

**BIO1: MDG 7: ENSURE ENVIRONMENTAL SUSTAINABILITY****Protected Area as a Percentage of Total Area****Ratio of area protected to maintain biological diversity to surface area****PH****Target 9: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources****Concept and Definition**

A *protected area* is defined as an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal and effective means. (Legal or effective means refers to the objectives of the Act under which an area is designated and implies security of tenure, generally revoked only by a state or national parliamentary process; or areas covered by a legally adopted plan of management.)

A protected area includes six categories, which are:

- Category I(a): Strict Nature Reserve
- Category I(b): Wilderness Area
- Category II: National Park
- Category III: National Monument
- Category IV: Habitat/Species Management Area
- Category V: Protected Landscape/Seascape
- Category VI: Managed Resource Protected Area

(Please refer to [http://www.iucn.org/about/union/commissions/wcpa/wcpa\\_overview/](http://www.iucn.org/about/union/commissions/wcpa/wcpa_overview/) [last accessed: June 19th 2009])

**Method of Computation**

The indicator is expressed as the ratio of Total Protected Area over Total Territorial Area.

*Numerator:*

**Total Protected Area** = Total Terrestrial Protected Area + Total Marine Protected Area.

*Denominator:*

**Total Territorial Area** = Total (terrestrial/surface) Area + Total Territorial Waters (up to 12 nautical miles)

where

*Total (terrestrial/surface) area = Total Land Area + Land under Inland Waters (rivers and lakes).*

The usefulness of the indicator depends on clearly distinguishing totally protected areas and partially protected areas, since they have very different, albeit complementary, functions. This is done by calculating the combined area of totally protected areas of one thousand hectares or more and the combined area of all partially protected areas, regardless of size. The percentage of the total land and marine area occupied by each group is then calculated to provide the total protected area.

**Indicator Relevance**

Biodiversity of natural and man-made ecosystems has its own intrinsic value whose maintenance is essential for the state of the ecosystems, human life and sustainable development. The main threats to biodiversity relate to the destruction and/or fragmentation of ecosystems due to human activities (such as massive deforestations, expansions in agricultural activities and fishing, urbanisation, and transportation networks) and to natural activities (such as climatic variations).

Protected areas are an essential tool for ecosystem conservation, with functions going well beyond the conservation of biological diversity. As such, they are one of the building blocks of sustainable development. As such, this indicator represents the extent to which areas important for conserving biodiversity, cultural heritage, scientific research (including baseline monitoring), recreation, natural resource maintenance, and other values, are protected from incompatible uses. It shows how much of each major ecosystem is dedicated to maintaining its diversity and integrity.

However, the effectiveness of this indicator is limited by two problems. First, it represents *de jure*, not *de facto* protection. It does not indicate the quality of management or whether the areas are in fact protected from incompatible uses. Secondly, the indicator does not show how representative the protected areas are of the country's ecological diversity. This is a significant deficiency since a large proportion of some ecosystems may be protected to the neglect of others.

**Data Assessment**

Nine Member States and three Associate Members provided data for this indicator. The Member States were the Bahamas, Belize, Dominica, Guyana, Jamaica, St. Lucia, St. Vincent and the Grenadines, Suriname and Trinidad and Tobago while the Associate Members were Anguilla, Bermuda and The Turks and Caicos Islands. The data provided was reasonably dense and detailed.

For the protected area, Belize reported protected land area while Trinidad and Tobago reported the protected forest area. In addition, Trinidad and Tobago reported protected forest area as a percentage of total land area for protected area as a percentage of total

area. All data from St. Vincent and the Grenadines refer only to areas of the sea. Instead of providing data for the current protected areas, Suriname provided the total area of current protected areas and proposed protected areas. For the total area, the Bahamas reported only the total land area. All of the other reporting countries reported data that was in strict accordance with the international concept of a protected area. As a result of these differences in the data provided by the Member States and Associate Members, this indicator is partially harmonized.

**Data Sources**

Please see **Appendix 2.8.1** for the sources of the data on protected area as a percentage of total area of Member States and Associate Members. Notes to the tables are also provided.

