



The New Zealand Sea Lion, Whakahao *Welcoming Back a Native Treasure*

Resource Book for Teachers



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The **New Zealand Marine Studies Centre**, located on the shores of Otago Harbour, runs marine education programmes throughout the year for schools and interest groups. The Centre is open daily to the public and interprets the local marine environment, conservation issues and current research through live displays, interactive exhibits and knowledgeable staff. The mission of the Centre is to foster understanding, appreciation and responsible management of NZ's unique marine environment.

The **New Zealand Sea Lion Trust** was established in 2003 by researchers to support their voluntary research on one of New Zealand's most charismatic species. New Zealand Sea Lions have only returned to the mainland of New Zealand since the 1970s. Our research is focused on New Zealand Sea Lions on the mainland, particularly the Otago region, while undertaking wider education about the species and threats to its survival elsewhere.

The **Department of Conservation** is the central government organisation charged with conserving the natural and historic heritage of New Zealand on behalf of and for the benefit of present and future New Zealanders. DOC is responsible for marine reserves; marine mammals such as dolphins, whales, sea lions and fur seals; administering the regulations for the whale and dolphin watching industry; and the New Zealand Coastal Policy Statement.

Additional support was also provided by the **St. Kilda Marine Environment Trust** (SKMET). The trust supports projects that increase understanding of the marine environment and lead to its protection.

The New Zealand Sea Lion, Whakahao

Welcoming Back a Native Treasure

The NZ Marine Studies Centre, together with the Department of Conservation and the NZ Sea Lion Trust are excited to offer a new education programme focusing on the NZ Sea Lion for schools and interest groups. Participants are encouraged to take on the role of a scientist to study these amazing marine mammals and explore the issues that surround them.

Notes For Teachers

This booklet has been designed to support the educational programme on sea lions that is offered at the New Zealand Marine Studies Centre. The programme is designed for Year 4-8 (8 to 12 years) but may be adapted for other age groups. It incorporates the big science concepts of conservation, sustainability, endangered species, and food chains/webs and links to topics in the social sciences and maths curriculum. This booklet provides background information, resource material, curriculum links, pre and post trip activity suggestions and a reference list.

Schools are encouraged to become a member of the New Zealand Sea Lion Trust and receive a free copy of 'Return of the Sea Lions' DVD. Scientists from the Trust may be able to visit your school with the latest research news. Please visit the web site for further information and a membership form.

Programme Overview

The study of a furry ocean wanderer is challenging. This programme is designed to introduce students to the research process and explore the intriguing techniques used by scientists to study the life cycle of these animals.

Human activity has caused the decline in sea lion populations. The programme looks at the history of sealing and current issues, like trawl fishing, that have effected the numbers of sea lions in New Zealand.

These native treasures have chosen to come back to us. How do we welcome them? This is an important conservation issue facing Otago residents as sea lion encounters are now common place on the Otago Coast. This programme has an important role in providing students with information about how to act around these unique animals.

Programme Goals

1. To increase students' knowledge of sea lion biology.
2. To explore the research process and scientific techniques used in the study of these marine mammals.
3. To investigate historical and current conservation issues that effect sea lion populations.
4. To instil appropriate public behaviour around sea lions on local beaches.



Curriculum Links

Although the programme complements the NZ Curriculum in many ways, the main links are to science, social studies and maths.

Old Curriculum Links

Science - Living World

Level 1 AO 1,2
Level 2 AO 3
Level 3 AO 1,3
Level 4 AO 1,4
Level 5 AO 2

Social Sciences

Place and the Environment
Level 2, Level 3, Level 6
Resources and Economic Activities
Level 4

Mathematics

Algebra - Graphing
Level 3
Interpreting Statistical Reports
Level 4

Key Competencies Developed -

- Managing self
- Relating to others
- Participating and contributing
- Thinking
- Using language, symbols and texts

New Curriculum Links

Science - Living World

Level 1 - 4
Life Processes, Ecology, Evolution,
Nature of Science - Understanding, Investigating,
Communicating and Participating/Contributing

Social Sciences

Level 1 - 5
Place and the Environment
Identity, Culture and Organisation
Continuity and Change

Mathematics and Statistics

Level 1 - 3
Number and Algebra
Statistics



Sea Lions Return to the Mainland

A Sea Lion Called 'Mum': The Matriarch of Our Mainland Sea Lions

In December 1993 something wonderful happened at the village of Taieri Mouth on the Otago Coast just south of Dunedin. A solitary female New Zealand Sea Lion came ashore and gave birth to a pup on a local farm. This is believed to have been the first pup born on the New Zealand mainland in over 200 years. A native treasure had returned.

