with their long-term survival. Any efforts which result in the successful return of healthy animals to their natural environment are worth the effort and cost expended.

## **Before a stranding**

Before a whale strands on a beach often there are obvious signs that all is not well. These include swimming in circles in a small area, remaining on the surface for long periods, and banging a section of the head or anatomy as if in pain. This behaviour may continue for days or even weeks. Any of these behaviours may lead to a stranding.

As soon as unusual behaviour is noted try to ensure that the authorities are alerted.

In many instances, if the problem animal is alone, nothing might be done until a thorough external examination has been carried out. If you are without resources this may be performed in shallow water. If the authorities are notified and resources are sent to the area, divers may be able to assist in an examination before stranding occurs.

## **After stranding**

In many instances whale strandings draw considerable interest from the general public. If the strandings are publicised through the media you could end up with hundreds of sightseers and people wishing to assist the animal(s).

In this situation it is important to have an experienced Stranding Coordinator to supervise the operation.

## **The role of the Stranding Coordinator**

The Stranding Coordinator is responsible for the entire rescue operation and as such should have previous experience in this field. Any euthanasing of animals will be decided by that person. The Stranding Coordinator will probably be someone in authority with a Government Department with a role in whale conservation, or a person appointed by a whale watchers group such as Project Jonah or Greenpeace.

Once the Stranding Coordinator is on site it is important to control the people and channel their assistance in the best possible directions.

In all strandings which I have attended the animals have responded positively to quiet talk and a gentle touch. Shouting and loud noises should be discouraged. There is no room for the people who wish to place their children on the backs of the animals or interfere with the animals eyes of blowholes. This is a definite no! no and should not be tolerated. Marine mammals are protected under conservation legislation in Australia and New Zealand .

In a mass stranding situation it will be impossible for one person to control the activities of a large number of people, especially where the whales are spread over two or three kilometres of beach.

At such times it is best to gather a number of people around you and explain what needs to be done. These people will be your lieutenants. Through these lieutenants, people can be coordinated and instructed in the rescue procedure.

You and your lieutenants should be easily recognisable . To this end fluorescent pullovers, such as basket ball players and road gangs wear, with "Whale Stranding Coordinator" or "Whale Stranding Assistant" prominently displayed should be available for distribution at the site.

## **Getting help to the stranding site**

A mobile telephone or long range radio may well prove to be your greatest asset in getting other people to the site in the shortest time. The more people with previous experience you can rally to assist the better.

**Remember time is of the essence and speed in response is paramount in order to reduce suffering.** This cannot be overstated.

In mass strandings it may be necessary to advise the media to ensure help is available. The more people you can get to isolated strandings the greater your chances of a successful operation. If asking for assistance through the media consider the locality and the things the public will have to guard against to ensure their own safety. Wetsuits will help people keep warm if they are in cold water for long periods.

**Stingers suits are essential to prevent loss of life for people assisting with strandings in tropical waters during the Box Jellyfish season. (Nov-May.)**

**Helpers should be warned to stay clear of the animals tails.** Stranded whales will often thrash their tails violently while still in the water to help cool their bodies and those of close neighbours. Tail thrashing is not a sign of aggression but volunteers need to be careful as they could be injured, especially where the animal is unable to see them. Always approach the animals from a direction where you can be seen by the animal.

**Stranded whales never attempt to bite.**

## **Rescue equipment:**

You should have access to a whale stranding kit which would/should include the following:

- 1 A manual on cetaceans which would aid in identification of the species stranded. Such a manual should give average and maximum sizes and lengths of both sexes, and size of newly-born calves. World distribution, numbers of teeth, and position in the jaw, or the length and colour of baleen if the animals falls into this category.
- 2 A set of tide tables for the local area. Most important when trying to determine what can be done to assist. If the whales came in on a spring tide and there is no heavy machinery capable of returning them to the water because of receding tides some drastic action may be required to reduce suffering.
- 3 Wide flagging tape, which can be used in conjunction with a waterproof marker pen to identify a sequence in mass strandings. The first animal to strand may be the one holding the rest of the pod or herd in the stranding area. If this animal is seriously incapacitated and euthanased the rest of the herd may quietly and quickly leave the danger area.
- 4 Data sheets for recording as much information on the stranding conditions, animal's health etc., as can be gleaned from the site. Water-proof paper, writing boards and pencils are a very good idea.
- 5 Tape measures. A number of these may be necessary to record individuals in a mass stranding.
- 6 Flensing tools preferably with a hooked tip for opening stomach cavities for autopsy or prior to burial, a lance for euthanasia, a number of good quality knives together with steels, files and stones to sharpen these tools.

