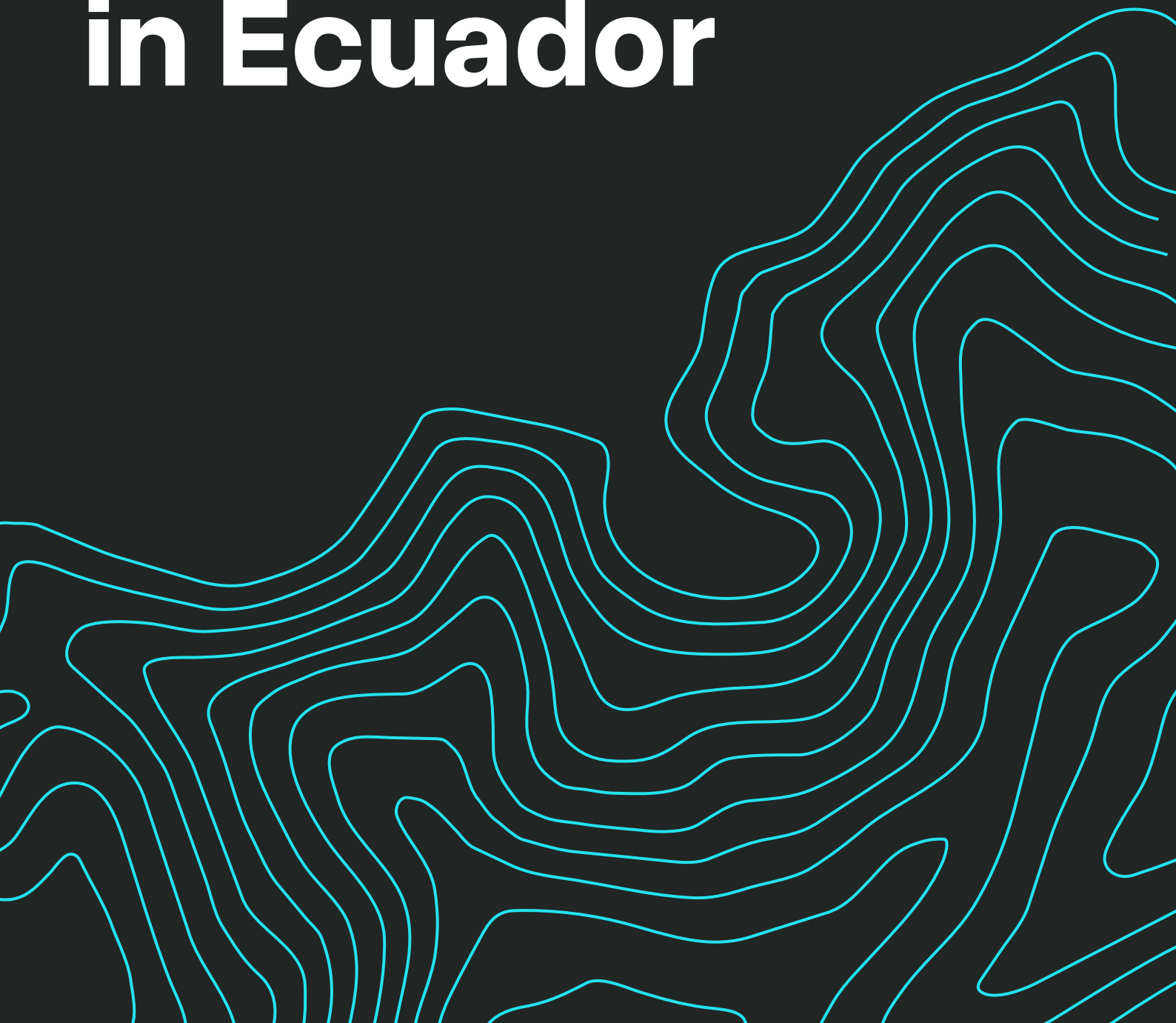
September 2026

MANGROVE BREAKTHROUGH

GLOBAL MANGROVE ALLIANCE

Mobilizing the Mangrove Breakthrough in Ecuador



Mobilizing the Mangrove Breakthrough in Ecuador

This country summary forms part of the Mobilizing the Mangrove Breakthrough in the Americas Regional Report. It highlights country-specific enabling conditions, policies, finance mechanisms, and opportunities for mangrove action in Ecuador.

For regional priorities, shared challenges, and the wider context of Mangrove Breakthrough goals, see the corresponding **Regional Report for the Americas.**

The reference list is available on **https://www.mangrovealliance.org/regional-reports**

Authors

Lead author: Miguel Cifuentes-Jara - URKO Earth Systems Additional authors: Claudia Medellín, Montserrat Albán - Conservation International

Editors

Mark Beeston - Conservation International;
Irene Kingma - Wetlands International

Design

Maps created and provided by Lammert Hilarides.
Report designed and produced by Lauren Bloom.

Partnerships

GLOBAL MANGROVE ALLIANCE
MANGROVE BREAKTHROUGH
CONSERVATION INTERNATIONAL
Wetlands INTERNATIONAL

With support from:
BEZOS EARTH FUND



Artisanal fishers working off the coast of Isla Santay
© Leslie von Pless

Table of Contents

1. Executive Summary 6
Significance of Ecuador's mangroves 6
Cultural, economic, and biodiversity value 7
Threats, vulnerabilities, and conservation 8

2. Potential for Achieving the Mangrove Breakthrough 10
Achieving the Mangrove Breakthrough goals in Ecuador 12

3. Mangrove Policy & Governance 18
Legal framework for mangrove conservation 19
Regional and national plans 20
National policies & international commitments 22

4. Ecosystem Services 26
Adaptation and resilience 26
Biodiversity 27
Mitigation benefits 28
Economic benefits 30

5. Finance 34
National finance mechanisms 34
Carbon Finance 35
Civil society working towards mangrove conservation 38

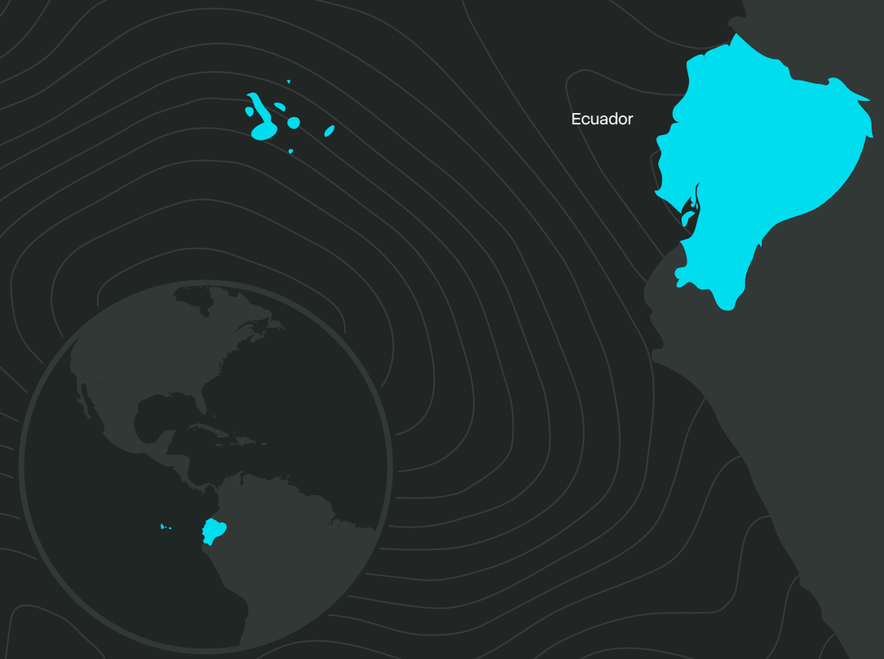
The **Mangrove Breakthrough** aims to catalyze both the ambition and necessary technical and financial support to:

Restore half
Restore mangroves to cover at least half of all recent loss

Double protection
Ensure long term protection is increased from 40% to 80% of remaining mangroves