This is her story.

'Mum' was tagged as a pup in the Auckland Islands in the 1986/87 breeding season. She was first seen on mainland New Zealand on the Catlins Coast south of Dunedin in 1991 by Dr. Chris Lalas. The surprise birth of her pup two years later generated great interest among scientists, conservationists and the local public. Dr. Lalas named the pup 'Katya', but the mother was not named at this stage and was simply known as 'Katya's mum.' When Katya was about 6 weeks old and could swim, she moved north with her mother past Dunedin city to a beach on the Otago Peninsula where she lives today. Now 14 years old, Katya is herself a mum and even a grandmum. Katya's mum returned two years later and had another pup on the same farm. She could no longer be referred to as 'Katya's mum' so is now known simply as 'Mum'.

Mum now spends most of her time on the Otago Peninsula but usually returns to the Taieri River Mouth each year to give birth. After a few weeks she encourages her pup to start moving up the coast to the Otago Peninsula, taking several days to make the journey. Since having 'Katya', Mum has had a further 8 pups.

The wonder of Mum's legacy is not just that she swam all the way from the Auckland Islands, over 600km, but that she stayed here, had a pup and keeps coming back to breed. Now her pups have decided to stay and have started breeding on the Otago Peninsula. Today, Mum is matriarch of a family of 12 male and 18 female offspring and in the 2007/2008 season became a great-grand mum.

A native treasure has chosen to return. Ours to welcome, look after, cherish and enjoy.

(For further details about Mum and her family tree go to www.sealiontrust.org.nz).



N. Peat

Pre/Post Trip Activity : Life Cycle Game

Remove the game from the centre of this booklet (or download from www.sealiontrust.org.nz) and find a die. Play the game and explore the challenges of becoming a healthy, well-fed sea lion that produces lots of pups.

Biology of the NZ Sea Lion

New Zealand Sea Lion - *Phocarctos hookeri* Whakahao (male) or Kaki (female)

New Zealand (Hooker's) Sea Lions are concentrated around the Auckland Islands and Campbell Island with approximately 150 based on the New Zealand mainland on the southeast coast of the South Island from Oamaru southwards. The only breeding area on the mainland is in the Otago region where it began with a single female, known as 'Mum' in the 1993/94 season. This region now averages 4 pups per year - almost all related to the original female. New Zealand Sea Lions were once found up to the top of the North Island, but after hunting by Māori and Europeans, were almost extinct by the mid-1800s. The total population is now estimated at 10 000 - 12 000, almost all at just five sites in the Subantarctic Islands, and is currently in decline.

New Zealand Sea Lions are similar to most other sea lion species in their length (up to 3m) and weight (up to 400kg). Adult males are dark grey or brown in colour with a mane of longer, thicker hair around the neck. Females are much smaller (up to 2m and 180kg) and lighter in colour with no mane, similar to juvenile males.

Like other Otariids, or 'eared seals' they lift their body off the ground and are able to walk on their flippers. This means they can reach speeds of up to 20km/hr on land. They use the front flippers for swimming as they chase a wide variety of prey including a range of fish, squid, octopus, crabs, and occasionally seabirds and fur seals.

Males fight for territories in November and mating occurs about one week after females give birth, usually in December or early January. Pups are generally weaned at 10-11 months old but may remain with the mother if she does not have a new pup. Female sea lions may start breeding as early as three years old and can live for as long as 28 years. It is uncertain when males become mature but they are not likely to be big enough to hold a breeding territory until they are about eight years old.

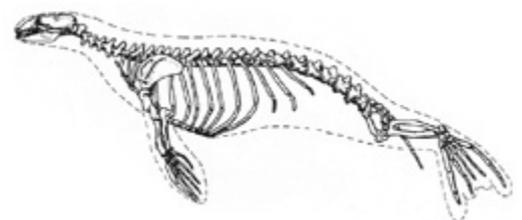
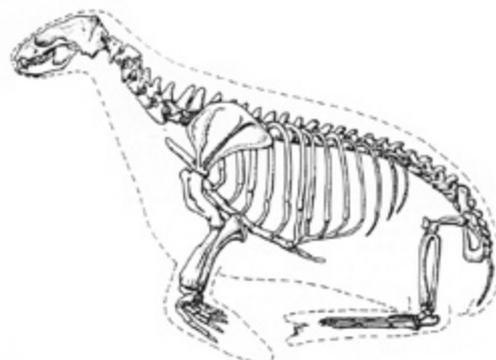
Sea lions prefer sandy beaches and can travel up to 1km inland. Sea lions are currently protected from all harassment under the Marine Mammals Protection Act 1978. They are considered a threatened species due to their limited breeding range. This makes them vulnerable to disease and fluctuations in local food sources. The greatest human impact is through fisheries 'by-catch' (being caught in trawl nets), though several sea lions have been shot since their return to the New Zealand mainland.

