

Matthew Crane The Beluga Whale (Dephinapatarus leucas)





Range



BELUGA WHALES ARE FOUND ONLY IN THE ICY WATERS OF THE ARTIC OCEAN, **ALONG THE** COASTS OF ALASKA, **CANADA AND** RUSSIA.





DIET

BELUGAS ARE CARNIVORES. THEIR DIET CONSISTS MAINLY OF FISH, CRAB, SQUID, SANDWORMS, SNAILS, SHRIMP AND CLAMS



Behavior

BELUGA WHALES ARE HIGHLY SOCIAL AND ARE OFTEN FOUND IN GROUPS RANGING FROM 2-10 UP TO 2,000 INDIVIDUALS. THEY GENERALLY MATE IN LATER WINTER AND EARLY SPRING WITH A GESTATION PERIOD OF ABOUT 15 MONTHS. THE NURSING PERIOD CAN RANGE ANYWHERE FROM 6-32 MONTHS.

Communication

BELUGAS ARE OFTEN CALLED THE CANARIES OF THE SEA. THEY USE AN IMPRESSIVE AND COMPLEX MIXTURE OF WHISTLES, PULSED/NOISY CALLS OR A COMBINATION OF ALL THREE TO COMMUNICATE WITH EACH OTHER. THEY ARE ALSO UNIQUE FROM MOST MAMMAL SPECIES IN THAT THEY USE ECHOLOCATION FOR NAVIGATION AND PREY DETECTION





BELUGAS ARE HIGHLY ADAPTED FOR LOCOMOTION. THEY USE FEATURES LIKE FINS TO CREATE LIFT, WHILE THEIR STREAMLINED HAIRLESS BODY REDUCES DRAG. BELUGAS ARE ALSO UNIQUE FROM OTHER WHALE SPECIES IN THAT THEY LACK A DORSAL FIN!

Locomotion



Living with ice

BELUGAS ARE MASTER THERMOREGULATORS. LIKE OTHER CETACEANS, THEY USE BLUBBER TO **STAY WARM IN THEIR** EXTREME ARTIC **ENVIRONMENT.** THEIR **MUSCLES ARE** SPECIALIZED FOR **CARRYING OXYGEN AND** HAVE HIGH MYOGLOBIN CONCENTRATIONS WHICH ALLOWS THEM TO **DIVE UNDER THE SEA ICE** FOR LONG PERIODS OF TIME





Temperature Change in the Last 50 Years



2014-2018 average vs 1951-1980 baseline

	1	1	1	
-2°C	-1°C	0°C	+1°C	+2°C

Concerns

BELUGA WHALES ARE CURRENTLY NOT LISTED AS THREATENED OR ENDANGERED, BUT THERE ARE STILL MANY THREATS AHEAD THAT MAY AFFECT THE HEALTH OF THESE ORGANISMS. COMMERCIAL, RECREATIONAL AND SUSTENANCE FISHING POSES A LARGE THREAT TO BELUGAS' FOOD SOURCE. AND THERE ARE MULTIPLE CONCERNS THAT ARISE AS OUR CLIMATE CONTINUES TO WARM.

References:

- Ball, H. C., R. L. Londraville, J. W. Prokop, J. C. George, R. S. Suydam, C. Vinyard, J. G. M. Thewissen, and R. J. Duff. 2017. Beyond thermoregulation: metabolic function of cetacean blubber in migrating bowhead and beluga whales. J Comp Physiol B 187:235-252.
- Chmelnitsky, E. G., and S. H. Ferguson. 2012. Beluga whale, Delphinapterus leucas, vocalizations from the Churchill River, Manitoba, Canada. J Acoust Soc Am 131:4821-4835.
- Choy, E. S., B. Sheehan, M. Haulena, B. Rosenberg, J. D. Roth, and L. L. Loseto. 2019. A comparison of diet estimates of captive beluga whales using fatty acid mixing models with their true diets. Journal of experimental marine biology and ecology 516:132-139.
- Cory, J. D. M., and H. F. Steven. 2015. Weaning age variation in beluga whales (Delphinapterus leucas). JMAMMAL 96:425-437.
- Norman, S. A., R. C. Hobbs, C. E. C. Goertz, K. A. Burek-Huntington, K. E. W. Shelden, W. A. Smith, and L. A. Beckett. 2015. Potential natural and anthropogenic impediments to the conservation and recovery of Cook Inlet beluga whales, Delphinapterus leucas. Marine fisheries review 77:89-105

Weber, P. W., L. E. Howle, M. M. Murray, J. S. Reidenberg, and F. E. Fish. 2014. Hydrodynamic performance of the flippers of large-bodied cetaceans in relation to locomotor ecology. Marine mammal science 30:413-432.

- Velten, B. P., R. M. Dillaman, S. T. Kinsey, W. A. McLellan, and D. A. Pabst. 2013. Novel locomotor muscle design in extreme deep-diving whales. J Exp Biol 216:1862-1871.
- NOAA