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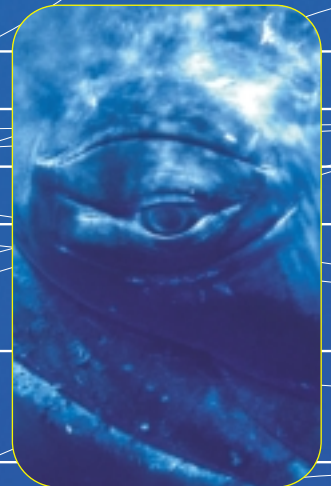
HAWAIIAN ISLANDS
HUMPBACK WHALE



Protecting **HAWAI'I'S** Ocean **Treasures**

**Information on
Humpback Whales
and other
Marine Species**

**Presented by NOAA's
Hawaiian Islands Humpback Whale
National Marine Sanctuary
hawaiihumpbackwhale.noaa.gov**



Protecting Hawai'i's Ocean Treasures

Information on humpback whales and other marine species

Contents for Protecting Hawai'i's Ocean Treasures were produced by

NOAA's Hawaiian Islands Humpback Whale National Marine Sanctuary

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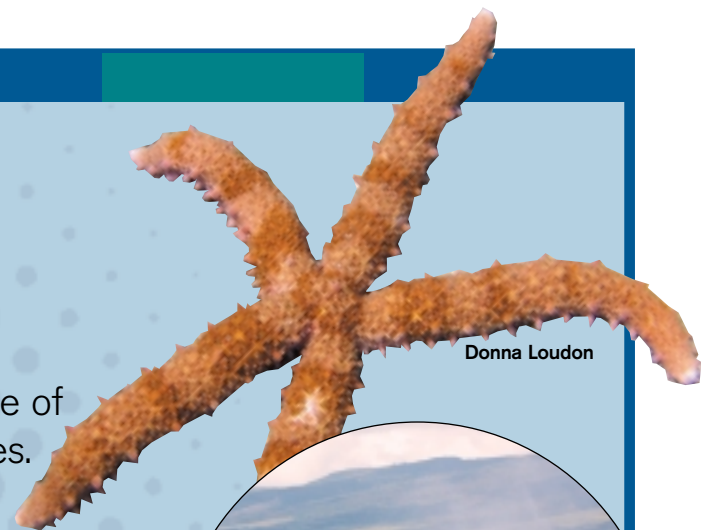
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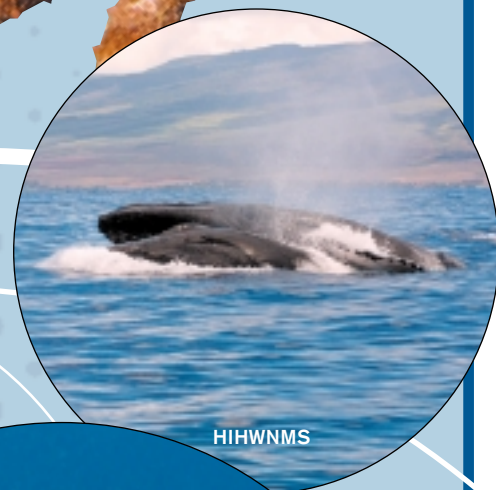
About the Insert

This educational insert is dedicated to increasing the public's knowledge of marine conservation in Hawai'i, with an emphasis on humpback whales. Within the insert you will find information on the Hawaiian Islands Humpback Whale National Marine Sanctuary, the National Marine Sanctuary Program and the program's Pacific Islands Region. The insert features information on a variety of marine species, ranging from humpback whales to coral reefs and includes details on threats to the marine environment and how you can help. Information on how to safely view humpbacks on the water and recommendations for shoreline viewing are also provided. In addition, educational activities* and games can be found in various sections of the insert. We hope you enjoy learning about Hawai'i's ocean treasures.

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HIHWNMS



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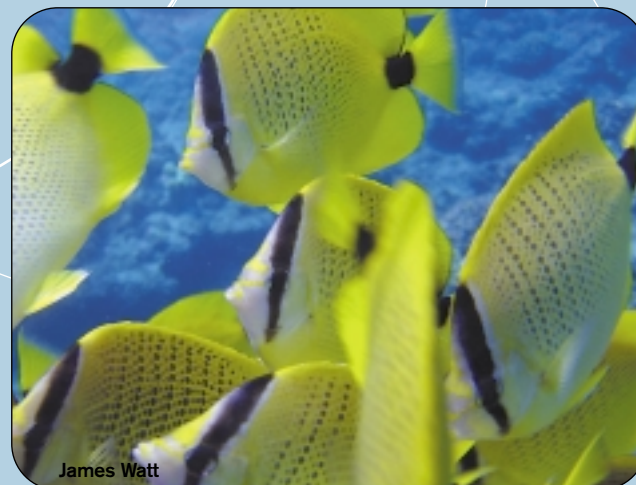
HIHWNMS



HIHWNMS



James Watt



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THE HAWAIIAN ISLANDS HUMPBAC WHALE NATIONAL MARINE SANCTUARY

The Sanctuary was created by Congress in 1992 to protect humpback whales and their habitat in Hawai'i. It is administered by the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) in partnership with the State of Hawai'i's Department of Land and Natural Resources. National Marine Sanctuaries protect marine areas of national significance.

Humpback whales were once plentiful in oceans worldwide. The global population of humpbacks was depleted by the commercial whaling industry at the start of the 20th century. In 1973, the United States government made it illegal to hunt, harm, or disturb humpback whales. When the Endangered Species Act was passed, the humpback whale was listed as endangered and remains so to this day.

Humpback whales receive protection under the Marine Mammal Protection Act, the Endangered Species Act and state wildlife laws. Also, Hawai'i is the only state in the U.S. where humpbacks come to breed, calve and nurse their young. They are protected as a resource of national

significance within the Hawaiian Islands Humpback Whale National Marine Sanctuary.

Education and Outreach

Outreach and education programs and projects are conducted to foster awareness of sanctuary resources and to promote ocean stewardship among Hawai'i's residents and visitors. Information about humpback whales and their habitat in Hawai'i is made available to the public through educator and student workshops, community lectures, shore-based whale watches, volunteer and naturalist training sessions, and sanctuary publications. On Maui, the Sanctuary Education Center in Kihei is a beach-front facility with year-round exhibits and programs.

Research

The sanctuary conducts and supports humpback whale research that aims to increase scientific knowledge about the North Pacific humpback whale population and its habitat.

Research efforts include photo identification, population, birth and mortality rates, and whale behavior.

Native Hawaiian Culture

Ocean stewardship is deeply embedded in Native Hawaiian culture. The sanctuary facilitates



The sanctuary is located from the shoreline to the 100-fathom isobath (600 ft. depth) in the four-island area of Maui; Penguin Bank; and off the north shore of Kaua'i, the north and south shores of O'ahu, and the North Kona and Kohala coasts of the Big Island.

During whale watch season, Atlantis Cruises *Navatek I* sets sail daily (from December 21 - April 8, 2005) to view the humpback whales. Their expert onboard naturalist provides educational commentary on the characteristics and biology of the whales while the captain pilots the vessel to areas identified as prime whale sighting locations.

973-1311

www.atlantisadventures.com





Native Hawaiian uses of the *koholā* (humpback whale) and its habitat by educating the public about traditional Native Hawaiian values, practices and traditions. A historical Native Hawaiian fishpond that fronts the sanctuary property on Maui provides a natural classroom for these education efforts.

Did you know that you have a voice in the management of the Hawaiian Islands Humpback Whale National Marine Sanctuary?

The Sanctuary Advisory Council (Council) is a community-based advisory group that was

established to provide advice to the sanctuary manager. The Council was established in 1996 and has a broad representation consisting of 46 members. The Council links the sanctuary with State and Federal agencies, and its various user groups such as: researchers, educators, county residents, policy makers, and Native Hawaiians.

The Council holds quarterly meetings that are open to the public. In addition, the Council has formed three standing committees for research, education, and conservation,

as well as several working groups that meet to address current issues. For more information on the Council, its members, or a schedule of meetings, please visit the sanctuary website.

