

# Anguilla Ecosystem Account Summary




2019 ecosystem account

July 2021



 **Funded by  
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# 2019 Ecosystem account

At 35 square miles (Government of Anguilla, 2021a) with a population of 15,117 (World Population Review, 2021), the island nation of Anguilla is largely dependent on its wealth of environmental assets, in fact the environment contributes at least **90 million XCD annual value** to Anguilla in 2019 (**Table 3**), which is 9% of its GDP<sup>1</sup> (Statistics Department of Anguilla, 2020a). These environmental assets provide an abundance of benefit to the people of Anguilla, including: the attraction of some of the world's most beautiful beaches for tourists (71m XCD/ year); marine ecosystems that support the fishing industry (17m XCD/ year); terrestrial and marine ecosystems sequestering carbon (1.68m XCD/ year); and other more difficult to measure values such as the biodiversity that makes life richer to both local inhabitants and visitors. The economic prosperity and wellbeing of the people of Anguilla are fundamentally linked to effective management of the environment, and an understanding of the value that it provides.

Ecosystem accounts provide economic evidence that supports the delivery of sustainable value from environmental assets. Effective management of the environment must consider the extent and underlying condition of ecosystems over time, as well as the range of benefits they provide and the economic value of those benefits to different stakeholder groups. Specifically, the data in ecosystem accounts can help address several fundamental questions for policy and planning:

- What environmental assets are present and what state are they in? How does this change over time?
- What benefits does the environment provide? How are these received by beneficiaries?
- What is the economic value of these benefits? How is this value distributed across the population?

The environmental and socioeconomic data produced within ecosystem accounts provide a basis for answering these questions. Their importance is reflected in the development of the United Nations Statistics Standard System of Environmental Economic Accounting – Ecosystem Accounting (SEEA\_EA)<sup>2</sup>. Officially adopted by the UN as a statistical standard in March 2021, the SEEA-EA supports the implementation of ecosystem accounting as a part of National Accounts by National Statistics Offices around the world. Ecosystem accounts provide indicators that compliment national economic and social indicators (such as GDP and demographic trends), and this evidence can support policy development and decision making, such as:

- Effective decisions which impact on the environment and the benefits it provides;
- Action on climate change, including mitigation, adaptation and resilience to impact;
- Delivery of international initiatives, such as the UN Sustainable Development Goals (SDGs)<sup>3</sup>; and
- A green post-COVID economic recovery, and in particular a sustainable tourism sector.

For ecosystem accounts to be a valuable addition to government and organisational policy and planning strategy, they should be embedded into the decision-making process, and updated on an annual basis both to provide current data and to monitor trends over time. A partnership of eftec, the UK Joint Nature Conservation Committee (JNCC), the New Economics Foundation, and Anguilla's Department of Natural Resources (DNaR), with Darwin Plus funding from the UK Government, have initiated this process in Anguilla. The aim is for full ownership of the accounting process to be handed over to the Government of Anguilla by

<sup>1</sup> GDP at market prices is estimated at 1,024 million XCD in 2019 (Statistics Department of Anguilla, 2020a).

<sup>2</sup> More information is available at: <https://seea.un.org/ecosystem-accounting>

<sup>3</sup> More information is available at: <https://sdgs.un.org/goals>

Q1 2022.

### *Physical flow and monetary flow*

A range of benefits have been assessed within the ecosystem account, with estimated annual physical flow and monetary values given a confidence rating, as described in **Table 1**. The confidence rating is based on the robustness of the evidence and assumptions used. The summary of the ecosystem account is presented in **Table 2**. The annual physical flow and monetary flow are divided between those measured in accordance with the SEEA-EA standard, and those measured by supplementary methods. The present values (the sum over 25 years), of the benefits are also shown.

**Table 1: Description of confidence**

Confidence	Symbol	Description
Low	●	Evidence is partial and significant assumptions are made so that the data provides only order of magnitude estimates of value to inform decisions and spending choices.
Medium	●	Science-based assumptions and published data are used but there is some uncertainty in combining them, resulting in reasonable confidence in using the data to guide decisions and spending choices.
High	●	Evidence is peer reviewed or based on published guidance so there is good confidence in using the data to support specific decisions and spending choices.
No colour	●	Not assessed

