

FREEZING TO DEATH IN THE BLAZING SUN

Ringed Seals Endangered By Global Warming

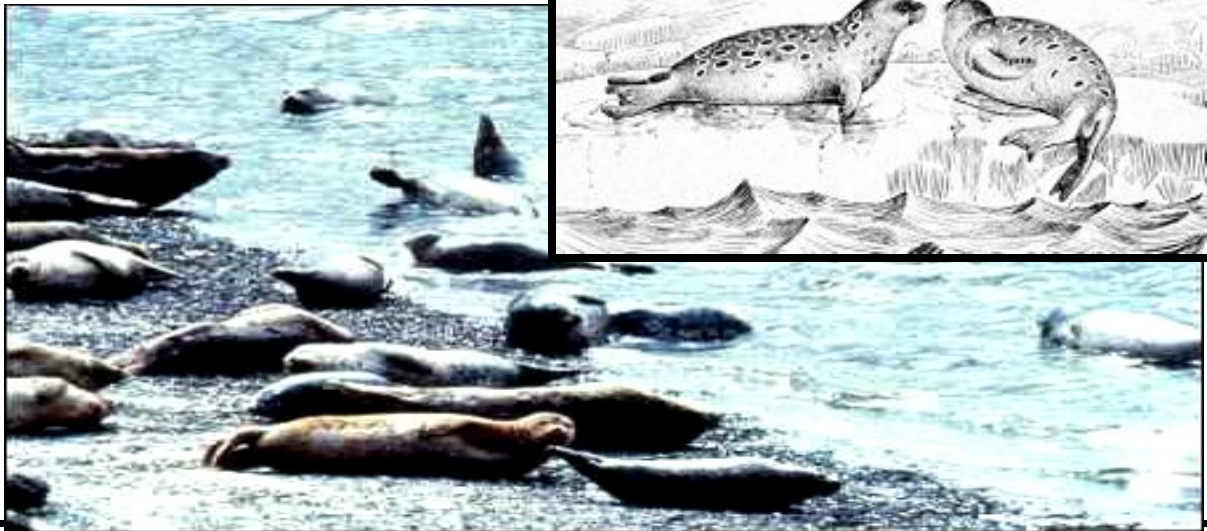


**INTERNATIONAL ICE-CLIMATE
EDUCATION
2008**

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INTRODUCTION

**IT WAS BITTERLY COLD
IT WAS WET
THE ICE BROKE AWAY
IT WAS HUNGRY AND HOPELESSLY LOST
AND WHIMPERING FOR SECURITY
THEIR HOMES DESTROYED
BY THE MELTING SNOW
DANGEROUS EXPOSURE
TO THE LURKING POLAR BEAR
GLOBAL WARMING,
DESTROYS THE OZONE LAYER
HOTTER TEMPERATURES WARM THE SNOW
ICE SLOWLY BECOMING WATER
IT FLOPS INTO THE WATER
AND DROWNS...**



Ring seals are one of the most common species of the Arctic seals. The Arctic appears to be warming faster than the Antarctic, which is destroying the habitat of ringed seals. Global warming is causing climatic change which is having very serious effects on marine mammals. When the ice melts too fast, the cubs end up in the water before they have developed their insulating fat layer, and die painfully of hunger, cold and exposure to predators.

We have the technology and ingenuity to reduce the threat of global warming! The science is clear – all seals need urgent attention!!

RINGED SEALS

(*Phoca hispida*)

1. POPULATIONS UNDER THREAT

Seals are the amphibious marine mammals of the polar regions. Ringed seals are found in all the Arctic seas and in the North Pacific as far south as Japan. The ringed seal is the most abundant of the Arctic ice seals. Although no accurate estimate exists, there are probably more than 2,000,000 ringed seals world wide. Diet varies widely but the seals are known to eat cods, smelt, herring, crustaceans, zooplankton, squid and sculpins.

Their streamlined, torpedo-shaped bodies, assist their movement through water, and all are expert swimmers and divers. Like its landbound ancestors, seals possess four limbs, each with five digits, but its limbs have evolved into flippers.

Ring seals are one of the most common species of the Arctic seals. The coat of a ringed seal is light grey with small black spots on it, the spots are surrounded with a lighter ring marking. They have small heads and plump bodies, with a short and narrow snout. The adults are between 85 and 160 cm long (most often closer to 117 cm) and can weigh up to 90 kg, some go as low as 40 kg. Seals can live up to 56 years.