Want to know more about
upcoming events, current research efforts,
how you can help as a volunteer,
or any other sanctuary related topic?

Visit the website at:

<http://hawaiihumpbackwhale.noaa.gov>



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Honolulu, HI 96813
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State Office - Kona

Department of Land &
Natural Resources
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The Sanctuary Education Center
in Maui is open Monday through
Friday from 10:00 a.m. to 3:00 p.m.

Please visit us!

Photo Credits: HI Humpback Whale NMS

What is a National Marine Sanctuary?

Our national marine sanctuaries embrace part of our collective riches as a nation. Within their protected waters, giant humpback whales breed and calve their young, coral colonies flourish, and shipwrecks tell stories of our maritime history. Sanctuary habitats include beautiful rocky reefs, lush kelp forests, whale migrations corridors, spectacular deep-sea canyons, and underwater archaeological sites. Our nation's sanctuaries can provide a safe habitat for species close to extinction or protect historically significant shipwrecks. Ranging in size from less than one square mile to over 5,300 square miles, each sanctuary is a unique place needing special protections. Natural classrooms, cherished recreational spots, and valuable commercial industries—marine sanctuaries represent many things to many people.

The National Marine Sanctuary System

The National Marine Sanctuary Program serves as the trustee for a system of 14 marine protected areas, encompassing more than 150,000 square miles of marine and Great Lakes waters from Washington State to the Florida Keys, and from Lake Huron to American Samoa. The system includes 13 national marine sanctuaries and the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve, which is being considered for sanctuary status. The sanctuary program is part of the National Oceanic

and Atmospheric Administration (NOAA), which manages sanctuaries by working cooperatively with the public to protect sanctuaries while maintaining compatible recreation and commercial activities. The program works to enhance public awareness of our marine resources and marine heritage through scientific research, monitoring, exploration, educational programs, and outreach.



● Existing Locations
▲ Proposed

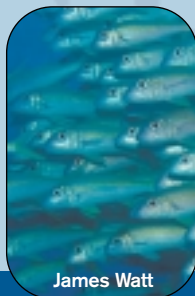
Scale varies in this perspective
Adapted from National Geographic Maps



Donna Loudon



Donna Loudon



James Watt



James Watt

NOAA's National Marine Sanctuaries

A WORD ABOUT NOAA...

The National Oceanic and Atmospheric Administration (NOAA) conducts research and gathers data about the global oceans, atmosphere, space, and sun, and applies this knowledge to science and service that touch the lives of all Americans.

NOAA warns of dangerous weather, charts our seas and skies, guides our use and protection of ocean and coastal resources, and conducts research to improve our understanding and stewardship of the environment which sustains us all.

A Commerce Department agency, NOAA provides these services through five major organizations: the National Weather Service, the National Ocean Service, the National Marine Fisheries Service, the National Environmental Satellite, Data and Information Service, and NOAA Research; and numerous special program units. In addition, NOAA research and operational activities are supported by the Nation's seventh uniformed service, the NOAA Corps, a commissioned officer corps of men and women who operate NOAA ships and aircraft, and serve in scientific and administrative posts.

Channel Islands	http://channelislands.noaa.gov
Cordell Bank	http://cordellbank.noaa.gov
Fagatele Bay	http://fagatelebay.noaa.gov
Florida Keys	http://floridakeys.noaa.gov
Flower Garden Banks	http://flowergarden.noaa.gov
Gray's Reef	http://graysreef.noaa.gov
Gulf of the Farallones	http://farallones.noaa.gov
HI Humpback Whale	http://hawaiihumpbackwhale.noaa.gov
Monitor	http://monitor.noaa.gov
Monterey Bay	http://montereybay.noaa.gov
NW Hawaiian Islands	http://hawaiireef.noaa.gov
Olympic Coast	http://olympiccoast.noaa.gov
Stellwagen Bank	http://stellwagen.noaa.gov
Thunder Bay	http://thunderbay.noaa.gov

The Pacific Islands Region

NOAA's National Marine Sanctuary Program's Pacific Islands Region protects the precious coral reef ecosystems in the Northwestern Hawaiian Islands and in American Sāmoa, as well as the humpback whale breeding grounds in the main Hawaiian Islands. The region is defined by biological, social and cultural similarities. Protection of these areas will help to ensure that the marine environment is healthy for future generations to enjoy.



Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve

On December 4, 2000, the Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve was created by Executive Order 13178. The Reserve encompasses an area of the marine waters and submerged lands of the Northwestern Hawaiian Islands (NWHI) extending approximately 1,200 nautical miles long and 100 nautical miles wide. The NWHI boasts a rich cultural history and is home to some of the healthiest and least disturbed coral reefs in the world. The Reserve also contains one of the last large-scale, predator-dominated coral reef ecosystems on the planet. These coral reefs form the foundation of an ecosystem that hosts more than 7,000 species, including marine mammals, fishes, sea turtles, birds and invertebrates. Many are rare, threatened, or endangered and least one quarter are found nowhere else. The reserve has been proposed as the nation's 14th National Marine Sanctuary and will be holding public meetings on this proposal in the summer of 2005. <http://hawaiiireef.noaa.gov>



James Watt

For more information on Hawai'i's remote coral reefs, visit the Mokupāpapa Discovery Center in Hilo, Hawai'i. The center features interactive exhibits that teach about the history, culture and science of the Northwestern Hawaiian Islands. The free center is open Tuesday – Saturday from 9 a.m. to 4 p.m. It is located in Hilo at 308 Kamehameha Ave, Suite 109. Phone: (808)933-8195

Fagatele Bay National Marine Sanctuary

Fagatele (Fohng-ah-téh-leh) Bay was designated as a national marine sanctuary on April 29, 1986. It is the smallest and most remote of all the national marine sanctuaries encompassing only 163 acres (.25 sq. mi.). This sanctuary is an ecologically rich and pristine pocket of Sāmoan reef ecosystems formed by the crater of an extinct volcano which has one wall open to the sea, much like Hanauma Bay on O'ahu. Located on Tutuila, the largest island in American Sāmoa, its borders extend from Steps Point, the southernmost point of the island, to Fagatele Point on the island's southwestern shore. <http://fagatelebay.noaa.gov>



Understanding Humpback Whales

The humpback whale is an endangered species. Scientists estimate that the pre-whaling population of the North Pacific stock of humpback whales numbered approximately 15,000. Currently there are about 7,000 humpback whales in the North Pacific. Out of this stock, approximately 5,000 humpbacks migrate to Hawai'i each year.

Where The Whales Go

The North Pacific stock of humpback whales winter in three nearshore lower latitude mating and calving areas: Hawai'i, western Mexico and the islands of southern Japan. During the spring and summer they migrate as far as 3,000 miles to feeding areas over the continental shelf of the Pacific rim, from the coast of California north to the Bering Sea.

Humpbacks continuously travel at approximately three to seven miles per hour with very few stops. The main Hawaiian Islands may contain the largest seasonal population of North Pacific humpbacks in the world.

The North Pacific stock of humpback whales feed during the summer in northern waters (between approximate latitudes of 40 - 75 degrees). The cool, nutrient rich waters around

Alaska provide ideal feeding locations. Humpback whales have plate-like bristles known as baleen in their mouth instead of teeth. They feed on krill and small schooling fishes, such as capelin and herring. A variety of feeding methods are used including bubble net feeding and lunge feeding. Humpbacks rarely feed in their wintering areas and it is not known if they feed along their migratory routes.

