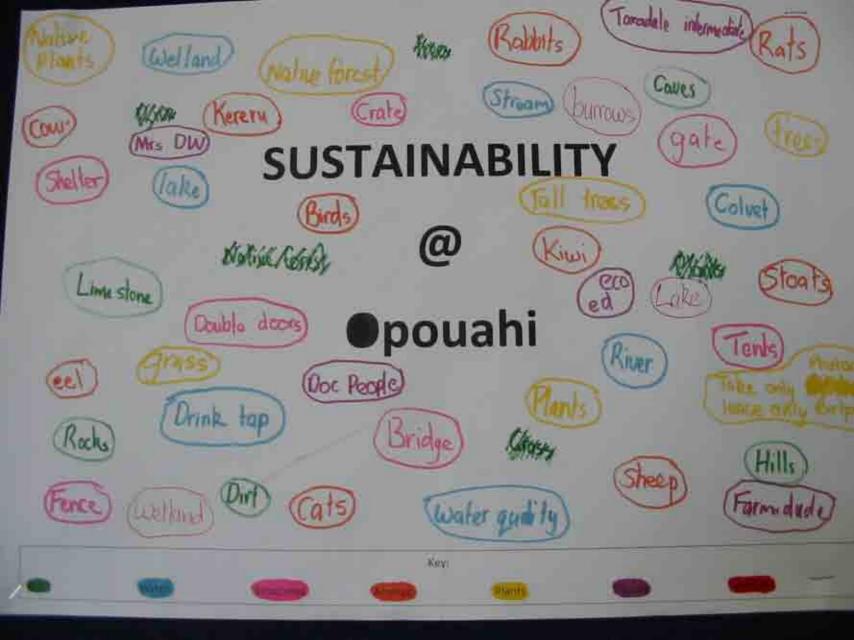
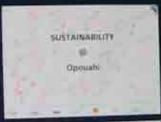
OUR CLASS DEFINITION OF SUSTAINABILITY:

The quality of protecting, maintaining and caring for the environment for the long term benefit of all.



SUSTAINABILITY



















Room 23s Opouahi Questions

How many kiwi are in the reserve?

How does the fence keep predators out?

How long has the Kiwi Crèche been there?

Is it a reserve for only kiwi? If so, why? If not, what other creatures are there?

What kids of trees are on the reserve?

How do they know if the pests get in?

How do the kiwis get in there?

Who owns the Kiwi Crèche?

What sort of habitat does a kiwi live in?

Why is the place called Ohouahi?

How much money does it take to raise a kiwi chick and then release it?

How old are the chicks when they are released?

What sort of pests do the kiwis need protection from? Why?

Investigating Our Own Questions

ARE PEST TRAPS IN NEW ZEALAND EFFECTIVE?

Yes. I have sufficient evidence to prove this that yes pest traps in New Zealand are effective. The kiwi's main enemies are: Ferrets, Stoats, Wessel, Possums and wild cats. There is a trap for each of these pests. The first is the Possum leg hold trap. This trap is only used in New Zealand It is approved by MAF and has a double coil spring making it the No.1 trap for Possum. Then there are the traps that are used on a wide range of pest the DOC 150, DOC 200 and the DOC 250. These traps are designed to trap mainly Stoats. Weasels and Ferrets. The 150 is designed for the smaller pest: rats and Stoats. Then the 200 is designed for larger pest like the Hedgehog and the 250 is designed to kill the most harmful to the kiwi the Ferret. This is my information about how pest traps in New Zealand are effective.

The Doc 200



The Leg hold trap



seep the rabbit non rallathe disease has been for the highly contagious ossums are an enemy kles and poisonous Propertion for spossing Lealand is not! Dossums should never have been invited railia is the perfect o incerculosis, while in is because our possums may be a l eaves...ours don'tt Another bossum defence DESCRIPTING W



What is happening with the Stoats in NZ???



· The stoat

The stoats were first introduced in the 1880s to control the hares and rabbits that were ruining the crops of farmers but it also had a devastating toll on the native New Zealand birds. The stoat was also able to swim long distances, therefore travel to other islands. The numbers of the stoat gradually rose and (because there was no predator hunting the stoat) the stoat was able to kill freely without being threatened. When people spotted the problem it was too late, the problem began to enlarge and enlarge...