Halt loss
Reduce net mangrove losses driven by direct human action to zero

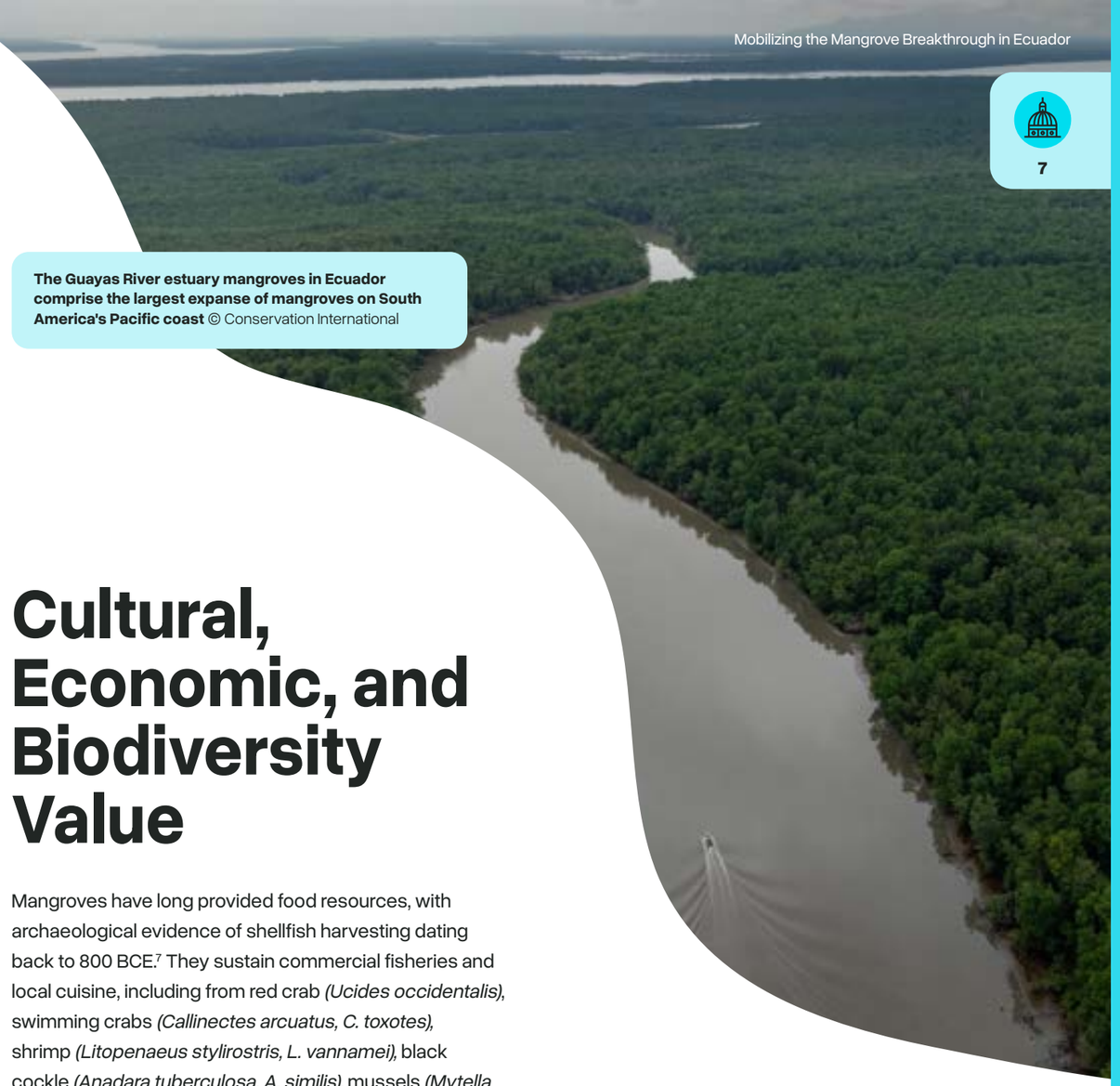
Sustainable financing
Ensure sustainable finance for existing mangrove extent



Key Messages

- Ecuador's approximately 155,000 ha of mangroves are globally significant. They host some of the tallest and most biodiverse mangrove forests in the Americas, including the exceptionally tall Chocó mangroves and the extensive Jama–Zapotillo systems. These ecosystems underpin coastal food security and sustain centuries-old fisheries for crab, shellfish, and finfish.
- Mangroves are critical natural infrastructure, protecting 3.4 million coastal residents and preventing an estimated US$250 million in annual flood losses.
- Ecuador has a broad set of enabling conditions to implement successful mangrove projects for conservation, adaptation and mitigation goals.
- The country has one of the strongest mangrove legal frameworks in the Americas, with mangroves protected under the Constitution, the Organic Environmental Code, and multiple decrees that restrict clearing, require restoration, and enable community stewardship.
- Community-based management through Custody and Sustainable Use of Mangrove Agreements (AUSCEMs) is Ecuador's backbone mangrove conservation strategy, currently covering 117,356 ha (close to 76% of Ecuador's mangroves) and reducing deforestation by 86% relative to unprotected areas.
- Socio Manglar is a mature, nationally embedded incentive program that channels public and donor finance into community-based mangrove conservation, restoration, and improved livelihoods for ancestral and traditional users.
- There is large-scale restoration potential, with an estimated 3,392 ha of former mangrove areas suitable for recovery.
- A robust portfolio of ongoing projects and partnerships, including GCF, REM, WWF, CI, IUCN, universities, local associations, and private-sector actors, is already strengthening governance, monitoring, and restoration at scale.
- Engagement opportunities are strong and immediate, especially in expanding AUSCEM coverage, co-financing Socio Manglar, supporting women-led associations, strengthening enforcement, and investing in community-driven restoration aligned with Ecuador's NDCs and 30x30 commitments.

1. Executive Summary



The Guayas River estuary mangroves in Ecuador comprise the largest expanse of mangroves on South America's Pacific coast © Conservation International

Significance of Ecuador's Mangroves

Mangroves in Ecuador extend across 36% of the country's 3,631 km Pacific coastline. Historical data indicate a decline in mangrove cover from 203,624 hectares in 1969[1, 2] to approximately 157,098 hectares in 2023, though estimates vary.[3, 4, 5, 6] These ecosystems are concentrated in six major estuarine systems, primarily in Guayas (67.68% in Guayas estuary), followed by El Oro (16.65% in Jambelí Estuary), Esmeraldas (14.49% in Cayapas Mataje and Muisne estuaries), and Manabí (1.18% in Cojimies and Chone estuaries), with additional presence in the Galápagos Islands.



Red mangrove crabs rest in deep, muddy burrows © Leslie von Pless

36%
of Ecuador's 3,631 km Pacific coastline is covered by mangroves

Ecuadorian mangroves are classified into three main types:

1. **CHOCÓ ECUATORIAL MANGROVES**
   Located in northern Ecuador, these mangroves span approximately 23,000 hectares in Esmeraldas province, within humid and very humid forest life zones. They exhibit high floral diversity and canopy heights historically reported to be up to 50 m.[1, 2]
2. **JAMA-ZAPOTILLO EQUATORIAL MANGROVES**
   Extending over 133,000 hectares (84 % of all mangrove area in Ecuador)[3], mostly in Guayas and El Oro, these mangroves are characterized by lower canopy heights (10–12 m) and occur within tropical dry and thorn scrub forest zones.[4, 7]
3. **GALÁPAGOS MANGROVES**
   Covering 35% of the Galápagos coastline, these mangroves are restricted to narrow tidal zones and host only six species: *Laguncularia racemosa, Avicennia germinans, Rhizophora mangle, Annona glabra, Taliparitiliaceus* var. *pernambucense* and *Conocarpus erectus*.[5, 6, 10]

Cultural, Economic, and Biodiversity Value

Mangroves have long provided food resources, with archaeological evidence of shellfish harvesting dating back to 800 BCE.[7] They sustain commercial fisheries and local cuisine, including from red crab *(Ucides occidentalis)*, swimming crabs *(Callinectes arcuatus, C. toxotes)*, shrimp *(Litopenaeus stylirostris, L. vannamei)*, black cockle *(Anadara tuberculosa, A. similis)*, mussels *(Mytella guyanensis)*, oysters *(Crassostrea columbiensis)*, and various fish species such as mullet *(Mugil cephalus)*, white sea bass *(Cynoscion albus)*, snook *(Centropomus spp.)*, and snapper *(Lutjanus sp.)*[8]. Fishing contributes 1.6% of GDP.[9] Historically, mangrove wood was exploited for shipbuilding, tannin extraction, and charcoal production.[5, 10]

Mangroves in Ecuador have **supported food resources since at least 800 BCE** and remain vital for fisheries, local cuisine, and about 1.6% of the fishing GDP

Ecologically, mangroves provide shoreline protection, preventing an estimated US$250 million in annual flood-related losses in Ecuador's coastal regions.[11] However, mangrove deforestation near coastal settlements exacerbates climate-related flood risks. In addition, they provide carbon sequestration, and aquifer recharge. Mangroves support 179 plant species, including *Pelliciera rhizophorae,* classified as vulnerable.[5, 12] Additionally, they serve as breeding grounds for marine species and habitats for culturally and ecologically significant fauna such as the American crocodile *(Crocodylus acutus),* close to 100 species of migratory shorebirds, and endemic bat species such as the near threatened *Eptesicus innocius*.[5, 8, 13, 14, 15, 16] There are new species of spiders and reports of ants and mammals, and threats posed by the presence of the exotic mangrove *Heritiera fomes* (a species from India).

Threats, Vulnerabilities, and Conservation

Since the 1970s, shrimp aquaculture has been the leading driver of mangrove loss, accounting for 51% deforestation between 2008 and 2018.[1, 17] Other pressures include agriculture, urban expansion, pollution, and overfishing.[6] These factors have led to biodiversity declines and contamination-related health risks.[5, 8, 18] Despite some reforestation between 2006 and 2018, mangroves remain threatened, with 8,000 hectares still impacted by shrimp farming.[19] Conservation efforts, including Custody and Sustainable Use of Mangrove Agreements (AUSCEM)[20], are crucial for ecosystem protection.