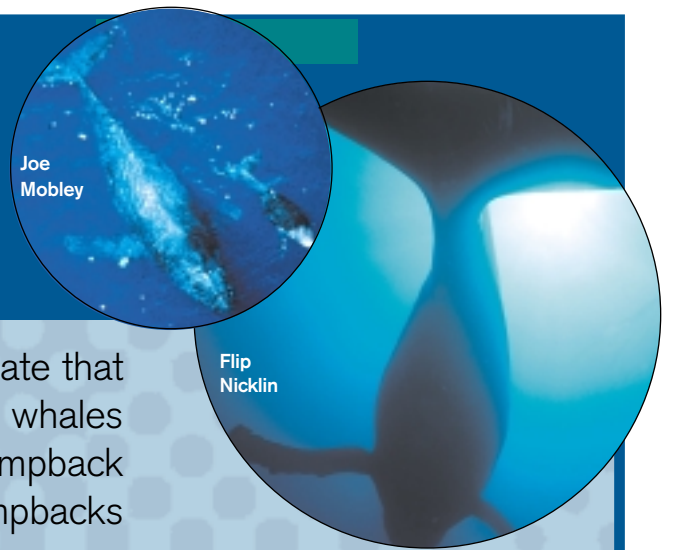
Hawai'i is the only state in the United States where humpback whales mate, calve, and nurse their young. Humpbacks may find Hawai'i suitable because of the warm waters, the underwater visibility, the variety of ocean depths, and the lack of natural predators. Mothers can be seen breaching alongside their calves and males can be seen competing with one another for females in fierce head-to-head battles.

Whale Sounds

Although many species of whales and dolphins are vocal, humpback whales are best known for their songs. The "humpback song" consists of sequences of sounds that are repeated over and over in a pattern. Patterns of humpback whale sounds change from year to year and can vary in different parts of the ocean. Scientists have found that male humpback whales sing while in their breeding grounds. Other humpback whale sounds have also been recorded in feeding areas. Each of the sounds made by the humpback is thought to have a distinct purpose. Research continues on this fascinating topic.

Whales Underwater

Humpbacks spend over 90% of their lives underwater. They are often called "gentle giants" because of the tendency of these large mammals to glide slowly and gracefully while underwater. Current studies focus on understanding the subsurface behaviors of this endangered species.



WHALE FACTS

Group	Mammalia
Order	Cetacea
Sub-order	Mysticeti
Family	Balaenopteridae
Genus	Megaptera
Scientific name	<i>Megaptera novaeangliae</i> ("great wings of New England")
Type of whale	Baleen whale
Hawaiian name	kohola
Weight	45-50 tons
Size	45 feet
Life span	Estimated to be 40 to 50 years
Age at sexual maturity	5 to 9 years
Gestation	10 to 12 months

Whales Feeding



Working in Partnership to Protect Hawai'i's Lands and Waters for Future Generations.

[unScramble]

DIRECTIONS: Read the section on “Understanding Humpback Whales” and then unscramble the words below using the definitions as clues. After the words are unscrambled, use the letter above each number to fill in the puzzle at the bottom, then try to find the same words you’ve unscrambled in the word search.



The scientific name for the humpback whale:
AEPGMEATR OGLNEAVIAANE

4 13

The name of the stock of humpback whales that visit Hawai'i:
RHONT FPIACIC KHCPABMU EAWLHS

19 16 1
24 23 5

An organism that is threatened with extinction:
EREGEANDND IPESECS

17 18 8 28 20 11

The name of the suborder of whales which possess baleen:
ITMETSICI

2 15

Being warm blooded, having a backbone, having hair and nursing their young are characteristics that make the humpback a:
MALMAM

25 26

N O R T H P A C I F I C H U M P B A C K W H A L E S B
U B P E O B U B L E N E T Y J U W P C Q Y M V O E U
S A A N L A E N C U R X M U S A L H U A E F E N P L L
K R I L L A N D F I S H A E T O P A P B J L O C T A T
H E H B L Y I R K E O B G N I D E E F E G N U L A H Y
U E I W U M J L B T D B P R C Z N K Y B A O F L R T B
L Y L H B O T N A G S E I C E P S D E R E G N A D N E
E P E A B U K A L C L F O L T A B U S O M Z C M L E T
R T U B E R C L E S B G N M I G R A T I O N W M R K L
L S V E R N O Q E P T U T B E O W A H N R L I A S D M
O N C E A I L G N A E A V O N A R E T P A G E M W A E

The plate-like bristles found in a humpback whale's mouth, mainly used for filter feeding:

ENBLEA

21 27

The favorite foods of a humpback whale:
LIKRL DAN SHIF

6 3

One of the two feeding methods of the humpback whale:
LBUBEB TNE

12

The method of feeding used when prey is abundant:
ELGNU GDEFNIE

9 14 10

The movement from one region or climate to another and back again (for humpbacks, the journey from Alaska to Hawai'i):
RGTNOIAMI

7 22

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28



SPLASHRESEARCH

A Comprehensive Study of North Pacific Humpback Whales

STRUCTURE OF POPULATIONS, LEVELS OF ABUNDANCE, & STATUS OF HUMPBACKS

SPLASH is a multi-year, international cooperative effort to understand the population structure of humpback whales across the North Pacific, and to assess the status, trends and potential human impacts to this population.

SPLASH will use consistent sampling efforts in feeding and wintering areas within the North Pacific. Field techniques such as photo-identification and biopsy tissue sampling will be the primary field methods employed.

HUMAN IMPACTS

Threats to humpback whales include entanglement in man-made ropes and nets, vessel strikes, degraded water quality, and underwater noise. SPLASH will provide data to evaluate a number of human impacts in a more comprehensive manner than previously possible. Entanglement in fishing gear impedes the recovery of some large whale populations. The entanglement rates of the North Pacific stock of humpback whales remain unknown. The first comparison of the impact of this human activity will be possible because of the broad scope and large sample sizes

of this study. In addition, researchers will examine other human impacts including the incidence of vessel strikes. Biopsy sampling will also provide valuable information for assessing the health of humpback whales.

KEY QUESTIONS:

- What areas are of the highest risk to the North Pacific humpbacks?
- Are humans affecting their ability to recover through entanglement and vessel strikes?

BIOPSY SAMPLING

Researchers have successfully collected small biopsy samples from thousands of humpback whales worldwide. Collected tissues provide invaluable information on the health and genetic diversity of humpback whales.

"This research will contribute to the long-term recovery of humpback whales."

KEY QUESTIONS:

- Is the North Pacific population one large breeding population, or several discrete populations with very little interchange?
- How many pregnancies survive to birth, and calves to weaning?
- Are North Pacific humpback whales picking up high levels of toxins in any of their feeding areas?



The Western Pacific Regional Fishery Management Council is proud to join in partnership with NOAA's National Marine Sanctuary Program and the Hawaiian Island Humpback Whale National Marine Sanctuary in efforts to conserve Hawaii's unique and diverse marine ecosystems.



Center for Coastal Studies
Vessel collision scar



Center for Coastal Studies
Biopsy sampling



HIHWNMS
Entanglement scar



Splash Regions: Western North Pacific waters off of Okinawa, Ogasawara and the Philippines; Hawaiian Islands; Mexico; Central America; California; Oregon; Washington; British Columbia; Western Gulf of Alaska; Southeast Alaska including the East Gulf; Aleutian Islands; Bering Sea; Far East Russia

PHOTO IDENTIFICATION

The black and white patterns of humpback whales' flukes (tail) are unique to each individual. For over 20 years, humpback whale researchers have been photographing the underside of humpback whale flukes in order to identify, catalog, and monitor individual whales. This process, known as photo-identification, has led to valuable information about humpback whale population sizes, migration, sexual maturity, and behavior patterns. SPLASH will provide a large and comprehensive collection of identifications collected under a standard protocol across an entire ocean basin habitat.

KEY QUESTIONS:

- How many humpback whales are there in the North Pacific, and is their population increasing or decreasing?
- Are there different stocks of populations, and to what extent do they intermingle?
- What is the status of humpbacks in habitats which have not been visited since whaling days?

Photo [Identification] Game

Directions: Pretend that you are a humpback whale researcher trying to locate the same whale in two different locations. Look at the photos below and try to match the tail patterns in the top row to those in the bottom row. Look closely for differences in coloration and scarring. **Good Luck!**



THE MIGRATION GAME

Many of the humpback whales that live in the north Pacific Ocean migrate south during feeding grounds in Alaska to warmer waters in Hawai'i to breed, calve and nurse their young. The Hawaiian Islands Humpback Whale National Marine Sanctuary was created to protect humpback whales and their habitat.

Materials Needed: A die and one colored game piece for each person playing.

Directions: One at a time, roll the die to move your whale ahead. As you land on each space, read the message out loud. Follow the directions given. You must land on the finish space in order to win the game. Keep rolling the die during your turn until you get the right number. The first humpback whale to make it to the finish space in Alaska wins the migration game!