Pre Trip Activity : *Seal or Sea Lion?*

Compare the drawing of an Otariid - eared seal (NZ Sea Lion) and a Phocid - true seal (Leopard Seal).
What is the difference between the two groups?

Label the following parts on the diagrams:

- head
- snout
- fore flippers
- hind flippers
- tail
- ribs
- spine
- skull
- teeth



Phocid Seal

Otariid Seal

Do some library research to find out what types of seals live in NZ waters and find out which group they belong to; Otariid (eared seals) or Phocid (true seals).

Post Trip Activity : *Southern Residents*

Map the distribution and breeding areas of the New Zealand Sea Lion and the New Zealand Fur Seal. Do they live and breed in the same area? Check out the Encyclopedia of NZ for information on distribution:

www.teara.govt.nz/EarthSeaAndSky/SeaLife/Seals/6/ENZ-Resources/Standard/1/en

Draw a food web which includes the NZ Sea Lion. Illustrate the animals / plants listed in your web with pictures or your own drawings.

A Day in the Life of a Marine Mammal Scientist

The following interview is with **Amélie Augé**, a French student who is studying for her PhD degree in Zoology at the University of Otago.

Why did you become interested in sea lions?

I have been interested in animals all my life. When we lived in France my father took my family to the Mediterranean Sea for holidays and we would look for marine animals. Many years ago I read about New Zealand and felt that I would like to visit to find out about all the marine and other animals. When I first saw seals and sea lions they were a mystery to me because they can live in the ocean. My interest in them has remained.

How long have you been studying sea lions?

This is the first of three years for my PhD study but I have completed almost 5 years working in the Department of Conservation research team and completing my M.Sc. That study was also on the sea lions.

What does your work involve?

It involves lots of time observing sea lions and taking samples of sea lion "poo" and "vomit" (food regurgitations). My work also involves following the satellite transmitters that are placed on the backs of some sea lions. This tells me where they have travelled, the depth of their dives, and the temperature of the water they are diving in. This gives me information on how the animals are feeding.

Where do you do most of your field work?

Most of my field work is on the Otago Peninsula but I have spent time on the Auckland Islands where the largest breeding colonies are. My shortest time on the Auckland Islands was 6 weeks and the longest time was 3 months. All of this was during the summer. There I live in a basic field hut but on the Peninsula I live in a crib (bach).

What do you do when you are not in the field?

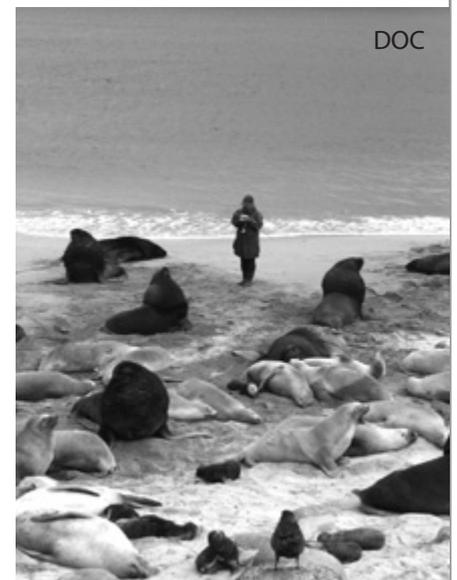
Much of my time is spent on the computer and in the laboratory where I sort through samples and analyse the data collected from my field work. I also have to prepare reports for the Department of Conservation, the University and my funding sources. I also attend meetings and conferences.

What do you do if the weather is wet and cold?

I still go out to observe in all types of weather because it is fun. I enjoy my time with the sea lions and will dress up in warm and dry clothing. Besides, the sea lions are still out in this weather and it doesn't bother them.

What do you like about your work with sea lions?

I enjoy the interactions and the behaviours of the animals. I know each animal because of its behaviour. After two months working with them, I can get up really close to them because they know me. I know that they can smell me. I have a permit from the Department of Conservation so I only approach them to weigh or to check on them on special occasions. I do not touch them normally.