**Evaluation**

Nine Member States and three Associate Members reported data for this indicator which is shown in **Table 8.1** below. Among Member States, Belize reported the highest proportion of protected area, which fluctuated between 1995 and 2004, increasing from 7,290 (31.7 per cent) in 1995, to 7,974 (34.7 per cent) in 1998 and further to 8,046 (35.0 per cent) in 2000 and finally to 8,246 (35.9 per cent) in 2001 and registered a small decline in 2004 to 7,930 (34.5 per cent). This was followed by Trinidad and Tobago with 25.6 per cent of its total area of 5,128 squared kilometres protected for the period 1970 to 2004. Dominica's protected area as a percent of total area of 750 squared kilometres increased for the period 1970 to 2004 from 0.1 per cent (4.1 squared kilometres) in 1970 to 23.1 per cent in 2004 moving from 0.1 per cent in 1970 to 17.1 percent in 1980, then to 17.3 percent in 1990 and 1995, further to 18.7 percent in 1998 and 1999 and finally to 23.1 percent from 2000 to 2004. The Bahamas recorded increases in the proportion of protected area from 8.6 percent in 1970 to 19 percent in 2007 an increase of 10.4 percent. Suriname's protected area as a percent of total area of 163,820 squared kilometres was 13 percent from 2000 to 2002 and 14 percent in 2003 and 2004. The total protected area as a percent of total land area for Jamaica in 1999 and 2002 was unchanged at 12.8 percent of the total land area of 11,425 squared kilometres. The remaining Member states were Guyana, reporting 2 percent of its total area (216,000 squared kilometres) protected in 2004, Saint Vincent and the Grenadines with a total protected area of 83 squared kilometres during the period 1990 to 2004 representing 0.3 percent of the total area of 27,500 squared kilometres and Saint Lucia whose total protected area represented 0.2 percent of the total area which was 616.4 squared kilometres.

Two Associate Member States reported high percentages of protected areas as a percent of total area and these were Bermuda and The Turks and Caicos Islands. Bermuda, whose total area was 55 squared kilometres, reported 15 percent of its total area as protected whilst The Turks and Caicos Islands reported 83.2 percent for the period 1995 to 2002 and 83.7 percent for 2003 and 2004 of its total area of 948.2 squared kilometres protected. The remaining Associate Member State, Anguilla recorded protected area as 0.05 squared kilometres, which represents 0.1 percent of its total area of 91 squared kilometres for the years 2002 to 2004.

**Table 8.1 - Protected Area as a percentage of Total Area: 1970, 1980, 1990, 1995, 1998 - 2004**

Unit: km<sup>2</sup>

Country	Year	Total Area	Protected Area	Protected Area as a % of Total Area	
<b>BS</b>	1970	13,940	1,199	8.6	
	1980	13,940	1,217	8.7	
	1990	13,940	1,217	8.7	
	1995	13,940	1,300	9.3	
	1998	13,940	1,300	9.3	
	1999	13,940	1,300	9.3	
	2000	13,940	1,300	9.3	
	2001	13,940	1,300	9.3	
	2002	13,940	2,651	19.0	
	2003	13,940	2,651	19.0	
	2004	13,940	2,651	19.0	
	<b>BZ</b>	1970	22,966	...	...
		1980	22,966	...	...
1990		22,966	...	...	
1995		22,966	7,290	31.7	
1998		22,966	7,974	34.7	
1999		22,966	...	...	
2000		22,966	8,046	35.0	
2001		22,966	8,246	35.9	
2002		22,966	...	...	
2003		22,966	...	...	
2004		22,966	7,930	34.5	
<b>DM</b>	1970	750	4	0.6	
	1980	750	128	17.1	
	1990	750	129	17.3	
	1995	750	129	17.3	
	1998	750	140	18.7	
	1999	750	140	18.7	
	2000	750	174	23.1	
	2001	750	174	23.1	
	2002	750	174	23.1	
	2003	750	174	23.1	
	2004	750	174	23.1	
<b>GY</b>	2004	216,000	4,245	2.0	
<b>JM</b>	1999	11,425	1,462	12.8	
	2002	11,425	1,462	12.8	
<b>LC</b>	2004	616	2	0.2	