~8000
hectares
of mangroves remain affected by shrimp farming, and the ecosystems continue to be under threat



Ecuador is the world's largest exporter of whiteleg shrimp © Conservation International

The primary driver of mangrove loss in Ecuador between 2000 and 2016 was commodities:

- **8.11%** Non-Productive Conversion
- **22.05%** Erosion
- **62.95%** Commodities
- **6.52%** Episodic Disturbances
- **0.37%** Settlements

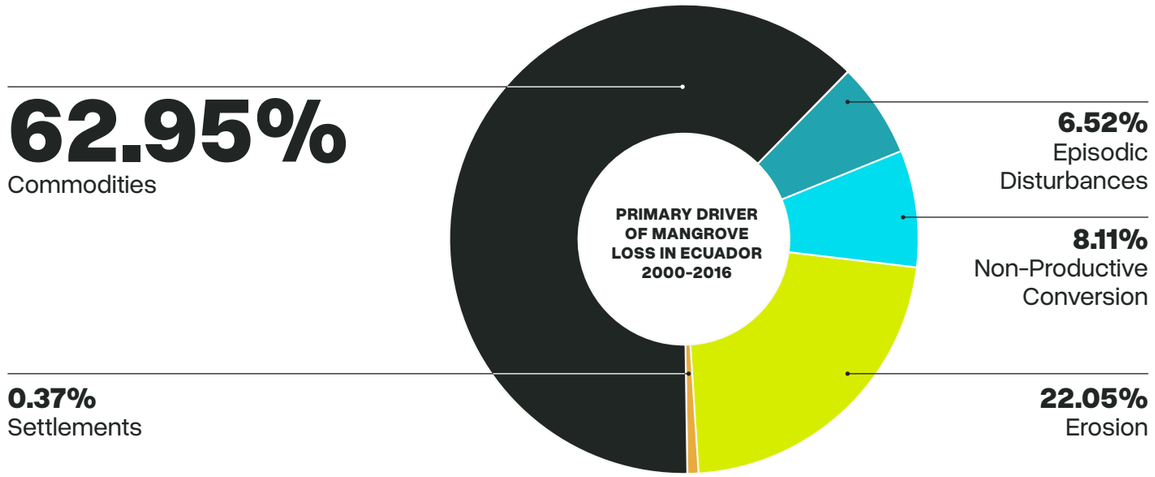


Figure 1: Drivers of mangrove loss in Ecuador | Source: Global Mangrove Watch[30]

Local associations access AUSCEM concession areas via the Ministry of Environment, with 3,500 artisanal fishers (35% women) relying on crab and black cockle fisheries for income and food security. These highly vulnerable populations, often below the poverty line, face coastal security challenges, as concessionaires and park rangers lack sufficient monitoring capacity. Reports indicate the presence of organized criminal groups in protected and concession areas.[21]

In 2024, the Ecuador chapter of the Global Mangrove Alliance (GMA-Ecuador) launched operations, fostering multi-stakeholder alliances for mangrove conservation. Currently, 24 participants engage in conservation and protection initiatives.

2. Potential for Achieving the Mangrove Breakthrough



Map 1: Distribution of mangrove area in Ecuador

Key

- Mangroves
- National borders

Halt Loss

Ecuador has one of the strongest and longest-standing mangrove governance systems in the Americas. Mangroves are recognized as State patrimony, explicitly protected in the 2008 Constitution[22] and reaffirmed in the 2017 Organic Environmental Code[23], which prohibits alteration, logging, degradation, or land-use change, and establishes fines for damage. A series of regulations issued since the 1990s further regulate sustainable use, impose sanctions, and require restoration for authorized impacts.

These frameworks reverted the net change in mangrove cover between 1996 and 2010 (Table 1). Importantly, there is a measurable reduction in mangrove loss particularly in Protected Areas and AUSCEM concessions, which experience deforestation rates 86% lower than unprotected mangrove zones.

Despite this strong legal architecture, Ecuador continues to face ongoing and emerging pressures. Mangrove cover in Ecuador has declined from 203,624 ha in 1969 [24, 25] to 157,098 ha in 2023, with variations in estimates.[26, 27, 28, 29]

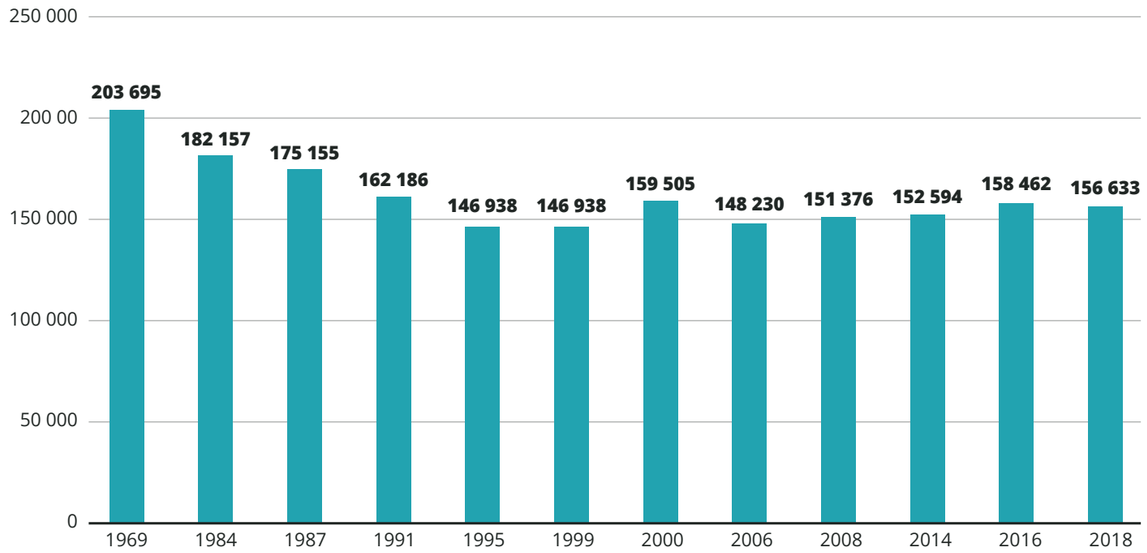


Figure 2: Mangrove area in Ecuador, 1969-2018 | Sources[24-29]

Shrimp aquaculture has historically been the dominant driver of loss, responsible for 51% deforestation between 2008 and 2018. Additional pressures include agricultural expansion, urban development around Guayaquil, Machala, and Esmeraldas, overfishing, and pollution from wastewater, hydrocarbons, heavy metals, and plastics.

These factors have caused biodiversity declines, deformities in crabs, fish tumors, and potential health risks for consumers of contaminated products. In northern Esmeraldas and in the Gulf of Guayaquil, an estimated 8,000 ha of mangrove areas remain affected by shrimp operations.

Table 1: Comparison of net change and gross loss of Ecuador's mangrove area and proportion of loss attributable to human causes, from Global Mangrove Watch.

NET CHANGE 1985-2025 (KM²)	NET CHANGE 2015-2025 (KM²)	GROSS LOSS 2015-2025 (KM²)	PROPORTION OF LOSS FROM DIRECT HUMAN DRIVERS (%)	TOTAL HUMAN DRIVEN LOSS 2010 – 2020 (KM²)
-27.08	9.7	-5.14	60	26.41

Halting mangrove loss requires improving implementation and enforcement, particularly in areas where local groups lack sufficient monitoring capacity. AUSCEM concessionaires and protected-area rangers often face insecurity, with documented presence of organized criminal groups inside protected and concession areas. Strengthening community stewardship, expanding surveillance and enforcement capacity, and increasing the effectiveness of existing legal instruments are essential to fully halt remaining mangrove loss and ensure long-term protection.



A local fisherman navigates through a narrow mangrove channel in Isla Santay, where a small community has lived for generations
© Leslie von Pless

Restore Half

Ecuador's historical mangrove losses indicate significant restoration potential. National mangrove cover declined from 203,624 ha in 1969 to approximately 155,201 ha in 2025. An initial assessment by Conservation International identified around 10,000 hectares of priority landscapes across four estuaries for mangrove restoration in Ecuador. A recent study by TNC estimates approximately 3,392 hectares of restoration potential[90]. Estimates should be updated as new studies currently under development become available, as these will provide the most up-to-date assessment of restoration potential in Ecuador. Over the same period, adjacent coastal ecosystem, including salt flats, also experienced significant losses. Salt flats are integral to mangrove ecosystem, supporting tidal exchange, biogeochemical processes, and other important ecological functions. Restoration should therefore always adopt an integrated landscape, seascape, or "ridge-to-reef" approach.

Table 2: Breakthrough restoration goals based on GMW[30] and TNC report[90].

SOURCE	TOTAL MANGROVE AREA 2025 (KM²)	TOTAL RESTORABLE AREA (KM²)	RESTORE GOAL (KM²)
GMW[30] / TNC[90]	**1,552.01**	33.92	16.96

Past restoration gains were closely linked to Executive Decree 1391, which required the legalization of illegally established shrimp farms in public coastal areas. Shrimp farms that failed to comply were evicted, resulting in 3,110 ha of mangroves restored since 2008. Smaller additional areas have been reforested under compensation mechanisms established by Ecuadorian law, including approximately 74 ha from **port operations** and other coastal developments. However, this mechanism is no longer adding significant new restoration areas, and future progress now depends on deliberate restoration planning and sustained investment.