How do you know what a sea lion eats?

I can do this by simply checking its "poo" and its "vomit" (food regurgitation). The hard remains of the food, like bones and squid beaks, are not digested. We look at these, and then compare them with collections to identify the type of animal and how big it was. I will also look at the stomach contents of a dead sea lion.

What behaviours of the sea lions do you find amusing?

The sea lion is very curious and I enjoy observing how they behave when they interact with each other. Watching them 'spook' each other is the funniest. Sometimes younger males will come up close to another one who is asleep and touch it to 'spook' it. Other times juvenile males (teens really) will try and run amongst the females during the breeding season and are chased away and sometimes bitten by the big males. They continue to go back and do it again. I am also amused when the pups do all kind of funny things such as falling over as they are not coordinated yet.

Have you ever been scared of a sea lion?

Oh yeah! Some big males during the breeding season definitely do not like us going around their females. I find their behaviour slightly upsetting. Sea lions may run towards you with their mouths open. This means they just want you to back off.

Are there any parts of your work that are not enjoyable?

I don't particularly enjoy collecting "poo" and "vomit" (food regurgitation). I also find it a little uninteresting to write the long reports and then read the comments by my supervisors. I find it very sad when I have to occasionally collect dead pups.

Are sea lions different in character to fur seals?

They are different to a fur seal in that sea lions are not scared of humans and are curious about them whereas the fur seal is scared of humans. The sea lion likes to 'play' and explore things with their mouth. Each individual animal has its own personality and behaves differently.

How can we find out more about sea lions?

You can go to your local library for books, magazines and DVDs. You can look on the web, especially at the 'Sea Lion Trust' and DOC websites.

What do you do if you notice an animal is not well?

I will ring the Department of Conservation, just like the time I found a young sea lion entangled in a net. Members of the public should do this as well if they come across a sick or injured animal.

What do you do in your spare time?

I enjoy tramping, cycling, swimming and scuba diving. When I can, I will spend time with my friends but as I am busy, I do not usually have too much spare time. Travelling is also one of my favourite activities and each year I go to a new country for six weeks holiday. This year I am travelling to Madagascar to work on a project to help the local community develop marine eco-tourism and research. My overseas travel always involves some conservation work.

What do you wish to do when your study is finished?

I would be particularly keen to work in marine conservation and in research management but it would depend where the work is located. This may mean I have to travel to other places around the world.

Interviewed by David Bond, 2008 Royal Society Teacher Fellow.

Pre Trip Activity : *Meet a Scientist*

Read the interview with Amélie Augé. Imagine you could interview the sea lions she studies.

- What questions would you ask them?
- What do you think their responses would be?
- What do they think of Amélie watching them?

Post Trip Activity : *A Research Expedition*

Imagine if you were given the opportunity to accompany Amélie on one of her research expeditions to the Auckland Islands.

- Find out where the Auckland Islands are and list the ways that you might travel there.
- Make a list of what you would bring on such a research trip. Think about personal items as well as what you will need to study the sea lions.
- Make a list of questions that you would like to find the answer to during your trip.
- Make a list of the characteristics you might need to have when working far from home, in all kinds of weather and sharing a small field base with other scientists you may or may not already know.

Sea Lion Conservation

Sharing the Beach with New Zealand Sea Lions

Jim Fyfe, Coastal Ranger, Department of Conservation, shares his views on how we can co-exist with these amazing ocean wanderers.

The return of New Zealand Sea Lions to Otago is a good news story for a threatened endemic species which was hunted close to extinction, first by Māori for food, and subsequently by sealers. New Zealand Sea Lion behaviour is very different from the fur seal behaviour most people are familiar with on our rocky shores. It is worth taking time to reflect on this, because understanding sea lion behaviour will increase your chances of having a positive experience during an encounter.

Firstly, sea lions have a strong preference for sandy beaches that they use to rest, sleep, mate and play. They will often interact with each other socially while ashore, but they also need to sleep. As people also frequent sandy beaches, many folks have now encountered sea lions, even though there are less than 150 of them in Otago.

Secondly, unlike fur seals, New Zealand Sea Lions are not afraid of people. Rather than run away, they will charge at you if you get too close. Keep a reasonable distance and they are unlikely to bother you, especially when they are resting. It is important to realise the charge is usually a bluff, indicating that you have invaded their personal space. Back off slowly and they are unlikely to pursue you far. It is also worth emphasising that you CAN walk between sea lions and the water. A widely known rule for fur seals, specifies not to get between them and the water because when fur seals are disturbed they will race back to the sea.

