



# Conservation, crime and communities:

## The Hawaii Integrated Coastal Zone Management Project, Guatemala

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**Related project:** Community-based wildlife management as a tool to tackle illegal wildlife trade: [www.iied.org/community-based-wildlife-management-tool-tackle-illegal-wildlife-trade](http://www.iied.org/community-based-wildlife-management-tool-tackle-illegal-wildlife-trade)

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## At a glance

<b>COUNTRY</b>	Guatemala
<b>LOCATION</b>	Hawaii beach, Santa Rosa (Pacific Coast of Guatemala)
<b>SPECIES</b>	Olive ridley sea turtle ( <i>Lepidochelys olivacea</i> ) Leatherback sea turtle ( <i>Dermochelys coriacea</i> ) Green sea turtle ( <i>Chelonia mydas</i> )
<b>ILLEGAL WILDLIFE TRADE CONTEXT</b>	Illegal harvesting of olive ridley, leatherback and green turtle eggs
<b>TYPE OF POACHERS</b>	Mainly local although some outsiders
<b>TYPE OF COMMUNITY ENGAGEMENT IN TACKLING IWT</b>	Community rangers/eco-guards
<b>CONSERVATION INCENTIVE MECHANISM</b>	Sustainable harvesting of eggs

## The story so far

Widespread community engagement in a scheme based on the sustainable harvesting of sea turtle eggs in Guatemala has contributed to a conservation success story in spite of a lack of government resources and weak legislation.

Conservation of Sea Turtles in Guatemala is almost entirely dependent on an informal system of egg donation to a network of hatcheries. Eggs may only be taken from olive ridley turtle nests, and collectors must donate 20 per cent of their harvest to the hatcheries. Taking the eggs of all other species, and any adult turtles is banned.

In the context of high rates of poverty in coastal communities in Guatemala, turtle eggs are important for subsistence, and prized by locals as a supplement to their income and diets.

### Competition for nests is intense

During the season when the turtles come ashore to lay their eggs, competition for nests is intense and it is extremely rare that a nest escapes plunder. Turtle eggs are sold to local buyers who transport them to restaurants and egg stalls in the capital and other large towns.

As the ability to continue harvesting the eggs is important to them, local communities assist in enforcing the sea turtle egg donation system.

The country's sea turtle nesting beaches stretch for approximately 254 kilometres along the Pacific coast and for 50 km along the Caribbean. Although the first hatchery was set up in 1971 in Hawaii, turtle conservation projects did not begin until the 1980s. Since then, efforts to maintain turtle populations have focussed almost solely on the hatcheries.

In the absence of any centralised coordination and finance, the number of hatcheries has fluctuated over the years between 16 and 24. Most of them lack human, technical and logistical resources to incubate eggs effectively, and to collect data in a scientific way. Few make the most of the potential of hatcheries as an environmental educational facility.



Hatchling on the beach (ARCAS)

A variety of organisations are currently involved in hatchery sponsorship and management, including the navy, the Austrian High School, trade associations and NGOs.

The Wildlife Rescue and Conservation Association (ARCAS) is a conservation NGO which manages the country's most productive hatchery and has been running the collaborative Hawaii integrated coastal zone management project since 1993.

Under the project, egg collectors who donate are given a receipt which gives them the right to sell and transport the rest of the nest. Donated eggs are then buried in hatcheries and after a 45–55 day incubation period, the hatchlings are released into the sea.



Hawaii Hatchery (ARCAS)

## Demographic, environmental and institutional change

Turtle conservation in Guatemala has developed in the context of considerable demographic and environmental change. The human population has doubled from 7 million to 14 million since the 1980s, and tourism has taken over from fishing and farming as the biggest source of employment. Where most beaches were once sparsely populated, now they are likely to have holiday homes and hotels.

There has been institutional change too. The National Sea Turtle Strategy, launched in 2002 was renewed by ARCAS in 2013, with more emphasis on the regulation of the turtle egg trade. Guatemala has been a signatory of the InterAmerican Sea Turtle Convention since 2003. However, the country has not developed a management plan and proven the sustainability of current use in order to warrant an 'exemption' which allows egg collection and consumption.

These developments have highlighted the need for better data on the egg trade and turtle populations in general. ARCAS has taken a lead in research, carrying out crawl count surveys at nine sites along the Pacific coast and conducting socio-economic surveys to learn more about the importance of sea turtles in the local economy and culture.

The results show that nesting density for olive ridley is significantly higher in the south east than the south west, with the peak area at Hawaii. However, taking this relative density into account, alongside reliable crawl count data from Hawaii, means a considerable drop in the number of eggs laid on the Pacific coast, compared to previous estimates. The new comparative density data suggests an estimated 673,304 olive ridley eggs are laid each year, with a beach value of US\$ 148,007. Very little open ocean research is carried out.

Each year, ARCAS publishes a situational analysis which provides information that will help to better regulate egg donation and ensure that it is sustainable.



Leatherback eggs in the market (ARCAS)

## What works and why?

Getting local communities interested and involved in turtle conservation based on sustainable use has been generally easy, because it is in their interests.

Ironically, the lack of government resources and the informal system of egg donation has galvanised other organisations, like ARCAS, to take the initiative in conservation and research. In the absence of official direction, the private sector has been more willing to contribute more to conservation. In particular, the growth of tourism in some areas has further encouraged this.

As a result of collaboration between different non-government organisations and the private sector the number of turtle eggs rescued on a national level has risen dramatically from 60,000 in 2003 to almost 270,000 today. Most of this increase is thanks to hotels, NGOs and eco-tourists buying eggs for incubation. In 2013, 40 per cent of the eggs laid on the Pacific coast were rescued and incubated.

The number of olive ridley sea turtles nesting have doubled in the past ten years in the Hawaii area. This site is the focus of ARCAS's conservation efforts that include community outreach, education, egg rescue and research. The ARCAS volunteer programme is crucial for the project's sustainability.

## Challenges

- Lack of government resources and leadership has led some to lose confidence in the egg collection system, and made the harmonisation of data gathering difficult.

- More government facilitation of private sector participation could improve conservation efforts and help to ensure that best hatcheries management practices are used.
- More data is needed to give a better picture of turtle population status and trends in the country as a whole.
- While olive ridley sea turtle numbers are rising on Guatemala's beaches, the leatherback – a much less frequent visitor – is critically endangered.

## Lessons learnt

- Where government agencies are lacking in resources, they can still do more as facilitators; for example, working with tourism and community participation to promote and support conservation goals.
- Well managed, strong volunteer/intern/ecotourism programmes increase project sustainability.
- Relations with the tourist sector are important in meeting conservation goals.

### COULD THIS WORK ELSEWHERE?

The Hawaii model is the only one of its kind in Guatemala but similar models are already being used in Central America so it has proved itself to be replicable.