

JOHNSTON ATOLL FACT SHEET

Natural resources

Physical Setting

- Depth range: 10 m elevation to depths of 4,000 m.
- Relative location: 1,403 km southwest of Honolulu, HI.

Geologic Structure

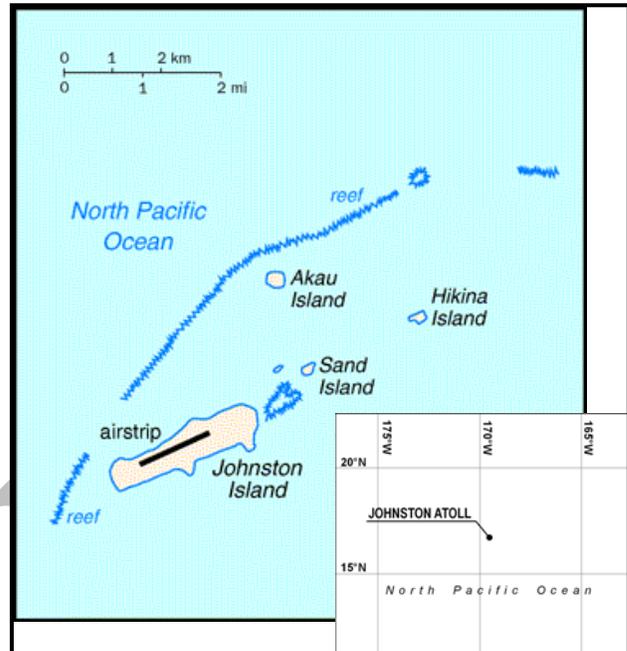
- Johnston, the northernmost island in the Line Islands chain, is an ancient atoll, and along with Wake Atoll is probably the oldest in the Pacific Ocean.
- Unlike most atolls, it does not have a surrounding barrier reef, but a semicircular emergent reef around the north and western margins of the island.

Ecosystem description

- Four major habitats characterize Johnston: low-lying islets consisting of the remains of corals and shells, shallow coral reefs to depths of 150 m, deeper reefs to depths of 1,000 m or more, and the slope of the ancient volcano on which the island rests.

Biological characteristics

- Johnston is a genetic/larval stepping stone from the Line Islands to the Hawaiian islands for invertebrates, other reef fauna, corals and dolphins.
- Despite its isolation, Johnston supports thriving communities of Table corals (*Acropora*), and a total of 45 coral species, including a dozen species confined to the Hawaiian and northern Line Islands.
- Some 300 species of reef fish are at Johnston, including the endemic Nahacky's pygmy angelfish.
- Many threatened, endangered and depleted species thrive there, including the green turtle, hawksbill turtle, and reef sharks. The surrounds waters are also used by six depleted/endangered cetacean species:



sperma, blue, sei, humpback, and north pacific right whales.

- Spinner dolphins are abundant, the endangered humpback whales may calve there, and the endangered Hawaiian monk seal are known to occasionally visit the atoll.
- Deep diving submersible surveys have revealed that Johnston supports the deepest reef building corals (*Leptoseris*) on record and large populations of hydrozoan corals (*Millepora*, *Distichopora*, *Stylaster*).
- Land areas support large populations of migratory shorebirds and resident seabird species, including populations of regional, national, or international significance of: Wedge-tailed Shearwaters, Christmas Shearwaters, Red-tailed Tropicbirds, Brown Boobies, Great Frigatebirds, Gray-backed Terns and White Terns.
- Approximately 200 threatened Green turtles forage at Johnston.

Mineral Resources

- Cobalt-rich iron-manganese crusts and seamount phosphorites have been

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systematically studied within the Johnston Atoll EEZ. Other mineral-deposit types have not been systematically surveyed in the EEZ, which likely contains immediate- to long-term potential mineral resources.

Historic

- Johnston Atoll was claimed by both the U.S. and Kingdom of Hawaii in 1856.
- The wreck of the 19th century New Bedford whaling bark, Jacob A. Howland, was discovered at Johnston Atoll by Dr. Philip Lobel. Survey for other potential submerged historical resources has not yet been conducted.
- President Coolidge designated islands within the atoll as a national wildlife refuge in 1926.
- President Franklin Roosevelt placed atoll under the U.S. Navy in 1934, except for the refuge. A Naval Defensive Sea Zone of 3 miles around the island was established in 1941.
- During WWII, the atoll was an important refueling station for planes and submarines. The facilities came under fire from Japan in December 1941, with no personnel casualties.

Human use & current management

- Johnston Island has been uninhabited since 2004. FWS, NOAA, and DoD staff make periodic visits to monitor fish and wildlife and waste disposal sites.
- The military mission ended in 2004. The Naval Defensive Sea Zone remains.
- A portion of the Atoll is a National Wildlife Refuge managed by FWS
- Marine fishery resources in the EEZ are managed by the Department of Commerce based on fishery management plans developed and recommended by the Western Pacific Fishery Management Council.

Key references

- Stanley, D. 1991. *Micronesia Handbook: Guide to the Caroline, Gilbert, Mariana, and Marshall Islands*. Moon Publications Inc., Chico, California.

- Amerson, AB Jr, and PC Shelton. 1976. The natural history of Johnston Atoll, Central Pacific Ocean. - *Atoll Research Bulletin* 192: 1– 479.
- USGS Circular 1286 [http://pubs.usgs.gov/circ/2005/1286/]
- Fishery Management Plans for: Bottomfish and Seamount Groundfish, Pelagic Fisheries, Coral Reef Ecosystems, and implementing regulations found at 50 CFR Part 665.
- Lobel, PS 2003. *Marine Life of Johnston Atoll, Central Pacific Ocean*. Natural World Press, Inc.
- Map of Essential Fish Habitat Areas, at www.wpcouncil.org/maps.htm
- Maragos, J. E. and P. L. Jokiel. 1986. Reef corals of Johnston Atoll: one of the world's most isolated reefs. *Coral Reefs* 4: 141-150.
- Miller et al. 2008. The state of coral reef ecosystems of the Pacific remote island areas, Pages. 353-386. *In: J.E. Waddell and A.M. Clarke (eds.), The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008*. NOAA Technical Memorandum NOS NCCOS 73. Silver Spring, MD. 569 pp.
- Grigg, R. W. 1981. *Acropora* in Hawaii. Part 2. Zoogeography. *Pacific Science* 35: 15-24.

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