



Harvest and ranching of Yellow-spotted River Turtle in Peru

Introduction: Species, Use and Trade

The Yellow-spotted River Turtle *Podocnemis unifilis* (or “Taricaya”) is distributed widely throughout the Amazon basin, and found in Venezuela, Colombia, Ecuador, Brazil, Peru and Bolivia, as well as in the Orinoco basin. In Peru, it is reported throughout the Amazon: in Loreto around Iquitos, and in the Trapiche, the Putumayo and the Santiago River basins.

It is listed in CITES Appendix II and as Vulnerable in the IUCN Red List. It has declined across much of its range due to habitat loss and fragmentation and widespread uncontrolled harvest of eggs and adults for food.

In Peru, Taricaya is harvested through a pioneering sustainable use ranching programme aimed at promoting conservation of the wild population while also delivering social benefits and conservation incentives for local communities. The specific objectives of the programme are to contribute to the recovery and sustainability of Taricaya populations, establish participatory and communal monitoring and conservation systems, and strengthen community organizations through training and articulation.

Eggs are collected from the wild (this may be within or outside of protected areas) and incubated in artificial, protected beaches by local villagers. Some hatchlings will be released to the wild to help rebuild wild populations, while some are exported as pets (see Fig 1), mainly to Hong Kong and mainland China. The first harvest of eggs was made in 2006, after twelve years of nest management through ranching with no local benefits. In 2017, almost 700,000 turtles were exported, with the communities being the main beneficiaries of this trade.

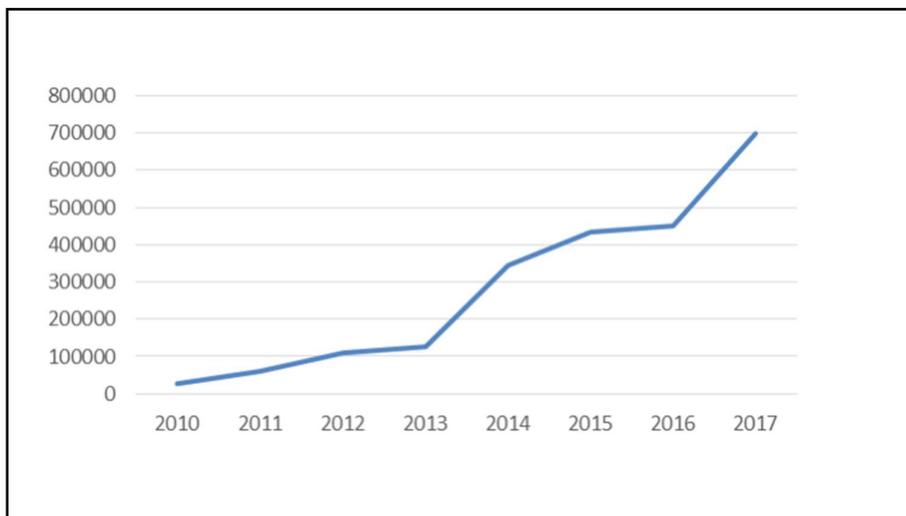


Fig 1. Exports of Yellow-spotted River Turtles from community management areas, 2010-2017

The communities that participate in the activity belong to different indigenous and peasant communities that live within the range of the species. Their main livelihoods are fishing, gathering, agriculture, hunting and selling handicrafts. According to government records, more than 1,000 families benefit from this programme, taking into account communities that are managing the resource both inside and outside protected areas.

The activities of egg harvesting, re-nesting and turtle care fall mainly on the women of the communities, who play a key role in the management of the species and the success of the ranching programme. The indigenous communities have always depended on the harvest, consumption and sale of turtle eggs as a source of protein and income, and their traditional knowledge about the seasons of laying, reproductive behavior and distribution of the nesting beaches is critical to successful implementation of the programme and to carry out monitoring.

Livelihood Benefits

A key benefit for the communities involved is cash income. The communities gain 31% of the export value of the turtles, the rest going to the exporting companies. In 2017, this amounted to USD 741,738 flowing to indigenous and peasant communities. Adjusting for purchasing power parity, this equates to Int\$ 1,176,396¹. This is an extremely important source of cash income at the local level. For the Amazonian indigenous communities in particular, who live in remote areas and follow a largely subsistence lifestyle, there are typically no other sources of cash income. Without this trade, many of would have no cash income, necessary to meet needs such as healthcare and education. Local communities have not only benefited from Taricaya exports but, in some cases, have been able to develop small-scale tourism attractions, especially to groups formed by school students who participate in the release of turtles.

The Amazonian indigenous communities have also gained technical assistance to strengthen the management and sustainable management of the Taricaya, building their management capacities.

The formation of organized groups in the communities for management of the harvest and rearing of Taricaya supports empowerment of the communities, and their ability to play an active and officially recognised role in conservation. The indigenous Amazonian communities have a great cultural background and knowledge of the natural dynamics of the Amazonian ecosystem and the species that are part of their subsistence. The experience and knowledge of the communities has allowed insights into the lifecycle of the species, its behavior and its relationship with other species, thus facilitating its management.

