Photo: David Leonard, USFWS

Seabirds

Mōlī or Laysan albatross

Phoebastria immutabilis

SPECIES STATUS:
State Recognized as Indigenous
NatureServe Heritage Rank G3 – Vulnerable
IUCN Red List Ranking – Near Threatened
Regional Seabird Conservation Plan – USFWS 2005

SPECIES INFORMATION: The mōlī or Laysan albatross is a large, abundant seabird (Family: Diomedeidae) whose breeding range is centered in Hawai'i. Adults are mostly white except for black wings and tail; upperwings entirely dark, underwings mostly white with variable amounts of black especially along leading and trailing edges. Bill is pink with gray, hooked tip; legs and feet are light pink. Like all albatrosses, mōlī are accomplished fliers using dynamic soaring to cover great distances. They mainly feed at night and often far from breeding colony (e.g., 1,770 kilometers [1,100 miles]). Mōlī often feed with conspecifics, but rarely with other species, and similar to other albatross, seizes prey from the surface while sitting on the water. Scavenges from carrion and follows fishing boats, but not as frequently as ka'upu or black-footed albatross (*P. nigripes*). In Hawai'i, diet consists primarily of squid, as well as deep-water crustaceans, fish and flyingfish eggs. Like most seabirds, mōlī nest in colonies, have long-term pair bonds and high site fidelity, lay only one egg per season, and both parents participate in all aspects of raising young. Pairs engage in long, noisy, ritualized courtship dances. They typically select nest site closer to vegetation than ka'upu, and nest varies from a scrape to a ring-like structure comprising sand, vegetation, and debris. In Hawai'i, eggs are laid between November and December and chicks fledge in July, and no post-fledgling care is provided by parents. Young birds do not return to land until their third year after fledging. These birds do not breed, but dance, build nests, and prospect for mates. Birds first breed between five and eight years of age, and the oldest known individual was at least 61 years old.

DISTRIBUTION: Nests throughout the Northwestern Hawaiian Islands (NWHI) and on the Main Hawaiian Islands (MHI) of Kaua'i and O'ahu and Lehua Island off Ni'ihau. Outside of Hawai'i, they nest on islands off Japan and Mexico. At sea, mōlī occur widely throughout the north Pacific Ocean.

ABUNDANCE: The worldwide population is estimated at 590,000 breeding pairs, and more than 99 percent of them nest in the NWHI; most are on Midway Atoll (441,000 pairs) and Laysan Island (145,000 pairs). Small numbers nest in the MHI (500 pairs), on islands near Japan (20 pairs), and off western Mexico (400 pairs).

LOCATION AND CONDITION OF KEY HABITAT: Most nesting occurs in flat open areas on low-lying coral and sand islands, but they also nest in steep rocky areas on high volcanic islands

such as Nihoa and Lehua. A majority of the world's mōlī nest within the Hawaiian Islands National Wildlife Refuge (NWR) and Midway Atoll NWR. Two of the largest breeding colonies on the MHI occur in the Kīlauea Point NWR on Kauaʻi and the Kaʻena Point Natural Area Reserve on Oʻahu. Predators are controlled at both these sites. Nesting attempts are discouraged (e.g., eggs are removed) at several military bases in the MHI to reduce collisions with aircraft. At-sea, they occur over the open ocean.

THREATS:

- Human disturbance and conflict. Historically, hunters decimated populations for the millinery trade. Populations extirpated from Johnston, Wake, and Marcus islands by Japanese feather hunters at the turn of the last century are only recently being re-colonized. Occupation of Pacific islands by military during World War II also took a heavy toll on this species. For example, during the 1950s and 1960s tens of thousands were killed at Midway to reduce collisions with aircraft. In 1909, 300,000 birds were killed on Laysan Island. Currently, human disturbance to breeding colonies on Oʻahu and Kauaʻi are a threat, and eggs are removed each year at the U.S. Navy Pacific Missile Range Facility to reduce the risk of aircraft collisions.
- Fisheries bycatch. One of the most serious threats to albatross, thousands were killed annually as bycatch in drift net fisheries prior to their ban in 1993. U.S. longline fisheries once killed thousands annually, but this form of bycatch has been greatly reduced in the last 10-20 years. However, bycatch from Japanese and Taiwanese fleets that operate in the north Pacific Ocean remains a significant threat to the albatross.
- Introduced predators. Like all seabirds, adults and nests on the MHI are susceptible to predation by introduced mammals including pigs (*Sus scrofa*), rats (*Rattus* spp.), dogs (*Canis familiarus*), feral cats (*Felis silvestris*), and the small Indian mongoose (*Herpestes auropunctatus*).
- Invasive species. Non-native plants, specifically golden crown-beard (*Verbesina encelioides*), degrades nesting habitat and may limit nesting density, reduce productivity, and provide habitat for mosquitoes that carry avian pox. Introduced big-headed ants (*Pheidole megacephala*) at Kure may facilitate the destruction of native vegetation by a non-native scale insect.
- Contaminants. At Midway Island, lead contaminated paint chips and soil is ingested by chicks, which causes lead poisoning and mortality. Organochlorine and mercury contamination, and oil spills are also potential threats to this wide-ranging species.
- Marine pollution. Adults ingest plastic debris, then feed it to their chicks, resulting in harm or mortality of chicks.
- Collisions. At Midway, albatrosses collide with buildings, lights, antenna wires, and other human-made structures. In 1964 alone, 3,000 albatrosses were killed by colliding with communication antennas on Midway.
- Climate change. Nesting colonies on low-lying atolls are vulnerable to sea level rise, and increased storms and wave events associated with climate change.

CONSERVATION ACTIONS: Actions specific to mōlī should include the following:

- Continue predator control and eradication at MHI colonies.
- Continue non-native vegetation control at Midway, Pearl and Hermes, and Kure Atoll.
- Continue lead remediation on contaminated soil and structures on Midway Island.
- Continue protection and management of wildlife sanctuaries and refuges.

- Continue egg swap project on Kaua'i, in which eggs removed from the U.S. Navy Pacific Missile Range Facility are placed with foster parents (whose eggs are not viable) at other suitable locations. Establish a breeding colony at James Campbell NWR in O'ahu, by translocating chicks hatched from the U.S. Navy Pacific Missile Range Facility.
- Continue efforts to reduce fisheries bycatch throughout the north Pacific Ocean.
- Conduct public education awareness programs about the hazards of plastics and other types of marine pollution, and their effects on seabirds and the ocean.

MONITORING: Continue annual censuses of breeding colonies and design and implement a population monitoring program that will allow the estimation of age-specific survival rates.

RESEARCH PRIORITIES:

- Continue monitoring all Hawaiian breeding colonies to collect demographic data, inform management decisions, and measure efficacy of conservation actions.
- Estimate annual mortality from albatross bycatch in U.S. and foreign fisheries and use demographic models to determine the effect of this mortality on population. Continue research and development of techniques and gear to minimize bycatch.
- Explore ways to reduce impacts of climate change and soil erosion on low-lying breeding colonies in the NWHI.
- Evaluate plastic loads in albatross chicks on Midway Island.

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