

## FAST FACTS:

# Laysan Albatross & Marine Debris on Midway Atoll



STEVEN SIEGEL / MARINE PHOTOBANK

## MIDWAY: POPULATION ONE MILLION

Known best as the site of a decisive 1942 World War II battle and a strategic U.S. Naval base, Midway Atoll is also a critical site for marine wildlife in the Pacific Ocean. Recognizing the area's importance to an array of species, the U.S. government designated Midway a National Wildlife Refuge in 1988.<sup>1</sup> Nearly two decades later, the refuge, located in the Northwestern Hawaiian Islands, became part of the Papahānaumokuākea Marine National Monument, which President George W. Bush established in 2006.<sup>2</sup>

During its history, Midway Atoll has had a population of more than 5,000 human inhabitants. While only 30-65 people currently live on Midway—including a small contingent of National Wildlife Refuge staff—from November to June more than one million<sup>3</sup>

waddling, squawking residents claim nearly every available square foot of island real estate. These black and white seabirds, called Laysan albatross (*Phoebastria immutabilis*), depend on the islands for breeding habitat. Researchers have reported that 428,000<sup>4</sup> mating pairs of these “gooney birds” nest on Midway’s islands annually, accounting for more than 70 percent of all Laysan albatross in the world.<sup>5</sup> Each pair mates for life and both parents raise a single chick each year, taking turns searching for food at sea.



Aerial view of Midway Atoll

NOAA



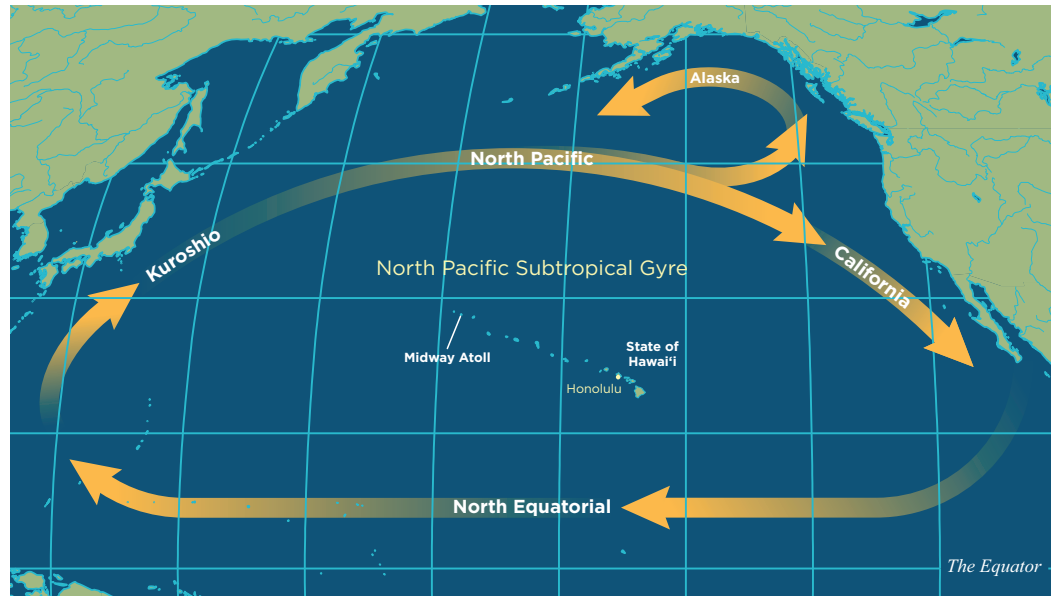
MARINE PHOTOBANK

GLEN TEPKE

The hunt for food can take the Laysan albatross a thousand miles offshore into the Pacific Ocean.