Finally, as part of the communities' monitoring and care of the beaches, the security threat posed by intrusions by poachers and traffickers has been reduced.

Livelihood benefits gained by these communities could be improved through training opportunities in the commercialization process and in meeting the documentation requirements of CITES. This way the community management groups could establish direct contact with the buyers rather than having to go via intermediaries, thus increasing the proportion of the value of the exports that is retained at the local level.

¹ Using purchasing power parity conversion factor of 1.586 for Peru
<https://data.worldbank.org/indicator/PA.NUS.PPP?view=map>

Conservation Impacts

The ranching programme has driven progressive increases in the yellow-spotted Amazon river turtle population, as indicated by nest counts. In one of the managed basins, Reserva Pacaya Samiria, for example, there were five times as many nests in 2017 as in the first year of monitoring (2012) (from 13,947 in 2012 to 68,979 in 2017; see Fig 2).

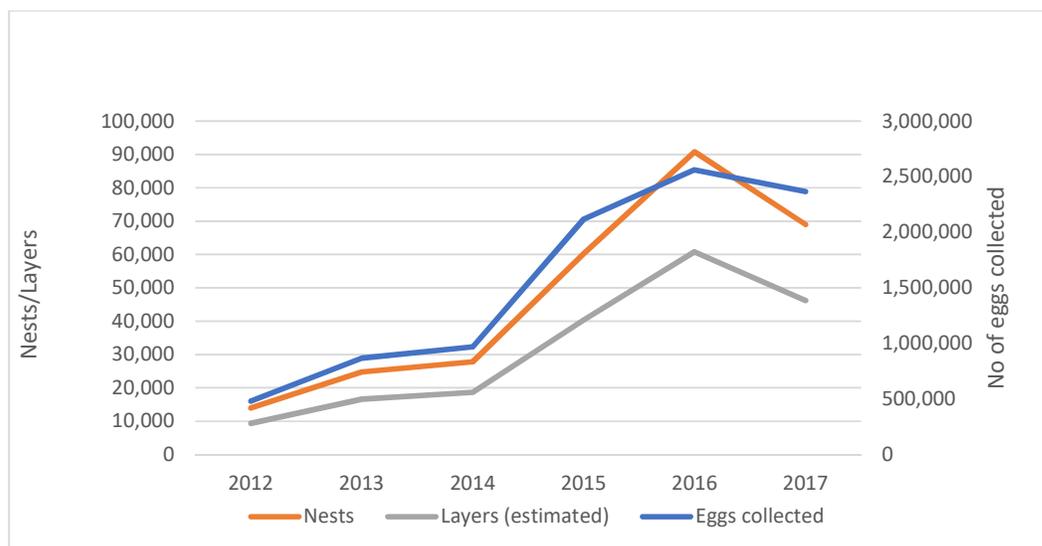


Fig 2: Number of nests, laying turtles and eggs collected in Pacaya Samiria Reserve, Peru, 2012-2017

The ranching programme has reduced poaching and illegal trade, due to the management groups formed by the communities and their surveillance and monitoring of the nesting beaches. This surveillance and monitoring not only supports the conservation not only of Taricaya, but also other species subject to illegal harvest and trafficking.

Another conservation benefit of the programme is improved availability of data for management. The programme has made data available on annual nest counts, nesting females on the beaches, releases to the wild, and exports, benefiting conservation management. Further monitoring methods are being developed with the participation of the communities, such as sightings of females sunning themselves in the rivers.

The livelihood benefits of the programme have been fundamental in gaining the support and engagement of the communities in conservation activities, including monitoring and protection of the nesting beaches.

Lessons for CITES Implementation: Challenges, Successes and Failures

Key factors that have made this harvesting programme a success include:

- Strong community governance: communities have managed to establish organizations that allow them to conserve and protect their resources;

- Government support and capacity development: the National Forest and Wildlife Service has developed the programme and supported training for indigenous communities in the management of their resources;
- Prevention of over-exploitation: through making of Non-Detriment Findings to ensure that the management of the species is sustainable in favor of the species and the communities that depend on it.

A key learning from the programme is the importance of building trust between the communities, the authorities, and researchers. This is helped by carrying out evaluations and having indicators that enable transparency around community involvement: this encourages the participation of other communities. The traditional knowledge used in management, based on traditional use of Taricaya for subsistence, should be valued and integrated into management and decision-making in future projects. Further, it is important to support empowerment of communities to not only manage the species at field level, but be able to participate in the entire trade chain for the resource.

To encourage the participation of communities in management programs involving CITES species, effort should be made under the Convention to incorporate mechanisms that reinforce a positive perception of CITES regulations. Currently, communities often consider it unduly restrictive and as rather a hindrance than a benefit.

A key challenge for this project is ensuring long term economic viability of the trade, given the dynamics of market demand and supply, as this viability underpins the whole conservation programme. There is also the risk of increased production saturating the market, with the consequent decrease in price, which could discourage the participation of communities.

Finally, the widespread shift in pet markets toward favouring captive-bred sources of pets would undermine the conservation of wild Taricaya in Peru and the livelihoods of indigenous and peasant communities involved in managing and conserving it.

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