New Zealand Sea Lions can move quickly on land, allowing them to roam considerable distances inland looking for that 'perfect quiet spot'. People can get a fright when they stumble on a sea lion unexpectedly. Be aware of the possibility that there might be sea lions when you are walking through the dunes.

7

You dine on barracouta
Move ahead 2

8

9

10

11

You are bullied by an older sea lion
Move back 2

12

Congratulations!
In passing here, you find a mate

6

A scientist gives you a numbered tag



A tagged pup



Juveniles at play



Adults courting

5

Your mother is away for some days and you go hungry
Miss a turn

4

Whakahao New Zealand Sea Lion welcoming back a native treasure

3

Pups are dependent on mothers for almost a year



Pup suckling

2

Drinking mother's milk. Move ahead 2

1

January, pups born



START



FINISH

Measure your parental success
Roll the die to find out how many of your pups survive to adulthood

Object of Game

to grow to become a healthy sea lion and produce lots of pups

33

You are harassed by humans
Move back 2

32

Sea lions can live for up to 28 years

31

Sea lions can weigh up to 1,000kg
females 156kg
males 450kg

13

Females can have a pup at 4 years

14

Males can mate at 6 years, but usually can't hold territory until 8 years

15

You are caught in a squid net and escape injured
Move back 5

16

You catch arrow squid for tea
Move ahead 1

17

18

Shark attack! Roll the dice to see how many spaces to go back

19

You eat junk food from a fishing boat
Move back 2



Sea lion feeding on paddle crab

20

21

You are accidentally hit by a boat
Move back 4



Injured sea lion

22

You have a pup
Move ahead 3

23



Adult female

24

Your pup is attacked by a dog
Miss a turn



Males fighting over territory

25

me...
thy well fed
ts of pups

30

Average weight...
females 110Kg
males 300Kg

29

28

Fight for territory
Roll the dice...
1-3=lose, back 3
4-6=win, ahead 3

27

You start a new breeding colony
Move ahead 5

26

You drown in a trawl net and your pup starves to death
Return to start

Sea lions can be curious and they like to play. This is particularly true of the younger ones. Try not to get into a situation where you are running away from a young sea lion; they think it is a game. Back away slowly, while facing them, and get right out of their space. Often, with playful sea lions, the trick is about timing; they are easily distracted. If you wait out of view for five minutes they are likely to have moved on.

Sea lions are truly in their element when in the water, and those engaged in water sports will know you cannot hide from a sea lion that has taken an interest in you. Remember they are usually just curious. Sea lions approach people in the same way they would approach another sea lion, but they have a way of saying hello that tests your nerves. Once you are approached at close quarters it is important not to engage, even if they are just playing. Would you wrestle with someone who weighed over 200 kg? Avoid engaging by not making eye contact and by moving slowly away. Do not race away in a panic, or try to push the sea lion. Stay horizontal in the water. The sea lion may try to mouth your fins or the end of your booties; ignore him - this is his ploy to get you to engage. Be really boring. The sea lion will divide his attention between everyone in a group, so there will be more time to relax and enjoy the experience if you are swimming with others. Some surfers who are familiar with sea lion antics claim this gives them an advantage in local surfing competitions.

Special care is needed not to encourage sea lions to view fishing boats as a source of food. Please clean fish well out to sea, or keep the offal on the boat until you get home. It is well known that feeding wild animals can lead to problems; spare a thought for people on smaller boats who get approached by a sea lion with high expectations of being fed. It is also an offence to feed marine mammals.

And of course the usual rules apply in respect to dog control around sea lions as for other wildlife species. Unlike most other wildlife, sea lions may choose fight over flight – an added incentive for you to carry a lead and to ensure your dog is under close supervision when visiting the beach. Vehicles should also take particular care not to impact on wildlife. The use of trail bikes on the beach or in the dunes will disturb sea lions, other wildlife and beach users as well. It is an offence to harass sea lions or to drive a vehicle within 50m of them.

Although sea lion behaviour is different to that of fur seals, it is also quite predictable. They are New Zealand's own unique sea lion, recovering from near extinction, and this requires that they re-establish on the mainland. Your tolerance and willingness to learn about sea lions will help minimise conflict on the beaches. Please contact DOC if you do have specific concerns.

