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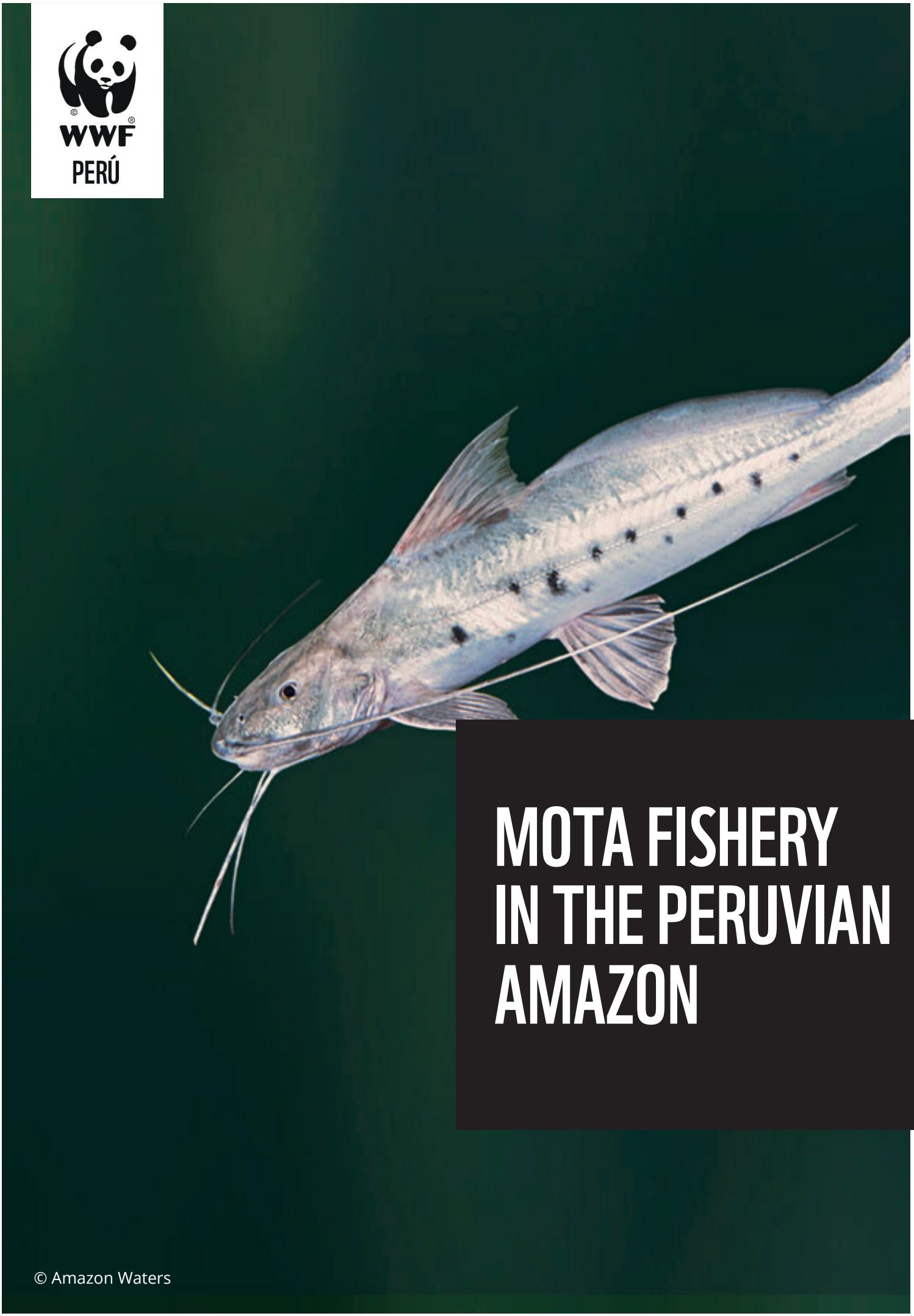
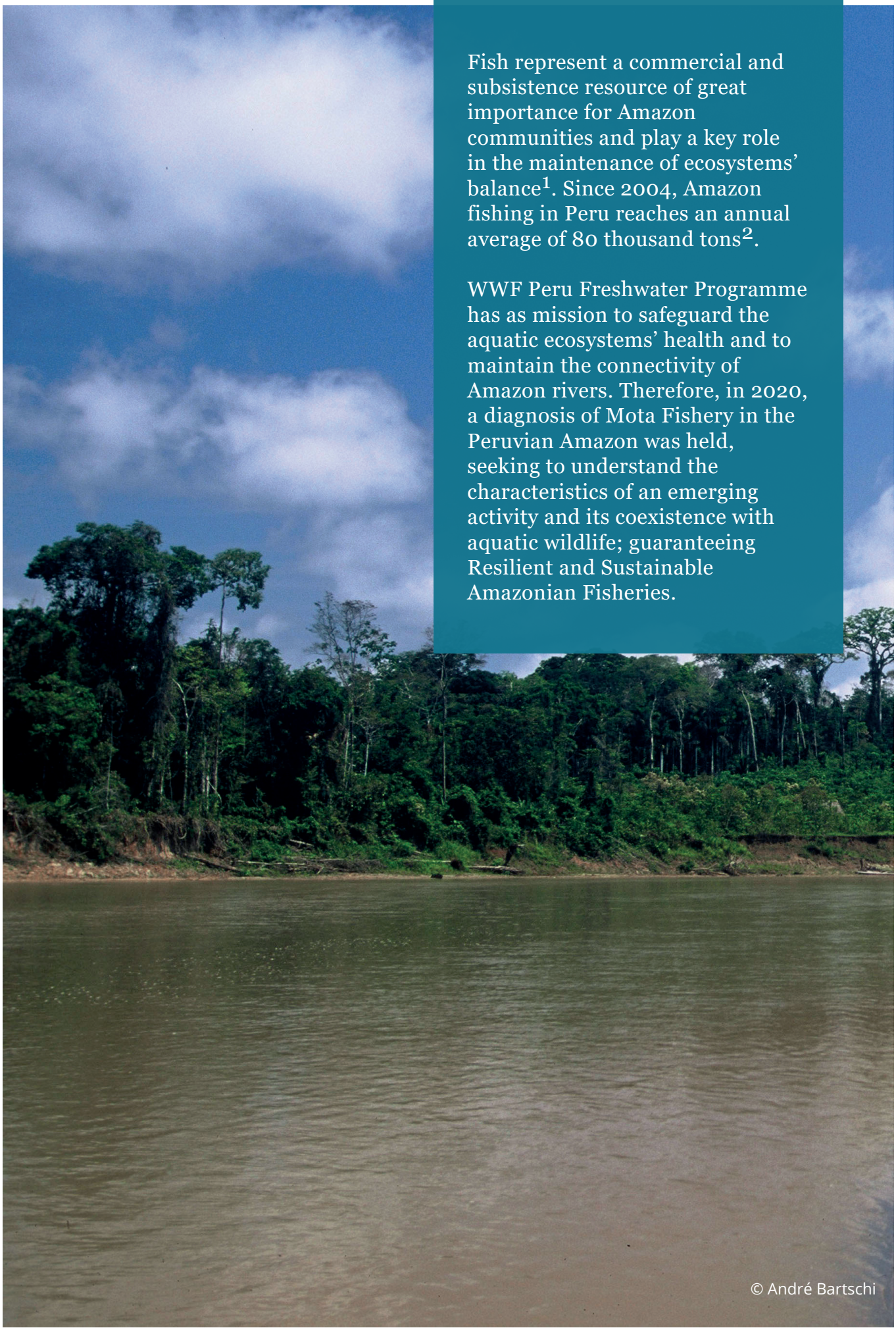