48,423ha
of mangroves in Ecuador have been lost in Ecuador between 1969 and 2025

Ecuador has already identified high-value restoration opportunities. Conservation International mapped more than 10,000 ha of priority areas across four estuaries, selected for size, ecological connectivity, proximity to remaining mangroves, vulnerability of nearby communities, and accessibility. Restoration efforts are also supported by national programs such as the REDD+ Early Movers initiative, which has already restored 560 ha, and by community-based reforestation within AUSCEM concessions. Scaling these efforts, especially across legally secure community-managed areas, represents a key pathway for Ecuador to contribute substantially to the Mangrove Breakthrough's ambitious global restoration target.



Mangrove tree in Cayapas-Mataje estuary
© Sergio Garcia, iStock

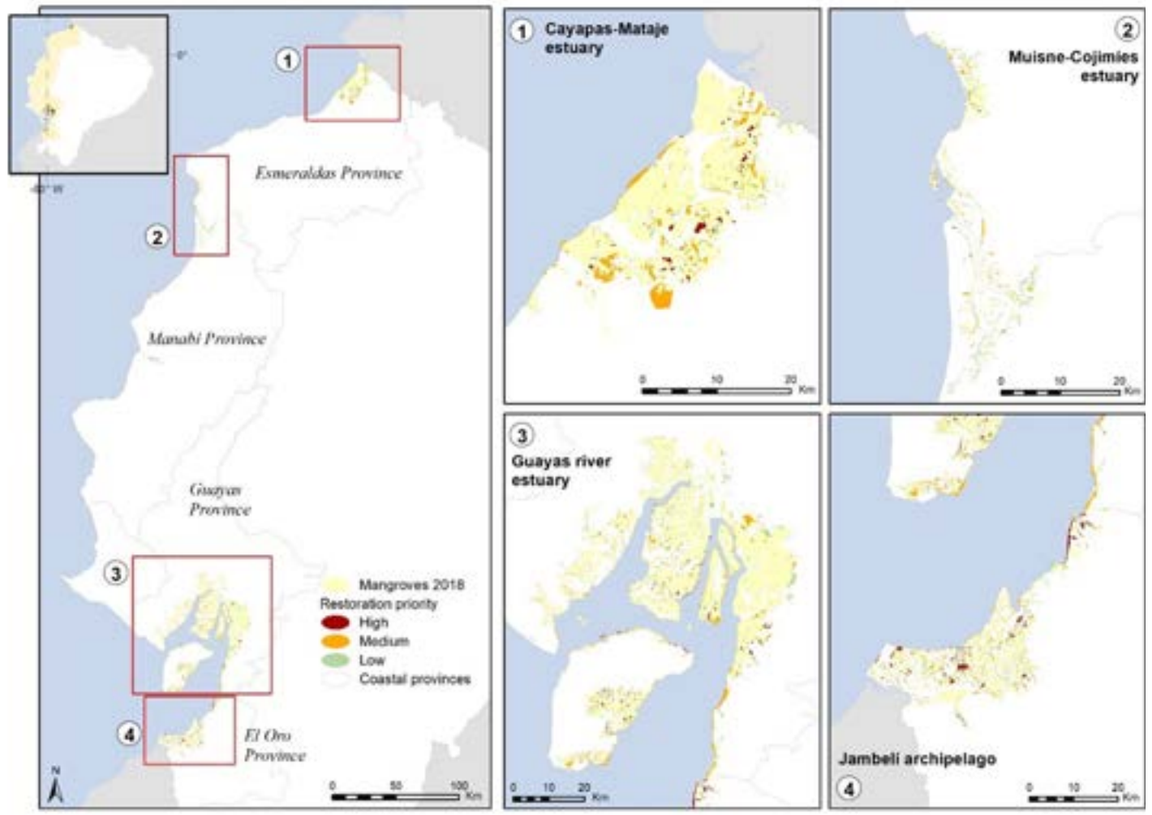


Figure 3: Potential mangrove restoration areas in Ecuador | Source[31]

Double protection

Ecuador's protection systems already constitute one of the strongest conservation baselines in the region. More than 45% percent of mainland mangroves lie within formal Protected Areas (Table 3); an updated 2025 estimate places this at 71,694.97 ha (Table 4) within 9 PA classified under Ecological Reserves (RE), Flora and Fauna Production Reserves (RPF), Wildlife Refuges (RVS) and National Recreation Area (ANR).

In addition to these government-managed areas, AUSCEM agreements grant legally recognized ancestral and traditional user groups long-term custodial rights over 117,356 ha (76% of national mangrove area). Together, these governance mechanisms cover a significant portion of Ecuador's mangroves and have proven highly effective: deforestation rates inside protected areas and AUSCEMs are 86% lower than in unprotected lands.

Table 3: Mangrove area under formal protection, according to Conservation International Ecuador. Expansion in protected area in the last year may not be included in this measurement.

PROTECTED AREA (KM²)	UNPROTECTED AREA (KM²)	PORTION OF MANGROVE AREA WITH PROTECTED STATUS (%)	ADDITIONAL PROTECTED AREA BY ACHIEVING NATIONAL GOALS (KM²)	PORTION OF MANGROVE AREA WITH PROTECTED STATUS BY ACHIEVING NATIONAL GOALS (%)
749.70	802.30	46	719.19	92

Table 4: Total mangrove area by protection category in Ecuador.

CATEGORY	TOTAL MANGROVE AREA (2008)	TOTAL MANGROVE AREA 2018 (HA)	TOTAL MANGROVE AREA 2026 (HA)	% NATIONAL TOTAL MANGROVE AREA (2026)
Protected Areas (PAs)	62,339	64,916	74,970	48%
AUSCEM, active June 2020	56,522	60,217	117,356	76%
No Protection	36,956	36,186	11,038	7%
Overlap AUSCEM and PAs	-4,441	-4,686	-48,162	-31%
Total	151,376	156,633	155,201	100%

Source[32]

Strengthening community management of mangroves through AUSCEMs has been an important pillar of Ecuador's approach to mangrove conservation for the last 25 years, however clear gaps remain. As of 2026, approximately 11,038 ha (7% of the country's remaining mangroves) are not under any formal protection mechanism and account for the majority of recent mangrove deforestation. These areas are disproportionately vulnerable to illegal encroachment, unregulated extraction, and expansion of aquaculture infrastructure. Many of these unprotected mangroves are also located near urban or peri-urban zones where enforcement has historically been challenging.

Doubling protection in Ecuador would involve expanding the MPA network, integrating additional mangrove areas into existing protected-area categories, and formally recognizing AUSCEM concessions as Other Effective Area-Based Conservation Measures (OMECs). This is already anticipated within the country's 30x30 commitments. Strengthening support for the Marine and Coastal Protected Areas Network, expanding governance capacities, and improving coordination with decentralized governments and ancestral communities would accelerate progress toward meeting global and national conservation targets.

Sustainable financing

Ecuador has an unusually well-developed portfolio of sustainable finance mechanisms for mangrove conservation, creating strong foundations for long-term scalability. The Socio Manglar incentive program is the most prominent mechanism, providing annual payments to AUSCEM concession holders for conservation and sustainable use activities.

Mangroves, including those on private land, are designated Natural State Patrimony and require legal concessions for use. Local communities and ancestral groups can request AUSCEMs for sustainable harvesting, tourism, and restoration. The **Organic Environmental Code,** Ecuador's highest-order environmental law, allows state-driven conservation mechanisms, while Socio Manglar is the primary program facilitating financial investments for mangrove conservation and management through AUSCEMs. Socio Manglar payments totaled US$555.354 in 2025, benefiting 45,451 ha and 6,193 beneficiaries under 37 AUSCEM agreements. It has demonstrably improved governance, strengthened local organizations, and contributed to mangrove recovery where implemented. Socio Manglar is financed through national budgets, REDD+ Early Movers, the Socio Bosque Fund (SBF), and contributions from partners such as the Aquaculture Stewardship Council and the Green Climate Fund. As of 2025, AUSCEM agreements cover 98,101 ha (63% of remaining mangroves), though many areas remain outside the program, risking encroachment and resource overuse.

Continued investment in **monitoring, enforcement, and community capacity-building** is key for **transparency, accountability, and alignment** with NDCs and climate adaptation plans

The broader financing landscape includes several complementary mechanisms. The Ecuador Azul Subaccount supports the financial needs of seven marine protected areas using capital from the Walton Family Foundation and the GEF. Multiple large-scale projects, including the GCF Mangroves for Climate program, Coastal Fisheries Initiative, REM, Heifer International's competitiveness project, and the Dove Mangrove Initiative, channel resources to governance improvements, restoration, fisheries management, monitoring systems, and livelihood diversification. Universities, NGOs, and community groups also contribute to bioeconomy initiatives and monitoring systems. Local capacity-building is crucial for climate adaptation[33] as part of these mechanisms.

Scaling sustainable finance will require expanding incentive coverage within existing AUSCEM areas, establishing new AUSCEMs in unprotected zones, and strengthening partnerships with the aquaculture sector, port operators, environmental funds, and international donors. Continued investment in monitoring (e.g., **MANGLEE monitoring app**), enforcement, and community capacity-building will increase transparency and accountability, allowing Ecuador to match ambitious outcomes with long-term financial sustainability and strong alignment with its NDCs and climate adaptation plans.