Now

The stoat's numbers are still continuing to rise despite NZ's best efforts. We are trying to use all sorts of traps to eradicate and control this pest such as bait traps, tunnel traps and powerful clamp traps. The reason the stoat has not been eradicated is:

- a) The stoat has no predator hunting the stoat.
- b) The stoat is able to hunt at any time, whether it is day or night.
- A female stoat changes its den site frequently, making it hard to locate and find any stoats that are vulnerable.
- d) Although many stoats die young (80%), the adults that survive can live up to 6-8 years.

Stoats also nest near their prey, making hunting an easier job.

Stats- The Kiwi

The rowl and Haast kiwl are the most threatened due to its small population size, and the rate of decline for the Brown Kiwl is 3% per year and 2% for the Great Spotted Kiwl

Stats-The Stoat

The stoat has many characteristics that enable them to survive eradication. The Stoats numbers are not known but we do know that the population that once spread like wildfire, is slowly but surely, being controlled

My answer

In conclusion stoats are still ever-present, but New Zealanders have made a comeback and are continuing to protect their native symbol, the Kiwi. NZ are also protecting native birds, also important to NZ life. The Stoats have been able to survive despite years of determination from NZ but it is slowly being eradicated.

Save the Kiwi!





How many kinds of Kiwis are there?

There are five different types of kiwis all which are flightless and unique to New Zealand. The kiwis at the national zoo are North island brown kiwis the only kiwis that can be seen outside of New Zealand. All five types of species of kiwis are endangered or close to extinction. The total number of kiwis is 70,000.

Little spotted kiwi

This is the smallest kiwi weighing about 1kg. In 1980 there were 1000 of this specie. They are only found in offshore islands of New Zealand.

Brown Kiwi

This is the most common kiwi only found in the north island of New Zealand. And it only lives in four spots in the North Island. Northland, Coromandel, Western and Eastern.

Great Spotted

This is the largest kiwi growing up to 45cm high. Weigh about 3-4kg. It is found in the top half of the South Island.

Dowl

The Rowi is the rarest specie of kiwis. It is only found in Otarito on the west coast of the South Island. There are only 300 Rowi left in the whole world!!

Tokoeka

This kiwi is found in Stewart Island. It is a bit weird because this kiwi is found out feeding during the day. Also looking after eggs in groups and taking turns at sitting on the eggs.

By Mia Penisula

Why are most of the Kiwi's predators foreign?

- The number one baby Kiwi killer is the stoat, which was introduced from Europe in the late 1800's
- 5 ferrets were introduced to New Zealand in 1879, ferrets
 eat rabbit. lizards, insects, penguins, eggs, chicks, weta
 and kiwi.
- The wearel war introduced with the stoat in the late
 1800. wearel have long, slender bodies and will follow their prey into burrows, kiwis live in burrows?
- The possum was introduced in 1837 from Australia.
 possums are found in 90% of New Zealand mainland.



Why are most Kiwi
predators foreign?
Because all them have
been introduced to solve
a problem but really
they've created one.



WHY ARE KIWIS ENDANGERED?



Before Europeans came to New Zealand, the kiwi's had a healthy population. 100 million years ago New Zealand was 100% forest and bush. When humans arrived at New Zealand they cut down 75% of the forest and bush leaving it with on 25%! When they cut down the forest they also cut down numbers of kiwis. 80 year ago there was a population of around 5 million birds which has slowly dropped down to 50,000 and 60,000 which even still is plummeting rapidly.