START

You've been feeding all summer and are now ready to begin your 3,000 mile migration to Hawai'i

Leaving Alaska, you encounter cruise ships. **Lose a turn** trying to avoid them.

There are smaller whale watching boats in the distance. Give them a show! **Breach forward 1 space.**

FINISH

Welcome back to Alaska, where the krill and herring are plentiful. You have safely and successfully finished this year's migration!

Wow you found a school of herring! **Swim ahead 1 space**

You see floating plastic trash. **Swim right 1 space to go around it.**

As you swim on you encounter a blue whale, the largest whale species in the world!

Swim back 3 spaces to protect your calf from an approaching killer whale.

You see a shark in the distance. **Swim forward 1 space** to avoid it.

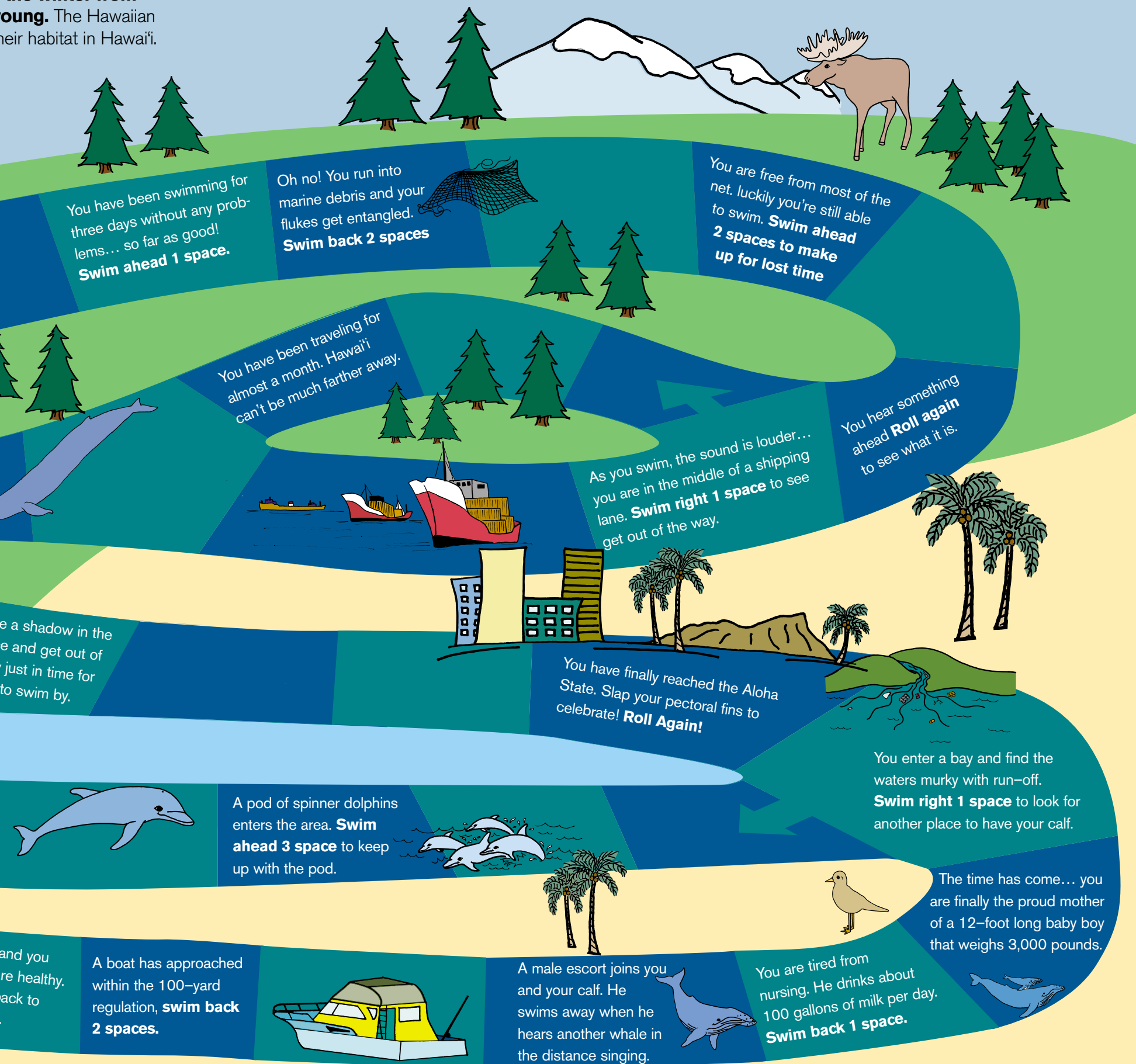
Oops! You wandered into an oil spill. **Lose a turn.**

It's early April and your calf is hungry. Time to head back to Alaska for food.

This game is geared toward ages 5-12. Caution: Game pieces you use should be made of a soft material. Illustrations by **Stephanie McCarthy, CA**

Text by the Hawaiian Islands Humpback Whale National Marine Sanctuary. Adapted from the game "Humpback Whale Migration" by the Hawaiian Islands Humpback Whale National Marine Sanctuary.

the winter from
young. The Hawaiian
their habitat in Hawai'i.



could be a choking hazard; please keep them away from small children.
by **Grey Morishige**, and **Christine Brammer**.
adapted from "The Migration Game", University of Alaska Sea Grant College Program.

On The Water With Whales

Viewing marine mammals in their natural habitat can be an educational and enriching experience if conducted safely and responsibly. However, when conducted irresponsibly, these activities can be disturbing to the animals (i.e. cause “harassment”) and place their health and welfare at risk. In addition, there are significant public safety considerations as people have been seriously injured while trying to interact with wild marine mammals.

“Harassment” involves acts of pursuit, torment or annoyance that have the potential to injure or disrupt the behavioral patterns of wild marine mammals. It includes approaching, interacting or attempting to interact, swimming, touching and trying to elicit a reaction from the animal.

All whales, dolphins and seals are protected by the Marine Mammal Protection Act of 1972. Humpback whales, sperm whales, monk seals and sea turtles are further protected by the Endangered Species Act of 1973 and under Hawai‘i State Law. The National Marine Sanctuaries Act provides additional protection for humpback whales and their habitat.



TIPS FOR BOATING AROUND WHALES

See a spout, watch out!

If you see a spout, or a tail, or a breaching whale, please slow down and post a look-out. Some whales dive 20 minutes or more. If you see one whale, many more could be close - maybe too close to your boat and its spinning propellers. Proceed cautiously!

Head on is wrong!

Don't alter a whale's path by cutting it off. When in sight of a whale, follow official guidelines and adhere to existing regulations that restrict or prohibit closely approaching whales. Always keep your boat a safe distance; don't risk striking a whale.

Don't chase, give the whales space!

Closely approaching a whale may cause the animal to move away. Respect the whale's behavior and keep your distance. If a whale moves away, don't chase it. Enjoy the whales, don't endanger them.

Game Answers

UnScramble

Megaptera novaeangliae
North Pacific
Humpback Whales
Endangered Species
Mysticeti
Mammal
Baleen
Krill and Fish
Bubble Net
Lunge Feeding

Migration
Fifth Largest of the
Great Whales!

Photo Identification

A-4
B-3
C-1
D-2



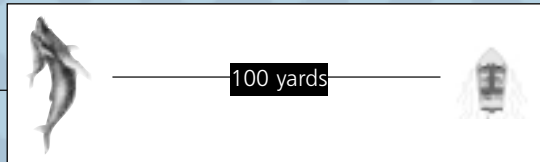
Proudly supports the National Marine Sanctuary Program's effort to preserve and protect Hawai'i's precious marine life and ocean environment.

WHALE WATCHING GUIDELINES

ACCEPTABLE VIEWING POSITIONS

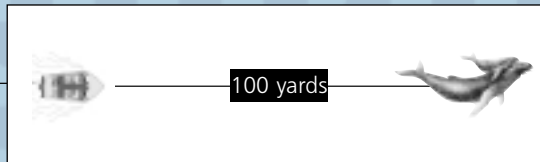
1

Viewing from the Side:
When a vessel is viewing a whale from either side, it should remain at least 100 yards from the whale and parallel the animal at that distance.



