

Name _____

Date _____

Marine Ecology Video Scavenger Hunt Answer Key

Watch each video. First, geolocate the marine ecosystem. Then, using the five key terms, describe the ecological principles presented in each video. Be as specific as you can in your descriptions. If you can use additional terms to describe the video, you may do so.

Key Terms

abiotic	carnivore	ecosystem	herbivore	parasitism
adaptation	commensalism	endemic species	human impact	population
apex predator	community	energy	invasive species	producer
autotroph	competition	food chain	mutualism	species
biodiversity	consumer	food web	niche	symbiosis
biotic	decomposer	habitat	omnivore	trophic level

Video 1: Antarctic Ocean (4 minutes)	Geolocation	convergence of Atlantic, Pacific, and Indian Oceans; also called Southern Ocean
	Video Observations and Description using these 5 key terms: adaptation, autotroph, food web, human impact, trophic level	Organisms must be adapted to extreme temperatures and icy habitat (abiotic) . Krill (herbivores/primary consumers) transform the sun's energy gathered by phytoplankton (autotrophs/producers) to support the entire Antarctic food web (niche) . Blue, fin, minke, right, sei whales (herbivores/primary consumers/heterotroph) migrate thousands of kilometers to consume krill, which are also the prey (trophic level) of many other Antarctic populations (penguins, sea birds, fish, seals). Underwater, penguins are streamlined and well-adapted to staying warm and swimming fast. Skua birds are large, fierce predators (carnivores) who consume penguin chicks and eggs. New research and methods for exploring the deep, dark depths of the Antarctic Ocean are showing that biodiversity is much greater than previously thought. Shifting ocean currents and climate change impacts are affecting the Antarctic Ocean (human impacts).

Marine Ecology Video Scavenger Hunt

Answer Key, continued

Video 2: West Indian Ocean (3 minutes, 30 seconds)	Geolocation	East Coast of Africa/Western edge of Indian Ocean (South Africa to Somalia); where Mozambique and Agulhas Currents converge
	Video Observations and Description using these 5 key terms: biodiversity, competition, ecosystem, human impact, species	Convergence of currents connect warm equatorial waters to cooler water masses to the south, creating upwelling of nutrients that support the Indian Ocean ecosystem and food web and create some of the richest biological (biotic) areas in the sea (habitat). From South Africa to Somalia, biodiversity is rich (>11,000 species). Sandy beach habitats provide nesting sites for several (~70%) of world's marine turtle populations (leatherbacks, loggerheads, hawksbills, greens). Coral reef fringe the shore, providing diverse habitat for other organisms (communities/populations). Various species of moray eels adapted a second set of jaws to capture and hold their prey. Upwelling of currents brings exotic species from the deep (i.e., coelacanth). Coastal communities have fished these areas for centuries (competition/omnivores/consumers/heterotroph). Seafood farming used for foods, medicines, cosmetics; large-scale commercial fishing operations have depleted waters of fish diversity and numbers (human impact). Areas are now being protected (MPAs).
Video 3: Monterey Bay (4 minutes, 30 seconds)	Geolocation	Monterey Bay, California, United States
	Video Observations and Description using these 5 key terms: abiotic, energy, food chain, habitat, human impact	Monterey Bay is known for its rocky shoreline, fierce waves and undersea canyon (ecosystem/habitat/abiotic). Monterey Canyon supports a richness of life (biodiversity) from tiny shrimp-like krill to the migrating baleen whales that feed on them (consumer/food chain/energy). Deep upwelling currents help krill thrive and provide food for predators (heterotroph, consumer) like gray whales. Humboldt squid uses flashes of color and jet propulsion to evade predators (adaptation). Sea otters have thick fur and high metabolic rate to keep them warm (adaptation). Monterey Bay is the ideal habitat for giant kelp because it provides a rocky seabed, nutrients, and calm waves (abiotic). Kelp forest ecosystems are high in biodiversity (e.g., sea slugs, purple sea urchins, octopus). Seasonal estuary (Elkhorn Slough) support marshes and mudflats, which are critical habitats (ecosystems) for hundreds of species of birds and marine life. In the early 20th century, Monterey's Cannery Row became known for its vast fishing industry. Overfishing (human impact) nearly wiped out populations of sardines, salmon, and halibut. But in 1992, 7,500 square kilometers of the bay and its seafloor were designated as a marine sanctuary (human impact). The diverse ecosystem of the area has made the bay one of the most studied parts of the ocean.

Marine Ecology Video Scavenger Hunt

Answer Key, continued

Video 4: Wood Storks (2 minutes, 30 seconds)	Geolocation	Everglades, South Florida, United States
	Video Observations and Description using these 5 key terms: adaptation, human impact, niche, population, carnivore	Colony of wood storks (population) breeding in Everglades (habitat/abiotic). Tree-top nests help them protect themselves from predators (adaptation) . Tactolocation adaptation to hunt prey in murky, shallow water. Adult breeding pairs feed their offspring by regurgitating into the mouths of the chicks. Raccoons are main predators (consumers/carnivores/heterotroph) of wood storks. Niche/habitat: storks build nests in tall cypress and mangrove trees surrounded by water to protect their nests. Seasonal floods that wood storks depend on have decreased due to land development and farming (human impact). Endangered due to limited breeding range (coast of Florida to South Carolina). Population is endangered and has dropped from 20,000 to 6,000 breeding pairs since 1930s. Everglades restoration is important (human impact).

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