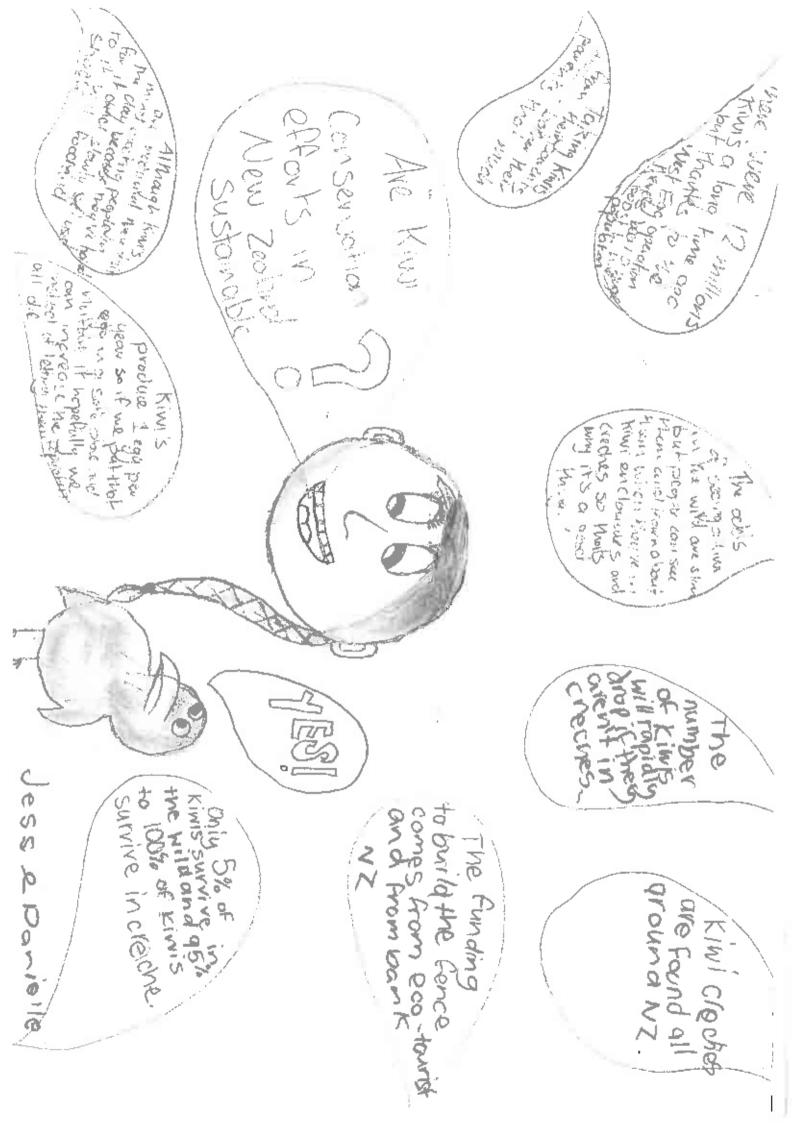
They also have many predators as well which doesn't help the population of kiwis either. These predators are manly: possums, stoats, ferrets, wild cats, pigs and dogs. The main enemy to kiwis are stoats and ferrets. Stoats try to get the male to leave the egg so that it can steal the egg. Ferrets are bigger so can take on a fight with an adult kiwi. Wild cats, pigs and dogs aren't as common because they don't necessarily live in the bush like a stoat or ferret so come across kiwis less often.

Kiwis are endangered because of habitat loss and imported predators. The kiwi's forest and bush are disappearing so fast due to the clearing of forests for farming and agriculture and the introduction of imported predators. We are getting rid of their bush which is making it harder for them to hide from unwanted predators.



Big Question #1

Are NZ Kiwi Conservation efforts sustainable?



Are Kiwi Conservation Efforts Sustainable?