**Table 8.1 - Protected Area as a percentage of Total Area: 1970, 1980, 1990, 1995, 1998 - 2004**

		Unit: km <sup>2</sup>		
Country	Year	Total Area	Protected Area	Protected Area as a % of Total Area
<b>VC</b>	1990	27,500	83	0.3
	1995	27,500	83	0.3
	1998	27,500	83	0.3
	1999	27,500	83	0.3
	2000	27,500	83	0.3
	2001	27,500	83	0.3
	2002	27,500	83	0.3
	2003	27,500	83	0.3
	2004	27,500	83	0.3
	<b>SR</b>	2000	163,820	20,850
2001		163,820	20,850	13.0
2002		163,820	20,850	13.0
2003		163,820	22,665a	14.0
2004		163,820	22,665a	14.0
<b>TT</b>	1970	5,128	1,314	25.6
	1980	5,129	1,314	25.6
	1990	5,130	1,314	25.6
	1995	5,131	1,314	25.6
	1998	5,132	1,314	25.6
	1999	5,133	1,314	25.6
	2000	5,134	1,314	25.6
	2001	5,135	1,314	25.6
	2002	5,136	1,314	25.6
	2003	5,137	1,314	25.6
	2004	5,138	1,314	25.6
<b>ASSOCIATE MEMBERS</b>				
<b>AI</b>	2002	91	0.1	0.1
	2003	91	0.1	0.1
	2004	91	0.1	0.1
<b>BM</b>	1970	55	...	...
	1980	55	...	...
	1990	55	...	...
	1995	55	...	...
	1998	55	...	...
	1999	55	...	...
	2000	55	15	26.8
	2001	55	15	26.8
	2002	55	15	26.8
	2003	55	15	26.8
2004	55	15	26.8	
<b>TC</b>	1970	948	-	-
	1980	948	-	-
	1990	948	-	-
	1995	948	792	83.5
	1998	948	792	83.5
	1999	948	792	83.5
	2000	948	792	83.5
	2001	948	792	83.5
	2002	948	792	83.5
	2003	948	794	83.7
	2004	948	794	83.7

### Appendix 1.8 Conversion Table

Metric	to	Imperial
2 hectares (ha)		5 acres
1 square kilometre (km <sup>2</sup> )		250 acres
8 square kilometres (km <sup>2</sup> )		3 square miles (mi <sup>2</sup> )

### Appendix 2.8

#### 2.8.1(a): Sources of Data for Table 8.1 - Protected Area As A Percentage of Total Area: 1970, 1980, 1990, 1995, 1998 - 2004

Country	Data Source
THE BAHAMAS	Bahamas National Trust
BELIZE	Land Information Centre, Ministry of Natural Resources and the Environment
DOMINICA	Fisheries and Forestry Division, Ministry of Agriculture
GUYANA	Bureau of Statistics
JAMAICA	National Environment and Planning Agency and UNEP
SAINT LUCIA	Saint Lucia National Trust
ST. VINCENT AND THE GRENADINES	Fisheries Division
SURINAME	Institute for Forest Management and Control
TRINIDAD AND TOBAGO	Central Statistical Office
ANGUILLA	Anguilla Statistics Department
BERMUDA	Department of Statistics
THE TURKS AND CAICOS ISLANDS	Department of Environmental and Coastal Resources

**2.8.1 (b): Notes for Table 8.1 - Protected Area As A Percentage of Total Area: 1970, 1980, 1990, 1995, 1998 - 2004**

Country	Notes
BELIZE	Protected Area has been modified to PROTECTED LAND AREA. It refers to protected areas in Belize which includes land area and inland waters but excludes sea protected areas. Protected Sea Area (which refers to MARINE RESERVES) is also available and is excluded from Protected Land Area. The data has been classified in this manner because using one figure for protected land and marine areas creates a false figure for protected area as a % of total area. It is quite high (over 45%). The area used in the calculations are GIS areas and not the area stipulated on the legal statutory instruments. Although the area on the Statutory Instruments are the legal one, the GIS area is more accurate.
JAMAICA	Total land area = 10,990.5km <sup>2</sup> . Total land and sea area is from UNEP
ST. VINCENT AND THE GRENADINES	The figures presented represent areas of sea only
SURINAME	a - Protected areas and Proposed Protected Areas
TRINIDAD AND TOBAGO	The protected area data submitted is the protected forest area. Data submitted for Protected Area as a Percentage of Total Area refers to protected forest area as a percentage of total land area.
ANGUILLA	There is no legal framework in Anguilla for naming an area as a protected area. However, the government has vested these areas to the National Trust to be protected.
BERMUDA	By definition the marine protected areas fall into this category as well. Total land protected area is 1,473 ha (14.73 km <sup>2</sup> ) and marine protected area is 32,095 ha (320.95 km <sup>2</sup> ) giving a total area of 335.68km <sup>2</sup> . Seeing that 14.73 km <sup>2</sup> of the 55kmsq is protected area, then this will be subtracted to give a total area of 375.95km <sup>2</sup> (335.68+55=390.68 km <sup>2</sup> -14.73km <sup>2</sup> =375.95 km <sup>2</sup> )