

Dugong (*Dugong dugong*)

Table 1.1: Occurrence, range, status and data reliability for Dugong range countries.

* **Status:** 1 = increasing; 2 = stable; 3 = unknown; 4 = unsustainable anthropogenic mortality; 5 = declining.

** **Reliability:** 1 = no information; 2 = anecdotal evidence; 3 = expert anecdotal evidence plus some relevant quantitative data; 4 = very likely (quantitative data); 5 = certain (reliable time-series data).

Country	Subset Country	Length of Coastline	% Range (coast)	Area <10m deep (km ²)	% Range (area <10m)	Native Presence Confirmed	Native Presence Suspected	Extinct	Vagrant	Status*	Reliability**
Australia	Queensland	10,160	7	140,675	11.2	√				5	5
Australia	Torres Strait	759	1	32,621	2.6	√				4	5
Australia	NSW	1,129	1	1,507	0.1				√	3	2
Australia	Western Australia	13,487	10	81,264	6.5	√				2	4
Australia	Northern Territory	8,616	6	53,710	4.3	√				2	4
Bahrain		158	0	24,543	1.9	√				3	3
Bangladesh		1,901	1		0.0		√			3	1
Brunei		119	0		0.0	√				3	3
Cambodia		353	0	9,578	0.8	√				3	1
China	South-Central	1,227	1	19,168	1.5	√				3	1
Comoros Archipelago		272	0	644	0.1	√				5	3
Djibouti		226	0	11,174	0.9	√				3	2
Egypt	Red Sea Coast	1,489	1	14,469	1.1	√				3	3
Eritrea		986	1	19,219	1.5	√				3	2
India	West and South-East	10,160	7	140,675	11.2	√				5	5
Indonesia		759	1	32,621	2.6	√				4	5

Country	Subset Country	Length of Coastline	% Range (coast)	Area <10m deep (km ²)	% Range (area <10m)	Native Presence Confirmed	Native Presence Suspected	Extinct	Vagrant	Status*	Reliability**
Iraq		43.64	0		0.0				√	3	1
Islamic Republic of Iran		2215.18	2		0.0				√	3	1
Israel	Red Sea Coast	9	0	7	0.0	√				3	1
Japan	Okinawa	568	0	4,813	0.4	√				5	3
Jordan		21	0		0.0	√				3	1
Kenya		472	0	6,631	0.5	√				5	3
Kuwait		317.04	0	56	0.0				√	3	1
Madagascar		4,306	3	15,952	1.3	√				5	3
Malaysia	East Malaysia	2,035	1	22,701	1.8	√				3	3
Malaysia	Pensinsula	1,522	1	15,761	1.3	√				3	3
Maldives		110	0		0.0			√		3	1
Mauritius		177	0		0.0			√		3	1
Mayotte		86	0	951	0.1	√				5	3
Mozambique		2,542	2	37,985	3.0	√				5	3
Myanmar		3,968	3	47,165	3.7		√			3	1
New Caledonia		1,047	1	5,197	0.4	√				3	4
Oman		1,600	1		0.0				√	3	1
Palau		1,519	1		0.0	√				5	3
Papua New Guinea		6,555	5	54,118	4.3	√				5	3
Philippines		11,677	8	94,809	7.5	√				5	2
Qatar		409.74	0	1	0.0	√				3	3
Saudi Arabia	Red Sea Coast	1,890	1	31,045	2.5	√				3	4
Saudi Arabia	Arabian Gulf Coast	710.78	1	70	0.0	√				3	4
Seychelles		111	0		0.0				√	3	3
Singapore		62	0	93	0.0	√				3	3
Solomon Islands		2,531	2	18917	1.5	√				3	2
Somalia		2,344	2	11,163	0.9	√				3	1
Sri Lanka		1,260	1	20,717	1.6	√				5	3
Sudan		547	0	589	0.0	√				3	1