2

Viewing from the Rear:
When a vessel is viewing from the rear, remain at least 100 yards behind the whale and adjust speed to that of the slowest whale.



Remember...

- Never operate faster than the speed of the slowest whale.
- Never separate whales, especially mothers and calves.
- Never use a vessel to herd or drive whales.

Report humpback whale violations to NOAA Fisheries Enforcement at:

1-800-853-1964

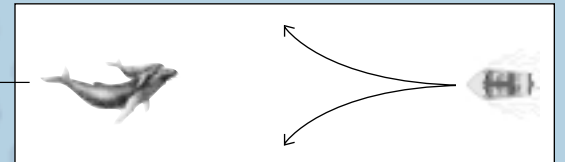
BOATER SAFETY

- Be aware of changing weather and ocean conditions. Visit <http://www.prh.noaa.gov/hnl/pages/marine.php> for more information.
- It is recommended that boaters wear lifejackets while underway. Hawai'i law requires children under 13 to wear a Coast Guard approved lifejacket unless the child is below deck or in an enclosed cabin.
- Monitor VHF communications to stay alert about other vessel and wildlife location and movement in the area. Report new sightings and their locations. All recreational boaters going more than 1 mile offshore in Hawai'i must carry a VHF radio or EPIRB (Emergency Positioning Indicator Radio Beacon). Exempted vessels include canoes, thrillcraft, surfboards, and paddleboards. Kayaks and training vessels are also exempt when accompanied by at least one vessel that has a VHF radio or EPIRB.
- Be cautious about carbon monoxide emissions when idling and remaining in a small or concentrated area.
- Avoid collisions with humpback whales. Watch your speed and post a lookout for surfacing whales while underway during whale season (November - May).

UNACCEPTABLE MANEUVERS:

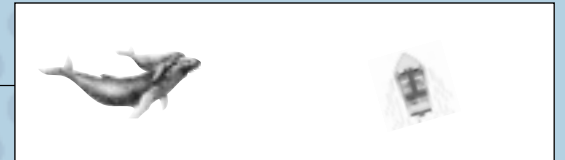
1

Approaching Head-On:
Never approach a whale head-on or in the path of the animal. If a vessel finds itself in the path of the whale, it should maneuver out of the path of the animal and instead follow parallel at a distance of at least 100 yards.



2

Running in front or cutting across a whale's path.



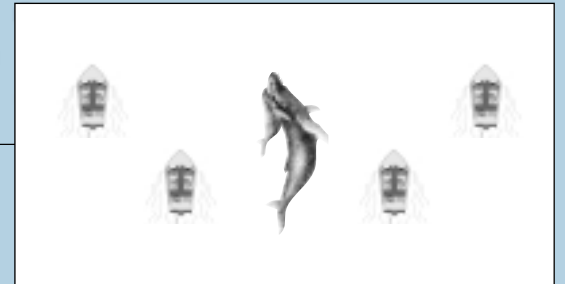
3

Cutting a whale off from deep water.



4

Surrounding a whale.



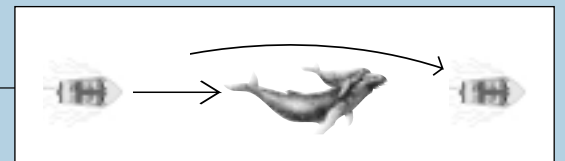
5

Placing your vessel between a mother and calf.



6

Leapfrogging.



To find out more about boater safety in Hawai'i visit the U.S. Coast Guard website at http://www.uscg.mil/d14/units/msohono/rec_boat_safety.htm or to register for boater education courses call the U.S. Coast Guard Auxiliary at 1-800-818-8724.

Matson

Matson is proud to support the Hawaiian Islands Humpback Whale National Marine Sanctuary.

Viewing Hawai'i's Humpbacks

There are a variety of ways in which you can catch a glimpse of Hawai'i's humpback whales. Boat tours and whale watching cruises have become increasingly popular. In Hawai'i, Maui is a top whale watching spot for boat-based viewing; however, whale watching cruises are available at most harbors around the state. The whale watching industry plays a strong role in the state's economy as it contributes approximately \$20 million in total revenues per year.

Sighting humpback whales can be an awe-inspiring experience whether from the water or the shore. Their impressive acrobatic displays are visible from miles away. Whales can be seen quite easily from most shorelines around the Hawaiian Islands. Take a trip to the beach or a scenic lookout and watch for the blows, pec slaps, fluke-up dives, and breaches of Hawai'i's humpbacks.

The **Sanctuary Ocean Count** provides Hawai'i residents and visitors with the

opportunity to actively participate in evaluating the status of humpback whales. For more information on the Sanctuary Ocean Count and how to participate, please visit our website at:

<http://hawaiihumpbackwhale.noaa.gov>

Humpback whales frequent the near-shore areas around the Hawaiian Islands each winter. Here are a few excellent viewing locations:

- Makapu'u Lighthouse, O'ahu
- Halona Blowhole, O'ahu
- Hanauma Bay, O'ahu
- McGregor Point, Maui
- Kihei, Maui
- Lapakahi State Historical Park, Hawai'i
- Kapa'a Beach Park, Hawai'i
- Kilauea Point National Wildlife Refuge, Kaua'i
- Kapa'a Overlook, Kaua'i



Kilauea Point Natural History Association (KPNHA) works in cooperation with the United States Fish and Wildlife Service to promote interpretive, educational, and scientific projects that focus on Hawai'i's unique natural history. KPNHA proudly supports the Sanctuary's efforts to preserve Hawai'i's Humpback Whales.

Humpback Whale Behaviors

Humpback whales can be seen in Hawai'i's nearshore waters during winter and their impressive acrobatic displays are often visible from miles away.

Blow

On average, adult humpbacks take a breath every 10-15 minutes, but can remain submerged for as long as 45 minutes. Calves must surface more frequently at every 3-5 minutes.

Head Rise or Spy Hop

A whale rises vertically toward the surface, with its head out of the water. Some believe this behavior allows the whale to look at activity going on above the surface.

Tail Slap

A humpback raises its tail flukes out of the water and slaps them forcefully on the surface of the water. This behavior is often repetitive and may serve as a warning.

Pec Slap

Humpbacks will slap the water's surface with one or both fins simultaneously. The slapping of fins may serve as a communication signal to other whales.

Head Lunge

A competitive display in which the humpback whale lunges forward with its head raised above the water.

Peduncle Slap

An energetic display where the whale throws its tail out of the water and in the process, slaps its peduncle on the surface.

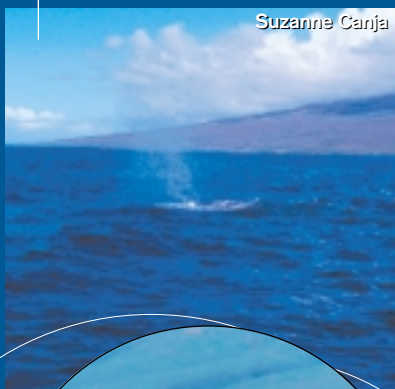
Fluke Up Dive

The tail of the humpback appears out of the water in an upward arch and slowly rolls underwater in conjunction with a dive.

Breach

An acrobatic display where the humpback uses its tail to launch itself out of the water then lands back on the surface with a splash.