- 7 At least three flying gaffs or specially-made large meat hooks for assisting with the removal of flesh.
- 8 At least three 20 metre lengths of 20mm terylene rope. (Not nylon rope)
- 9 At least two blackboards and a quantity of chalk. (Instructions can be written advising new arrivals at the stranding site on how to assist and what not to do.)
- 10 A quantity of plastic bags, sterile bottles and formalin. (For preserving specimens.)
- 11 Plastic fishing aprons, light and heavy rubber gloves and a good quality scrubbing brush.
- 12 Photographic equipment and a number of rolls of film. Include flashlight gear. A couple of spray cans of yellow and black paint for marking dead whales for photographic purposes.
- 13 A heavy calibre firearm e.g. .303 .308 or similar.
- 14 A quality first aid kit. (For the rescuers use, not the whales.)
- 15 Portable generator, electrical leads, lighting, torches and batteries. This also gives you a means of heating food and providing hot soups and brews for the rescuers. (Remember it could be a lengthy operation.)
- 16 Tarpaulins and knotless nets which can be use to transport small animals either by hand, machinery or helicopter to the water.
- 17 A number of collapsible rope and canvas buckets, ropes and car and truck inner tubes. Shovels for digging to assist in getting the animals into a more comfortable position.
- 18 Sheets and blankets, hessian and newspapers. Or anything else that will absorb water and reject sunlight allowing the cooling of the animals bodies. Remember thick blubber is designed to stop the animal from cooling down, so it will never be too cold. The enemy of a stranded cetacean is heat and sunshine.

The outer dermis of skin and blubber on the animals which is naturally lubricated by water, breaks down very quickly when exposed to heat and the drying effects of wind. Very quickly the skin cracks and deep pits may appear even in cool climates in the south of New Zealand. I would compare the effect as similar to the cracking of the earth around a billabong as the last of the moisture is drained from the soil. In such situations one can well imagine the pain and suffering an animal is subjected to. Blankets, hessian, newspaper, sheets or anything similar capable of deflecting sunlight and wind and retaining water will be of great assistance in such situations.

Because of an affinity that many people feel towards cetaceans, actually getting what you need to a stranding is often achieved very quickly, provided the general public are made aware of what is required and what needs to be done. This is not the case in remote situations.

**Sunlight and wind are the greatest dangers confronting cetaceans at a stranding.**

## ACTION AT A STRANDING SITE

The following is a recommended course of action which should be taken at a stranding site regardless of the position of the person discovering the stranding. **Remember speed and accuracy in notifying the authorities is important in order to reduce suffering.**

- 1 Check the time and type of stranding, whether or not the animals are alive or dead. If there is only a single animal on the beach but more milling just off shore or in shallow water a means of identifying the individual first beached is very important. Tie something around the base of the animals tail. Ribbon, string, rope or a plastic bag would suffice.
- 2 If there is more than one already beached and others still offshore it may be necessary to identify a number. (One of the first beach animals will be the key whale holding the rest in that area.)
- 3 Take a good look at the state of the tide the prevailing wind and wind strength, cloud cover and the state of the sea. (Rough, moderate or calm)
- 4 If you are familiar with cetaceans note the time, species, number and position of the animals in relation to the area. If you are unable to identify the animal be prepared to give the authorities an accurate description i.e. Approximate size and colour of the animal/s, whether there are teeth and their position, or baleen in the mouth, one blowhole or two, ridges on the top of the head, large or small flippers. Such information will help the authorities decide on the course of action to be taken and the type of equipment required at the site.
- 5 Notify the Police, a Wildlife Ranger or a Fisheries Officer of your discovery, being prepared to give the details you have collected. These should include your name, address and phone number. If you are able to remain in the area, advise the authorities of this and ask how soon you could expect some help. You may be asked to give some direction to the people on site while a Stranding Coordinator is being rushed to the area. If the site is hard to find, arrange for someone to wait at the nearest road head to ensure no time is lost in getting help to the stranding site.
- 6 If there are other people in the vicinity willing to assist and the animal/s are capable of being moved (not so far up the beach as to make the task impossible with the assistance available) move the animals into an upright swimming position facing the waves and the prevailing wind. Do not attempt to push them into deep water unless you have identified the key whale and have solved the problem of why stranding took place in the first place. **Do not allow people to enter the water to assist the animals if they are not adequately protected against envenomation during the stinger season.** Record this on your beach blackboard if necessary.
- 7 Animals which have been laying on one side will require gentle rocking from side to side to regain their equilibrium. They become like cast sheep with blood rushing to one side of the body. Unless they are given a chance to restore blood evenly throughout the body they will just tip over onto their sides again as soon as they move out from the shallows. This may require a minimum of five to ten minutes per animal. **Do not use the flippers or dorsal fins as levers with which to push the animal upright.** These appendages may be easily damaged in such situations. Always approach from a direction where the animal can see you and before stroking gently, talk quietly and soothingly to the animal.
- 8 If you believe a stranding is imminent and it is caused by an area previously known to trap whales, it may be possible to keep the animals from the shore. You need help and the help must be informed of what you are trying to do. Such strandings can be avoided by making a noise underwater to show the whales that there is danger in the

