

Coral reef goods and services information



Goods and services provided by the coral reef

Type of Service	Name	Description
Provisioning Services	Food	It has been estimated that coral reefs provide food for up to 1 billion people. Coral reefs provide a habitat for about a quarter of the ocean's fish and if properly managed coral reefs could produce a yield of around 15 tonnes of fish and other seafood per km ² per year.
	Raw material	Coral reefs found in East Africa, South Asia and the Pacific are often mined for limestone and construction material. Sand and limestone from coral reefs are used in cement for new buildings. A 1995 study estimated that 20,000 cubic meters of coral per year were collected in the Maldives solely for constructions materials (Brown, 1995). Corals are also harvested for souvenirs and jewellery.
	Medicinal resources	Natural bacteria and fungi that already exist in the coral reef can be used to develop effective drugs such as pain killers. Coral reefs have yielded sources for medicines used in the treatment of HIV, cancer and cardiovascular diseases.
Habitat (supporting) Services	Habitats for species	Coral reefs support more species per unit area than any other marine environment. Scientists estimate there may be another 1 million to 8 million undiscovered species of organisms living in and around coral reefs.

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Type of Service	Name	Description
Regulating Services	Erosion prevention	Coral reefs dissipate wave energy from storms and tsunamis which reduce the damage to land, prevent coastal flooding coastal erosion and loss of property. It is estimated 150,000km of shoreline in 100 countries and territories receive some protection from coral reefs. This saves countries billions of dollars each year, not only in terms of the cost of coastal defence strategies but also in insurance costs and human destruction and displacement.
Cultural Services	Recreation, mental and physical health	Coral reefs are beautiful locations people may visit and experience the wonder of corals. Recreational activities include snorkeling, scuba diving and fishing.
	Tourism	A key source of revenue in many countries and territories within 100km of coral reefs is tourism. Australia's Great Barrier Reef generates over US\$6.4 billion per year.

Table 2. Summary of monetary values for each service per biome (values in Int.\$/ha /year. 2007 price levels). R de Groot et al / Ecosystem \Services I (2012) 50-61

	Marine	Coral reefs	Coastal systems	Coastal wetlands*	Inland wetlands (rivers/lakes)	Fresh water forest	Tropical forest	Temperate forest	Woodlands	Grasslands
Provisioning services	102	55,724	2,396	2,998	1,659	1,914	1,828	671	253	1,305
1. Food	93	677	2,384	1,111	614	106	200	299	52	1,192
2. Water			12	1,217	408	1,808	27	191	170	60
3. Raw materials	8	21,528		358	425		84	181		53
4. Genetic resources		33,048		10			13			
5. Medicinal resources				301			1,504			1
6. Ornamental resources		472			114				32	
Regulating services	65	171,478	25,847	171,515	17,364	187	2,529	491	51	159
7. Air quality regulation							12			
8. Climate regulation	65	1,188	479	65	488		2,044	152	7	40
9. Disturbance moderation		16,991		5,351	2,986		66			
10. Regulation of water flows					5,606		342			
11. Waste treatments		85		161,125	3,015	187	6	7		75
12. Erosion prevention		153,214	25,368	3,929	2,607		15	5	13	44
13. Nutrient cycling				45	1,713		3	93		
14. Pollination							30		31	
15. Biological control					948		11		235	
Habitat services	5	16,210	375	17,138	2,455	0	39	862	1,277	1,214
16. Nursery service		0	194	10,648	1,287		16		1,273	
17. Genetic diversity	5	16,210	180	6,490	1,168		23	862	3	1,214
Cultural services	319	108,837	300	2,193	4,203	2,166	867	990	7	193
18. Esthetic information		11,390			1,292					167
19. Recreation	319	96,302	256	2,193	2,211	2,166	867	989	7	26
20. Inspiration		0			700					
21. Spiritual experience			21							
22. Cognitive development			22						1	
Total economic value	491	352,249	28,917	193,845	25,682	4,267	5,264	3,013		2,871

Numbers in the cells are averages of the values found for a particular service and biome. Calculations are based on a total of 665 values. For details see Appendix I
 *Coastal systems include estuaries, continental shelf area and sea grass, but exclude wetlands like tidal marsh, mangroves and salt water wetlands.