Females:

They reach maturity after 5-7 years. Females give birth to 1 young pup after 10 – 11 months of pregnancy. They give birth on ice floes from mid March to early April. Maternal care lasts up to 40 days until the pup has a thick layer of blubber.

Males:

Males reach maturity after 6 – 8 years. Males roam the ice during mating season (between August and September). Males will mate with more than one female. Ringed seals are the only pinniped that maintains a breathing hole in the ice. They can therefore live in a habitat that no other seal uses.

The female seal and her pup are among the many animals that live on the sea ice surrounding the North Pole. What will happen to these animals if global warming causes the ice to melt?

Ringed Seals resting metabolic rate is higher than that of most land mammals – which means that seals can make up for heat losses more readily, therefore, cooling and heating is stable. The blubber helps to control the temperature from outside and that of inside the seal.



2. NEAR PERFECT NURSERIES

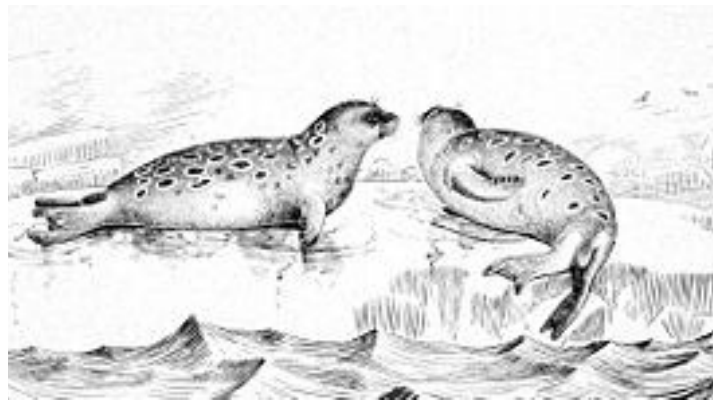
Ringed Seals display various patterns of social organisations. The seals become strongly gregarious at least during breeding season. The bulls indulge in courtship displays, cavorting between ice floes, swimming madly in circles, porpoising, and shooting onto the floes to attract the females. Mating occurs about two weeks after the pups are born and takes place either in the water or on the ice floes.

Implantation of the fertilized ovum in the uterus is delayed for some 10 weeks- a physiological device ensuring that pupping occurs at the right time of the year.

During winter and early spring, they dig holes/lairs into the snowdrift above the breathing hole. These can be multi chambered lairs and they may have multiple lairs up to 4.5 km apart.

Ringed seal females dig out lairs to give birth and nurse pups. A ringed seal pup only weighs 10 pounds at birth! The lairs offer protection from the extreme cold as well as from polar bear predation, though polar bears spend much of their time on sea ice hunting for seals. Ringed seals usually give birth and raise their pups hidden from view in lairs under the snow. Ringed seal pups learn to dive soon after birth; they have to be ready to move in a hurry, if a polar bear finds their lair! They are also preyed upon by the killer whale, walrus, wolves, dogs, wolverine, sharks, and even gulls, who have been known to kill pups. There is also subsistence harvesting by native hunters throughout their range, for the creamy white fur of the pups.

After two months the pups are weaned, and the ice pack breaks up at about the same time. In early summer, ringed seals come out of their lairs onto the snow surface to sunbathe and molt. The seals always stay near a breathing hole or crack in the ice, so they can jump in the water if they see a polar bear. Ringed seals do not live in large groups and are usually found alone, but they may be found in large groups on the ice during the molting season, gathered around cracks or breathing holes.



GLOBAL WARMING AND ITS EFFECTS

Global warming is caused by greenhouse gases such as carbon dioxide that are trapped by our atmosphere. Greenhouse gasses are necessary for life in this planet. But, in the last 200 years, human activity has increased carbon dioxide levels more than our planet can handle – too many gasses are staying inside our atmosphere, more than at any time in the last 800'000 years. The effects of this global warming of our planet are becoming more dramatic every day.

Temperatures in the Arctic are rising at almost twice the rate of that of the rest of the world, and this is threatening to place the entire Arctic ecosystem in jeopardy....

Some effects of global warming:

- Glacial Retreat.
- Arctic shrinkage.
- Sea level rise.
- Extreme weather events.
- Species Extinctions.
- Reductions in the ozone layer.
- Lowering of ocean pH.
- Threat to global security.



In addition, sea-ice buffers villages against a combination of rising sea levels, decreasing ice, increased erosion and more violent storms will wipe out villages – displacing many Arctic Natives.

Climate change is directly linked to our fossil energy consumption. Global warming of the earth is the result of increasing greenhouse gas emissions. The principal cause is carbon dioxide (CO₂), which is released when fossil fuels such as coal, oil and gas are burned.