Blow



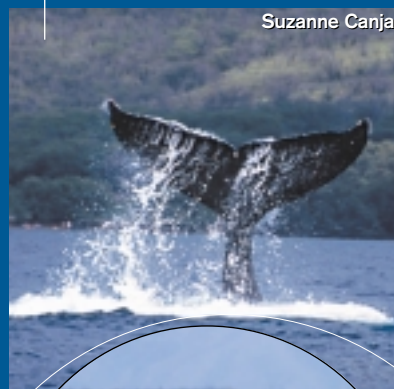
Suzanne Canja

Spy Hop



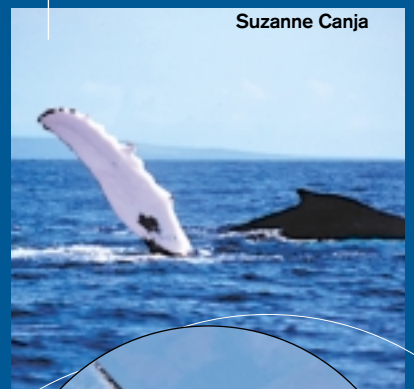
Suzanne Canja

Tail Slap

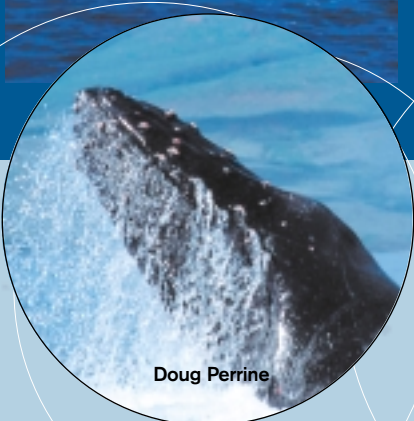


Suzanne Canja

Pec Slap

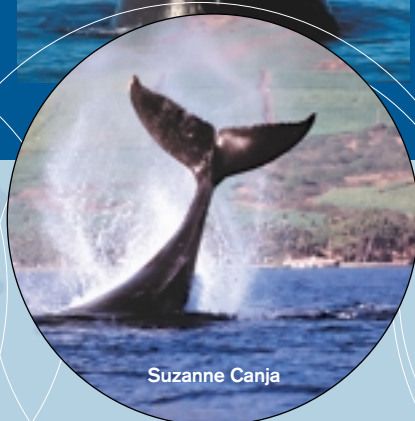


Suzanne Canja



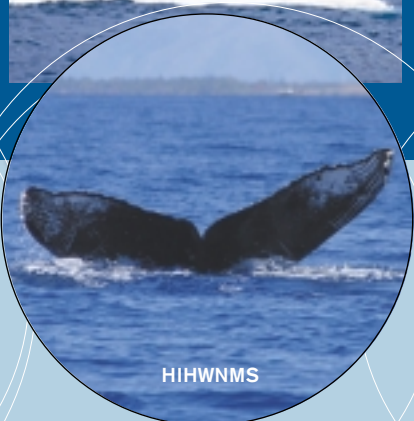
Doug Perrine

Head Lunge



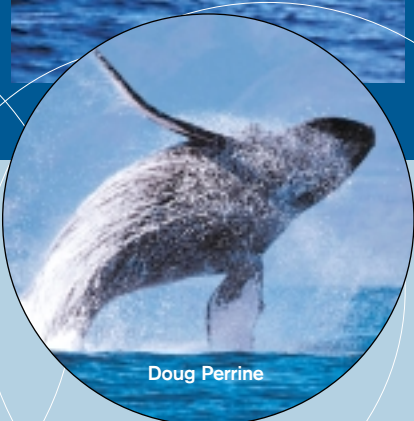
Suzanne Canja

Peduncle Slap



HIHWNMS

Fluke Up Dive



Doug Perrine

Breach



Hawai'i Sea Grant encourages marine conservation efforts through an innovative program of research, education and extension services directed to the improved understanding and stewardship of coastal and marine resources. For more information, visit www.soest.hawaii.edu/SEAGRANT

Humpback Whale [Threats]

Entanglement in marine debris and fishing gear is a growing problem for marine mammals. It can hinder diving, swimming, feeding and surfacing activities, as well as the overall behavior of the animal. Annex V of the Marine Pollution Act (MARPOL) prohibits the disposal of plastics anywhere in the ocean and restricts the disposal of most other types of refuse materials.

- Choose reusable items instead of disposables.
- Properly dispose of and recycle your trash.
- Get involved in a beach or reef clean-up.

Habitat is critical for the conservation and health of humpback whales. Any activity which can lead to poor water quality can affect the habitat and ecosystem of the humpback whale. Major sources include urban runoff from yards, streets, parking lots and construction sites.

- Properly dispose of oils, paints and other chemicals, instead of letting them run into storm drains.
- Be aware that pesticides, herbicides, soil and fecal matter wash out to sea untreated during heavy rainstorms.

Vessel-whale collisions have been known to cause injury to humpback whales and may result in serious injury to both humans and whales. It is illegal to approach a humpback within 100 yards in the water, as well as to disrupt the normal behavior of a humpback, including its prior activity.

- Know that it is illegal to approach a humpback whale within 100 yards by sea and 1,000 feet by air.

- Avoid collisions with humpback whales, watch your speed and post a lookout for humpbacks while underway during humpback whale season (November - May).
- Be aware of vessel and safety regulations. Make others aware as well.

Acoustic disturbance due to dredging, blasting, shipping, recreational, testing and other activities may affect humpback whales and their behavior (e.g. resting and calving).

- Be aware of the problem and get involved - this is the key to successful conservation strategies.



Center for Coastal Studies



Good water quality is critical to protecting the habitat of humpback whales and other marine species. The Sierra Club's Blue Water Campaign is a statewide outreach effort to help keep our waters clean and healthy. Working together we can help protect Hawai'i's Blue Water. www.bluewaterhawaii.org

Report violations to the NOAA Fisheries Enforcement Hotline at 1-800-853-1964

Report marine mammal emergencies (including injuries and entanglements) and monk seal sightings to NOAA Fisheries at 1-888-256-9840

Report dead, sick, injured, or stranded sea turtles to NOAA Fisheries at 1-808-983-5730

Report oil or hazardous material spills to the U.S. Coast Guard at 1-800-424-8802

HAWAII'S LIVING REEFS

www.hawaiiireef.org



Hawaii's Living Reef Awards Program Information

Hawaii's Living Reef Program is a statewide public awareness program created and implemented through the cooperation and dedication of over 40 state and federal agencies, and non-governmental organizations.

The goal is to build and increase public awareness of the importance of coral reefs to Hawaii's way of life, and to teach and encourage positive behaviors. Our island lifestyle depends on our coral reef ecosystem. The ocean is part of the fabric of Hawaiian culture and history and integral to our island lifestyle today. We, as individuals, are the only ones who can prevent further decline of this vital natural resource.

The reefs are central to our economy...

Hawaii's nearshore reefs annually generate about \$800 million in gross revenues -- nearly 10% of the total revenues contributed by tourism to the state's economy.

The reefs create Hawaii's white sandy beaches...

Beach sand is primarily made up of worn fragments of coral, shell, urchin and calcified algae, as well other minute organisms found on the ocean floor.

The reefs create Hawaii's big wave surfing...

The shape of the reef is one of the important determinants of how big a wave gets.

The reefs provide food and shelter for millions of marine life -- **25 percent that are found nowhere else on earth...**

The reefs make Hawaii one of the top tourist destinations in the world...

Hawaii's beaches are ranked among the top beaches in the world.

Central in the Hawaiian way of life is the intimate knowledge that the protection and maintenance of reef resources was, is, and continues to be a part of our island lifestyle.

10 WAYS YOU CAN HELP PRESERVE HAWAII'S REEFS

1. Cut down on your own use of herbicides, fertilizers, pesticides and cleaning products. Don't pour these down the drain.
2. Dispose of your trash properly, including cigarettes and fishing gear.
3. Take only the fish you will eat that day.
4. Never release aquarium or non-native plants or animals into Hawaii's waters.
5. Stay off the reef when swimming, snorkeling, diving and boating (anchor on sandy bottom or use moorings if available)
6. Don't touch or chase marine life.
7. Support reef-friendly businesses and be an informed consumer.
8. Volunteer for or organize reef and beach cleanups and monitoring programs.
9. Be aware of the rules and encourage others to do the same.
10. Take only pictures, leave only bubbles, leave marine life on the reef.



James Watt



James Watt

Overview

Hawaii Living Reef Program through the Coral Reef Outreach Network (CRON) has developed an annual Living Reef Awards Program. The goal of the Living Reef Awards Program is to honor groups and individuals that promote reef ecosystem health and have taken action to conserve this vital natural resource, appropriate to their resources and ability.

