

*C*hapter 14

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# Biodiversity

Data Table 14.1

## National and International Protection of Natural Areas, 1997

Sources: World Conservation Monitoring Centre, United Nations Educational, Scientific and Cultural Organization, and Ramsar Convention Bureau

	National Protection Systems										International Protection Systems (a)							
	All Protected Areas (IUCN Categories I-V)			Totally Protected Areas (IUCN Cat. I-III)				Partially Protected Areas (IUCN Cat. IV-V)			% of Protected Areas (IUCN Cat. I-V) at Least		Biosphere Reserves		World Heritage Sites		Wetlands of International Importance (b)	
	Number	Area (000 ha)	Percent of Land Area	Number	Area (000 ha)	Number	Area (000 ha)	100,000 ha in Size	1 million ha in Size	Number	Area (000 ha)	Number	Area (000 ha)	Number	Area (000 ha)	Number	Area (000 ha)	
																		Number
<b>WORLD (c)</b>	<b>10,401</b>	<b>841,041</b>	<b>6.4</b>	<b>4,502</b>	<b>499,446</b>	<b>5,899</b>	<b>348,433</b>	<b>12.1</b>	<b>1.5</b>	<b>337</b>	<b>219,891</b>	<b>126</b>	<b>127,001</b>	<b>895</b>	<b>66,840</b>			
<b>AFRICA</b>	<b>746</b>	<b>154,043</b>	<b>5.2</b>	<b>300</b>	<b>90,091</b>	<b>446</b>	<b>63,952</b>	<b>28.0</b>	<b>4.8</b>	<b>46</b>	<b>24,033</b>	<b>30</b>	<b>29,910</b>	<b>72</b>	<b>13,522</b>			
Algeria	18	5,891	2.5	13	5,762	5	129	11.1	11.1	2	7,276	1	X	2	5			
Angola	12	8,181	6.6	6	5,423	6	2,758	50.0	X	0	X	0	0	0	X			
Benin	2	778	7.0	2	778	0	0	100.0	X	1	880	0	0	0	X			
Botswana	8	10,497	18.5	4	4,551	4	5,945	87.5	37.5	0	X	0	0	1	6,864			
Burkina Faso	12	2,855	10.4	3	534	9	2,321	50.0	8.3	1	16	0	0	3	299			
Burundi	9	144	5.6	0	0	9	144	X	X	0	X	0	0	0	X			
Cameroon	16	2,097	4.5	7	1,032	9	1,066	50.0	X	3	850	1	526	0	X			
Central African Rep	13	5,110	8.2	5	3,188	8	1,922	84.6	15.4	2	1,640	1	1,740	0	X			
Chad	9	11,494	9.1	2	414	7	11,080	100.0	22.2	0	X	0	0	1	195			
Congo, Dem Rep	11	10,191	4.5	10	10,187	1	4	81.8	36.4	3	298	5	6,855	2	866			
Congo, Rep	9	1,545	4.5	2	513	7	1,032	55.6	X	2	172	0	0	0	X			
Côte d'Ivoire	11	1,986	6.2	10	1,891	1	95	36.4	9.1	2	1,480	3	1,484	1	19			
Egypt	12	793	0.8	4	99	8	695	8.3	X	2	2,577	0	0	2	106			
Equatorial Guinea	X	X	X	X	X	X	X	X	X	0	X	0	0	0	X			
Eritrea	3	501	5.0	0	0	3	501	66.7	X	0	X	0	0	0	X			
Ethiopia	20	5,518	5.5	12	3,036	8	2,482	70.0	X	0	X	1	22	0	X			
Gabon	5	723	2.8	1	15	4	708	20.0	X	1	15	0	0	3	1,080			
Gambia, The	4	22	2.2	3	18	1	4	X	X	0	X	0	0	1	20			
Ghana	9	1,104	4.8	7	1,097	2	7	33.3	X	1	8	0	0	6	178			
Guinea	3	164	0.7	3	164	0	0	33.3	X	2	133	1	13	6	225			
Guinea-Bissau	X	X	X	X	X	X	X	X	X	1	110	0	0	1	39			
Kenya	36	3,504	6.2	32	3,451	4	52	19.4	2.8	5	1,335	0	0	2	49			