direction in which they are proceeding. The best way to achieve this is to spread your helpers around the shallow danger area of the bay with something capable of producing a sharp metallic sound under water. This can be achieved by banging two fist sized stones together underwater or placing a metal bar or metal fence post in the water and banging it with another metal object. Tyre lever and wheel braces would work well.

- 9 Do not continue to make underwater noises if the animals remain on a course for the beach. The problem is obviously not caused by a loss of direction. Animals which continue to move toward the beach in such situation have more serious problems to contend with such as injuries, or parasitic worm infestation as mentioned earlier. Such animals may well have to be euthanased and will certainly need close evaluation.
- 10 Face all animals out to sea and keep them in close proximity to one another. Move them seaward if the tide is falling only as far as is necessary to ensure they do not become stuck. Assist them toward the shore without beaching them if the tide is rising.
- 11 An inspection of beached animals should help identify the key whale. Action regarding this animal may include euthanasia to ensure that the majority of the herd returns to deep water. Do not hesitate if this is your prognosis. The longer you stall the more you may have to put down, especially if the animals are large.
- 12 Having euthanased or returned the beached animals to the water, the next thing is to encourage them to swim out to sea. This can be achieved by swimming or taking a couple of the bulls or large females out to deep water using Zodiacs or boats with the animals held in mats alongside. The people holding the other animals, (cows, juveniles and calves) should have rocked them sufficiently to ensure free circulation. They would then release them gently at the same time guiding them to swim toward the bulls or large cows offshore.
- 13 Never attempt to take small animals as the catalyst for moving the herd. They will only swim back to their parents as soon as they are released. It is widely believed that the members of a group or pod of toothed whales will be related. The maternal instinct will be strongest between related calves and cows and for this reason it is important to swim these animals off the beach together.
- 14 Provided you have identified and rectified the problem in relation to the key whale you will almost invariably save the group. Healthy animals are not likely to remain in shallow water,
- 15 Remember with single strandings involving a cow and calf, if the little one is not capable of fending for itself it is best to put that down at the same time as the mother. Calves less than half the adult size are not likely to survive. Lactating calves have no chance at all.

Do not fall into the trap of thinking you can achieve the impossible and spend hours administering to the animal/s when logistics of size and weight, remoteness of area and condition at the stranding site (falling tides etc.) make it impossible to get them off a beach. Do not attempt to minister to an animal which has reached the end of its natural life span and has come into shallow water to die. Every living creature is entitled to some dignity at such a time.

### **Assessing an animal's condition**

At times assessing an animal's condition may be quite difficult, and on occasion the reasons for a stranding may remain a mystery. As a general rule older animals in poor condition will be thin to emaciated. There may be considerable scarring and there may be fresh bite marks from predators on the animal's body.

Large shark bites may be present in almost any area. Small bites from Cookie Cutter sharks, which normally appear behind the dorsal fins in healthy animals, may be present in the head area. (These small sharks usually come from behind to ambush their victims, grab a mouthful and race away to avoid retaliation.) Where the whale is slowed by old age and unable to defend itself the bites may appear anywhere on the body.