Yes Proof- Problem- The number of kiwi is decreasing rapidly from 12 million when the maori people arrived in NZ till 1930 when there was 5million and now there is 50,000-60,000 which is a major decrease. Why the kiwis need protection-The kiwi chicks are being killed by dogs cats ferrets stoats and weasels, only 5% of the chicks are surviving to adult age. That means that less eggs are being laid every year and so the problem is getting rapidly worse. The solution- In 1991 the NZ government realised that the kiwi could soon become extinct. They started the kiwi recovery programme with the help of the bank of new zealand and the forest and bird society. Sponsers- The bank of NZ, forest and bird society and other forest companies Resources- Traps, bait, research, predetor proof fence, to run workshops to share kiwi conservation skills Habitat- Kiwi will live almost anywhere. They are also found in scrub, exotic plantation forests, rough farmland and sand dunes, even mangroves. They especially like places with wetland vegetation, and where trees run down to river edges. Costs-\$5 to feed a kiwi chick for one week \$10 to track one hectare for one year \$20 to buy a kiwi zone sign \$75 to train one dog to avoid kiwi \$300 to buy 1 smart transmitter \$1,200 to fund 1 year in the life of a bnz operation nest egg chick \$2,500 to buy 1 reciever to pick up transponder signals Cost information found by websitewww.kiwisforkiwi.org/take-action/fundraise/

Kezia and Yunji

ECO E

Are Kiwi conservation efforts sustainable?

Kiwi evolved for 70 million years before man introduced the many mammals that are found in this country now. Chick and eggs are very vulnerable to predators. Also the removal of large areas of forest has reduced the habitat and left fragmented populations of kiwi across the country. The male incubates the egg for 70 to 90 days. It can take four days for a kiwi chick to break out of its egg and by then it is exhausted. It is sustained with the yolk for up to a week and from then it must fend for itself. After hatching, it's a race against time to reach 1kg, when a chick is stronger and more likely to hold its own. This can take up to a year. 95% of these chicks will be predated during the first few weeks of their lives so most populations probably consist of aging birds. We will therefore see a rapid decline in population as these birds begin to die of old age. The Kiwi population of 80 years ago was around 5 million birds. Today they have plummeted to 50,000 - 60,000. Great Spotted Kiwi has dropped from 30,000 to approximately 10,000. Okarito Brown has dropped from 3000 to 200. Haast Tokoeka has dropped from 6000 to 200.

(information from the NZ Conservation trust website)

Without the efforts of conservation workers, the kiwi would die out within 20 years. But, since there are conservation workers, we hope to keep the kiwi alive for much longer. But it does cost a lot of money to keep things like DOC and ECOED going. And they rely on fundraising and money from the government. And the government will only give so much money. So in conclusion, there answer is no. the companies will not last forever and although we may be able to postpone the extinction date we will not be able to restore the kiwi's once great number.



Anna



Are kiwi conservation efforts in NZ sustainable?

MAYBE

Kiwi Conservation

The eggs are removed from the wild, hatched and reared in captivity then released back into the wild when big enough to defend themselves against predators.

Kiwi Sanctuaries - Five sanctuaries have been created covering 43,000 hectares

When the Maori first came to New Zealand, there were about 12 million Kiwis, but today there are less than 50,000 and the kiwi population is under threat from introduced animals and mankind.

The biggest threat is the stoat.



How is the kiwi conservation done?

BNZ has donated nearly \$7 million over the kiwi conservations all around New Zealand.

Predator Fence

In the willow bank kiwi Conservation Company

there is 2 hectors of land. There is usually about 8-10 kiwis in this area.

Overall we think **maybe**. Because they might not be able to get the fundraising to keep the place running. And the volunteers might not be able to volunteer any more. The positive side is that there are kiwis being saved and get to live in the forest once they can protect themselves.

By Grace and Mia

Are kiwi conservation efforts in NZ sustainable?

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By Grace and Mia

Micre are kivil Sandymaries? · Maungatautai ecological Island - waikalo · Cape Sanchary in hawkes bay · Ravinbon springs - Rotoma e pukaka mt bruec valdlike centre - wairarapa Rapati island nakure reserve - wellington Trictive matangi island - Hackland porokonui eco Porokonni eco Are Riwi Conservation Our group think the answer is lefforts in 1/2 Funding & Costs (Sustainable? YES because the Envival vals we picking up

many Sanctuavies.

We formal floor

Ow reserved that They charge people \$550 per night The preserve receives \$500,000 Der year From the BNZ Save the there are several avound NZ. The Rivi population So years ago was have plummeted to avound The money that the sanctuarie reciere from the BNZ trust 50,000. fund goes towards each kiwi chick which costs \$3000-\$7,000.