MOTA FISHERY IN THE PERUVIAN AMAZON



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Fish represent a commercial and subsistence resource of great importance for Amazon communities and play a key role in the maintenance of ecosystems' balance[1]. Since 2004, Amazon fishing in Peru reaches an annual average of 80 thousand tons[2].

WWF Peru Freshwater Programme has as mission to safeguard the aquatic ecosystems' health and to maintain the connectivity of Amazon rivers. Therefore, in 2020, a diagnosis of Mota Fishery in the Peruvian Amazon was held, seeking to understand the characteristics of an emerging activity and its coexistence with aquatic wildlife; guaranteeing Resilient and Sustainable Amazonian Fisheries.

Current situation of Mota fishery

The “mota” (*Calophysus macropterus*) is mainly distributed in the Amazon and the Orinoco basins, covering parts of Bolivia, Brazil, Peru, Colombia and Venezuela[3].

In Peru, it is found in Loreto, Ucayali and Madre de Dios regions. Mainly in Amazon rivers, Puinahua, Ucayali, Marañón, Napo, Tigre, Putumayo, Pachitea, Purús, Callería, Tahuamanu, Manu, and the Imiria lake.

In recent years changes in the composition of the catches have been observed, probably as a consequence of the decrease in presence of larger species such as paiche or gamitana[4] that are being replaced by species with higher yields and lower prices such as mota[5].

This species has gained popularity in Amazonian markets due to the quality of its meat, the lack of intramuscular spines and the high yield in its fillets[6], leading to intense fishing pressure in recent years.

The fish landing of mota in 2020 was 613.36 MT for the rising season, and 503.2 MT for the emptying season[7].

In the peruvian Amazon, mota fishery is mainly distributed in the regions of Loreto, Ucayali y Madre de Dios.

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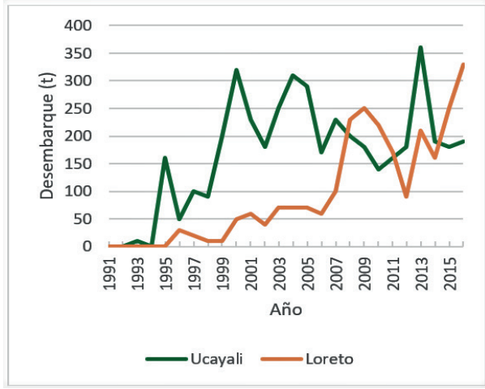
Graphic 1. Evolution of mota’s fishing landing in the peruvian Amazon[8]



Source: Adapted from García-Dávila, C. et al., 2018

Data is increasingly understood both on the impacts that mota fishing generates on aquatic ecosystems, as well as their socioeconomic dynamics.

In this scenario, key actors take part, such as fishermen with their artisanal capture methods; collectors, who trade in the communities with local buyers; wholesalers, who supply other regions, and financiers, who inject capital into the activity.

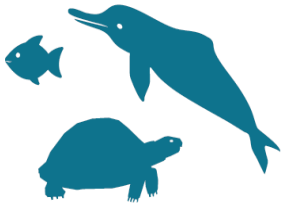
The most common fishing gear used in this activity is direct fishing by hand. This technique does not require a large investment from fishermen and their tasks usually last about a week.

Additionally, other techniques that are also used are trawl nets and, less frequently, slinger nets.

Main concerns and challenges

Public health and environmental risks

It is known that mota fish is attracted to decomposed meat and animal fat. In this sense, a significant number of mota fishermen use bait made up of pig remains, poultry, commercial fish and domestic animal's (dogs) remnants. This involves risks to public health, air and water bodies pollution.



There is still the challenge of implementing specific legal measures on this species regarding fishing areas, minimun catch sizes, minimun mesh length of fishing nets, etc.

Cases of wildlife use

Sacrificing wildlife is considered illegal due to degradation of the Amazon trophic food networks. Until 2010, the use of river dolphins, alligators, ronsocos and manatees[9], vulnerable species and even close to extinction[10], were frequently used as bait for the capture of Mota, reaching around 1000 dolphins to get sacrificed each year, 140 tons annually on average[11].