Local fishermen at San Lorenzo port in Esmeraldas province, Ecuador © Robert Gibson, Shutterstock

3. Mangrove Policy & Governance

Mangrove ecosystems in Ecuador have been legally protected since 1981. Between the late 1990s and 2010, regulatory frameworks reinforced conservation and sustainable management, granting ancestral communities and traditional users the right to request concessions for subsistence use, harvesting, and commercialization of mangrove resources.

Ecuador's 2008 Constitution[34] guarantees the right to a healthy environment, explicitly mentioning mangrove conservation, restoration, and protection. The **2017 Organic Environmental Code** reaffirmed mangrove conservation as a matter of public interest, designating them as fragile ecosystems and prohibiting alteration, logging, and land-use changes. It restricts mangrove concessions to legally recognized local communities and ancestral groups, upholds State ownership of mangroves, including those on private land, and allows their exploitation only through concessions. The law also mandates national programs for mangrove restoration and requires the environmental authority to implement State-funded conservation incentives.

2017

Organic Environmental Code designates mangroves as fragile ecosystems and a matter of public interest, prohibiting alteration, logging, and land-use changes

Legal Framework for Mangrove Conservation

Executive Decree 1391 is the primary driver of recent mangrove cover increases in Ecuador.[35] The decree mandated the legalization of shrimp farms illegally established in public coastal areas, with non-compliant farms evicted and the land reverting to the government. Farms within protected areas (2,280 ha) were excluded from legalization and were evicted and restored at the expense of the illegal operators. Following the decree, mangrove restoration efforts surged, with 44,642 ha of shrimp farms requiring legalization. Plans to restore 9.6% of this area were submitted, but only 3,110 ha were successfully restored by 2018. Additionally, projects causing unavoidable mangrove deforestation, such as ports, canals, or roads, are required to reforest an equivalent of six times the affected area, though this has had a limited national impact, contributing only 82 ha of reforestation.

No new areas have since been added under this mechanism. Despite these legal frameworks (Table 5), the continuation of mangrove recovery now relies on additional regulatory instruments and voluntary conservation initiatives, and enforcement mechanisms remain insufficient.

The **2010 Ministerial Agreement No. 129** established regulations for granting mangrove concessions to ancestral communities and traditional users under AUSCEM. Approved activities include extractive fishing, sustainable aquaculture, controlled forest management, reforestation, ecotourism, conservation, and scientific research. In 2014, Agreement No. 198 introduced the "Socio Manglar" program, the primary national mechanism for financing mangrove conservation, restoration, and sustainable management. It has improved AUSCEM management effectiveness, strengthened local governance, enhanced livelihoods, and contributed to mangrove recovery where implemented.[36, 37, 38]



A protected mangrove area, highlighting conservation efforts within the dense coastal ecosystem © Conservation International

Table 5: Summary timeline of legal instruments enacted in Ecuador related to mangrove conservation.[39]

YEAR	LEGAL INSTRUMENT	DESCRIPTION
1994	Ministerial Agreement No. 1907	Declaration of public interest in conserving, protecting, and restoring mangrove forests. A five-year moratorium on mangrove exploitation was also enacted.
1995	Decree No. 3327	Established guidelines for sustainable use concessions and imposed fines for mangrove destruction. Regulations for the management, conservation, and sustainable use of mangroves were drafted by State authorities. The decree also required beneficiaries of legally authorized mangrove easements for transit, docks, or channels to replant an equivalent of six times the affected area and maintain it for at least four years.
1999	Decree No. 1102	Outlined measures for mangrove protection, conservation, and management, emphasizing the rights of ancestral communities to request sustainable mangrove use concessions for subsistence, harvesting, and commercialization of fish, mollusks, and crustaceans found within mangroves.
2000	Ministerial Agreement No. 172	Established guidelines for granting sustainable use concessions to organized ancestral users with legal status.
2008	Ministerial Agreement No. 1391	Required shrimp farms that had been illegally established in public coastal areas, to enter a process of legalization. Projects that cannot avoid mangrove deforestation (e.g., certain ports, canals or roads) are required to reforest six times the area of mangrove destroyed.
2010	Ministerial Agreement No. 129	Regulates the approval and granting of mangrove conservation agreements to ancestral communities and traditional users. The AUSCEM framework allows for activities like extractive fishing, controlled forest management, reforestation, ecotourism, conservation and protection, and education and scientific research.
2011	Ministerial Agreement No. 056	Provides full protection to all mangroves from destruction (i.e., logging, burning, degrading), with a fine of $89,273 for each hectare of mangrove destroyed.
2014	Agreement No. 198	Introduced the **Operations Manual** for the "Socio Manglar" incentives program.

Regional and National Plans

Ecuador's 2008 Constitution[31] grants the central government exclusive jurisdiction over PAs, mandating financial support and community involvement. Mangroves in Ecuador are part of a network of 19 coastal-marine protected areas established in 2019 (Figure 3). Mangroves are further protected under the Ramsar Convention and managed through the **National Action Plan for the Conservation of Mangroves**[4] (PAN Manglares). Capacity-building efforts for PA management have been supported through international collaborations.

Ecuador is part of the **Regional Action Plan for the Mangroves of the Southeast Pacific,** which focuses on strengthening policy, education, capacity building, and sustainable finance.[40] In turn, the PAN-Manglares[4] aims to enhance policies and programs for mangrove protection, recovery, and sustainable use while improving the livelihoods of traditional users. It addresses key threats, including illegal logging, over-exploitation, pollution, sedimentation, climate change, and poor territorial planning. The plan also seeks to enhance policies, increase knowledge, promote good practices, and improve the capacities of local communities and administrators.

Ecuador has developed specific action plans for mangrove fisheries, including:

SHELLFISH FISHERY

Approved in June 2021 under **Ministerial Agreement MPCEIP-SRP-2021-0139-A,** focusing on conservation, sustainable use, research, and monitoring.

CRAB FISHERY

The PAN Crab, issued in June 2021 under **Ministerial Agreement MPCEIP-SRP-2021-0151-A,** focuses on communication, training, research, control, and governance.

PARTICIPATORY MONITORING

Methodological guides for the participatory monitoring of red crab *(Ucides occidentalis)* and black clam *(Anadara tuberculosa* and *A. similis)* fisheries under **Ministerial Agreement SRP-2021-0100-A.**

The **National Landscape Restoration Project** (2022-2025) is funded through government resources (USD 26.6 million), results-based payments (USD 4.3 million), and **REDD+ Early Movers** (USD 6.5 million). The project includes an analysis of mangrove deforestation and the benefits of restoration.

In Ecuador, mangroves are **protected within 19 coastal-marine PAs** and under the Ramsar Convention and PAN Manglares

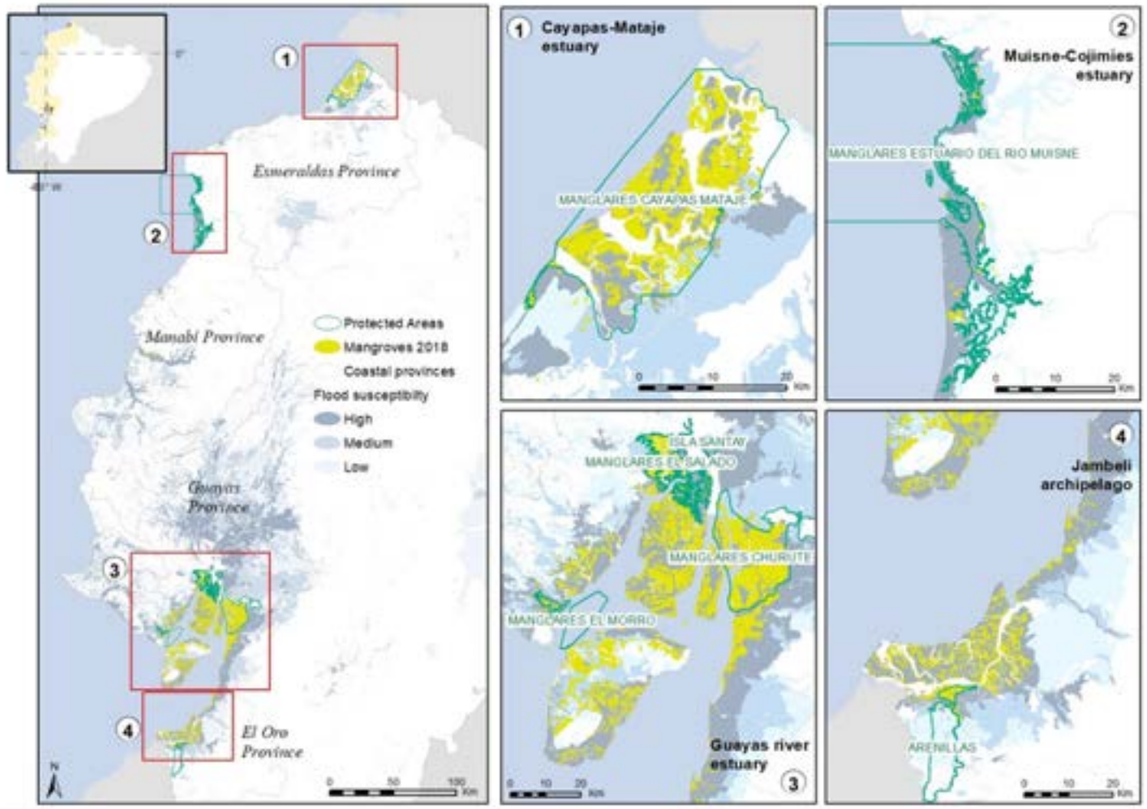


Figure 4: Marine Protected Areas in Ecuador's mangrove ecosystems | Source[31]

National Policies & International commitments

127,500
hectares
of conservation areas will be expanded via SBF incentives

NDCS

Ecuador's **2026-2035 NDC**[41] targets a 4% unconditional and up to 16% conditional reduction in GHG emissions from the LULUCF sector, potentially reducing emissions by around 62 million metric tonnes by 2025. Marine and coastal biodiversity conservation is highlighted as a key mitigation and adaptation strategy, including the update of protected area management plans to address climate change and enhance ecosystem protection.

