

IUCN Releases First Comprehensive Assessment of Extinction Risk for Caribbean Freshwater Fishes

Nearly Half of Caribbean Freshwater Fishes Are Threatened with Extinction. More Effective Conservation Initiatives Could Prevent Their Extinction

The shallow streams, swamps, crystal-clear springs, and cascading waterfalls of the Caribbean islands are home to 79 species of obligate freshwater fishes that occur nowhere else outside of the region. A recent assessment revealed that 41% are threatened with extinction.

The assessment is the first of its kind to survey all freshwater fishes in the Caribbean and comes only a few months after a global report found that one-third of freshwater fishes worldwide are threatened with extinction. Fifty-four of the Caribbean's species of freshwater fishes are endemic to the two largest islands, Cuba and Hispaniola, with fewer endemics scattered across some of the region's smaller islands.

While these findings are alarming, they provide a basis for conservationists - including local communities - to formulate plans to protect and restore freshwater fishes and their habitats.

"Freshwater fishes are one of the most threatened groups of vertebrates on the planet," said Tim Lyons, Species Survival Officer at the ABQ BioPark and project coordinator for the assessment. "When you think of the Caribbean, the first thing that comes to mind are visions of beaches and coral reefs, but freshwater fishes are just as important. We depend on them and the watersheds they live in for everything from food to energy". Researchers from the ABQ BioPark Center for Species Survival in collaboration with regional experts, the IUCN Species Survival Commission's Freshwater Fish Specialist Group, and the IUCN Global Species Programme's Freshwater Biodiversity Unit contributed to the study.

"This new assessment sheds light on the critical need for directing more resources to conserving the unique freshwater fishes of the Caribbean, given they face a risk of extinction higher than the global average and include many species found nowhere else on Earth", said Harmony Patricio, Conservation Programme Manager for Shoal.

The assessment determined that one area of concern is Lake Miragoane, a coastal freshwater lake on the Tiburon Peninsula of southwestern Haiti. It is a hotspot for freshwater fishes with 10 Critically Endangered species in the genus *Limia* that live nowhere else in the world. To increase their chances of survival, Lake Miragoane needs to be better protected from pollution and the destruction of forests surrounding it.

Invasive alien species are also a threat to the Caribbean's freshwater fishes. The African Walking Catfish (*Clarias gariepinus*) is now common in Cuba's freshwaters, and its arrival has resulted in steep population declines for the Cuban Gar (*Atractosteus tristoechus*), a giant fish whose lineage dates back to the late Jurassic. The Critically Endangered Cuban Gar is an apex predator in Zapata Swamp, the largest wetland in the Caribbean. It can grow up to two meters long and helps to keep other native fish populations in check.

"The primary threats to freshwaters in the Caribbean are consistent with the threats that are driving extinction in other parts of the world, and the extinction risk that these species face is a clear indicator of an ecosystem in distress," said Tim. "The IUCN has declared 80 species of freshwater fishes Extinct,

with hundreds more likely to have gone extinct before their formal description or assessment on the IUCN Red List. We must act now to prevent unique Caribbean species from joining them.”

“These assessments are a critical step towards the conservation of freshwater fishes in the Caribbean, said Yolanda León, President of Grupo Jaragua, which is based in the Dominican Republic and works on the conservation of biodiversity on the island of Hispaniola. Grupo Jaragua led the submission under approval of all Caribbean members of IUCN Resolution on [Halting biodiversity loss in the insular Caribbean](#), which was approved in 2020 by over 550 member organisations of IUCN. The Resolution recognizes that the insular Caribbean is considered among the five most important biodiversity hotspots, and requests states, as well as regional and international organisations responsible for environmental and economic sustainability issues, to strengthen actions to halt biodiversity loss in the insular Caribbean. “The results of these Red List assessments will help identify freshwater conservation priorities that can address the objectives of that IUCN Resolution” said Yolanda León.

Through species-specific conservation planning and action, conservation practitioners have an opportunity to ensure that these unique animals and the habitats that they rely on are conserved in perpetuity. A few examples include invasive species removal and captive breeding programs, community-based initiatives like education and outreach, and better management and protection of rivers, lakes, wetlands and their catchments.