During 2020, an abandonment of this practice was observed, although isolated areas, with less supervision and greater access to wildlife areas, should be analyzed in more depth. Among the main reasons identified for this change is the positive effect that alternative baits has on the capture[12].

Poor conditions in the mota fishery

There is still the challenge of implementing specific legal measures on this species regarding fishing areas, minimum catch sizes, minimum mesh length of fishing nets, etc. However, there is a major limitation and it is the lack of updating of the Management Regulation for Amazon Fisheries (ROPA), which should include the mechanisms for the sustainable management of resources.

On the other hand, despite the constant implementation of human, economic, logistical and operational resources in the Regional Production Directorates (DIREPRO) to attend this activity, there are still opportunities for improvement.

In addition, there are fishing infrastructure gaps, which means that public health standards in the commerce of Mota is also an aspect that must be worked on.

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Can we achieve an enhaced Mota fishery?

WWF Peru has identified that Mota fishery in some Amazon areas, under current conditions, has limitations that prevents it from being a sustainable activity. There is a need to develop the following actions:

1. Institutional and gubernamental

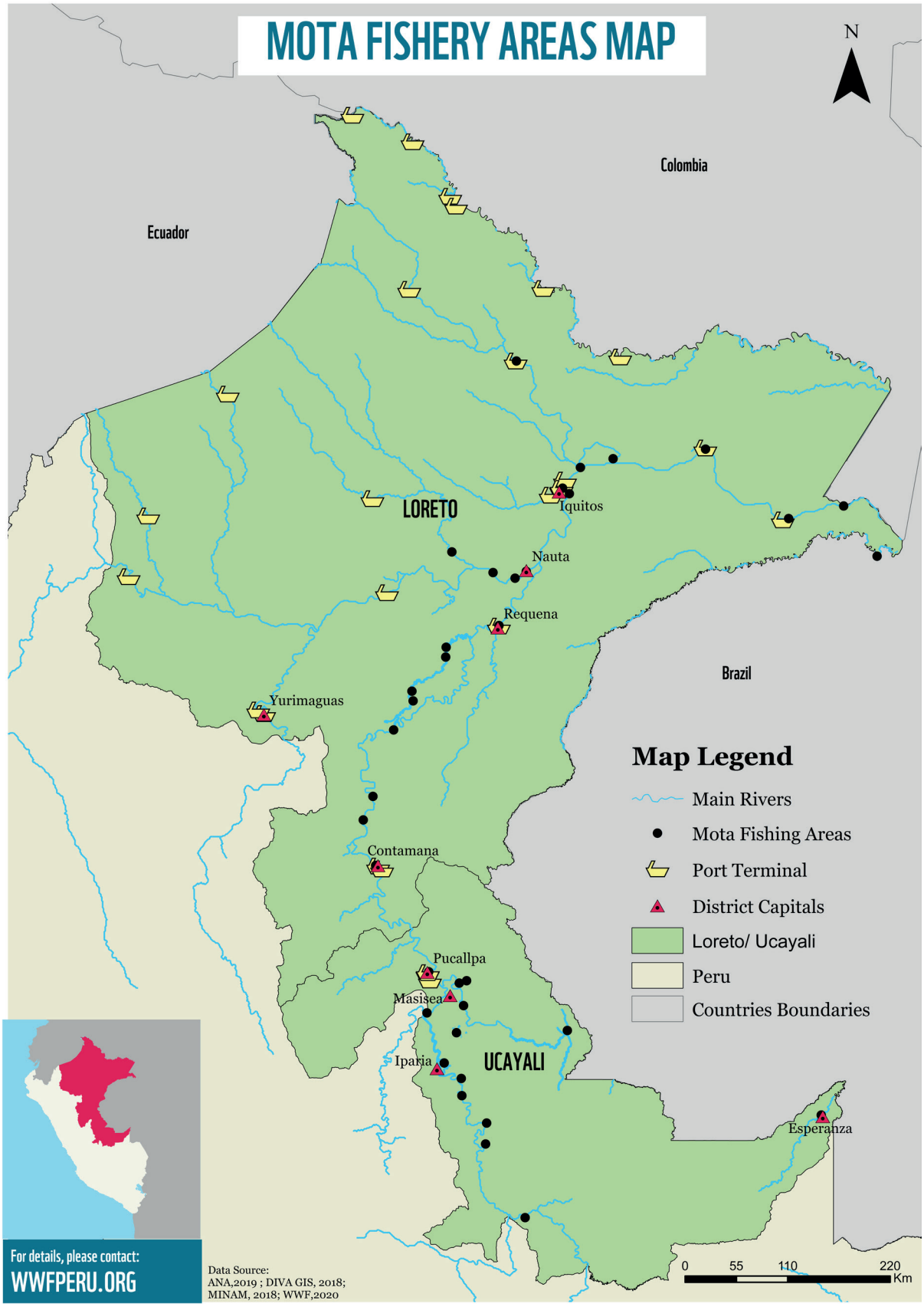
To promote articulation spaces between DIREPRO Loreto and Ucayali with PRODUCE for the implementation of monitoring actions in sectors with high threat to wildlife. To prioritize the implementation of fishing infrastructure for better monitoring and the creation of specific legal measures with an inter-ethnical approach.

