WHALES & CLIMATE CHANGE

The ocean is essential for climate regulation. It is the largest carbon dioxide (CO2) reservoir on earth, absorbing approximately 25% of CO2 emissions. It absorbs 90% of excess heat resulting from greenhouse gas emissions and produces 50% of the oxygen we need to breathe.[1]

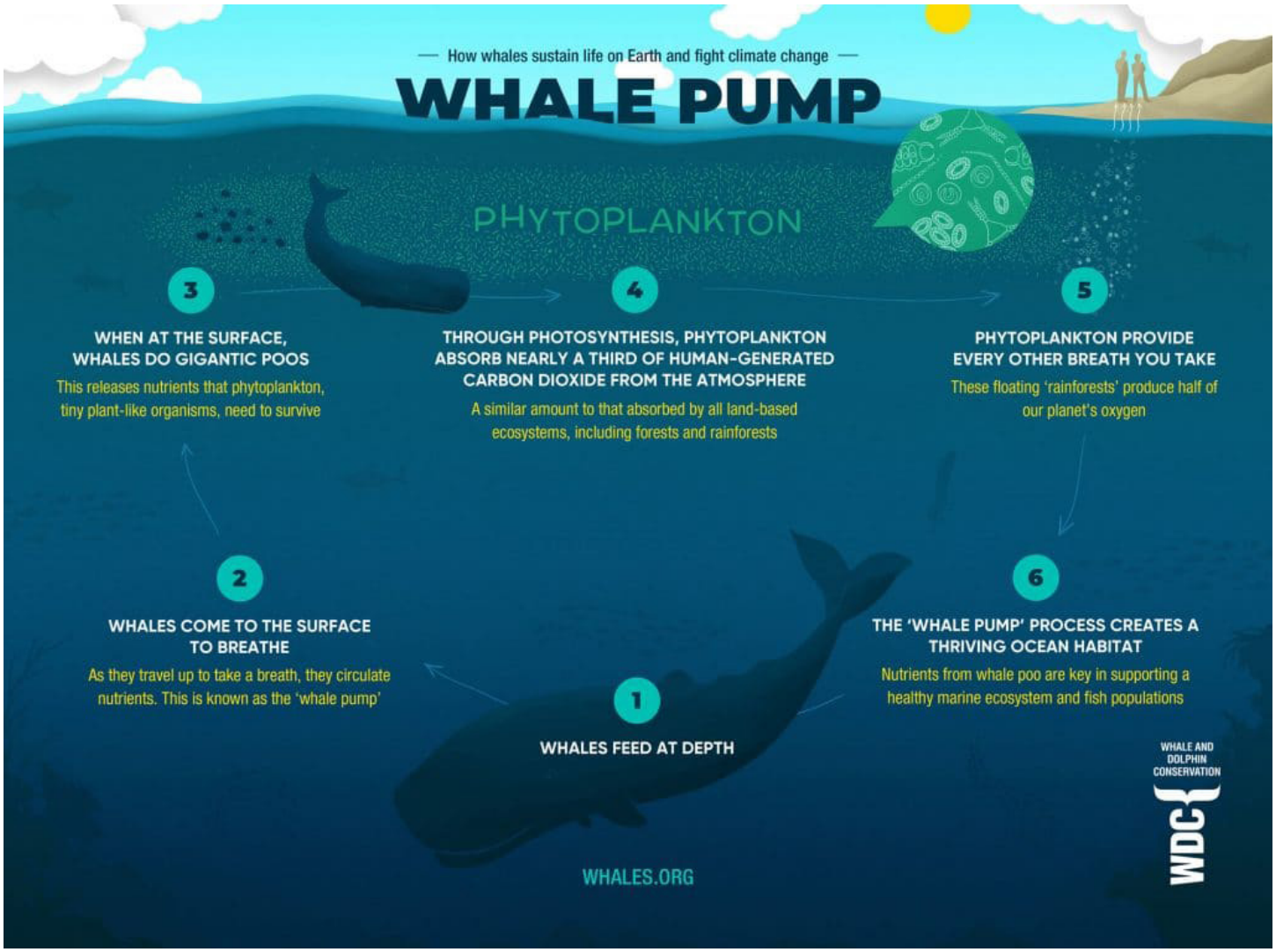
Climate change is threatening ocean ecosystems around the globe, with a significant impact on whale species. Climate change causes changes in water temperature, shifts in oceanic currents, displacement of prey, ocean acidification, and contributes to an increase in human-whale conflict, all of which threaten whales' ability to thrive.[2]

Several critically endangered NOAA-designated Species in the Spotlight, including Rice's whales, Cook Inlet beluga whales, and North Atlantic right whales, are facing ever-growing challenges to their survival.[3] The population of these species is dwindling and climate change, among other cumulative threats, is making their road to recovery increasingly difficult.

THE WHALE PUMP

Not only does climate change impact whales, but whales, in turn, can impact the climate. Due to their enormous size and long life spans, whales store a large amount of carbon in their biomass. They also play an essential role in oceanic carbon sequestration through a process known as the "whale pump." As whales move vertically throughout the water column, they are able to effectively cycle nutrients during this process. The excrement of whales catalyzes the growth of phytoplankton, which enables increased CO2 capture from the atmosphere while also producing oxygen through photosynthesis. Therefore, the whale pump is critical to supporting all life in the ocean. When whales die, their bodies sink to the ocean floor carrying their stored carbon with them, which prevents it from seeping into the atmosphere as CO2.[4]

The relationship between whales and climate change is synergistic. Fewer whales on a global scale can reduce the ability of the ocean to efficiently capture CO2, thereby making climate change more pervasive. Consequently, climate change threatens the migration, reproduction, and survival of whales. Interventions to break this cycle are urgently needed.



URGENT ACTION IS NEEDED

To protect the whales and help regulate the climate, it is necessary to uphold the Endangered Species Act (ESA) and the Marine Mammal Protection Act (MMPA), among other environmental laws. Moreover, continued funding for government agencies to support research and protect these animals and their habitats is crucial. More whales mean a healthier ocean, which facilitates a more stable climate. We need effective, science-based policies under the ESA and MMPA as well as robust federal funding to ensure the health and abundance of these important marine mammals.

WDC WHALE AND DOLPHIN CONSERVATION

ENDANGERED SPECIES COALITION

1 United Nations. "The ocean – the world's greatest ally against climate change." https://www.un.org/en/climatechange/science/climate-issues/ocean
2 Whale and Dolphin Conservation. "Climate Change." https://us.whales.org/our-goals/create-healthy-seas/climate-change/
3 NOAA Fisheries. "Climate Change Escalates Threats to Species in the Spotlight." 2024. https://www.fisheries.noaa.gov/feature-story/climate-change-escalates-threats-species-spotlight
4 NOAA Fisheries. "Whales and Carbon Sequestration: Can Whales Store Carbon?" 2024. https://www.fisheries.noaa.gov/feature-story/whales-and-carbon-sequestration-can-whales-store-carbon