The NDC implementation plan also includes objectives relevant to mangroves:

1. Updating at least three management tools for protected areas (PAs) to incorporate climate change adaptation criteria;
2. Expanding conservation areas by 127,500 ha through SBF incentives to maintain ecosystem functionality under climate change scenarios, with 10,000 new hectares planned and 60,000 hectares of existing AUSCEMs receiving strengthened management; and
3. Establishing at least 30 additional AUSCEM agreements in mangrove areas.



Crabbers reach deep into the mud to retrieve red crabs hidden beneath the surface © Leslie von Pless

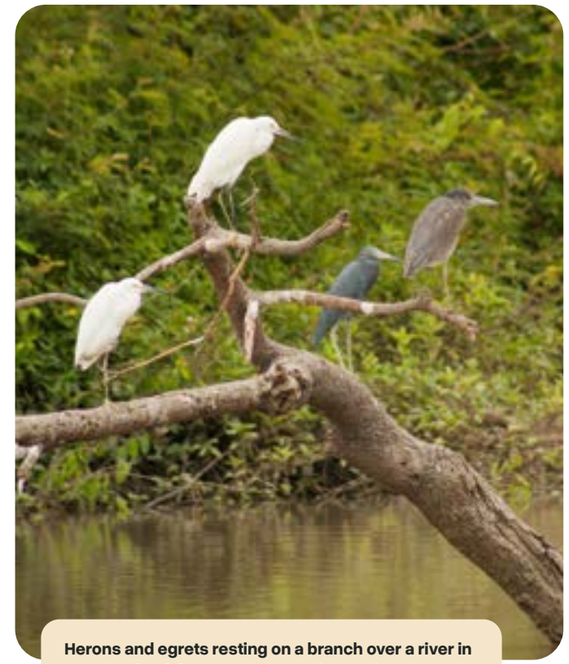
NATIONAL CLIMATE CHANGE STRATEGY (ENCC)

The ENCC identifies the loss of mangrove areas as a threat to food sovereignty due to the decline in estuarine species and land use changes from shrimp farm expansion.[42] It set three key goals for mangroves and climate change adaptation:

- **2013** Expand conservation or environmental management of continental marine-coastal areas to enhance ecosystem resilience to climate change impacts.
- **2017** Promote the conservation of terrestrial and marine-coastal biodiversity, focusing on maintaining managed areas and exploring the need for expansion based on ecosystem dynamics and climate change projections.
- **2025** Strengthen measures to enhance species and ecosystem response capacity to climate change, ensuring that Ecuador's natural heritage supports this effort.

By July 2025, **Ecuador reached 100,000 ha of mangrove forests under community conservation** with the establishment of new AUSCEM.

The ENCC highlights mangrove loss **from shrimp farm expansion and declining estuarine species** as a **threat to food sovereignty**



Herons and egrets resting on a branch over a river in Santay Island © Ampuero Leonardo, iStock

NGHGIS

Ecuador's NGHGI includes mangrove area and carbon density but categorizes emissions under broader forest data.[43] Ecuador submitted a FREL[44] to the UNFCCC, focusing on gross deforestation and planning to incorporate additional activities like degradation, conservation, and sustainable forest management. The FREL uses 2001-2014 data to project emissions based on average forest carbon stocks, including mangroves, though mangrove-specific data is not disaggregated, limiting projections for their emissions.

NBSAPS / CBD / GBF

The **National Biodiversity Strategy 2015-2030**[45], aims to create a portfolio of incentives for the protection, sustainable use, and restoration of biodiversity, alongside policies to eliminate perverse incentives that hinder conservation. The overall goal is to achieve 500,000 ha of reforestation and 1.8 million ha under protection for forests, paramos, and mangroves, though specific targets are not outlined. While progress has been made, it is considered insufficient.[39]

In Ecuador, the Global Biodiversity Framework Early Action Support (GBF-EAS) project is being implemented through a collaborative effort involving the United Nations Development Program (UNDP), the Ministry of Environment, Water, and Ecological Transition (MAATE), and the Global Environment Facility (GEF).

The expected outcomes are strengthened institutional capacity, improved policy integration, and mobilized financial resources, although not specifically focused on mangroves.

Ecuador has achieved 19.42% of its 30x30 protection target, with 19.15% of this within marine and coastal ecosystems, through its National System of Protected Areas and other effective area-based conservation measures (OMECs). Active participation from decentralized governments, indigenous groups, and private landowners is necessary to continue this progress. However, the Ministry of Environment still needs to develop guidelines for incorporating mangrove AUSCEMs as OMECs.

RAMSAR

Ecuador has designated five mangrove forests as Ramsar Sites, with four located in continental Ecuador (three in the Gulf of Guayaquil) and one in the Galápagos Islands. The largest site, the **Cayapas-Mataje Ecological Mangrove Reserve** (44,847 ha), is part of the Choco-Darien-Western Ecuador hotspot, known for its high biodiversity and endemic species. The **Churute Mangroves** (35,042 ha) include mangrove forests, salt-tolerant species, and a lagoon with rich aquatic vegetation. The **"Don Goyo" Mangroves** (15,337 ha) in the Gulf of Guayaquil play a key role in flood control and climate regulation. **Isla Santay** (4,705 ha) offers refuge for diverse species despite its altered state, qualifying for Ramsar listing under all biodiversity and fish criteria. The smallest Ramsar site, the **Southern Isabela Wetlands** (872 ha) in the Galápagos Archipelago, is notable for its rich biodiversity, including many endemic species listed as vulnerable or endangered.

Ecuador is also part of **Ramsar's Regional Initiative on Mangroves and Corals,** collaborating with 14 countries to enhance coastal blue carbon ecosystems.

The Ministry of Environment, Water and Ecological Transition (MAATE), with support from the National Climate Change Adaptation Plan Project (PLANACC), is updating Ecuador's Wetlands Action Plan, including climate risk analyses for ten priority wetlands,[46] while the Action Plan for Migratory Shorebirds Conservation (2017–2019) integrates restoration and habitat management.[47]

> Ecuador has **five mangrove forests designated as Ramsar Sites,** four on the mainland and one in the Galápagos



Local paddling down Amazon river, Ecuador
© Inspired by Maps, Shutterstock

4. Ecosystem Services

Adaptation and Resilience

Mangroves cover 36% of Ecuador's continental coastline and are crucial for both export industries and local livelihoods, supporting commercial fish species and maintaining coastal health. Nearly 96% of mangroves are concentrated in eight municipalities across three provinces, impacting 3.4 million people, of whom 97% live within 5 km of mangroves, with significant poverty (49% urban, 95% rural).[48]

Many fishers and shellfish gatherers depend on mangroves for sustenance but live in poverty. In the Gulf of Guayaquil, 74% of surveyed fishermen belonging to 60 local community associations earned less than US$400 per month (below the national monthly rural average and below the benchmark of basic family needs defined by the National Institute of Statistics and Census -INEC- as US$507), and 90% of their income comes from these activities.[20] Within these local associations, 24% of families are led by women. However, women face challenges like gender-based violence, long working hours, and limited political representation, restricting their participation in mangrove conservation.

REDD+ Early Movers (REM) project supported the restoration of 560 hectares of mangroves, benefiting more than 10,000 residents of the provinces of Esmeraldas, Guayas, Manabí, and El Oro. This effort **contributed to the recovery of mangrove and the sustainability of crab and conch production** in this ecosystem.

Projected sea-level rise of 49-64 cm by 2100 threatens coastal areas, with an average rise of 0.8 cm annually (or slightly less) from 1990-2009.[49,50] The National Secretariat for Risk Management (SNGR) identified 198,687 people in the coastal mangrove zone at high flood risk, primarily in eight municipalities, though the source of flooding remains undetermined.

36%

of Ecuador's continental coastline is covered by mangroves, which are vital for export industries, local livelihoods, and the health of coastal ecosystems.