Country	Subset Country	Length of Coastline	% Range (coast)	Area <10m deep (km ²)	% Range (area <10m)	Native Presence Confirmed	Native Presence Suspected	Extinct	Vagrant	Status*	Reliability**
Taiwan, Province of China		873	1		0.0			√		3	3
Tanzania		1,216	1	10,899	0.9	√				5	2
Thailand		2,433	2	13,866	1.1	√				3	3
Timor Leste		706	1		0.0	√				3	2
United Arab Emirates		585	0	305	0.0	√				3	3
Vanuatu		1,471	1	4,938	0.4	√				3	3
Viet Nam		3,048	2	38,495	3.1	√				3	3
Yemen		1,579	1	1,369	0.1	√				3	1

Table 1.2: IUCN Threat Authority File codes for Dugong in each of its range countries.

Country	Subset Country	Major Threats											
		Human settlement	Transport-water	Harvest food for subsistence	Harvest Subsistence Medicine	Harvest subsistence materials	Netting	Dynamite	Agric' Pollution	Oil	Storm	Slow Growth rate	Tourism
Australia	Queensland	1.4.2	1.4.5	3.1.1	3.2.1	3.5.1	4.1.1.2		6.3.1		7.2	9.7	
	Torres Strait		?	3.1.1	3.2.1	3.5.1			6.3.1		7.2	9.7	
	NSW	1.4.2	?				4.1.1.2		6.3.1		7.2	9.7	
	Western Australia		1.4.5	3.1.1	3.2.1	3.5.1	4.1.1.2				7.2	9.7	10.1
	Northern Territory		?	3.1.1	3.2.1	3.5.1	4.1.1.2				7.2	9.7	
Bahrain		1.4.2	?	3.1.1	3.2.1	3.5.1	4.1.1.2		6.3.1	6.3.6		9.7	
Bangladesh		1.4.2	?	?	?	?	?		6.3.1		?	9.7	
Brunei		1.4.2	1.4.5	3.1.1	3.2.1	3.5.1	4.1.1.2	4.1.1.4	6.3.1			9.7	
Cambodia		1.4.2	?	3.1.1	3.2.1	3.5.1	4.1.1.2	4.1.1.4	6.3.1			9.7	
China	South-Central	1.4.2	1.4.5	3.1.1	3.2.1		4.1.1.2	4.1.1.4	6.3.1			9.7	10.1
Comoros Archipelago		1.4.2					4.1.1.2					9.7	
Djibouti		1.4.2	?	?	3.2.1	3.5.1	4.1.1.2		6.3.1	6.3.6		9.7	
Egypt	Red Sea Coast	1.4.2	1.4.5	3.1.1	3.2.1	3.5.1	4.1.1.2		6.3.1	6.3.6		9.7	10.1
Eritrea		1.4.2	1.4.5	3.1.1	3.2.1	3.5.1	?		6.3.1	6.3.6		9.7	
India	West and South-East	1.4.2	?	3.1.1	3.2.1	3.5.1	4.1.1.2	?	6.3.1		7.2	9.7	
Indonesia		1.4.2	1.4.5	3.1.1	3.2.1	3.5.1	4.1.1.2	4.1.1.4	6.3.1			9.7	
Iraq		1.4.2	?				?	?		6.3.6		9.7	
Islamic Republic of Iran		1.4.2	?				?	?		6.3.6		9.7	
Israel	Red Sea Coast	1.4.2	1.4.5	?	?	?	?		6.3.1	6.3.6		9.7	
Japan	Okinawa	1.4.2	1.4.5				4.1.1.2		6.3.1			9.7	
Jordan		1.4.2	1.4.5	3.1.1	3.2.1	3.5.1	4.1.1.2		6.3.1	6.3.6		9.7	
Kenya		1.4.2	?	3.1.1	3.2.1	3.5.1	4.1.1.2	?	6.3.1			9.7	
Kuwait		1.4.2	?				?	?		6.3.6		9.7	
Madagascar		1.4.2	?				4.1.1.2	4.1.1.4	6.3.1		7.2	9.7	