In 2001 the IPCC issued its Third Assessment Report, which found new and stronger evidence that most of the observed warming of the past 50 years is attributable to human activities. It found that about three-quarters of the anthropogenic (human created) emissions of CO₂ during the past 20 years are due to fossil fuel burning.

The IPCC also reported that the average global temperature was projected to rise between 1.4 and 5.8 degrees Celsius in the next 100 years. A 2-degree increase would produce substantial damage to or loss of many natural ecosystems, lead to spread of diseases such as malaria and cause substantial damage to agriculture in developing countries.

The melting snow exposes the Ringed seal pups to more freezing weather, they get wet, and they are separated by breaking up of ice. Lairs provide insulation, which keeps breathing

holes open, but also provide warm shelter for pups, which are not ready for chilly Arctic water. When the ice melts too fast, the cubs end up in the water before they have their insulating fat layer, and they die painfully of hunger and cold.....

Unseasonal warming can lead to collapses of the snow caves where female Ringed seals bear their young. The young as yet have no blubber and die of exposure when cold conditions return

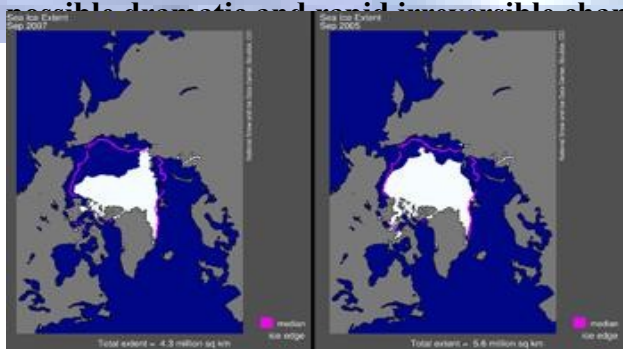
The Arctic appears to be warming faster than the Antarctic, largely because, as the Arctic sea ice melts, it switches from reflecting the sun's energy to absorbing it, and seals find the water too hot, causing ecosystems to be completely reshaped.

Canadian scientists have documented unusual weather events, including rain that kills pups on bare ice! The science is clear – seals are threatened by global warming by the loss of sea ice – they all need protection! Ringed seal pups cannot survive in cold water until they have a layer of blubber. Roughly, about 1,500 ringed seal cubs born every month are in danger! If the ice isn't there when the mother Ringed seals are ready to give birth, they are forced to abort the pups in the water. They drown instantly. If there is ice but not as solid as necessary, so that it doesn't hold out for the entire nursing period, the pups will fall into the water and drown. Storms in the area can push the chunks of ice around in the water, also putting the pups at risk of being crushed.

According to the 'Multinational Arctic Climate Impact Assessment' at least half of the Arctic summer sea ice will melt by the century's end. This region is likely to warm by 7 to 13 degrees. The glaciers of Greenland are melting twice as fast as compared to what they 5 years ago. The ice conditions this year are among the worst on record! It is likely that this year we could have close to 100% pup mortality in the Gulf of St. Lawrence due to the effects of global warming.

Polar bears would be threatened by any decline in ringed seal populations, their main food source. Moreover, polar bears are dependent on sea ice for hunting and transportation. The polar bears in Hudson Bay and James Bay already fast during the four ice-free summer months they are forced to spend ashore, and pregnant females fast for eight months. The extension that has already been observed in this ice-free period has already resulted in decreased birth rates and will sooner rather than later lead to starvation and ultimately the extinction of local polar bear populations. Melting permafrost is causing trees and buildings to fall down in the far North. Almost a quarter of all land in the Northern hemisphere has permafrost under it. As it melts, carbon dioxide and methane stored in the ground is released. Scientific understanding of the Earth's climate and how humans are affecting it is constantly improving, but there is still much to learn about what climate change will mean to natural systems.

For most people polar regions are remote places that are out of sight and perhaps out of mind. They are, however, highly sensitive to climate change with strong feedbacks at play. Risk of sea level rise that could displace millions of people; radical alterations of ocean currents that in turn affect regional climate; loss of glaciers that provide water people need to live; changes to the food chain and even possible dramatic and rapid irreversible changes to the global climate - these are



This image compares the average

*sea ice Extent for September 2007
(on LEFT) to September 2005; the
magenta line indicates the
long-term median from 1979 to 2000.*

PROTECTION STRATEGIES

Gaps in our knowledge:

The is much research that still needs to be done as out knowledge on the ecosystems and specific species within the systems and how they interact is not yet adequate by far. We need to get more researchers into the area or get the local communities involved as it is clear that when local communities gets involved conservation is more effective.