During an average annual storm, mangroves in Ecuador provide flood protection to around 177,822 individual people and US$ 215m worth of property and infrastructure across 386km^2 of coastal land, rising to more than 564,459 people and US$ 517m in the case of a 100-year storm event.[51]

Biodiversity

Mangroves are crucial for maintaining the diversity of neighboring marine protected areas. Biodiversity data in Ecuador is limited, particularly for mangrove areas, which provide critical habitats for various species:[52]

Birds
Including mangrove black hawks *(Buteogallus anthracinus),* white ibises *(Eudocimus albus),* roseate spoonbills *(Platalea ajaja),* great egrets *(Ardea alba),* snowy egrets *(E. thula),* little blue herons *(E. caerulea),* tricolored herons *(E. tricolor),* green-backed herons *(Butorides striatus),* as well as black-crowned *(Nycticorax nycticorax)* and yellow-crowned *(Nyctanassa violacea)* night herons[54]

Crustaceans
Such as the Pacific white shrimp *(Litopenaeus vannamei);* Pacific blue shrimp *(Litopenaeus stylirostris);* red crabs *(Ucides occidentalis)* and blue crab *(Cardisoma crassum)*

Reptiles
Such as iguanas *(Iguana iguana)*[53]

Fish
Including croakers (Cynoscion spp.); mullets (e.g., Mugil cephalus), and black snook (Centropomus nigrescens)

Mammals
Including crab-eating raccoons *(Procyon cancrivorus),* neotropical otters *(Lontra longicaudis),* serotine bat *(Eptesicus innocius)* and bottlenose dolphins *(Tursiops truncatus)*[55]

Figure 5: Infographic showcasing the biodiversity within a Ecuadorian mangrove ecosystem

Without mangroves, neighboring marine protected areas risk having smaller and less diverse fish populations. The Gulf of Guayaquil has close to a dozen species under IUCN's red list[56], as follows:

- **Endangered:** Green Turtle *(Chelonia mydas)*
- **Critically endangered:** Hawksbill Turtle *(Eretmochelys imbricata)*, Lilacine Amazon *(Amazona lilacina)*
- **Vulnerable:** American Crocodile *(Crocodylus acutus)*, Tea Mangrove *(Pelliciera rhizophorae)*, Olive Ridley Turtle *(Lepidochelys olivacea)*, Leatherback Turtle *(Dermochelys coriacea)*
- **Near threatened:** Neotropical Otter *(Lontra longicaudis)*, Harmless serotine bat *(Eptesicus innocius)*

Mitigation Benefits

Mangrove carbon density in Ecuador ranges from 73.6 to 192.2 MgC/ha, with total ecosystem carbon at 320.9 to 419.4 MgC/ha.[24, 57] National mangrove carbon stock estimates range from 19.4 to 50.7 million MgC (71.3 to 186 million MgCO2e), with uncertainty due to varying mangrove area estimates, from 147,701.02 ha **(MapBiomas Ecuador)** to 263,816.34 ha.[25, 58, 59] Historical data show a loss of 46,526 ha (22.8% of the 1969 mangrove area), corresponding to 12.6 to 32.8 million MgCO2e in emissions from aboveground losses.

34.7 million
tonnes of irrecoverable carbon are stored in Ecuador's mangroves, making them critically important for long-term climate mitigation

Mangrove conversion to shrimp ponds leads to carbon losses of 240-340 MgC/ha (880.8-1247.8 MgCO2e/ha) to a 1-meter depth. These losses, based on historical data, range from 40.9 to 58.1 million MgCO2e, representing 54.4-77.1% of Ecuador's national emissions in 2018 (75.3 million MgCO2e)[60], approximately 2.5 to 3.5 times the emissions from the AFOLU sector.

Ecuador has 34.7 million metric tonnes of **irrecoverable carbon** stored in its mangroves.







Galapagos iguana *(Amblyrhynchus cristatus)*, Night heron *(Nycticorax nycticorax)* and Red crab *(Ucides occidentalis)* © Shutterstock

During the off-season, crabbers help restore mangroves, providing vital income while reviving the ecosystem © Leslie von Pless

Economic Benefits

Several studies have estimated the economic value of mangroves based on selected ecosystem services or fishery income, however methods are variable and outcomes may be location-specific. One study[61] estimated the economic value of mangroves in Ecuador at US $89,273 per hectare, considering coastal protection, nutrient production for aquaculture, and artisanal fishing.

Mangroves in Ecuador are valued at up to **US$89,273 per hectare,** with over **US$4.9 billion lost** due to **historical deforestation**

This equates to a total economic loss of over US $4.9 billion due to historical mangrove deforestation.

Solá (2016)[62] calculated a direct productivity value of US $14,938.57 per hectare annually in the Gulf of Guayaquil, primarily from fishing, with total annual productivity value for Ecuador at US $1.58 million. The northern province of Esmeraldas generates US $1,506.20 per hectare from blue crab harvesting, while southern Ecuador's red crab harvest value is lower at US $290.5 per hectare.[63] Mangroves also contribute significantly to shrimp production and nutrient provision for shrimp farms, particularly in the Gulf of Guayaquil, where they support US $2,296.19 per hectare in shrimp production and US $18,722–25,234 per hectare in nutrient provision. Similarly, Romero et al. (2021)[64] estimated mangroves provide US $18.20/m^3 and US $1.21/ha in water filtration services.

$5.83 million
US dollars are lost annually in Ecuador due to mangrove deforestation

Ecuador loses US $5.83 million annually due to mangrove deforestation, with a cumulative economic loss of US $2.03 billion between 1990 and 2021.[65] Carbon sequestration values were estimated at US $280–406 per hectare based on local prices of US$4–5.8 per tonne[53] in 2016[47, 48, 66] Adjusted for 2025 prices for high quality carbon credits of US $27.50 to US $50 we can estimate a carbon sequestration value of US $ 1,925 to US $ 3,500 per ha.

The scenic beauty of mangroves has an estimated value of US $31,540 annually in two protected areas in the Gulf of Guayaquil. Mangroves also provide significant coastal protection, valued at US $2.55 million in avoided costs for artificial infrastructure.[67] Mangroves have a cost-benefit ratio of 445:1, with a loss of US $67,763.71 to US $74,410.07 per hectare deforested. The cost of restoring a hectare of mangrove in the Gulf of Guayaquil is estimated at US $510.[68] For the Galápagos Islands, mangrove-based carbon storage, local fisheries, and tourism generate significant economic value, with stored carbon valued between US $2,940 and US $22,838 per hectare and tourism contributing US $62 million to the local economy.[69]



A Cocoi Heron *(Ardea cocoi)* flying through the mangroves at Puerto El Morro, Ecuador
© Paul Wolf, Shutterstock

Mangroves act as natural coastal defenses, protecting hundreds of thousands of people and saving hundreds of millions of dollars in potential flood damage during major storm events.

Mangroves in the city of Guayaquil, Ecuador
© Cesar Mera, Shutterstock

5. Finance

National Financing Mechanisms

SOCIO MANGLAR INCENTIVE

Between 2000 and 2013, the “Socio Manglar” program invested over $50 million, benefiting more than 120,000 families across 55,514 hectares.[70] The Socio Manglar incentive has been mainly financed by the Government of Ecuador through its annual budget and the REDD+ Early Movers project.

Conservation International (CI), in collaboration with the Aquaculture Stewardship Council (ASC), helped **establish the Socio Manglar subaccount within Ecuador’s Socio Bosque Fund** with an initial US$150,000 donation. The Fund is managed by Ecuador’s Environmental and Sustainable Investment Fund (FIAS). Additionally, CI is implementing a GCF project with US$4 million to support incentive payments to AUSCEMs, which will be managed long-term by FIAS in an interest-bearing account.

OTHER MECHANISMS

The **"Ecuador Azul Subaccount", part of the Socio Bosque Fund, was established in 2019** with $4 million from the Walton Family Foundation and $2 million from the GEF to support 7 MPAs in conservation, sustainable use, surveillance, communication, and management. Additionally, various bioeconomy initiatives in mangrove areas are backed by NGOs and universities. **Espol** and **UTPL** universities focus on enhancing mangrove resource values and supporting local associations, while **UEES** emphasizes research and hosted **Ecuador’s first mangrove congress** and the inaugural **Mangrove Congress of the Americas** in 2019 and 2024.

The **Ecuador Azul Subaccount,** established in 2019, received **US$6 million total from the Walton Family Foundation and GEF** to support 7 marine protected areas



Crabbers harvesting from the rich but challenging mangrove tidal ecosystem © Conservation International

Carbon Finance

CARBON ZERO PROGRAM

The **Carbon Neutral Scheme** (PECC), established in 2014 by Ecuador's Ministry of the Environment, encourages companies to reduce and offset their emissions to support the country's climate change mitigation efforts. Compensation activities under the program must undergo independent audits, and the quantification of Emissions Reduction Units (ERUs) must follow criteria from recognized standards such as Gold Standard, Plan Vivo, or the forthcoming Paris Agreement Crediting Mechanism (PACM), which will include projects transitioning from the CDM.

