Coral Red Pencilfish, *Nannostomus mortenthaleri* © Peter Maguire

CALL TO ACTION

Tiny fishes have swam under the radar, and not just because they compete for attention with larger, more familiar or more charismatic species. A two-centimetre fish can quite literally slip through the net, and as such, our conservation attention.

There are 295 fishes under 40 mm on SHOAL's Priority Fishes list. Of those:

- 94 are Critically Endangered
- 142 are Endangered
- 2 are Extinct in the Wild
- 57 are Vulnerable

Most of them do not have any conservation action in place.

To accompany our Tiny Fishes Report, SHOAL is calling for action for tiny fishes across the globe. If you're working on, or would like to work on a tiny fish, we would love to hear from you.

Fortunately, one of the tiny fishes featured in our report, the Critically Endangered Coral Red Pencilfish (*Nannostomus mortenthaleri*), is already the focus of a conservation project led by Amazon Research Center for Ornamental Fishes (ARCOF). This initiative integrates science-based conservation, national policy engagement, and community-driven livelihood solutions. However, the project urgently needs support. The details of the project can be found below.

Shoal

PROJECT SUMMARY

Saving the Coral Red Pencilfish (*Nannostomus mortenthaleri*) in Peru

The Amazon Research Center for Ornamental Fishes is seeking $50,000 to support the project summarised below.

PROJECT DESCRIPTION

This project seeks to prevent the extinction of the Critically Endangered Coral Red Pencilfish (*Nannostomus mortenthaleri*), a striking ornamental species found only in a highly restricted area of the Peruvian Amazon. Its future has become increasingly uncertain as illegal gold mining has rapidly expanded across the region. Since 2017, 989 mining sites have been documented in the Loreto Region alone. Widespread deforestation and the use of mercury to extract gold have severely degraded aquatic habitats, rendering large areas uninhabitable for sensitive species like the Coral Red Pencilfish.

Led by the Amazon Research Center for Ornamental Fishes (ARCOF), this initiative integrates science-based conservation, national policy engagement, and community-driven livelihood solutions. The project will generate critical data on population size and distribution through field surveys and environmental DNA (eDNA) analysis, support efforts to secure legal protection for the species at the national level and work directly with local fishers in Alvarenga to eliminate harvesting pressure. By establishing sustainable ornamental fish aquaculture using a non-threatened alternative species, the project provides a viable economic pathway that protects biodiversity while supporting local communities.

RATIONALE

Although the Coral Red Pencilfish was listed as Critically Endangered by the IUCN in 2016, little conservation action has followed. The species remains heavily harvested for the international aquarium trade and is currently known from an estimated range of only ~100 km² in the upper Río Nanay basin near Alvarenga, Peru. Critically, there is still no recent population or distribution data to support enforcement or policy action, allowing exports to continue unchecked. At the same time, local fishing communities depend on this species for income. Without urgent intervention that addresses both population decline and livelihoods, the Coral Red Pencilfish faces extinction in the wild.

Coral Red Pencilfish, *Nannostomus mortenthaleri* © Peter Maguire

AMAZON RESEARCH CENTER
FOR ORNAMENTAL FISHES

OBJECTIVES

1. Secure national legal protection for the Coral Red Pencilfish by providing the Peruvian Ministry of Production and relevant committees with up-to-date, actionable population and range data.
2. Assess population status and distribution through rigorous field surveys conducted during both wet and dry seasons, integrating relative abundance sampling, GPS mapping, and eDNA techniques.
3. Stop wild harvesting of the Coral Red Pencilfish by providing local fishers with the skills, knowledge, and infrastructure to transition to ornamental fish aquaculture using a non-endangered, high-value alternative species (*Apistogramma pantalone*).
4. Build long-term local capacity through hands-on training, a "train-the-trainer" approach, and sustained engagement with fisher associations.

POTENTIAL OUTCOMES AND IMPACT

- Formal initiation of a national process to list the Coral Red Pencilfish as a protected species in Peru, restricting harvest and export.
- The first comprehensive evidence-based dataset on the species' population size, distribution, and habitat use, supporting IUCN assessments and national policy.
- A transition away from harvesting the Coral Red Pencilfish by participating fishers, reducing extinction risk at its source.
- Improved and more stable livelihoods for fishing families through year-round aquaculture income, decreasing dependence on seasonal and extractive practices.
- A scalable conservation model demonstrating how threatened ornamental fish can be protected by aligning policy, science, and community-based solutions—applicable to other species and regions globally.

KEY PARTNERS

- **Amazon Research Center for Ornamental Fishes (ARCOF)** – Lead implementing organisation
- Local fisher communities and **Alvarenga Fishers Association** – Primary stakeholders and beneficiaries
- **Peruvian Ministry of Production (Fisheries) & Regional Directorate (DIREPRO)** – Policy and regulatory engagement
- **Universidad Nacional de la Amazonía Peruana (UNAP)** – Academic collaboration and student involvement

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AMAZON RESEARCH CENTER FOR ORNAMENTAL FISHES

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