- We need to understand the genetic relationship between different species of seals
- We need to know if subspecies can crossbreed to increase the chances of survival in the species
- We need to know if we can change the diet of the seals to a food source that we can supply
- We need to know where all the breeding sites are
- We need to know where the feeding areas are
- We need to know the exact number of seals worldwide
- We need to understand the predator prey relationships between the different species better - with statistical data.
- We need to know if we can provide artificial milk to the abandoned pups that will be good enough for their survival.

Game Reserves

By law there should be areas designated to seal breeding grounds that must be monitored by game rangers that can monitor and protect the seals from poaching. Local people can be used and trained for this task



- Here surrogate mothers could be kept close to the research/protection facilities that will help to take care of abandoned pups.
- Researchers and volunteer workers can also help out to help raise the pups. This suggestion might be a little difficult, but what if we can use convicts that are sentenced to 2 - 3 year prison sentences that had something to do with killing animals or destroying the environment, and we send them to take care of the pups? This could teach them how serious their involvement in the earth really is.
- In the game reserve there should be areas where special fish and other marine life is bred to feed the pups and perhaps seals that have been hurt or poisoned by humans or human-impact on the environment.
- Keeping polar bears away from the breeding sites during that time, by distracting them with other food sources, to ensure safety of pups.

- Creating man made ice floes and pools, enticing ringed seals to concentrated areas, more inland, during birth time, providing food in these pools and keeping polar bears at bay.

Artificial Breeding lairs

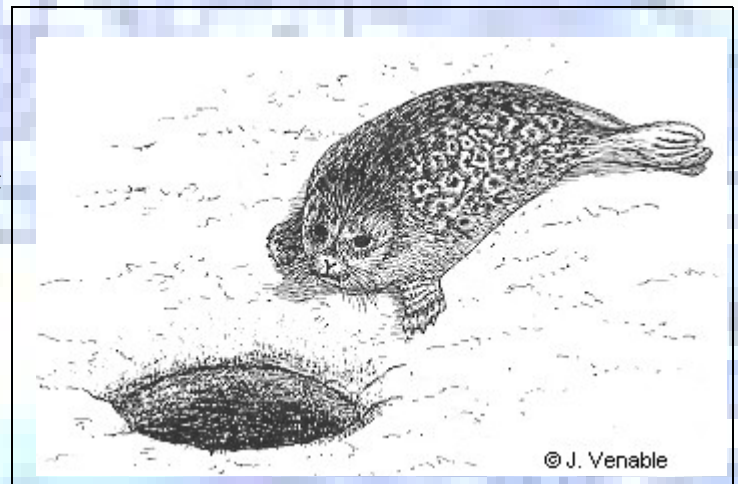
As the ice melts the seals lose their lairs. The pups are then exposed to the extreme environment. It might be helpful to produce artificial nurseries in a plastic type of materials and see whether the seals will accept these as alternative nesting sites. When the original ice then melts they might be able to use the new ones. The nurseries must float and be monitored at all times. This will give researchers more opportunity to study these animals.

Creating artificial pools filled with food the females can also be fed with fish and other marine animals to keep them stronger and fitter.

Perhaps the Polar bears can be given an alternative food source to prevent them from hunting so many seals especially during breeding season...

Shielding Gale force winds

For added protection closer to breeding sites, we could erect barriers that might withstand the winds that blow the snowdrift over the openings of the breathing holes. This will reduce the number of times that the seal female needs to expose herself to added dangers by opening the holes.



Education

The world at large should be educated in what they can do to help save the seals –

- Adopting a seal programs. Making an emotional impact on their feelings will often help. Win the empathy of the world!
- Programs on TV, large Bill Boards and
- School based educational programs on global warming; the ozone layer and its drastic effects should be run. Children should be taught as early as nursery school! It must be compulsory that teachers attend workshops to know more themselves. Updating of information is very important. Magazines, newsletters, competitions, projects, artworks, debates and speeches all relating to this subject. Children of all ages and levels must be provided with differentiated education.
- Educating the locals – involving them. They have the most knowledge of ringed seals. Creating awareness constantly, like paying them to help – entice them with whatever it takes!
- The internet is also a great help. By designing websites with easy to access

information like on Wikipedia more people can be informed about the current situation. Include statistics and photos that can be used in various situations. Make it an ongoing issue!