**Table 2: Summary of Anguilla ecosystem account**

Annual overview	Physical flow (unit/yr)			Monetary value (XCDm/yr)			Present Value 25 yr (XCDm)
Produced at: July 2021	Reporting	Confidence	Units	Value	Confidence	Valuation metric	
<b>Ecosystem service flow account (SEEA-EA)</b>							
Fisheries	1,502,256	●	Total volume of fish landings (lbs/yr)	17.30	●	Total value of fish	295
Agriculture	176,274	●	Total weight of agricultural production (lbs/yr)	1.01	●	Total value of agricultural production	17
Carbon sequestration	11,611	●	Total volume of CO2e sequestered (tCO2e/yr)	1.68	●	Total value of CO2e sequestered	41
Coastal hazard protection	96,295.7	●	Total area of avoided infrastructure damage (sqft)	-	●	Total avoided infrastructure damage cost	10
Tourism	756,761	●	Total number of visits (visits/yr)	71	●	Total value added to tourism industry attributed to ecosystems	1,206
			<b>Total value</b>	<b>91</b>	●	<b>Mix of values</b>	<b>1,569</b>
<b>Supplementary information</b>							
<b>Other exchange values</b>							
Tourism	0.8	●	Total number of visits (visits/yr)	212.0	●	Remaining visitor expenditure attributed to ecosystems	3,616.8
<b>Welfare values</b>							
Local cultural services	0.0014	●	Total number of tour attendees (adult and children)	0.1	●	Total WTP for cultural services for local population	2
<b>Non-monetised benefits</b>							
Water supply	151,126,976	●	Volume of water supplied from brackish water reverse osmosis plant (US gal./yr)		●		
	294,178,397	●	Volume of water supplied from seawater reverse osmosis plant (US gal./yr)		●		
Surface hydrology regulation		●			●		
Heritage salt pond	0.00057	●	Total number of people within 200m of salt heritage ponds (no.)		●		
	0.00005	●	Salt picking tour attendees (attendees/yr.)		●		

### Extent and condition account

Spatial analysis was conducted to assess the ecosystems present within Anguilla. The quantity (i.e. extent) and quality (i.e. condition) of the present ecosystems are recorded in the extent account (**Table 3**) and condition account (**Table 4**), respectively. The accounts can be used to monitor changes in the environmental assets over time. The terrestrial and marine ecosystem of Anguilla are mapped in **Figure 1**.

**Table 3: Extent account**

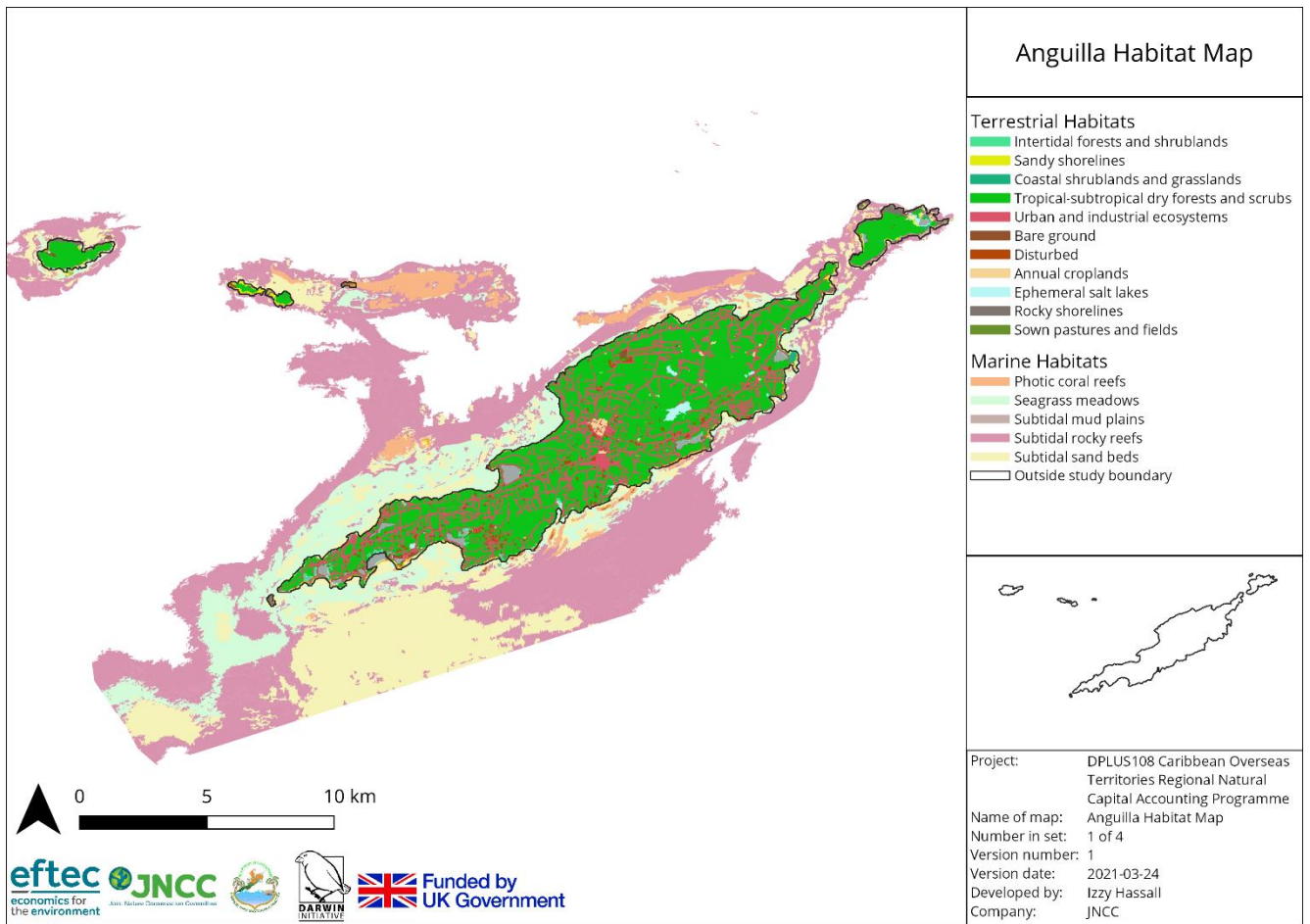
IUCN Code	Ecosystem	Area (m2)
<b>Terrestrial</b>		
<b>Total</b>		<b>76,349,736</b>
F2.7	Ephemeral salt pond	2,973,613
MT1.3	Sandy shorelines	1,522,543
MT2.1	Coastal shrublands and grasslands	873,474
MFT1.2	Intertidal forests and shrublands	1,194,680
T1.2	Tropical-subtropical dry forests and scrubs	55,203,464
T7.1	Annual croplands	722,087
T7.2	Sown pastures and fields	2,206,676
T7.4	Urban and industrial ecosystems	5,337,307
<b>Marine</b>		
<b>Total</b>		<b>248,483</b>
M1.1	Seagrass meadows	248,483
<b>Other</b>		
<b>Total</b>		<b>474,560</b>
	Unknown	474,560