Country	Subset Country	Major Threats											
		Human settlement	Transport-water	Harvest food for subsistence	Harvest Subsistence Medicine	Harvest subsistence materials	Netting	Dynamite	Agric' Pollution	Oil	Storm	Slow Growth rate	Tourism
Malaysia	East Malaysia	1.4.2	1.4.5	3.1.1	3.2.1	3.5.1	4.1.1.2	4.1.1.4	6.3.1			9.7	
	Pensinsula	1.4.2	1.4.5	3.1.1	3.2.1	3.5.1	4.1.1.2		6.3.1			9.7	
Maldives		1.4.2	1.4.2	?	?	?	?	?	?	?	?	9.7	10.1
Mauritius		1.4.2	?	?	?	?	?	?	?	?	?	9.7	?
Mayotte		1.4.2	1.4.5				4.1.1.2		6.3.1			9.7	10.1
Mozambique		1.4.2	?	3.1.1	?	3.5.1	4.1.1.2	?	6.3.1		7.2	9.7	10.1
Myanmar		1.4.2	?	?	?	?	?	?	6.3.1			9.7	
New Caledonia		1.4.2	1.4.5	3.1.1			4.1.1.2	?	6.3.1			9.7	
Oman		1.4.2	?	?			?		?			9.7	
Palau		1.4.2	?	3.1.1		3.5.1.		4.1.1.4	6.3.1			9.7	
Papua New Guinea		1.4.2	?	3.1.1	3.2.1	3.5.1	4.1.1.2	?	6.3.1			9.7	
Philippines		1.4.2	1.4.5	3.1.1	3.2.1	3.5.1	4.1.1.2	4.1.1.4	6.3.1			9.7	10.1
Qatar		1.4.2	1.4.5	3.1.1	3.2.1	3.5.1	4.1.1.2		6.3.1	6.3.6		9.7	
Saudi Arabia	Red Sea Coast	1.4.2	1.4.5	3.1.1	3.2.1	3.5.1	4.1.1.2		6.3.1	6.3.6		9.7	
	Arabian Gulf Coast	1.4.2	1.4.5	3.1.1	3.2.1	3.5.1	4.1.1.2		6.3.1	6.3.6		9.7	
Seychelles												9.7	
Singapore		1.4.2	1.4.5		3.2.1	3.5.1	4.1.1.2		6.3.1			9.7	
Solomon Islands			?	3.1.1			?	?	6.3.1			9.7	
Somalia		1.4.2	?				?		6.3.1			9.7	
Sri Lanka		1.4.2	?	3.1.1	3.2.1		4.1.1.2	4.1.1.4	6.3.1		7.2	9.7	
Sudan		1.4.2	?	?	?	?	4.1.1.2		6.3.1	6.3.6		9.7	
Taiwan, Province of China		1.4.2	1.4.5	?	?	?	4.1.1.2	?	?	?	?	9.7	?
Tanzania		1.4.2	1.4.5	3.1.1	3.2.1	3.5.1	4.1.1.2	4.1.1.4	6.3.1			9.7	
Thailand		1.4.2	1.4.5	3.1.1	3.2.1	3.5.1	4.1.1.2		6.3.1			9.7	
Timor Leste		1.4.2	?	?	?	?	4.1.1.2	?	6.3.1			9.7	

Country	Subset Country	Major Threats											
		Human settlement	Transport-water	Harvest food for subsistence	Harvest Subsistence Medicine	Harvest subsistence materials	Netting	Dynamite	Agric' Pollution	Oil	Storm	Slow Growth rate	Tourism
United Arab Emirates		1.4.2	?	3.1.1	3.2.1	3.5.1	4.1.1.2		6.3.1	6.3.6		9.7	
Vanuatu		1.4.2	?	3.1.1	3.2.1	3.5.1	4.1.1.2		6.3.1			9.7	10.1
Viet Nam		1.4.2	?	3.1.1	3.2.1	3.5.1	4.1.1.2	4.1.1.4	6.3.1			9.7	
Yemen		1.4.2	?	3.1.1	3.2.1	3.5.1	4.1.1.2		6.3.1	6.3.6		9.7	10.1

Table 1.3: IUCN Conservation Measure Authority File codes (conservation measures in place) for Dugong in its range countries.