Categories

Five awards will be given in the Industry Division:

- Fisheries (aquaculture, commercial, aquarium trade, etc.)
- Ocean recreation (dive shops, snorkeling tours, whale watching, etc.)
- Travel/visitor industry (hotels, cruise lines, car rentals, etc.)
- Business (corporations and small business)
- Agriculture/land owners

Two awards will be given in the Community Division:

- Non-profit organizations (individuals and groups)
- Education (students, student groups, teachers, all levels of schools)

Eligibility

Nominees may self-nominate for this award. Nominated programs or individual activity must have taken place between January 1, 2003, and December 31, 2004. Submissions must be received by January 31, 2005.

Award

Winners in each category will receive a specially designed award (by Tiffany's Jewelry Company) and acknowledgement at a banquet scheduled to be held in June 2005. Community Division winners will receive monetary and/or in-kind donations.

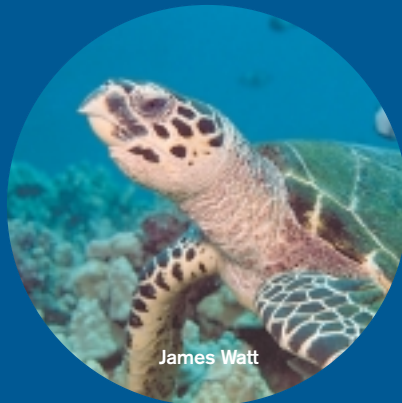
For more information on Hawaii's Living Reef Program and Awards, visit their website at www.hawaiiireef.org.



HAWAI'I'S MARINE



Mathew Godfrey



James Watt



Ursula Keuper-Bennett



James Watt

SEA TURTLES

Three species of sea turtles are considered native to Hawai'i: green, hawksbill, and leatherback. Two other species, the loggerhead and olive ridley, are sometimes observed in Hawaiian waters. The life span of sea turtles is unknown. They grow very slowly in the wild and take an average of 25 years to reach sexual maturity. Sea turtles are important to the culture and environment of Hawai'i. They are featured in Hawaiian mythology and petroglyphs, and as *aumakua* (personal family gods and guardians).

Leatherback Sea Turtles

The leatherback is the world's largest turtle. It can grow up to eight feet long and weigh up to 2,000 pounds. Leatherback turtles are seen regularly in Hawai'i's deep offshore waters, where they feed on jellyfish and other invertebrates. The leatherback is the only sea turtle species that lacks a hard shell.

GREEN SEA TURTLE

The green sea turtle is the most common sea turtle in Hawaiian waters. It feeds on marine plants in shallow coastal waters. Green sea turtles are primarily vegetarians and eat *limu* (algae). They grow to an adult breeding size of 200 pounds or more and migrate once every 2-5 years across hundreds of miles of open ocean to mate and nest in the Northwestern Hawaiian Islands at French Frigate Shoals. While Hawai'i's green sea turtle population has increased in recent years, they are still threatened from poaching, death by fishing gear and from fibropapilloma disease. This disease causes fibrous growths on the eyes, neck, flippers, and in the mouth and can be fatal to turtles.

HAWKSBILL SEA TURTLE

The hawksbill sea turtle is a critically endangered species that is native to Hawai'i. It nests on a few small sand beaches on the Big Island, Maui, Moloka'i, and O'ahu. These areas are extremely important habitat for hawksbill turtles. Mature hawksbills measure about three feet long and weigh up to 200 pounds. Hawksbills use their long, narrow beaks to probe for food. Hawksbills feed on invertebrates, including some sponges that are toxic to most other animals.

HAWAIIAN MONK SEALS

Hawaiian monk seals are the most endangered seal species in the U.S., with only an estimated 1,300 seals remaining. Major breeding populations are at six locations in the Northwestern Hawaiian Islands; a relatively small, but apparently increasing number of seals live in the main Hawaiian Islands.

Prey includes bottom-dwelling and reef fish, eels, octopus, squid and crustaceans. Most feeding occurs at depths less than 100 meters (although they sometimes dive over 500 meters).

The maximum age of the Hawaiian monk seal is believed to be 25-30 years. Females reach sexual maturity at 5-10 years of age. Pups are weaned at 5-6 weeks of age. Pups measure about 3 feet at birth and weigh about 30 pounds; their weight may increase to as much as 150 to 200 pounds before weaning.



The Waikiki Aquarium has been protecting our reefs through research, education and entertaining experiences for over 100 years. Located along the Kapiolani Park shoreline, open from 9:00 a.m. til 4:30 p.m. daily.



PROTECTED SPECIES



James Watt

SPINNER DOLPHINS

Unlike oceanic spinner dolphins, Hawaiian spinners are found close to shore in shallow coves and bays during the day. In these important nearshore habitats, Hawaiian spinner dolphins rest, care for their young, avoid predators and engage in reproductive activities vital to their survival.

Hawai'i's spinner dolphins feed at night in the open ocean. They feed on organisms that rise toward the surface at night, such as small squid, lantern fish and small hake.

Females reach sexual maturity at 5-12 years of age. Normally, adult females can give birth to a single calf every second or third year. Calves are weaned at 7 months of age or more. Although the maximum age is unknown, the spinner dolphin's lifespan is believed to be over 20 years. Exact population numbers are not known.

RESPONSIBLE WILDLIFE VIEWING IS UP TO YOU!

- View wild marine mammals from a distance. Use binoculars or telephoto lenses to enhance your viewing experience.
- Remember to stay 100 yards from humpback whales and 50 yards from other marine mammals.
- Observe sea turtles from a distance. Do not attempt to touch, ride, or feed them.
- Limit your time observing an animal to a 1/2 hour.
- Do not feed wild marine mammals. It is illegal and may cause them to become dependent on humans, change their natural behavior and make them vulnerable to injury and illness.
- If approached by a marine mammal or turtle, put the engine in neutral and allow the animal to pass.
- Remember that wild marine mammals are unpredictable in their behavior and can seriously injure people or can lead to great damage to your vessel.
- Dispose of trash properly. Marine debris can entangle or be ingested by an animal and can be deadly.

Threats to Hawai'i's Marine Protected Species include: accidental capture, especially in long lines, gillnets and entanglement in fishing lines; vessel collision; habitat degradation; human disturbance of critical areas; illegal capture and killing; marine debris; acoustic disturbance; human disturbance; and limited prey resources.



James Watt



NOAA FISHERIES, Pacific Islands Region

Providing stewardship of our nation's living marine resources.
1601 Kapiolani Blvd., #1110, Honolulu, HI 96814

http://www.nmfs.noaa.gov/prot_res

To report marine mammal emergencies call: **1-888-256-9840**

Coastal Zone Management

H A W A I I

Coastal Zone Management Hawai'i (CZM Hawai'i) plays a crucial role by bringing together agencies and organizations that operate in all areas, from the mountain to the sea, echoing the scope of the ancient ahupua'a land divisions. Hawai'i's coastal program is evolving as it balances needs for economic growth and a clean environment on which that growth depends. In managing competing demands, CZM Hawai'i's role is to learn from Hawai'i's ancient traditions, tap the local knowledge of contemporary communities, and coordinate the efforts of governmental partners.

CZM Hawai'i focuses its work on the complex resource management problems of coastal areas. Within a framework of cooperation among federal, state, and local levels, CZM Hawai'i employs a wide variety of regulatory and non-regulatory techniques to address coastal issues and uphold environmental law. Among them are planning, permitting, education and outreach, technical assistance, policy development and the identification of emerging issues and exploration of solutions.



We all know Hawai'i's ocean resources are unique and special. With no point of land in Hawaii more than 29 miles from the ocean, our marine environment is an integral part of our lives. Our beaches, coral reefs, waterways, scenic and open spaces, recreational activities, ocean industries, fisheries, and marine mammals, all play a key role in shaping not only our unique quality of life, but our island economy.

To the Hawaiian kupuna, stewardship was a way of life. In ancient Hawai'i, the

ocean claimed a role in every aspect of life. It provided an environment for learning, provided food, served as routes for commerce and transport, and was an arena for recreational activities. The ancient Hawaiians recognized the value of wetlands and estuaries, pristine streams and fresh water springs, and the need to manage resources from mauka (mountain) to makai (sea).

Like them, we recognize the need for responsible development of our ocean and coastal resources.

