



Fish Conservation



SEA LIFE is working with partners across the world to learn more about the many different species of fish we have in our aquariums; taking part in pioneering projects to help them in the wild; promoting sustainable seafood choices to our visitors; and providing homes for pet fish that have outgrown their home aquaria.

We're contributing to research to better understand how threatened species of fish breed and how we can rear them to adulthood.

Increasingly, these breeding projects are forming part of pioneering projects to reintroduce threatened fish species to local habitats where populations have declined.

Sustainable Seafood – SEA LIFE global

- Fish populations around the world are heavily fished and many fisheries have suffered significant declines.
- Consumers have a key role to play in helping protect fish that are vulnerable to overfishing, by voting with their forks and avoiding unsustainable seafood.
- SEA LIFE works with conservation organisations around the world to promote sustainable seafood guides including the Monterey Bay Seafood Watch Guide in the USA; Marine Conservation Society Good Fish Guide in the UK and Australia; WWF in Germany; and Forest and Bird Best Fish Guide in New Zealand.
- Since 2015 over 750,000 SEA LIFE visitors have taken a sustainable seafood guide home from their visit.

Lake Sturgeon, Michigan - SEA LIFE Michigan, USA

- Lake sturgeon (*Acipenser fulvescens*) are classified as 'threatened' due to habitat destruction and their slow reproductive and life cycles (females take 20 years to reach maturity and only lay eggs every 3-5 years).
- They're an important part of the lake ecosystem as they eat invasive species like zebra mussels.



- SEA LIFE Michigan is working with the Michigan Department of Natural Resources and a number of other conservation organizations to help repopulate local habitats with healthy lake sturgeon.
- SEA LIFE Michigan takes in juvenile lake sturgeon and rears them to an age at which they have the skills to survive in the wild including hiding and foraging. After one year, the sturgeons are released back into local lakes where they'll continue to live out their lives – perhaps for as long as 100 years!

Rising Tide Conservation - SEA LIFE Michigan, USA

- SEA LIFE Michigan is involved in a groundbreaking project 'Rising Tide Conservation' dedicated to developing and promoting aquaculture of marine ornamental fish species through the collaborative efforts of researchers, public aquaria, hobbyists, pet industry professionals, and conservation groups.
- Rising Tide Conservation has supported the successful aquaculture of nearly 30 species of marine ornamental fish.
- SEA LIFE Michigan is working with Rising Tide and the University of Florida by holding adult brood stock for the project and sending eggs to the Florida's aquaculture lab.
- The SEA LIFE team has also bred large numbers of their own reef fish in-house including Porkfish (*Anisotremus virginicus*) and French Grunts (*Haemulon flavolineatum*).

Spotted handfish - Australia

- In 1996, the Spotted handfish (*Brachionichthys hirsutus*) was the first marine fish to be listed as Critically Endangered by the IUCN.
- Handfish, closely related to the deep-sea angler fish, once populated the world but are now only found in south-east Australia, with most species restricted to Tasmania.
- Most fish have a swim bladder which allows them to float but these guys don't have that. Instead of swimming they walk around on the bottom of the sea. They can swim, but about as well as a chicken can fly!
- Their restricted mobility makes them particularly susceptible to introduced predator species such as the North Pacific Seastar and their limited ability to disperse means that if their habitat is damaged by pollution, siltation, boat moorings and coastal development, they cannot relocate to other areas.
- But one of the world's rarest fish could have a new lease of life thanks to a joint breeding programme at SEA LIFE Melbourne aquariums and Seahorse World, Tasmania assisted by the governments and CSIRO is aiming to boost that number.
- In 2017, an "ambassador" population of adult spotted handfish and eggs was collected from the River Derwent and brought into captivity.
- The next goal is to get the fish reproducing in captivity so they can then be released in the wild.

SustaiNable Aquarium project (SNAP) - UK

- In the UK, SEA LIFE aquariums are working together with the Zoological Society of London, The Deep, and Bangor University's School of Ocean Sciences on a landmark research



programme to improve aquarium breeding success - the SustainNable Aquarium Project (SNAP).

- The breeding of aquatic animals is an incredibly complex science and determining the correct diet and environment to enable larval fish to develop into adults is particularly challenging.
- As the world's aquatic species face increasing threats due to climate change, overfishing, pollution and the illegal wildlife trade, research is vital to increase knowledge and breeding capabilities – and as this research is difficult in the wild, aquariums and the expertise of their teams provide an invaluable research platform.
- Coral reefs require specific tropical fish in order to thrive, including species of butterflyfish, rabbitfish, wrasse and tangs. An initial 20 species - key to the health of coral reefs but which have not yet been successfully bred in aquariums - are the focus of the project.
- SNAP is part-funded by the European Regional Development Fund through the Welsh Government's SMART Expertise programme.

Big Fish Campaign - UK

- SEA LIFE aquariums across the UK support The Big Fish Campaign - educating our visitors about how big and how quickly some fish species grow, making them unsuitable for home aquaria.
- Every year, zoos and aquariums across the country are inundated with requests to rehome pets that have outgrown their tanks.
- SEA LIFE aquariums provide a home for hundreds of fish every year, but there's a limit to the size of even our tanks!
- The Big Fish Campaign aims to share information and promote responsible buying and selling of the larger species of fish, including gouramis, catfish and pacus.

Saving *Salmo carpio* – Gardaland, Italy

- *Salmo trutta carpio*, also known as the carpione (*carpione del Garda* or *Lake Garda carpione*) is a salmonid fish endemic to Lake Garda in Italy.
- The population in Lake Garda has declined significantly, by 80% since 2006, and is considered Critically Endangered by IUCN. The main threats are overfishing, pollution and possibly competition from introduced species such as *Coregonus lavaretus* and other Salmonidae.
- Gardaland SEA LIFE is working with partners in the Italian regions of Veneto, Lombardia and Trentino Alto Adige to support the restoration of the population in Lake Garda.
- A new quarantine area is being built to breed the fish and a public exhibit will showcase the project and the importance of protecting the species.
- Once juvenile fish are ready to release SEA LIFE staff will assist in their release into Lake Garda.



Eurasian Minnows – SEA LIFE Berlin, Germany

- Since 2014 SEA LIFE Berlin have been working with their local fishery institute (Institut für Binnenfischerei Potsdam-Sacrow, IFB) to breed and release the Eurasian minnow, a native species that is locally endangered.
- In 2016 the project released 600 captive bred minnows.
- They are also raising funds for habitat restoration initiatives including the creation of 200 m² of gravel beds in the River Dosse which is perfect for the species to spawn.
- These minnow populations are monitored by the IFB to measure the long-term effect of the project.

San Ignacio and Desert Pupfish – SEA LIFE Helsinki and SEA LIFE Arizona

- SEA LIFE Helsinki has joined efforts to conserve a critically endangered species of pupfish after receiving a group of San Ignacio pupfish (*Cyprinodon bobmilleri*).
- The pupfish are known to only exist in one tiny geothermal spring in the San Fernando river basin, in Nuevo Leon, Mexico. They are threatened with extinction and the threat is becoming steadily more real with the proposed development of a leisure centre in the area.
- SEA LIFE Helsinki now holds roughly half of all known captive specimens and has successfully bred the species to help maintain a viable Ark population in case the species becomes extinct in the wild. The Helsinki team are world experts in breeding this species; they now have third generation semi-adults.
- Helsinki also joins SEA LIFE Arizona in pupfish conservation with Arizona also holding an ARK population of Desert pupfish (*Cyprinodon macularis*) in partnership with the Arizona Game and Fish Department.