Pre Trip Activity : *Sea Lion Survey*

Find out your community's views on sea lions by asking people the following survey questions:

- Have you ever seen a live sea lion? *yes / no*
- Where did you see it? *rocky shore / sandy beach / other*
- How would you describe your encounter? *exciting / scary / boring*
- Did you know that sea lions were once more abundant on the Otago Coast than today? *yes / no*
- Your own question (must have only 2 or 3 answers to choose from)

Graph your results.

Post Trip Activity : *Kai Tahu Tale*

There is a Kai Tahu tale relating the friendship between the koreke (quail – now extinct) and the pakake (sea lion). The pakake said, 'Let us go out to sea together.' 'No' replied the koreke, 'we will stop on land.' But the pakake returned to sea lamenting, 'Alas, if I stay here I will be killed for meat', and the koreke turned inland.

- Describe what this tale means to you.
- Do some research to find out why sea lions were hunted.

Post Trip Activity : *Role Play*

A sea lion has taken up residence on St. Clair Beach and has been chasing the swimmers, picnickers, walkers and surfers. Dogs are running up to it and barking and tourists wanting a good photograph are getting much too close and throwing things at it to make it sit up. The DOC hotline has been running hot with some locals complaining that the sea lion is being disturbed, others that it's not safe to take their children to the beach any more. Surfers claim they are being chased out of the water and local fishers fear local fish stocks may be threatened. A public meeting has been called to air community concerns and discuss what could be done.

Think about the character you or your group will present. A few lines on each have been provided to help get you thinking. Consider what other concerns they might have, experiences they might have had and how that may influence what their attitude might be.

Trawl the Internet to see if you can get any material there that may help flesh-out your character and what he/she might say....and how they might say it.

Character Cards: (Photocopy this page and cut out cards for students to work from.)

Marine Mammal Scientist

I believe that their return to our shores should be welcomed.

They are the world's rarest sea lion and breed at only four other sites in the Subantarctic, where they are frequently killed in trawl nets. A colony on the Otago Peninsula would be added security for the species. A local colony would mean we could study them all year around rather than just the few months we currently spend in the Subantarctics.

DOC Ranger

Our role is to protect New Zealand's natural heritage for all to enjoy. A particular emphasis is to conserve species that are threatened with extinction. New Zealand Sea Lions are unique to this country and have a long road to full recovery from past exploitation. We endeavour to provide the public with information and guidelines that will allow them to safely share coastal space with sea lions. By showing respect for this special native species and by being prepared to follow some simple rules during encounters with sea lions, the public can continue to enjoy the full range of recreational pursuits available to them on the coast.

Surfer

I can't `chill –out' any more when I'm out there as I'm always scared I'll get attacked. DOC should be chasing them away from any beach where there are surfers. People will stop coming here to surf.

Commercial Fisher

DOC should be culling them not encouraging them. It's hard enough to make a living from fishing these days. They are always round the boat when I'm gutting my fish. They must be having an impact on fish stocks.

Local Tour Operator

Dunedin promotes itself as `wildlife capital of New Zealand'. I make my living from showing tourists that wildlife. Sea lions are very spectacular and popular and their return can only be good for business and the local economy. My company would be happy to contribute time and money to help them return.

Sea Lion

I can't talk but if I could I'd just like to say that as a MARINE mammal first and foremost, we only come ashore to rest and have our pups. We are not interested in eating humans, fish and squid taste better! When we bark and charge at you we are just reminding you to keep your distance. You are welcome to share the beaches we once occupied long before you came to NZ.... just give us space and keep your dogs under control and we will happily interact with our own kind and you will get all the wonderful photographs you could want...from a safe distance. Humans take far more fish from the sea than sea lions. It's we that should be worried about how much of our fish you humans are taking.

Dog Owner

I like wildlife as much as anyone but dog owners have a right to be able to let their dogs off lead when out for a walk. Next thing they will make the beach a reserve and ban dogs completely. I'm scared my dog will get attacked or DOC will have it put down if it disturbs a sea lion.

Recreational Fisher

They are eating all `my' fish. You see them tossing whole salmon around out there. They come around the boat when you are gutting fish. Then they follow you back to the wharf and scare the kids on the jetty by charging at them. They should stay down in the Subantarctics. They don't belong here!

Other characters can be tailored to your local community. You may want to include a Māori or Pacifica view etc.

Post Trip Activity : *Sea Lion Survey - Revisited*

Revisit your survey graph from the pre visit activity.