By Max & Mason

. When the moor arrived in NZ there Were Today there is my hought to be Moont 1000-1500 Kins die o year stones, wearels, trevets, cars and many many Should shindled and by 1930 there were less 50,000 10 60,000 2600 Cane ine cost 8850 of becieve Mines is a problem about 12 million Buch Their mambers 5% of kinn's survive where as still decreasing 170-275 per netice and week and 10 a sout littat we predator prover tearing have found on and the numbers KIMI COMSZIVENTION SUNDIVE Carorred

Are Kiwi Conservation efforts in NZ sustainable? Our group thinks that to few the Efforts much by the Kiwi romsocializant people are sustainable. We hade looked through mesenthed using money reposites We Gound Heat the Survival Rate of kinest in the wild has been raised from 5 -> 85% Since the excelors have been started. This has been vaised due to the huge number of erectors in NZ. More cleaches are being word, every year due to functionising and donations are some rise Funded by the government. Openhil released their 100th kind like wild Allen 2 years. The website "Kiwis for Kiwis" States that from long term intensive monitoring the population of the spotted kiw has remained Femarchy stable for over 20 years. This is because of their home which is in wet upland areas and a lat of spatted kiewi live in national parks were dogs are bonded

Big Question #2

Can NZ really be considered 100% pure?



"New Zealand is often advertised as 100% pure. Is this tagline deserved?"

New Zeedand is not worthy of being advertised as 100% pure. Overy country has its families so it isn't fair for one country to be called 100% pure as it's not. Here are some examples of why New Zeeland is not 100% pure:

Now Zealand has the third highest rate of threatened bird species
 Fact: 33% of all bird species in New Zealand are threatened.

Attp://www.nationmaster.com/graph/env_bre bir the environment-breeding-birds-threatened

 It is said that New Zealand has the lifth highest ecological footprint per person in the world.

Definition of an ecological footprint: an ecological footprint is the resources that human beings beare behind on this earth that can harm other creatures and the environment.

Attp://www.nationmaster.com/graph/env eco foo-environment-ecological-footprint

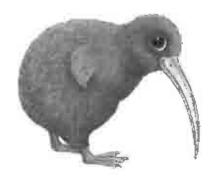
3) New Zealand Ras the fourth Righest sublish rate in the world.

Rttp://www.nationmaster.com/graph/env_pob_mun_was_per_cap-poblidion-municipal-waste-per-capita

There are many more reasons why New Zealand is not 100% pure so that phrase is definitely false. We do understand that advertising almost always has persuasive language included which helps to sell a product. In this case 'New Zealand is 100% pure' is used to attract towists which increases the economy of our country.



By Danielle P and Gina







For a country that states itself as '100% Pure'. New Bealand's environment isn't as great as many people would think. "Rivers are too polluted to swim in" States Britain's Daily Mail Online; Dairy forming had been a significant cause of poor river quality due to fertiliser.



"Only one in five New Jealand
Rivers could be safe to swim in,
according to a new report.
Opposition parties are questioning
New Jealand's '100 percent
pure" branding after a Ministry
for the Environment report card
said 52 percent of monitored
swimming sites on our rivers have
"poor" or "very poor" water
quality. Another 28 percent were
rated as "fair", with a risk of
illness for those who go in the water

and only 20 percent as "good" or "very good"." States 3 News.

This has been denied by many New Zealanders, they have said: "If New Zealand has a poor environment record, well someone better help the rest of the world-People from around the world have told us all they can focus on is the fresh air and the nice food, New Zealand is 100% pure." It has also been proved that the Lord of the Rings films got global attention to the breath-taking scenery and natural environment. John Key has also claimed that New Zealand has the world's second best freshwater quality according to Dr. Joy

60% of beaches have been rated at good or very good-stating that New Bealand Beaches are cleaner than New Bealand Rivers.

This proves that New Bealand is not 100% pure.

By Danika and Yunji

"New Zealand is often advertised as 100% pure. Is this tagline deserved?"

Definition of pure

Not mixed or adulterated with any other substance or material.

