

Desert Flamingoes

MONITORING FLAMINGO HEALTH AND CONSERVATION STATUS IN CHILE'S ATACAMA DESERT

The Atacama Desert of northern Chile is the world's most arid desert. Flanked by the Pacific coast on one side and the snowcapped peaks of the Andes Mountains on the other, the desert is a series of salt basins (*salars*), sand, and lava flows that stretches 600 miles from Peru's southern border into the Chilean Altiplano, reaching altitudes over 5,000 meters above sea level. At its center, in an area climatologists refer to as "absolute desert," the Atacama possesses long, sterile stretches where rainfall has never been recorded and virtually no vegetation exists. It is a landscape so remote, desolate, and barren, that it is oftentimes described as "moonlike." And with daytime and nighttime extremes of 122 degrees Fahrenheit to 40 degrees below zero it is a place seemingly hostile to life.

Yet in this remote, inhospitable environment, Chilean flamingo (*Phoenicoparrus chilensis*), Andean flamingo (*Phoenicoparrus andinus*), and James' flamingo (*Phoenicoparrus jamesi*), thought to be extinct until its rediscovery in 1957, can be found living in large flocks often numbering in the thousands. The three species live together in and around the salars, feeding on red algae and other microscopic organisms that grow in the brackish, alkaline waters. Their colorful plumage, displayed prominently during courtship rituals, stands in dramatic contrast to the stark Atacama landscape.

Unfortunately, flamingo populations in northern Chile have been declining since 1986.

Habitat disturbance due to mining and unregulated tourism, which can disturb feeding and breeding behaviors, have long been suspected as the main culprits. Until recently, however, no health evaluations had been conducted to determine the exact causes of the increasing number of flamingo deaths.

In late 2002, with the conservation status of Chile's flamingo populations in doubt, Dr. Mauricio Fabry and biologists from the Zoologico Nacional de Chile and Corporacion Nacional Florestal (CONAF) began investigating the causes of population declines among flamingos living in and around the Surire and Atacama salars – areas where two of Chile's most abundant flamingo populations are found. The project's principal objective is to test for linkages between human activity and declining flamingo populations by monitoring and evaluating flamingo health. Additionally, the project seeks to involve local indigenous populations in flamingo conservation through environmental education campaigns and volunteer opportunities. Support from Wildlife Trust has allowed the research team to conduct their investigation while funding from Zoo Conservation Outreach Group (ZCOG) enabled Dr. Fabry to present preliminary research findings at the 2003 AZA National Conference in Columbus, Ohio.

During the last three years, Dr. Fabry and his team have safely captured, marked, and released over eighty flamingos in the region. Samples taken from the birds have identified several pathogens, including Newcastle's disease, Avian influenza, and West Nile virus, as possible causal agents for the increasing death rates affecting flamingo populations. In addition, the research coalition has developed a series of recommendations designed to decrease the impact of mining and tourist activities near the salars.

The team hopes that their ongoing research efforts will contribute to the conservation of these majestic birds and the protection one of the planet's most unique habitats.

If you would like to learn more about how your institution can support flamingo conservation efforts in the Chilean Atacama please contact the Zoo Conservation Outreach Group (ZCOG) at dhilliard@auduboninstitute.org.

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