- If the sea lion was seen on the rocky shore, it was more likely a fur seal. You may want to disregard those results or graph them separately.
- Based on your survey results, describe your community's attitude towards sea lions.

Sea Lion Conservation

Welcoming Sea Lions Back to the Mainland

Public should make room for marine mammals

By REBECCA FOX

MEMBERS of the public need to learn to live with, and make room for, native seals, sea lions, Hector's dolphins, southern right whales and other marine mammals which spend time on or near the Otago coast, Otago Conservation board chairman Hoani Langsbury says.

His comments were made in the board's annual report, which was adopted at a meeting at Portobello.

"It is encouraging to see more New Zealand sea lions and southern right whales returning to some of their former habitats along the coast."

"These marine mammals are the marine equivalent of the large land animals in other countries and should be valued in the same way," he said in the report.

Speaking to the Otago Daily Times yesterday, Mr Langsbury said how the public interacted with mammals like sea lions on the Otago Peninsula and in the Otago Conservancy was of concern to the board.

"They are all part of the wider, larger food chain and it's important to understand the difference between fur seals and sea lions."

A lone New Zealand fur seal was easily mistaken for a sea lion, although there was a significant size difference, he said.

The public needed to be a bit more understanding of species which were here before "us" and were now only reestablishing populations along Otago's coast.

Excerpt from the Otago Daily Times, July 18, 2007.

Diver wants sea-lion warnings on beaches

By STEVE HEPBURN

A REGULAR beach-goer believes signs warning the public about sea lions should be put up along Otago beaches, but Doc has rejected the idea.

Graeme Bell, of Fairfield, said sea lions were threatening predators, and he never went into the sea alone.

Mr Bell (61) was responding to an article in the Otago Daily Times this week about the dangers to humans posed by the creatures along the Otago coastline.

He said he had once been accosted by a sea lion while diving, and then chased up the beach. He was concerned a child walking along the beach could be hurt if a sea lion attacked.

"These animals are fast and quick and they are creating lots of problems," he said.

He had heard of jet-skiers being chased out of the water and up sand dunes by sea lions.

A paau diver for more than 40 years, Mr Bell said the creatures had become more prolific in the past 10 years, but the females - a white colour - were extremely hard to see.

The Department of Conservation was portraying the animals as something they were not, and a child was going to get hurt, he said.

Doc rejected the call to put up warning signs.

Doc marine ranger Jim Fyfe said it would be impossible to put up signs on all Otago beaches as the sea lions landed on many different ones along the coast. They preferred sandy beaches.

Doc was talking to the Dunedin City Council about putting up road signs between Brighton and Taieri Mouth after a sea lion was run over by a vehicle last year.

The best way to move away from a sea lion was to back off slowly. Sea lions were social animals who hunted fish and squid, not humans, Mr Fyfe said.

He had been at Surat beach in South Otago over the past month, and sea lions and humans were enjoying a peaceful co-existence in that area.

*"worldwide there are virtually no sea lion incidents involving serious injury to humans," according to Fyfe.**

Females were due to give birth this month. About six pups were expected to be born around Otago this season.

Mum (21), the sea lion who started the breeding programme on the Otago coast had been spotted at Taieri Mouth earlier this summer, but it was unclear whether she was pregnant.

Otago Daily Times, January 26, 2008.

**Correction made by Jim Fyfe as he was misquoted. There have been no incidents involving NZ Sea Lions.*

Pre Trip Activity : *Your View or Mine?*

Read the articles from the Otago Daily Times. Summarise the key points and outline why you agree or disagree with the views presented and explain why.

Post Trip Activity : *Sharing the Learning*

Create a poster that will catch people's attention and highlight how we can welcome sea lions back to the mainland. Refer to the viewing guidelines on the inside back cover.

Some Resources to Explore

Books

- Farry, L. 1994. **Frank and Sam's Summer at Aramoana**. Nelson Australia Pty Limited, South Melbourne.
- Encourage students to find out what the boy does in this story that is not recommended.
- King, C.M. (Ed). 2005. **Handbook of NZ Mammals**. 2nd Edition, Oxford University Press.
- MacDonald, D. (Ed). 2001. **The New Encyclopedia of Mammals**. Oxford University Press.
- Peat, N. 2001. **Coasting, The Sea Lion and the Lark**. Longacre Press. Dunedin.
- Reeves, R., Stewart, B., Clapham, P., Powell, J. 2002. **Guide to Marine Mammals of the World**. Alfred A Knopf, New York.
- Todd, B. 2002. **Seals and Sea lions**. Reeds Children's Books, Auckland.
- One of a series of natural science books for children.

