

Indian River Lagoon — Facts and Figures

- The IRL is an “Estuary of National Significance,” one of 28 in the nation. The primary goal of the Indian River Lagoon National Estuary Program (IRLNEP) is to protect this ecologically significant estuary that is threatened by degradation caused by human activity. IRLNEP coordinates watershed management at the local level, building community-based processes to implement protection programs with specific actions to address environmental problems.
- The IRL is also designated as an aquatic preserve, an Outstanding Florida Waterway, and a Surface Water Improvement and Management (SWIM) Program Water Body.

Physical Features

- The Indian River Lagoon (IRL) is a 156-mile long estuary located on Florida’s East Coast. The lagoon is long and narrow, occurring between approximately 27° and 29° North latitude.
- The IRL system is comprised of three distinct water bodies, Mosquito Lagoon, Banana River, and the Indian River.
- The IRL is an estuary, not a river. Unlike true rivers, water flow in the IRL is not driven by gravity. Rather, it is the wind that primarily drives the circulation patterns within the lagoon.
- Six coastal Florida counties occur within the natural IRL watershed (Volusia, Brevard, Indian River, St. Lucie, Marin, and northern Palm Beach County).
- Like all estuaries, the IRL is a semi-confined water body characterized by mixing of saline oceanic water and freshwater from upland sources. Water is exchanged between the IRL and the Atlantic through five ocean inlets—cuts in the barrier island chain. Although natural in origin, the inlets have been artificially stabilized and are maintained through human manipulation.
- The salinity, tidal influence, and degree of flushing characteristic of a particular portion of the lagoon depend in large part on its proximity to an inlet and to freshwater inputs from streams, rivers, ditches, and canals.

Biodiversity

- The IRL has been cited as among the most biologically diverse estuaries in North America.
- The IRL straddles a warm-temperate climate to the north and a subtropical climate to the south. The influence of these two distinct biogeographical provinces is one of the factors underlying the spectacular biodiversity found within the Lagoon.
- High biodiversity is also fostered by the presence of a number of distinct habitats that serve as home to the plants and animals of the IRL. Seagrass meadows, mangrove forests, and saltmarshes are foremost among IRL habitats whose continued health is essential for a healthy lagoon.
- The IRL watershed is home to more than 2,100 different species of plants and more than 2,200 animal species, including some 700 fish species and 310 bird species.
- Approximately 50 threatened or endangered species can be found in the IRL region, including 12 plants and 36 animals.

Indian River Lagoon — Threats to the System

- The most serious threats to the health of the IRL include reduced water quality due to manmade hydrologic changes, non-point source pollution, loss and fragmentation of habitats, overuse/overharvest of resources, and the threat of invasive exotic species.
- For many decades, human activity has greatly increased the amount of freshwater that drains to the IRL. A network of agricultural and drainage canals has been created that discharges large volumes of freshwater, such that the lagoon currently receives two-and-a-half times more freshwater than the system was naturally required to handle. The natural volume and timing freshwater inputs to the lagoon have been greatly altered and the health of the estuary has been measurably impacted.
- Unlike pollution coming from a factory or water treatment facility, non-point source pollution cannot be traced back to a single point of origin. It includes the dilute discharges of contaminant-laden water from residential and agricultural sources, nutrient inputs from septic drainage fields, and pollutants carried to the lagoon as stormwater runoff.
- Stormwater runoff problems are compounded in urbanized areas. In undeveloped portions of the watershed, rainfall percolates down into porous soil and nutrients and other contaminants are mechanically and biologically filtered out before stormwater reaches the lagoon. As more and more land is devegetated and paved over, this important natural process is lost.
- There are several sources of direct habitat loss within the Lagoon. Development of the IRL shoreline has sometimes necessitated the removal of mangrove stands, salt marsh vegetation, or seagrass meadows. Various state permitting processes aim to minimize such habitat loss.
- Less apparent forms of direct habitat loss also impact the IRL. Since the mid-1950's, more than 40,000 acres of highly productive salt marsh and mangrove marsh has been converted into mosquito impoundments designed to thwart the reproductive cycle of salt marsh mosquitoes. Both the productivity and the nursery habitat value of impounded marshes are lost to the rest of the Lagoon.
- Small-scale direct habitat loss also occurs in the IRL and the cumulative impact of such damage is significant. One example is prop scarring of slow-growing seagrass beds by motorized watercraft. Increased utilization of the lagoon by recreational users exposes sensitive, vital habitats to accidental damage.
- Invasive exotic species occur in all portions of the IRL watershed, from upland habitats to wetlands to aquatic habitats within the lagoon to adjacent coastal habitats. Exotics compete with and often crowd out native species, greatly reducing ecosystem biodiversity and function. Exotic species usually have few natural controls to help keep their numbers in check.