	Country	Australia				Bahrain	Bangladesh	Brunei	Cambodia
	Subset Country	Queensland	Torres Strait	New South Wales	Western Australia				
Conservation Initiatives In Place	Management Plan developed	1.1.1			1.1.1	1.1.1			
	Management plan in place	1.1.2			1.1.2				
	Legislation in place	1.2.2.1	1.2.2.1	1.2.2.1	1.2.2.1	1.2.2.1	1.2.2.1	1.2.2.1	1.2.2.1
		1.2.2.2	1.2.2.2	1.2.2.2	1.2.2.2	1.2.2.2	1.2.2.2		
		1.2.2.3	1.2.2.3	1.2.2.3	1.2.2.3	1.2.2.3	1.2.2.2		
	LivAlt	1.3.3							
	Formal Education	2.1							
	Awareness	2.2	2.2						
	Capacity Building	2.3							
	Taxonomic Research	3.1	3.1						
	Population Numbers & Range	3.2	3.2		3.2	3.2	3.2		
	Biological Research	3.3	3.3		3.3				
	Habitat Research	3.4	3.4		3.4	3.4			
	Threats Research	3.5	3.5				3.5		
	Harvesting Levels Research		3.6						
	Research Cultural Relevance	3.7	3.7			3.7			
	Research Conservation Measures	3.8			3.8				
	Research Population Trends	3.9	3.9		3.9				
	Habitat Maintenance/ Conservation	4.4.1			4.4.1	4.4.1			
	Establishment of Protected Areas	4.4.2	4.4.2		4.4.2	4.4.2			
Management of Protected Areas	4.4.3			4.4.3	4.4.3				

	Country	China	Comoros Archipelago	Dijoubti	Egypt	Eritrea	India	Indonesia	Iraq	Islamic Republic of Iran
	Subset Country	South-central			Red Sea Coast		West & South-east			
Conservation Initiatives In Place	Management Plan developed									
	Management plan in place									
	Legislation in place	1.2.2.1 1.2.2.2		1.2.2.1	1.2.2.1 1.2.2.2	1.2.2.1	1.2.2.1 1.2.2.2	1.2.2.1 1.2.2.2 1.2.2.3		1.2.2.1
	LivAlt									
	Formal Education									
	Awareness									
	Capacity Building									
	Taxonomic Research									
	Population Numbers & Range	3.2								
	Biological Research					3.3		3.3		
	Habitat Research					3.4		3.4	3.4	
	Threats Research					3.5		3.5		
	Harvesting Levels Research									
	Research Cultural Relevance									
	Research Conservation Measures									
	Research Population Trends					3.9				
	Habitat Maintenance/ Conservation									
	Establishment of Protected Areas	4.4.2				4.4.2	4.4.2	4.4.2	4.4.2	
	Management of Protected Areas									

	Country	Israel	Japan	Jordan	Kenya	Kuwait	Madagascar	Malaysia		Maldives
	Subset Country	Red Sea Coast	Okinawa					East Malaysia	Pensinsula	
Conservation Initiatives In Place	Management Plan developed									
	Management plan in place									
	Legislation in place	1.2.2.1	1.2.2.1 1.2.2.2	1.2.2.1	1.2.2.1 1.2.2.2	1.2.2.1	1.2.2.1 1.2.2.2	1.2.2.1 1.2.2.2		1.2.2.1
	LivAlt									
	Formal Education									
	Awareness				2.2					
	Capacity Building							2.3		
	Taxonomic Research									
	Population Numbers & Range		3.2		3.2			3.2	3.2	
	Biological Research	3.3	3.3							
	Habitat Research	3.4	3.4					3.4	3.4	
	Threats Research		3.5		3.5			3.5		
	Harvesting Levels Research									
	Research Cultural Relevance							3.7		
	Research Conservation Measures									
	Research Population Trends									
	Habitat Maintenance/ Conservation									
	Establishment of Protected Areas	4.4.2				4.4.2				4.4.2
Management of Protected Areas										