School Journals

- Close Encounters. Ramari Stewart. Part CN No. 3 2004; pages 2 – 9.
- Hooker's Sea Lions. Mary Cresswell. Part 1 No. 3 1996; Pages 8 – 11.
- Sea Lions. Hugh Best. Part 2, No. 4 1978; Pages 28 – 35.
- Searching for Sea Lions. Kim Westerskov. Part SL No. 2 1988; Pages 2 – 20.

Websites

- www.sealiontrust.org.nz
Information about the NZ Sea Lion Trust including information about current research, ecology, conservation issues and what you can do to help. Free DVD (Return of the Sea Lion) with every school membership.
- www.doc.govt.nz
Fact sheets on NZ seals, sea lions and conservation issues
- www.doc.govt.nz/templates/page.aspx?id=71778
DoC's Meet the Locals Video Series – check out the sea lion filmed on Otago Peninsula with Jim Fyfe.
- www.teara.govt.nz/EarthSeaAndSky/SeaLife/Seals/6/ENZ-Resources/Standard/1/en
Encyclopedia of New Zealand site that has information on seals and sea lions.

Posters

Threats to Marine Mammals. DOC publication 2003

The Seal Deal – Caring for Kekeno Together (Series of three posters). DOC publication

Sea Lion Trust posters : Available from NZ Sea Lion Trust

DVDs

Return of the Sea Lions. By Kyle Beggs and Hannah Smith, Natural History New Zealand 2002

A good introduction to sea lions on the Otago coast and current conservation issues. Available from the NZ Sea Lion Trust.

Whetu Rere - The Sea Lion and the Comet. By Kat Baulu and Alastair Jamieson, Natural History New Zealand 2005

The touching story of one of `Mum's` most challenging breeding seasons on the Otago Coast. Available from the NZ Sea Lion Trust.

Articles

Check out www.sealiontrust.org.nz for a comprehensive list of sea lion research undertaken on mainland New Zealand.

Visit Royal Forest and Bird Protection Society (www.forestandbird.org.nz) for articles like these:

- McConkey, S. 2001. New Start for the Sea Lions (Hooker's Sea Lion). Forest & Bird, May, pg. 14.
- Owen, SJ. 1984. The NZ Sea Lion – A Problem of By-Catch. Forest & Bird, February, pg. 34.
- Peat, N. 1993. Hooker's Sea Lions: A Comeback Story. Forest & Bird, November, pg. 2.
- Smith, K. 1998. Extending Marine Mammal Sanctuary (Auckland Islands Sea Lions). Forest & Bird, February, pg. 8.
- Weeber, B. 2001. New Zealand Sea Lions at Risk in the Subantarctic. Forest & Bird, May, pg. 16.
- Unknown, 2001. Female Sea Lions. Forest & Bird, May, pg. 15.

Sea Lion Te Reo

Whakahao - Sea Lion, sometimes used just for the male sea lion

Kaki - female sea lion

Kekeno - fur seal

Ākau- shore, coast, rocky coast

One - beach

Patiki - sand flounder

Hoka - Red Cod

Marari - Greenbone

He ara pakake - a sea lion pathway into the coastal vegetation

He takotoraka pakake - a resting place for sea lions

Ngū - Squid

Pakake - possible local Otago word for sea lion

Rāpoka - Leopard Seal

Au o te moana - open sea, open waters

Onepū - sand

Tāhuahua - sandhills or sand dune

Tahatai - shore, seashore

Guidelines for Viewing Sea Lions

- Always try and stay at least 10m away (10m from sleeping sea lions and 20m from active sea lions). If you come across sea lions on the track, back off and find a different route.
- Do not disturb sea lions by making loud noises, throwing things at them or driving vehicles in their vicinity.
- Keep dogs well away from sea lions, preferably on a lead.
- Keep children under close supervision when sea lions are in the area, they might be asleep in the dunes and hard to see.
- If you are in a group, do not surround sea lions.
- Be prepared to back away if a sea lion takes an interest in you.
- If a sea lion approaches you in the water, avoid looking it in the eye and move slowly away.
- Never attempt to handle sea lions (they will bite if provoked, and can carry diseases such as TB and salmonella).
- Do not feed sea lions.

Let DOC know if you are concerned about the safety of a sea lion or to report inappropriate behaviour around them.



Photo Credits

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Back Cover

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