Compensation activities must be independently audited, and emissions reduction units quantified using approved methodologies. Mangroves are eligible for inclusion under the national PECC scheme, which is meant to reduce the carbon footprint of domestic companies only, and not for producing internationally tradeable carbon credits. This current limitation might change as government interest on carbon markets and other carbon pricing mechanisms continue to evolve. The country also implements REDD+, with results-based payments from the REDD+ Early Movers program supporting mangrove restoration and the management of 14,163 ha of mangroves under the Socio Manglar incentive scheme (US$133,740/year).

Blue carbon is beginning to be integrated into broader environmental finance strategies where outcomes of ecosystem management are increasingly described based on the modeled economic value of carbon sequestration, contributions to national mitigation targets, or the cost of emissions associated with ecosystem loss.

Overall, Ecuador’s regulatory frameworks, valuation studies, and existing incentive programs create a clear foundation for expanding carbon finance linked to mangrove conservation, restoration, and community-based management. Strengthening carbon accounting tools, expanding incentive coverage within AUSCEM areas, and deepening alignment with national climate policy represent viable pathways to enhance the role of mangrove ecosystems in the country’s mitigation strategy.



Mangrove ecosystems are a critical food source for a vast array of bird species © Conservation International

GCF MANGROVES FOR CLIMATE

The **“Mangroves for Climate” project (FP235)**, led by the Ministry of Environment **with the support of Conservation International and the Green Climate Fund**, is a national initiative designed to address the ongoing degradation of mangrove ecosystems and the climate risks faced by coastal communities. With a total budget of USD 45.9 million, the project seeks to reverse the impacts of urban expansion and commercial shrimp aquaculture, the historical primary drivers of mangrove loss in Ecuador, by supporting community participation, sustainable management, and improved governance. The project will safeguard and restore these functions while contributing to national climate targets through avoided emissions and carbon sequestration.

A central element of the project is its inclusive approach, which integrates local communities and the private sector, particularly shrimp aquaculture operators, as partners in conservation. Rather than relying solely on enforcement measures, the initiative promotes the adoption of legal and sustainable production practices, restoration of mangrove areas within or adjacent to aquaculture concessions, and active participation in stewardship programmes.
These efforts are supported through a results-based payment system tied to measurable environmental outcomes, using accrued interest from GCF funds to finance incentive payments.



Coastal area in the Guayas river estuary
© Conservation International

The project also seeks additional capital from bilateral donors, climate funds, and private investors to expand its coverage and long-term financial sustainability. More than 89,000 people in vulnerable coastal regions, including traditional fishers and crab collectors, are expected to benefit directly from strengthened governance, improved livelihoods, and enhanced ecosystem resilience.

89,000
coastal residents are expected to benefit from improved livelihoods, governance, and ecosystem resilience

To ensure durability beyond the project period, Mangroves for Climate is integrated into Ecuador’s institutional frameworks, including the Ecuador Mangrove Fund, which supports transparent and coordinated delivery of climate finance. The project builds capacity for monitoring, legal empowerment, and community-based management, reinforcing existing mechanisms such as AUSCEMs and complementing national conservation policies. By linking climate finance, ecosystem restoration, and community leadership, the initiative aims to generate scalable outcomes and provide a model for inclusive, results-driven mangrove conservation.

AFD SCIENTIFIC EXPERTISE AND PILOT MANGROVE RESTORATION

The **French Development Agency’s “Scientific Expertise and Pilot Mangrove Restoration” project** aims to provide operational recommendations for national mangrove policy, contribute to the National Action Plan (PAN Manglares), and strengthen the sustainability of the SocioManglar program through carbon finance.

Funded by the AFD’s Blue Carbon Facility, the project runs 2025 to 2028 and is implemented by IRD in close collaboration with MAATE, the final beneficiary.

Civil Society Working Towards Mangrove Conservation

CONSERVATION INTERNATIONAL

GLOBAL MANGROVE ALLIANCE COUNTRY CHAPTER

Conservation International is a key promoter of Ecuador's GMA chapter. In 2022, Ecuador began establishing the framework for a national GMA chapter, focusing on creating alliances for mangrove conservation and integrating individual efforts into a cohesive management strategy. By 2024, the Ecuador GMA chapter had 24 members, including non-governmental organizations (8), international agencies (1), academia (4), individuals (5), private sector representatives (2), an environmental fund (1), a public research institute (1), and fishing associations (2).

Ecuador began **establishing a national Global Mangrove Alliance (GMA) framework in 2022** to strengthen collaboration and coordinate mangrove conservation efforts

TYPE OF MEMBER	MEMBER NAMES
Non-governmental organizations	CI Ecuador, The Nature Conservancy, WWF Ecuador, Fundación Ecuatoriana para la Investigación y Conservación de las Aves y sus hábitats (Aves y Conservación), Fundación Heifer Ecuador, Fundación CALISUR, Fundación Proyecto Social, Unión Internacional para la Conservación de la Naturaleza (UICN)
International agencies	Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura - UNESCO
Academia	Universidad Espíritu Santo – UESS, Pontificia Universidad Católica del Ecuador – Sede Esmeraldas, Universidad Técnica Particular de Loja – UTPL, Universidad Casa Grande
Private sector	Cámara Nacional de Acuacultura – CNA, DPWORLD POSORJA S.A
An environmental fund	Fondo de Agua de Guayaquil – FONDAGUA, para la Conservación de la Cuenca del Río Daule
A public research institute	Instituto Público de Investigación de Acuicultura y Pesca - IPIAP
Fishing associations (AUSCEM)	Asociación de Cangrejeros y Pescadores Artesanales 21 de mayo – Puerto Roma, Asociación de Mariscadores Autónomos y Afines Los Isleños

GMA Ecuador's activities include field visits to AUSCEMs, interinstitutional coordination, strengthening restoration capacities, and implementing two mangrove restoration demonstration plots with local universities. Additionally, a participatory proposal for Communication and Education Plans for mangrove conservation has been developed. Collectively, the organizations are working on at least 70,000 hectares of mangroves, primarily in the Gulf of Guayaquil.



The Global Mangrove Alliance Ecuador chapter 2023
© Global Mangrove Alliance



Isla Santay community member exploring local mangroves © Leslie von Pless

ACRONYMS AND ABBREVIATIONS

AFOLU	Agriculture, Forestry and Other Land Use sector
AUSCEM	Custody and Sustainable Use of Mangrove Agreements (Acuerdos de Uso Sostenible y Custodia del Ecosistema de Manglar)
ASC	Aquaculture Stewardship Council
CDM	Clean Development Mechanism
CFI	Coastal Fisheries Initiative - Latin America
CIIFEN	International Center for the Study of El Niño (Centro Internacional para la Investigación del Fenómeno de El Niño)
CLIRSEN	Centro de Levantamientos Integrados de Recursos Naturales por Sensores Remotos
CI-GEF	Conservation International GEF Project Agency
DMCO	Marine-Coastal and Oceanic Directorate (Dirección Marino-Costera y Oceánica)
ECLAC	Economic Commission for Latin America and the Caribbean
ERU	Emissions Reductions Unit
ESPOL	Litoral Polytechnic School (Escuela Politécnica del Litoral)
FAO	UN Food and Agriculture Organization
FIAS	Sustainable Environmental Investment Fund (Fondo de Inversión Ambiental Sostenible)
GAD	Descentralized Autonomous Government (Gobierno Autónomo Descentralizado)
GCF	Glocal Climate Fund
GEF	Global Environment Facility
GMA	Global Mangrove Alliance
GMW	Global Mangrove Watch
INEC	National Census and Statistics Institute (Instituto Nacional de Estadística y Censos)
INEFAN	Ecuadorian Institute of Forestry and Natural Areas and Wildlife (Instituto Ecuatoriano Forestal y de Áreas Naturales y Vida Silvestre)
LULUCF	Land Use, Land-Use Change and Forestry
MAATE	Ministry of Environment, Water and Ecological Transition (Ministerio de Ambiente, Agua y Transición Ecológica)
MPA	Marine Protected Area
OMEC	Other effective area-based conservation measures (Otras Medidas Efectivas de Conservación)
PA	Protected Area
PAN-Manglares	Mangroves National Action Plan (Plan de Acción Nacional – Manglares)
PECC	Ecuador's Zero Carbon Program (Programa Ecuador Carbono Cero)
PLANACC	National Climate Change Adaptation Plan
PMRC	Coastal Resources Management Program
POEMC	Coastal and Marine Spatial Planning Framework (Plan de Ordenamiento del Espacio Marino y Costero)
RAMSAR	La Convención sobre los Humedales Ramsar
RE	Ecological Reserve (Reserva Ecológica)
RPF	Flora and Fauna Production Reserve (Reserva de Producción de Flora y Fauna)
RVS	Wildlife Reserve (Reserva de Vida Silvestre)
SBP	Socio Bosque Fund
SNGR	National Secretariat for Risk Management (Secretaría Nacional de Gestión de Riesgo)
SSP	Shared Socioeconomic Pathways
UEES	University of the Holy Spirit (Universidad del Espíritu Santo)
UBN	Unsatisfied Basic Needs
UTPL	Public Technical University of Loja (Universidad Técnica Particular de Loja)



Great egret foraging in the shallow waters
© Conservation International

March 2026

MANGROVE BREAKTHROUGH

GLOBAL MANGROVE ALLIANCE

Mobilizing the Mangrove Breakthrough in Ecuador