	Country	Mauritius	Mayotte	Mozambique	Myanmar	New Caledonia	Oman	Palau	Papua New Guinea	Philippines
	Subset Country									
Conservation Initiatives In Place	Management Plan developed									
	Management plan in place									
	Legislation in place	1.2.2.1	1.2.2.1	1.2.2.1 1.2.2.2	1.2.2.1	1.2.2.1 1.2.2.2	1.2.2.1	1.2.2.2	1.2.2.1 1.2.2.2	1.2.2.1 1.2.2.2
	LivAlt									
	Formal Education									
	Awareness			2.2						
	Capacity Building									
	Taxonomic Research									
	Population Numbers & Range		3.2	3.2		3.2		3.2	3.2	3.2
	Biological Research								3.3	3.3
	Habitat Research					3.4		3.4		
	Threats Research		3.5	3.5						3.5
	Harvesting Levels Research								3.6	
	Research Cultural Relevance								3.7	
	Research Conservation Measures									
	Research Population Trends		3.9							
	Habitat Maintenance/ Conservation									
	Establishment of Protected Areas				4.4.2					4.4.2
Management of Protected Areas										

	Country	Qatar	Saudi Arabia		Seychelles	Singapore	Solomon islands	Somalia	Sri Lanka	Sudan
	Subset Country		Red Sea Coast	Arabian Gulf Coast						
Conservation Initiatives In Place	Management Plan developed									
	Management plan in place									
	Legislation in place	1.2.2.1	1.2.2.1	1.2.2.1	1.2.2.1 1.2.2.2	1.2.2.1	1.2.2.1	1.2.2.1	1.2.2.1 1.2.2.2	1.2.2.1
	LivAlt									
	Formal Education									
	Awareness									
	Capacity Building									
	Taxonomic Research									
	Population Numbers & Range	3.2	3.2	3.2						
	Biological Research		3.3	3.3						
	Habitat Research		3.4	3.4						
	Threats Research		3.5	3.5						
	Harvesting Levels Research									
	Research Cultural Relevance									
	Research Conservation Measures									
	Research Population Trends									
	Habitat Maintenance/ Conservation									
	Establishment of Protected Areas				4.4.2					
	Management of Protected Areas									

	Country	Taiwan, Province of China	Tanzania	Thailand	Timor Leste	United Arab Emirates	Vanuatu	Viet Nam	Yemen
	Subset Country								
Conservation Initiatives In Place	Management Plan developed					1.1.1			
	Management plan in place								
	Legislation in place		1.2.2.1 1.2.2.2	1.2.2.1 1.2.2.2	1.2.2.2	1.2.2.1 1.2.2.2	1.2.2.1 1.2.2.2	1.2.2.1 1.2.2.2 1.2.2.3	1.2.2.1
	LivAlt								
	Formal Education								
	Awareness		2.2	2.2				2.2	
	Capacity Building		2.3						
	Taxonomic Research								
	Population Numbers & Range		3.2	3.2		3.2	3.2		
	Biological Research			3.3		3.3			
	Habitat Research			3.4		3.4		3.4	
	Threats Research		3.5	3.5				3.5	
	Harvesting Levels Research								
	Research Cultural Relevance			3.7					
	Research Conservation Measures								
	Research Population Trends		3.9	3.9					
	Habitat Maintenance/ Conservation								
	Establishment of Protected Areas		4.4.2	4.4.2		4.4.2		4.4.2	
	Management of Protected Areas								

Table 2.1: Summary of status and threats for Dugong across its range.

Status	Based on % of coastline		Based on % of continental shelf <10 m deep	
	Certain	Possible	Certain	Possible
Declining/Extinct*	32		36	
Unknown	52		53	
Possibly stable but uncertain	16		11	
Threats	Certain	Possible	Certain	Possible
Gill netting	87	99	90	98
Human settlement	82	82	85	85
Food for subsistence	85	92	93	98
Agricultural pollution	80	82	89	89

*based on reported declines and/or population modelling which indicates that the present harvest is unsustainable.