The Kuroshio Current from Japan and the North Pacific Current from the Central Pacific Ocean flow through this seabird's feeding areas in the North Pacific Ocean, carrying food and, unfortunately, plastic refuse from coastal and sea-based sources.<sup>6</sup>

## LAYSAN ALBATROSS: INDISCRIMINATE EATERS



*Ocean currents carry land- and ocean-based litter and debris from coastal areas and other parts of the ocean to Midway Atoll.*

Laysan albatross have evolved into rather indiscriminate eaters, scooping up buoyant matter like squid, flying fish eggs and crustaceans from the ocean's surface.<sup>7</sup> In essence, if it floats, Laysan albatross can swallow it. As a result, light, buoyant plastic objects have become a regular component of the albatross diet.



USFWS

Flying fish lay long strands of eggs onto material floating at the water's surface. Historically, the fish would adhere their eggs to natural objects, such as wood or volcanic rock. Today, these eggs are more likely to be attached to pieces of floating debris.<sup>8</sup> When an albatross swallows an egg strand, the debris comes with it. While many seabird species have ingested plastic materials, studies show that Laysan albatross consume larger volumes of plastics than any other seabirds.<sup>9</sup> Research indicates that plastic can make up nearly half of the indigestible matter in Laysan albatross digestive tracts.<sup>10</sup>

### WHY ARE ALBATROSS CALLED "GOONEY BIRDS"?

With their long, stiff wings reaching lengths of more than six feet,<sup>11</sup> albatross can glide and soar effortlessly in the air for long periods of time. However, they are less than graceful on land. Flapping their wings awkwardly and stumbling on the ground, the birds look awkward and a bit clumsy during takeoffs and landings, which earned them the "gooney bird" nickname.<sup>12</sup>



CORRIE CURTICE

## DANGEROUS DINNER

Adult albatross feed their young an oily, regurgitated mix of partially digested flying fish eggs and squid oil.<sup>13</sup> When the adults return from foraging at sea, they can inadvertently feed their chicks any plastic they may have ingested as well. In addition to natural materials that chicks cannot digest—such as squid beaks and fish bones—scientists have found a variety of plastic materials in dead chicks' stomachs, including cigarette lighters, buttons, golf tees, toys and toothbrushes.<sup>14</sup> With several hundred thousand baby albatross mouths to feed on Midway, the amount of ingested plastic can really add up.



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Eating plastic debris poses several health concerns for Laysan albatross chicks. Consumed debris can create a false sense of fullness, which prevents chicks from eating enough food and possibly starving. It can also block or tear portions of the chick's digestive tract, possibly damaging internal organs.

## WHAT CAN YOU DO?

A large majority of marine debris is made of synthetic polymers. These plastic products are lightweight, durable, and able to float on ocean currents for hundreds and thousands of miles.

So even though Midway is located in the middle of the Pacific Ocean—more than 2,550 miles east of Tokyo, Japan, 3,150 miles west of San Francisco, California<sup>15</sup> and 1,250 miles northwest of Honolulu, Hawaii<sup>16</sup>—debris from land areas located thousands of miles away can still wash up on its shores.

Here are some important steps you can take to help stop the threat of marine debris and protect the Laysan albatross, wherever you live.

- Reduce, reuse and recycle.
- While on land, carefully dispose of any trash in the appropriate receptacles and pick up any trash and litter you see.
- Keep storm drains and sewers trash-free as these can lead directly to the ocean and other waterways.
- While at sea, be sure to bring all of your trash back with you for proper disposal on land.
- Start a local recycling program. If your community already has a program in place, encourage your friends and family to participate.
- Serve as an example to others. Encourage friends and family to keep trash and litter out of our oceans and local waterways.
- Remember that you are responsible for how you dispose of your trash and recyclables.



