

# Web Connection



## Objective

Students will learn how animals are interconnected with the arctic ecosystem and how humans impact these interrelationships.

## Materials

- colored markers or crayons
- yarn
- copies of animal cards

## Background

Wherever animals live, they depend on either plants or other animals for food. One way of showing the connection between animals is by diagramming a food chain or a food web. An arctic food chain might include a harp seal that eats a cod. In turn, a polar bear might eat the harp seal. A food web might also include a polar bear, but the diagram shows many prey items—harp seals, ringed seals, bearded seals. The food web would also expand to show prey items for all the seals. A food web weaves together many straight line food chains.

## Action

1. Ask students to name some animals that they know live in the Arctic. As they suggest names, either show animal cards or pictures from magazines.
2. Once you have about 10 animals, ask students who eats what. Try to arrange animals on the floor or a table so students can see the connections (older students may work in groups to do this).
3. Once you get the connections defined, paste or staple images on a bulletin board. Have students tie or tape yarn to show which animal eats what prey. Some animals have more than one prey item.

## Deeper Depths

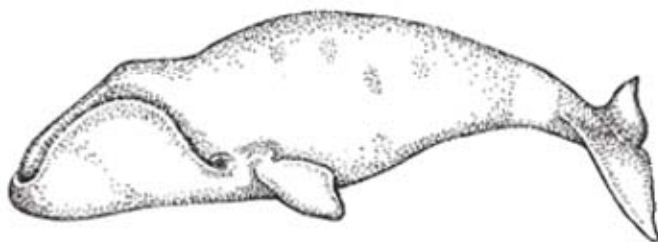
Older students may want to do poster reports on how humans use the Arctic. Reports could focus on fishing, raising caribou, mining, or hunting wildlife.



## bowhead

*Balaena mysticetus*

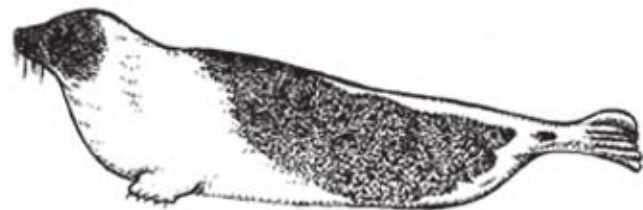
- size: 18.5 m (60.7 ft.) and 100 metric tons (220,400 lb.)  
Females generally larger than males
- distribution: Circumpolar in the Arctic but usually in the Bering, Chukchi, and Beaufort Seas
- prey: Mostly planktonic swarms of krill and other small crustaceans
- predators: None, but hunted by humans



## harp seal

*Phoca greonlandica*

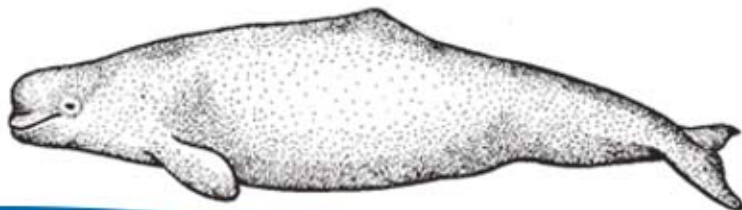
- size: to 1.7 m (5.6 ft.) and 130 kg (287 lb.) Males somewhat larger than females
- distribution: population centers in the northwest Atlantic Ocean around Newfoundland
- prey: pelagic crustaceans and fishes such as capelin and herring. During the summer they also feed on arctic cod and polar cod found at high latitudes
- predators: polar bears and killer whales



## beluga

*Delphinapterus leucas*

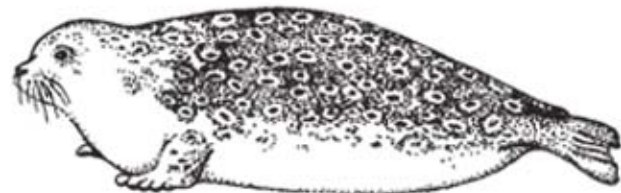
- size: Males to 4.6 m (15.1 ft.), 1,500 kg (3,307 lb.)  
Females to 4 m (13.1 ft.), 1,360 kg (2,998 lb.)
- distribution: Arctic Ocean and adjoining seas
- prey: primarily bottom-dwelling animals such as flounder, octopuses, crabs, shrimps, clams, snails, and sandworms
- predators: killer whales and polar bears



## ringed seal

*Phoca hispida*

- size: to 1.5 m (4.9 ft.) and to 70 kg (154 lb.) Males somewhat longer than females
- distribution: widespread and abundant in arctic waters; they breed and dig out birthing lairs in land-fast ice.
- prey: depending on location and season, amphipods, shrimps, squids, cods, and sculpins
- predators: polar bears and killer whales







## collared lemming

*Dicrostonyx torquatus*

- size: 10 to 11 cm (3.9–4.4 in.), 17 to 20 g (0.6–0.7 oz.)
- distribution: tundra regions of the northern hemisphere
- prey: green parts of plants, occasionally bulbs, roots, and mosses
- predators: arctic fox, snowy owl, arctic skua, and stoats. Lemmings form an important part of the arctic food chain.