Ocean awareness and stewardship is a responsibility that falls to each of us.

Theodore E. Liu, Acting Director

Department of Business, Economic Development & Tourism



Our Vision: looking to our heritage and inspiring island stewardship, CZM Hawai'i and community partners promote a sustainable coastal environment.

www.czmhawaii.com



Get Involved for the Sake of the Ocean World

From Sea to Shining Sea - You Can Help Preserve our National Marine Treasures

The National Marine Sanctuary Foundation is the private-sector, non-profit partner to NOAA's National Marine Sanctuary Program.

The Foundation helps the sanctuary program conserve and protect our nation's underwater treasures by assisting the program with outreach and education. Locally, the Foundation is working with the Hawaiian Islands Humpback Whale National Marine Sanctuary on a variety of projects, including the SPLASH research program and the annual whale count. While the Sanctuary Program is a leader in marine conservation, the Foundation offers another way for the public to connect with the nation's marine sanctuaries.

The Foundation was "born" on Maui at an exhibition of the works of Hawaii's own artist Robert Lyn Nelson. Nelson's gallery came to life one evening with a showing of bold canvases depicting his "Two Worlds" style of painting, depicting life above and below the surface of the sea. One of his clients was so moved by the breathtaking paintings that she asked, "What can I do?" The answer was simple: Get involved. Nelson's client took that advice to heart and, through public and private sector partnerships, the Foundation was established.

"The Foundation helps preserve our ocean and freshwater

resources in the face of pollution, habitat loss, depleted fisheries and increased populations in coastal areas" Lori Arguelles, NMSF's executive director said. Donations from individuals, groups and companies play a key role in ensuring our underwater treasures are here for future generations. In fact, you may specify that your donation go directly to support local programs at the Hawaiian Islands Humpback Whale National Marine Sanctuary. Together, we can ensure coral reefs will thrive, humpback whale habitat is preserved and all marine life flourishes.

National Marine Sanctuary Foundation Pledge Form

National Marine Sanctuary Foundation
8601 Georgia Avenue, Suite 201
Silver Spring, MD 20910
(301) 608-3040 (t) (301) 608-3044 (f)
www.nmsfocean.org

☐ Yes, I want to help preserve America's Underwater Treasures!

Enclosed is my contribution of: ☐ \$25 ☐ \$50 ☐ \$100 ☐ other

To support: ☐ programs in the Hawaiian Islands
☐ Marine Sanctuaries nationwide

Credit Card type: _____

Card number: _____ Exp date: _____

Name: _____

Address: _____

City/State/Zip: _____

Email: _____

Please make checks payable to NMSF, or make donations online at www.NMSFocean.org.

Thank you for supporting the National Marine Sanctuary Foundation.

Message from the National Marine Sanctuary Foundation

As marine biologists, explorers and citizens, we – the members of the National Marine Sanctuary Foundation Board of Trustees – believe it is imperative that this important partnership continues.

Throughout this special section, you'll see evidence of the accomplishments of the Hawaiian Islands Humpback Whale Sanctuary. From the Sustainable Seas Expedition and its education programs to the annual Ocean Count to the Kaua'i Family Ocean Fair – the sanctuary has had an impact on public awareness and knowledge of the magnificent humpback whale species.

That's why we believe it is critically important for this effort to continue. The opportunity to renew the state/federal partnership presents itself every five years. So, we ask each of you to join us in endorsing the Hawaiian Islands Humpback Whale National Marine Sanctuary and urge all parties to ensure its continued success.

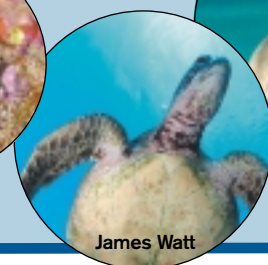
The National Marine Sanctuary Foundation Board of Trustees

Dr. Bob Ballard
Jean-Michel Cousteau
Dr. Sylvia Earle
Terry Garcia
Kym Murphy
Robert Lyn Nelson

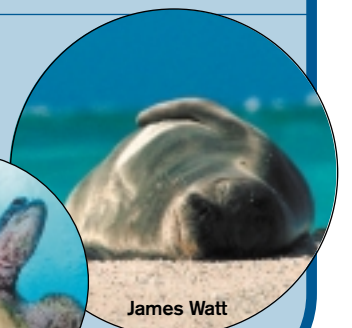
The Honorable Leon Panetta
Pat Romanowski
Bob Talbot
Jim Tulip
John Wright



Donna Loudon



James Watt



James Watt



Hawaiian Monk Seal **E**
Monachus schauinslandi N 0.8–1.2M;
♂ ~2.12M, 2.3M; ♀ ~2.34M, 2.4M



Pygmy Killer Whale
Feresa attenuata N 0.70–0.92M
♂ 2.1–2.4M, 2.6M; ♀ 2–2.3M, 2.45M



False Killer Whale N 1.5–1.9M ♂ 3.9–5.5M, 6.1M
Pseudorca crassidens ♀ 3.6–4.58M, 5.06M



Striped Dolphin
Stenella coeruleoalba N 0.92–1.0M
♂ 1.8–2.64M, 2.7M; ♀ 2.1–2.4M, 2.6M



Melon-headed Whale
Peponocephala electra N 0.8–1.1M
♂ 2.1–2.7M, 2.75M; ♀ 2.1–2.6M, 2.75M



Bottlenose Dolphin N 0.9–1.2M
Tursiops truncatus ♂ 2.4–3.3M, 3.8M; ♀ 2.3–3.1M, 3.5M



Pantropical Spinner Dolphin
Stenella longirostris longirostris
N 0.9M; ♂ 1.7–2M, 2.1M; ♀ 1.6–1.9M, 2M



Pantropical Spotted Dolphin
Stenella attenuata N 0.8–0.9M
♂ 1.6–2.2M, 2.57M; ♀ 1.6–2.3M, 2.4M



Dwarf Sperm Whale N 0.95–1.0M
Kogia sima ♂ 2.1–2.4M, 2.7M; ♀ 2.1–2.15M, 2.34M



Rough-toothed Dolphin
Steno bredanensis N ~0.88M
♂ 2.2–2.6M, 2.8M; ♀ 2.3–2.5M, 2.6M



Pygmy Sperm Whale N 1.1–1.24M
Kogia breviceps ♂ 2.7–3M, 3.4M; ♀ 2.66–2.8M, 3.1M



Risso's Dolphin (Grampus) N 1.1–1.6M
Grampus griseus ♂ 2.6–3M, 3.8M; ♀ 2.6–2.8M, 3.6M

Images above are at a relative scale of 1:50; images below at 1:100.

Marine Mammals of Hawai'i



Cuvier's Beaked Whale
Ziphius cavirostris
N ~2.7M
♂ 5.3–6.7M, 7.5M
♀ 5.1–6.6M, 7M



Killer Whale
Orcinus orca N 2.1–2.4M
♂ 5.0–8.2M, 9M; ♀ 4.6–7.0M, 7.7M



Short-finned Pilot Whale
Globicephala macrorhynchus
N ~1.85M; ♂ 5.5–6.1M, 7.2M;
♀ 3.9–5.1M, 5.5M

Fin Whale **E** N 6.0–6.5M; ♂ 19–19.8M, 22M
Balaenoptera pterygius ♀ 19.5–21.4M, 24M



Humpback Whale **E**
Megaptera novaeangliae
N 4.0–5.0M
♂ 11.1–13M, 15M
♀ 11.2–13.3M, 16M



Sperm Whale **E**
Physeter macrocephalus N 3.5–4.5M
♂ 12.7–17.1M, 18.5M; ♀ 11.1–18.6M, 21M



Blairville's Beaked Whale **R**
Mesoplodon densirostris
N 1.9–2.4M; ♂ 5.8M; ♀ 4.7M

Starbucks Coffee Hawaii proudly supports the conservation,
education and outreach programs of the Hawaiian Islands
Humpback Whale National Marine Sanctuary.



E = Endangered; **R** = Naturally Rare; N = newborn; ♂ = male; ♀ = female
Size ranges are in meters (M) for sexually mature animals, followed by the
maximum known length.

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