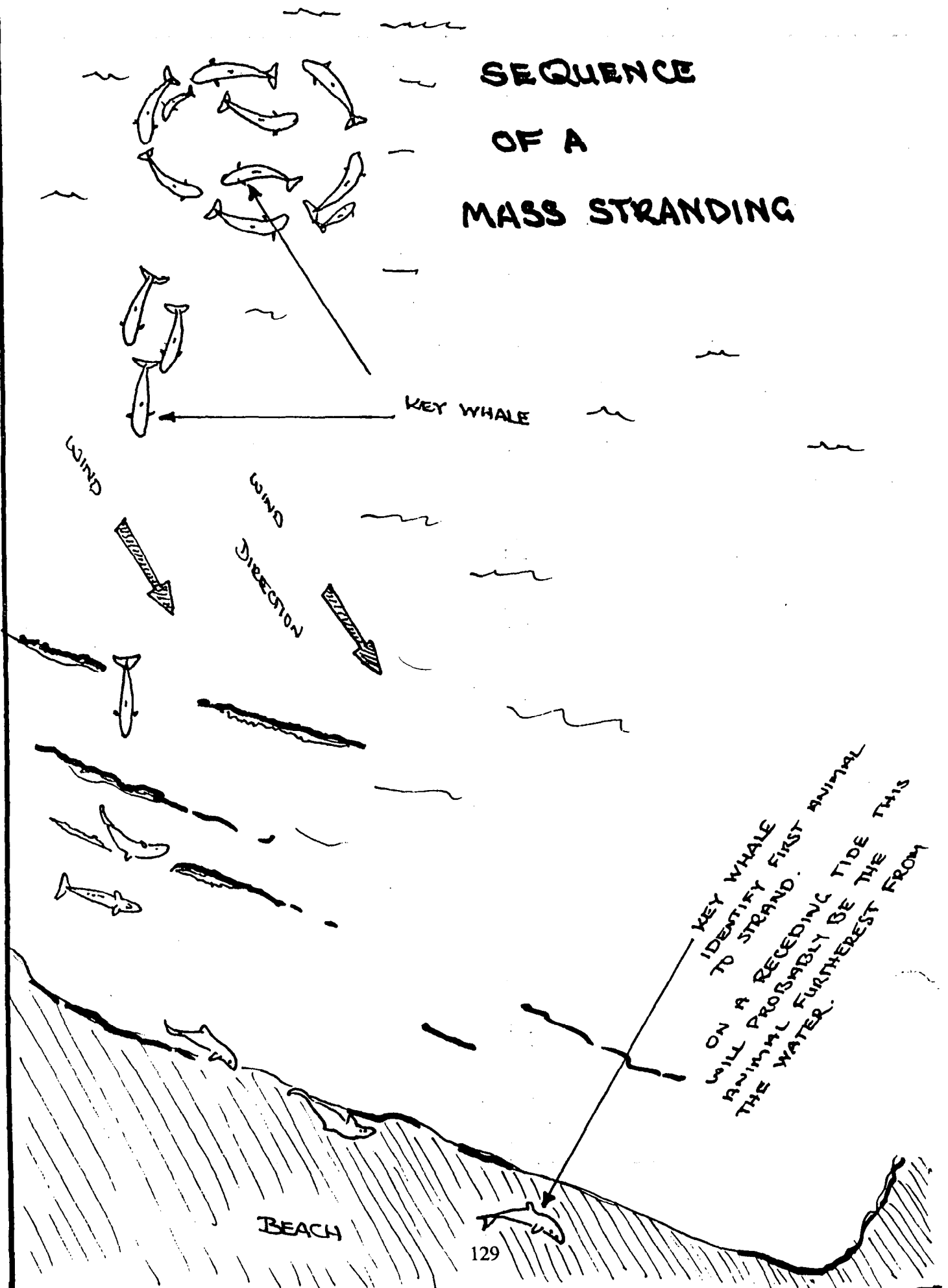
Vertebrae may be noticed beneath the skin of the animal and in severely emaciated cases it may be possible to see the vertebrae from the central body region to the tail stock.

Teeth may be flattened and worn. This is not always obvious but if there are a number of animals as in a mass stranding and you are not sure which animal is the key animal, this may be an indication of the oldest members.

There may be bruising in the neck and head area if the animal is affected by parasites. As mentioned earlier, pain associated with such parasitisation could be a major factor in many strandings.



# SEQUENCE OF A MASS STRANDING



# REGULAR CETACEAN STRANDING SITES IN NEW ZEALAND.