My point of view

I disagree with the statement "New Zealand is 100% pure." For me New Zealand is a great country but I don't think pure is the word to describe it as. There are also very bad things about New Zealand such as it is the 3rd highest car crash death rate in the world. It also has the highest rate on young adults' suicide from the ages 15-24 years of age. Also 33% of birds in New Zealand are threatened.

Some people also say New Zealand is pure well I wouldn't say it's clean. New Zealand has the fourth highest trash waste in the world. New Zealand which is also the third fattest OECD country.

Is New Zealand Healthy? Well did you know New Zealand has the fifth highest ecological footprint? This is where you drop or leave rubbish behind.

These facts are exactly why I think New Zealand wouldn't be 100% pure.

By Grace and Mia

Sustainability in New Zealand

With your partner, design a pamphlet in Publisher to display information for other children in the class on one of the following topics.

Alternatively you could choose your own topic and make fabulous open questions (okay them with Mrs Barber) and research them.

1. Biosecurity

What does it mean?

How does NZ protect itself?

What species are considered pests in NZ?

Draw a timeline to show when these species were introduced.

Watch https://www.google.co.nz/#q=meet+the+locals+biosecurity

Who is responsible for Biosecurity?

How can people visiting pest free places help keep them pest free?

Research one of these pests to find out about it and why it is considered a pest. How are we going about controling them?

2. Water

Research the water cycle. Draw a diagram to show the water cycle including the scientific words for the different processes.

OR

Complete the 'Water on the Move' activity.

Why is water so important?

How can we reduce our water usage?

Watch http://tvnz.co.nz/meet-the-locals/s2009-e41-video-2833587

Why are pest fish such trouble?

Why is it good for farms to have wet lands on them?

What is Riperian Planting? - See Mrs Barber's sheet.

Draw a picture of a healthy stream with some of the animals and plants that can be found it.

3. Global Warming

What is Global Warming and what has caused it?

What are the predictions for our future on Earth if we do not do something to stop Global Warming?

Watch the polar bear video:

http://worldnews.nbcnews.com/ news/2013/11/13/21441506-climate-change-threatening-polar-bears-in-canada

How are these bears affected by global warming?

How are New Zealand animals being affected by global warming?

How can we reduce our carbon foot print?

Draw a diagram to show how it works.

4.Tuna

Read about the different types of eels (tuna) living in New Zealand.

Create a table to explain the differences between the long fin and short fin eels. Draw a diagram of both of these aquatic animals.

Watch http://tvnz.co.nz/meet-the-locals/s2011-e13-video-4091509

What new information does the video tell you about the eels?

What is amazing about how the eels breed? Use an atlas or google maps to find how far these eels swim.

Create a diagram to show their journey.

Why are the long fin eels endangered?

How can we help them to survive?

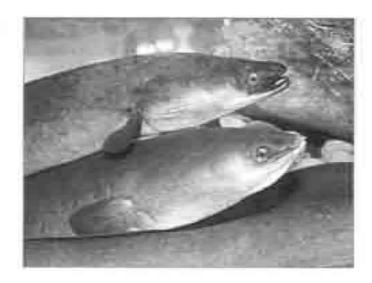
Breeding

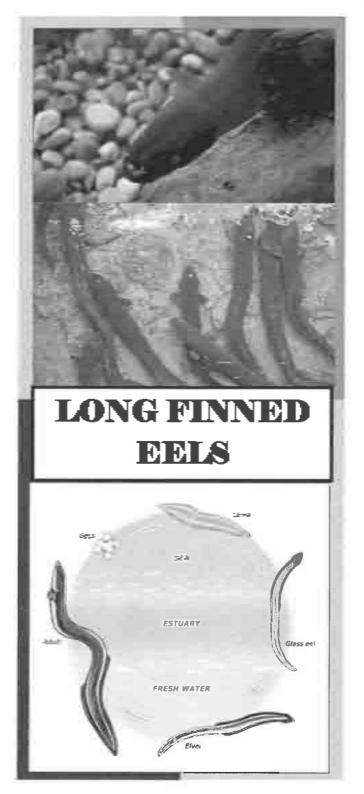
Longfin eels breed only once at the end of their life. When they are ready to breed, they leave New Zealand and swim 5000 kilometres up into the tropical pacific to spawn, probably, in deep ocean trenches somewhere near Tonga.