Competitions, petitions and fund-raises

Launching different competitions with prizes to go to the Arctic, or simply to win cars etc. While staying at home can also bring people knowledge of the situation.



Funding will follow- if sufficient proof is provided. Having fund-raises to get money for research will also educate people and get their emotions involved. The right people and countries must be targeted, eg. the UN.

More people should be contacted to sign the petitions to end global warming and habitat destruction so governments can be forced to change. Maybe more rallies should be held to make the government and large companies listen to the people.

Uniting as many bodies to one objective – protecting the animals of the Arctic!

Meetings, conferences and updates all will help! Include marine biologists, geologists and scientists to work with each other, consult each other with their findings, like finding new cooling methods to prolong melting of ice. Or even the suggestion of artificial insemination, to preserve the species.

Continue the education about human impact on society, but make it more specific to each country, yet add information about other countries situations as well. We need more accessible information please!

We need to reverse the global impact on our world in order to save it for our own children someday. Why can the large corporations not simply adhere to the laws that are already in place and implement the saving strategies that have already been discovered and designed?



CONCLUSION

In my opinion, it would be inhumane not to show compassion, when it comes to the ice melting and exposure of the little cubs in their melting caves, which will eventually lead to their extinction!! We cannot ignore the fact that scientists have documented unusual weather events, including rain storms that kill seals on ice.

Although there are many short term solutions, we need to focus on the long term resolutions to reduce the effects of global warming, leading to the protection of our endangered ringed seals.

Solutions are already available that will stimulate the economy by creating jobs and saving consumer's money. By investing in renewable energy and energy efficiency, and increasing the efficiency of the cars we drive, we can take essential steps toward reducing our dependence on oil and other fossil fuels that cause global warming.

Using energy more efficiently and moving to renewable energy (wind, solar, geothermal, and bioenergy) would significantly reduce our emissions of heat-trapping gasses. Countries such as the United States, currently produces 70 percent of its electricity from fossil fuels such as coal, natural gas, and oil, but only two percent from renewable sources. Since the burning of fossil fuels releases large amounts of carbon dioxide – the leading cause of global warming – but renewable resources does not, increasing the share of our electricity generated from renewable resources is one of the most effective ways to reduce global warming emissions.

Cars and trucks are another significant source of carbon dioxide emissions. A serious effort to address global warming must therefore reduce emissions from cars and trucks. Many technologies already exist that can do this, while also creating new jobs in the automotive sector and other industries. In addition, consumers would save billions on gasoline, and we would reduce our dependence on foreign oil.

By putting energy efficiency, renewable energy, and vehicle technology solutions in place, we can reduce our contribution to global warming while creating a stronger, healthier, and more secure world.

Every effort must be made to protect these Ringed seals. A little consideration would save many marine species!



This fragile earth deserves a voice...

IT NEEDS SOLUTIONS

IT NEEDS CHANGE

IT NEEDS ACTION



IT NEEDS PRAYER!

SUMMARY

FREEZING TO DEATH IN THE BLAZING SUN

YASEEN BISMILLA

Global warming is causing climatic change which is having very serious effects on marine mammals. Unseasonal warming is causing the Arctic's sea ice to melt much faster. The melting snow exposes the Ringed Seal pups to more freezing weather. They get wet, and separated by the breaking up of ice. Lairs provide insulation, which keeps breathing holes open, but also providing warm shelter for pups, who are not ready for chilly Arctic water. Ringed seals are preyed upon by polar bears, foxes and gulls, and Ringed seals constitute as their most important source of food!!

We have the technology and ingenuity to reduce the threat of global warming. Using energy more efficiently and moving to renewable energy (wind, solar, geothermal, and bioenergy) would significantly reduce our emissions of heat-trapping gasses. The burning of fossil fuels release large amounts of carbon dioxide – the leading cause of global warming.

Besides curbing the dangers and threat of extinction of these seals by global warming – every effort must be made to protect them. Various new concepts and ideas such as game reserves playing a major role in monitoring and protecting seals from poaching. Involvement of the local communities! Surrogate mothers! Keeping polar bears away from breeding sites and building of artificial breeding lairs.

Perhaps finding ways of shielding gale force winds. Education and special seal programmes will also help. Use of all forms of media – informing the people regarding the seal extinction due to climatic changes.

Competitions, petitions and fund raisers will also contribute heavily towards protection of the seals.

Gaps in our knowledge must be filled as much research still needs to be done on our ecosystems and specific species. Public notice of this INTERNATIONAL CRISIS may give us all a wake up call – these Ringed Seal pups need urgent help or face extinction...

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