

State of the oceans: waves of change

by Sara Tjossem



Endangered goliath grouper congregate on deep shipwrecks along Florida's east coast during the spawning season in August and September. The giant fish, often found in the Gulf of Mexico and the Caribbean Sea, can weigh as much as 800 pounds and are often accompanied by cigar minnows. (MICHAEL PATRICK O'NEILL/PHOTO RESEARCHERS)

FOR MANY AIR TRAVELERS, crossing the ocean is measured in interminable hours of unremitting blue flatness. Perhaps a flash of light or twist of wave might punctuate this boredom with thoughts of whales or other deep-sea creatures. Over a century ago the American writer Henry David Thoreau observed, “The ocean is a wilderness reaching round the globe, wilder than a Bengal jungle, and fuller of monsters....” Indeed, the ocean’s aerial monotony masks a remarkable diversity of form, function and use. Although one can speak of a single ocean of salt water, its regional variation is hinted at by names such as the Atlantic, Pacific, Indian, Arctic and Southern Ocean, along with a multitude of smaller seas. The global ocean plays an integral role in climate and weather, supports at least half of all species, and provides about a quarter of the animal protein in the human diet. A billion people count on seafood for their primary source of protein, while countless towns and cities rely on the economic engine of fisheries to provide direct employment to some 200 million people. The global economy is

predicated on cargo ships that move almost all internationally traded goods.

Despite the ocean covering over two thirds of the world’s surface, humans have explored less than 5% of it. Generations of people thought and acted as though it was so vast as to be beyond human influence, an inexhaustible source of fish and adventure. The most recent scientific consensus, however, suggests that the ocean is highly vulnerable to cumulative human action, including fishing, resource extraction and pollution—effects that are exacerbated by climate change. An increasing number of citizens and policymakers fear that the rapidly deteriorating conditions of the oceans will profoundly reduce human welfare. Advocates for a

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