2. Capacity building and research

Deepening the scientific study of key species and their importance in aquatic ecosystems, such as the case of dolphins; and strategically disseminate information to strengthen local knowledge. Likewise, Mota fishermen should be trained in biology and sustainable fishing technologies, and be able to evaluate their own interaction with dolphins.

3. Technological innovation

To implement technologies for dolphins bycatch prevention using acoustic and visual devices that keep them away from boats and fishing nets. The development of sustainable fishing gear may have great potential through a pilot project with the Social Organization of Artisanal Fishermen (OSPA) “José Olaya Balandra”, in the town of Caballococha, Loreto.



The WWF Freshwater Programme made a diagnosis about the Mota (*Calophysus macropterus*) fishery in 2020. The assessment was focused over the species distribution zones in the Peruvian Amazon.

References

[1] MINAM, 2018
[2] SPDA, 2018
[3] Salinas & Agudelo, 2000; Reis et al., 2003
[4] Paiche (Arapaima gigas) and gamitana (Colossoma macropomum)
[5] Tello & Bayley, 2001
[6] Kossowski, 1998; Niño, 2008
[7] It is considered only figures from Loreto and Ucayali, as in Madre de Dios there was a ban on the commerce of Mota according to the statement N° 004-2016-SANIPES/DSNPA. http://www.sanipes.gob.pe/documentos/5_COMUNICADO-N-004-2016-SANIPES-DSNPA.pdf
[8] Data from Madre de Dios is not shown due to lack of records from the DIREPRO
[9] River dolphins (Inia geoffrensis y Sotalia fluviatilis); Alligators (Melanosuchus niger, Caiman crocodilus y Paleosuchus spp); ronsocos (Hydrochaeris hydrochaeris); and manatees (trichesus inunguis)
[10] Da Silva, 2008; Thorbjarnarson, 2010; Velasco and Ayarzagüena, 2010 in Brum et al., 2015
[11] Gómez et al., 2008 en García et al., 2017
[12] Beltrão, H., Porto-Braga, T. y Shwartz-benzaken, Z. 2017. Alternative bait usage during the piracatinga (Calophysus macropterus) fishery in the Manacapuru region, located at the lower Solimões-Amazonas River, Amazon Basin, Brazil. Pan-American Journal of Aquatic Sciences (2017), 12(3): 194-205

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For more information, please contact:
Brenda Toledo Asenjo
Freshwater Programme Officer
Amazon Freshwater Coordinator
brenda.toledo@wwfperu.org