When they reach were their going to the female lays millions of eggs that are fertilised by the male. The larvae are called leptocephalus and look nothing like an eel – they are clear, flat, and leaf-shaped. The larvae reach New Zealand by floating on ocean currents.

Before going into fresh water, the leptocephalus change into a more familiar eel shape, although they remain clear for up to a week after leaving the sea. These tiny glass eels enter fresh water between July and November each year, often in very large numbers

Eels take many years to grow and it could be ages until an individual is ready to undertake the long trip back to the tropics to breed. The average age at which a Longfin ee migrates is 23 years for a male and 34 for a female. The adults never return as they die after spawning.





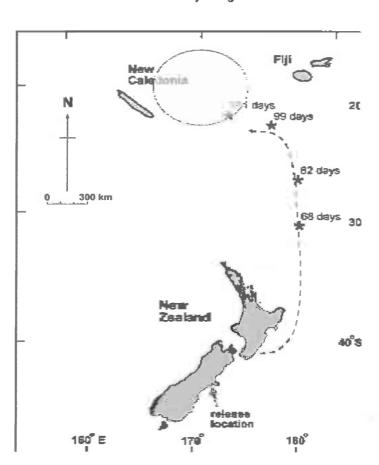
Endangered

Longfin eels are endangered because of people catching them and eating them.

When they breed some of the baby eels don't make it back because they get eaten by other fish.

And when there coming back the cant go around the hydrodam which cuts them up.

For eels to survive they need shade for when its hot but with they way we are cutting down the trees the eels will have beery them selves in the mud but after a while they will get burnt and die.



Why are pest fish such trouble?

First lists are spould in the Zemand pattern be unless than tracke the water ways whose native has the unhealthy or not mon for them to live in.

there are some things that peut fish do so ow we tot woo.

- Shring up sediment and making the water muchs.
- Солинилищ по еговон
- Tending on and removing malive aguntic owner.
- Prepare on invertibleating, neither fish and their eags.
- Competing with nepre species for food and species.

There are as many as 22 introduced flet species in New Zealand, company to name to native finally and flet messes.

Here are some of the Major peass flat that have been introduce into no.

Serphose (moseuholin)

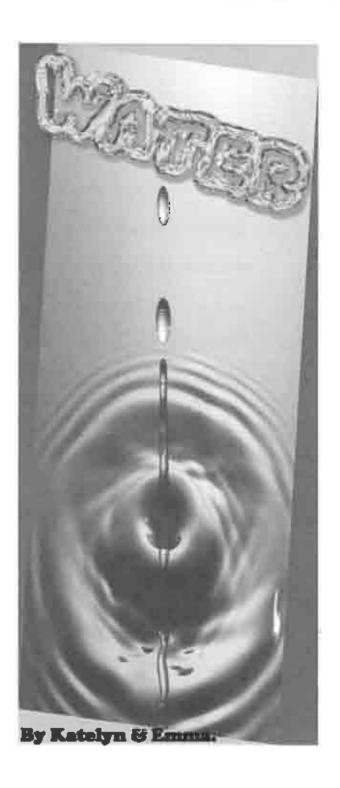
Ken name

Riidd

Cottien

Water Cycle

The water cycle is known as the H₂O cycle. Which it describes the continuous movement of water on, above and below the surface of the Earth. Here is a diagram of the water cycle.



Why is water important?

Water is everywhere and all around us like the Sea, lake, rivers, in the air and under ground. 97% of the water in the world is salt water and 4/5 of the remaining is fresh water. Water is important to us and other living things on the planet because we need water to keep us humans and animals alive.



How can we reduce our water usage?

Lots of fresh water has been tipped down the sink or down the drain everyday. There are lots of ways to reduce our water usage. Here are some ways to reduce the usage of our water at home or at school.