Source: DNR (2020), TNC (2020)

**Table 4: Condition account**

Category	Sub-category	Value
<b>Ecological communities and species</b>		
Count of native reptiles and amphibians (#)	Lesser Antillean iguana ( <i>Iguana delicatissima</i> )	300
	Bridled Terns ( <i>Onychoprion anaethetus</i> )	540
	Sooty Tern ( <i>Onychoprion fuscatus</i> )	226,000
	Brown Booby ( <i>Sula leucogaster</i> )	990
	Least Tern ( <i>Sternula antillarum</i> )	1580
	Laughing gull ( <i>Leucophaeus atricilla</i> )	177
	Brown pelican ( <i>Pelecanus occidentalis</i> )	50
	Common tern ( <i>Sterna hirundo</i> )	5
	Royal tern ( <i>Thaasseus maximus</i> )	37

Source: Knapp et al (2014), Johnson et al (2014), BEST Initiative (2019).



**Figure 1: Anguilla terrestrial and marine ecosystems**

Source: DNR (2020), TNC (2020)

### Box 1: Ecosystem accounts

The ecosystem accounting approach helps frame the interconnection between humans and the environment in economic terms. The environment can be viewed as an asset, or natural capital, that provides a revenue of ecosystem goods and services, which benefit people. This includes provisioning services, such as agricultural produce or fisheries, regulating services, such as protection from natural hazards and carbon sequestration, and cultural services, such as tourism and local recreation. These benefits can be measured and valued in a consistent and structured manner, and compiled into an accounting framework, called ecosystem accounts. Ecosystem accounts produce environmental statistics which provide an evidence base on the benefits provided by the environment.

An ecosystem account is structured as a set of component accounts, each of which require data to be consistently collected and collated in a systematic way. The main components of an ecosystem account are:

- **Extent and condition accounts** - an inventory that holds details on the state of all the ecosystem assets that are present, including their extent and condition (quality and other relevant factors). For example, the spatial area of a reef system, and its health in terms of suitable indicators.
- **Physical flow account** - contains the flow of goods and services which are dependent on the ecosystem assets that are identified in the extent and condition accounts. This includes benefits related to the provisioning, regulating and cultural goods and services provided by ecosystems.
- **Monetary flow account** - calculates the annual value of the estimated flow of benefits that are captured in the physical flow account. The overall asset value is estimated based on assumptions about the values of the physical and monetary flows into the future.

This set of accounts therefore monitor the presence and state of different habitats, the benefits these provide, and the value that humans receive from them. When updated year on year they provide a useful means to monitor and evaluate growth or decline in any of these elements, while also helping to understand the relationship between the environment, the services it provides, and how humans use and value them.



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