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Photo 1:



Caption 1: A juvenile Cuban Gar (known locally as Manjuari). This species is assessed as Critically Endangered due to declining populations associated with the introduction of invasive species. Photo by Erik Garcia-Machado.

Photo 2:



Caption 2: Poza Azul in Cayuco, Guanahacabibes, Cuba. This freshwater karst sinkhole is home to two species of troglobitic cavefishes in the genus *Lucifuga*. Photo by Erik Garcia-Machado.

Photo 3:



Caption 3: A Jumbie Teta (*Ancistrus trinitatis*) feeds on periphyton growing along a shallow streambed in Trinidad. This species was assessed as Near Threatened due to its limited range and continuing habitat decline associated with industrialization. Photo by Amy Deacon.

Additional Quotes

Jose Ponce de Leon

“Beyond the species known so far, the insular Caribbean holds an incredibly valuable diversity of freshwater fishes still to be discovered, described and understood. This IUCN report shows the overwhelming need of protecting Caribbean freshwater habitats and educating ourselves and others about their values and threats. This project is an important step in identifying conservation priorities in the Caribbean and highlights the value of collaborative research and inclusive strategic alliances for conservation biology.”

Prosanta Chakrabarty

“Despite its proximity to the U.S., many Americans don't know much about the hidden beauty of the freshwaters of the islands of the Caribbean and certainly fewer know about the startling diversity of freshwater fishes in the region. These fish can provide insights into the complicated and ancient

geological history of North, South and Central America, and most of these species are found nowhere else. Despite their importance, the ichthyofauna of the Caribbean is remarkably understudied. This IUCN report is a call to action for us to help build the international scientific infrastructure needed to save these remarkable species. Having traveled to several of these islands in the past, I can see that we are at an inflection point where we still have an opportunity to save these species if we act now. These IUCN findings could not be more timely."



Shoal is a global collaborative initiative to halt the extinction and recover populations of the most threatened freshwater species in the wild. Freshwater species are going extinct faster than their marine or terrestrial cousins, and almost one in three of those alive today could soon disappear, never to return. There is an urgent need for determined action, and Shoal is building a strong community of partners that will work together to give critical attention, escalate support, and accelerate and intensify the action that is required to stem the tide of extinction and recover endangered species populations throughout the Earth's freshwaters. Join The Shoal at shoalconservation.org, and follow them on [Twitter](#), [Facebook](#) and [LinkedIn](#).



Located along the Rio Grande River near downtown Albuquerque, New Mexico, ABQ BioPark consists of: The ABQ BioPark Zoo, Botanic Garden, Aquarium and Tingley Beach. Welcoming more than 1.3 million visitors per year, we are the top tourist destination in the state of New Mexico and a critical resource for education and conservation in the Southwest US. Through captive breeding programs, large-scale freshwater fish rearing and reintroduction, habitat restoration initiatives, and seed banking, ABQ BioPark is committed to building sustainable conservation initiatives that benefit New Mexico and the world. ABQ BioPark supports conservation measures within the Assess, Plan, Act model by contributing directly to research, providing technical and logistical support for the IUCN SSC, and engaging in direct conservation action. The New Mexico BioPark Society (NMBPS), the nonprofit support organization for the ABQ BioPark, funds the Red List partnership in its entirety and employs three species survival

officers at the BioPark. To learn more about the ABQ BioPark, visit their [website](#), or follow them on [Twitter](#), [Facebook](#), or [Instagram](#). For more information on NMBPS, visit www.bioparksociety.org.



The Freshwater Fish Specialist Group (FFSG) of IUCN's Species Survival Commission is a diverse group of over 160 experts, spread across the world, with a solid record in ichthyology (the study of fish) and the conservation of freshwater fishes.

The mission of the FFSG is to achieve conservation and sustainable use of freshwater fishes and their habitats through:

- generating and disseminating sound scientific knowledge;
- creating widespread awareness of their values, and
- influencing decision-making processes at all levels.

The activities of the FFSG include strategy and policy development, provision of technical information and advice, training and education, IUCN Red Listing and biodiversity assessments.