- Turn off the tap when brushing your teeth.
- Don't over fill the pool.
- Not to loooooooonnnnnnnnngggggg showers.
- Don't leave the hose running when your washing.
- Designate one glass for your drinking water each day, or refill a water bottle.
 This will cut down on the number of glasses to wash.

What is a Riperian Planting?

Riperian planting is when the Benefits in addition to the zones that with retain nutrients from fertilizer and animal wastes.

Here are some benefits of Riperian planting:

- More birds
- Improves water quality
- Reduces weed spread
- Increases biodiversity
- Recreation
- · Retention of sediments
- Greater Bank stability
- Less flooding
- More shade

How can people visiting pest free places help keep them pest free?

There are many different
ways you can help keep NZ
pest free. Like after you go
and visit a native part of NZ
like a bush or forest you can
look around for pests and
unwanted species but first
you need to no what they
look like so take five and
identify unwanted things
and call for someone to
come and remove it. Or investigate.

Who is responsible for biosecurity?

There is a lot of different people responsible for biosecurity. The system is made up of many groups and organisations working together as a team. But we as the public can help protect NZ from pests and plants that are unwelcome here in NZ. Ministry for Primary Industries is the main company that Is responsible.





Remember to keep NZ pest free!



What does biosecurity mean?

Biosecurity is a prevention against pests, disseises and alien species. Alien species means plants and animals that come from different country and then introduced to NZ but not wanted in the native parts. So pretty much unwanted plants, animals and disseises.

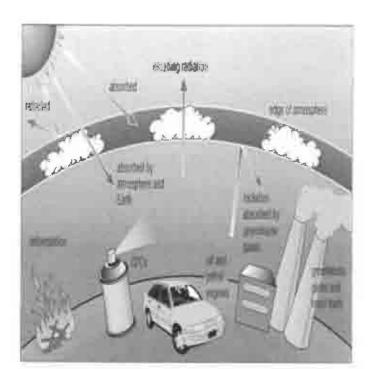
What are considered pests in NZ?

- : deer
- :Feral goats
- :Ferrets
- : Fish
- : great white butterfly
- : Hedgehogs
- :Cats
- :Possums
- :Rabbits
- :Rats
- :Stoats
- :Weasels
- :Wasps

How does NZ protect itself?

On the way back from country's there is a very strict program making sure there is no animals or plants hidden away. They may cheek your shoes to make sure there is no unwanted plant or something stuck to the show. They have special custom's.





References:

National geographic magazine.

Science for kids .com Google images Answers.com

Yahoo

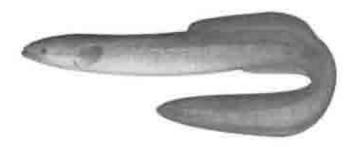
By Lucy and Isabella

What are our predictions on earth if we don't do anything to stop global warming?

- ◆ Over the next 30 100 years, temperatures will continue to rise. In the future, projected impacts include:
- More droughts: for areas like the East Cape and Northland, climate change means increased droughts
- More floods: for other areas, particularly the West Coast, it means increased extreme rainfall
- Greater landslides and possibly floods – of coastal areas.
- Introduction of new pests and disease, affecting both health and agriculture.
- It's also likely that our lives will be significantly affected by global impacts such as immigration and food shortages.

How are new Zealand animals being affected by global warming?

One of the animals being affected is Long fin eels because they love cold water. With cold water diminishing with global warming. The long fin eels habitat is disappearing fast. Without cold water to live in one of New Zealand's native animals will be extinct.



What is global warming?

Global warming is the gradual increase in the heat to the earths temperature causing animals and other living creatures (including humans) to be affected in many different ways. What we need to do is reduce our carbon footprint and be aware of the causes and effects.



How can we reduce our carbon foot-print?



Global warming is a prob-

lem of too much carbon dioxide in the atmosphere (this is our carbon footprint which is measured by how many chemicals we let out in the environment) this acts as a blanket, trapping heat and warming the planet also known as the green house affect.

We could reduce our carbon footprint by using the least amount of gas and chemicals like driving a car or smoking. Global warming is happening Because Humans are pouring carbon dioxide into the atmosphere much faster than plants and oceans can absorb it.

GLOBAL WARMING