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## ADDITIONAL RESOURCES

Visit these websites for more information on the Laysan albatross and marine debris

**U.S. Fish and Wildlife Service, Midway Atoll National Wildlife Refuge**  
[www.fws.gov/midway](http://www.fws.gov/midway)

**U.S. Fish and Wildlife Service, Midway Atoll National Wildlife Refuge—Birds of Midway Atoll**  
[www.fws.gov/midway/laal.html](http://www.fws.gov/midway/laal.html)

**Papahānaumokuākea Marine National Monument**  
<http://papahānaumokuākea.gov>

**NOAA Marine Debris 101**  
<http://marinedebris.noaa.gov/marinedebris101/welcome.html>

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## REFERENCES

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- <sup>2</sup> U.S. Fish and Wildlife Service; Midway Atoll National Wildlife Refuge. "Chronology of Events." <http://www.fws.gov/midway/chronology.html>, March 22, 2010 (accessed May 19, 2010).
- <sup>3</sup> U.S. Fish and Wildlife Service, Midway Atoll National Wildlife Refuge, Papahānaumokuākea Marine National Monument, January 2010 Update, <http://www.fws.gov/midway/monthlyupdates.html>. (accessed June 17, 2010).
- <sup>4</sup> Agreement on the Conservation of Albatross and Petrels. Lots of birds: counting Midway Atoll's breeding Laysan and Black-footed Albatrosses <http://www.acap.aq/latest-news/lots-of-birds-counting-midway-atolls-breeding-laysan-and-black-footed-albatrosses> (accessed June 17, 2010).
- <sup>5</sup> U.S. Fish and Wildlife Service, Midway Atoll National Wildlife Refuge, Papahānaumokuākea Marine National Monument, January 2010 Update, <http://www.fws.gov/midway/monthlyupdates.html>. (accessed June 17, 2010).
- <sup>6</sup> Ryan, P. G., 1988. Effects of ingested plastic on seabird feeding: Evidence from chickens. *Marine Pollution Bulletin* 19: 125-28.
- <sup>7</sup> U.S. Fish and Wildlife Service; Midway Atoll National Wildlife Refuge. "Birds of Midway Atoll: Laysan Albatross." [www.fws.gov/midway/laal.html](http://www.fws.gov/midway/laal.html), May 21, 2009 (accessed March 8, 2010).
- <sup>8</sup> Papahānaumokuākea Marine National Monument. "Northwestern Hawaiian Islands Marine National Monument: A Citizen's Guide." [http://papahānaumokuākea.gov/PDFs/Citizens\\_Guide\\_Web.pdf](http://papahānaumokuākea.gov/PDFs/Citizens_Guide_Web.pdf), 2006 (accessed March 8, 2010).
- <sup>9</sup> Ryan, P. G., 1987. The effects of ingested plastic on seabirds: Correlations between plastic loads and body condition. *Environmental Pollution*. 46: 119-25.
- <sup>10</sup> Mayer, Barbara. Midway Atoll National Wildlife Refuge: Management, "Marine Debris: Cigarette Lighters and the Plastic Problem on Midway Atoll." [www.fws.gov/midway/Midway\\_Atoll\\_NWR\\_Cigarette\\_Lighters.pdf](http://www.fws.gov/midway/Midway_Atoll_NWR_Cigarette_Lighters.pdf), Summer 2003 (accessed March 8, 2010).
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- <sup>12</sup> Olympic Coast National Marine Sanctuary. "Black-footed albatross." [http://olympiccoast.noaa.gov/living/marine\\_wildlife/seabirds/spp\\_albatross.html](http://olympiccoast.noaa.gov/living/marine_wildlife/seabirds/spp_albatross.html), July 30, 2004 (accessed March 10, 2010).
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- <sup>14</sup> Ryan, P. G. and Jackson, S., 1987. The lifespan of ingested plastic particles in seabirds and their effect on digestive efficiency. *Marine Pollution Bulletin* 18: 217-19.
- <sup>15</sup> CORIS: NOAA's Coral Reef Information System. "Midway Atoll (28 15'N - 177 20'W): Human Activities," [http://coris.noaa.gov/about/eco\\_essays/nwhi/midwayatoll.html](http://coris.noaa.gov/about/eco_essays/nwhi/midwayatoll.html), Nov. 30, 2009 (accessed March 16, 2010).
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