## Atlantic puffin

*Fratercula arctica*

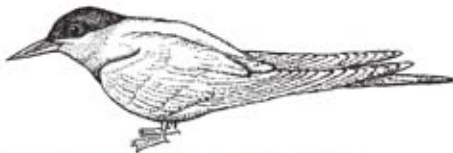
- size: 28 to 30 cm (11–11.8 in.) standing, wingspan 53 to 58 cm (20.9–22.8 in.).
- distribution: North Atlantic Ocean
- prey: small fishes; including sand eels, sprats, capelin, and small herring
- predators: Great black-backed gulls prey on adults. Herring gulls and lesser black-backed gulls steal eggs and young.



## arctic tern

*Sterna paradisaea*

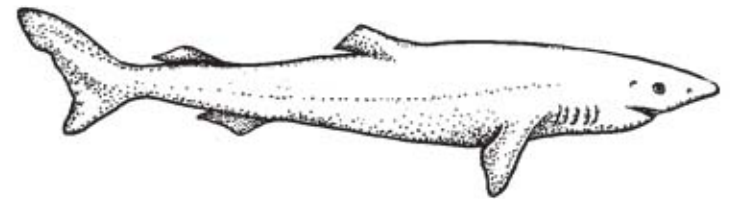
- size: to 38 cm (15 in.) standing, wingspan to 81 cm (31.9 in.)
- distribution: circumpolar at high northern hemisphere latitudes during the summer. Flies south to winter along the shores of Antarctica. Travels as far as 36,000 km (22,370 mi.) round trip.
- prey: small fishes, molluscs, and pelagic crustaceans
- predators: Snowy owls, arctic skuas, stoats, foxes, and weasels may steal eggs and young.



## greenland shark

*Somniosus microcephalus*

- size: more than 4 m (13.1 ft.)
- distribution: North Atlantic and Arctic Oceans
- prey: various fish species such as herring, spiny eels, salmon, char, smelt, cods, and flatfish in addition to marine mammals, most commonly seals
- predators: none





## Atlantic cod

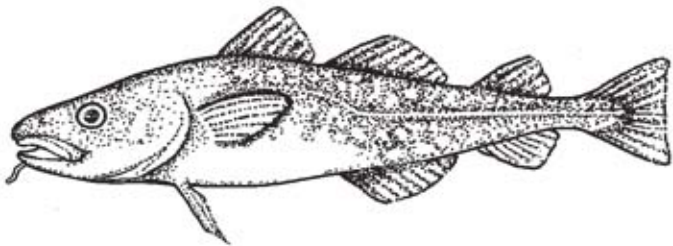
*Gadus morhua*

size: to 1.8 m (5.9 ft.) and to 91 kg (201 lb.)

distribution: Arctic Ocean south to Virginia

prey: molluscs, crustaceans, bottom plants

predators: fishes, whales, seals



## polar bear

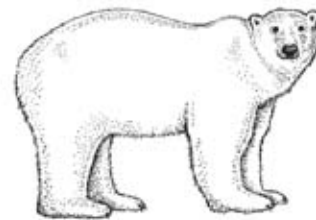
*Ursus maritimus*

size: to 1.7 m (5.6 ft.) and 130 kg (287 lb.) Males somewhat larger than females

distribution: circumpolar Arctic

prey: mostly ringed and bearded seals, also harp and hooded seals and the carcasses of beluga whales, walruses, narwhals, and bowhead whales

predators: none



## narwhal

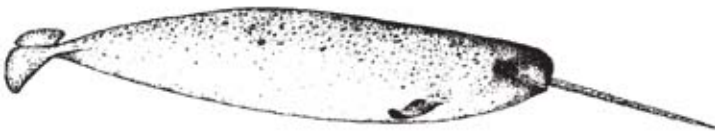
*Monodon monoceros*

size: to 4.5 m (14.8 ft.) and 1,500 kg (3,300 lb.) Males usually larger than females

distribution: circumpolar in the Arctic above 65°N latitude

prey: squid, polar cod, bottom-dwelling fish, and crustaceans

predators: occasionally killer whales; polar bears may feed on carcasses



## walrus

*Odobenus rosmarus*

size: Males to 3.6 m (11.8 ft.) and 1,700 kg (3,748 lb.)  
Females to 3.1 m (10.2 ft.) and 1,250 kg (2,756 lb.)

distribution: circumpolar with distinct populations concentrated in the Bering, Chukchi, and Laptev Seas and around northeastern Canada and Greenland

prey: molluscs, mainly bivalves such as clams

predators: Polar bears and killer whales prey on young and injured adults.