Lesotho	1	7	0.2	0	0	1	7	X	X	0	X	0	0	0	X			
Liberia	1	129	1.3	1	129	0	0	100.0	X	0	X	0	0	0	X			
Libya	6	173	0.1	3	51	3	122	16.7	X	0	X	0	0	0	X			
Madagascar	36	1,119	1.9	16	744	20	375	2.8	X	1	140	1	152	0	X			
Malawi	9	1,059	11.3	5	696	4	362	33.3	X	0	X	1	9	1	225			
Mali	13	4,532	3.7	2	750	11	3,782	61.5	15.4	1	771	1	400	3	162			
Mauritania	4	1,746	1.7	3	1,496	1	250	75.0	25.0	0	X	1	1,200	2	1,189			
Mauritius	3	12	6.0	1	7	2	6	X	X	1	4	0	0	0	X			
Morocco	7	316	0.7	2	9	5	307	14.3	X	0	X	0	0	4	11			
Mozambique	11	4,779	6.1	5	1,967	6	2,812	63.6	18.2	0	X	0	0	0	X			
Namibia	16	10,616	12.9	10	9,775	6	841	43.8	18.8	0	X	0	0	4	630			
Niger	6	9,694	7.7	2	1,500	4	8,194	66.7	33.3	1	728	2	7,956	1	220			
Nigeria	20	3,020	3.3	7	2,276	13	745	45.0	X	1	0	0	0	0	X			
Rwanda	5	362	14.7	2	264	3	98	20.0	X	1	15	0	0	0	X			
Senegal	9	2,180	11.3	5	1,012	4	1,168	33.3	X	3	1,094	2	929	4	100			
Sierra Leone	2	82	1.1	0	0	2	82	X	X	0	X	0	0	0	X			
Somalia	1	180	0.3	0	0	1	180	100.0	X	0	X	0	0	0	X			
South Africa	232	6,578	5.4	35	4,262	197	2,316	3.9	0.4	0	X	0	0	15	486			
Sudan	11	8,642	3.6	8	8,499	3	143	63.6	36.4	2	1,901	0	0	0	X			
Swaziland	2	35	2.0	0	0	2	35	X	X	0	X	0	0	0	X			
Tanzania	30	13,816	15.6	12	4,100	18	9,716	66.7	10.0	2	2,338	4	7,380	0	X			
Togo	8	428	7.9	3	357	5	71	25.0	X	0	X	0	0	2	194			
Tunisia	6	44	0.3	6	44	0	0	X	X	4	32	1	13	1	13			
Uganda	32	1,910	9.6	7	876	25	1,034	18.8	X	1	220	2	132	1	15			
Zambia	21	6,364	8.6	21	6,364	0	0	52.4	4.8	0	X	1	4	2	333			
Zimbabwe	25	3,068	7.9	11	2,704	14	364	24.0	4.0	0	X	2	1,095	0	X			
<b>EUROPE</b>	<b>3,153</b>	<b>105,209</b>	<b>4.7</b>	<b>615</b>	<b>47,665</b>	<b>2,538</b>	<b>57,544</b>	<b>6.6</b>	<b>0.3</b>	<b>130</b>	<b>94,031</b>	<b>24</b>	<b>16,621</b>	<b>566</b>	<b>13,045</b>			
Albania	25	76	2.8	16	38	9	37	X	X	0	X	0	0	1	20			
Austria	176	2,344	28.3	2	18	174	2,326	1.1	X	4	28	0	0	9	103			
Belarus, Rep	57	864	4.2	4	303	53	561	X	X	2	253	1	88	0	X			
Belgium	4	78	2.6	0	0	4	78	X	X	0	X	0	0	6	8			
Bosnia and Herzegovina	5	25	0.5	1	17	4	8	X	X	0	X	0	0	0	X			
Bulgaria	49	491	4.4	33	291	16	200	4.1	X	17	25	2	41	5	3			
Croatia, Rep	26	375	6.7	13	92	13	283	3.8	X	1	150	1	19	4	80			
Czech Rep	44	1,223	15.8	6	88	38	1,135	2.3	X	6	434	0	0	9	39			
Denmark	112	1,368	32.2	8	28	104	1,340	1.8	X	1	70,000	0	0	38	1,833			
Estonia, Rep	53	507	12.0	4	178	49	330	1.9	X	1	1,560	0	0	10	216			
Finland	126	1,823	6.0	42	1,087	84	736	3.2	X	2	770	0	0	11	101			
France	132	6,416	11.7	11	394	121	6,021	17.4	X	8	647	1	12	15	582			
Germany	518	9,414	27.0	3	37	515	9,377	5.0	X	13	1,185	1	0	31	673			
Greece	24	288	2.2	11	147	13	141	4.2	X	2	9	2	0	10	164			
Hungary	54	629	6.8	5	159	49	470	X	X	5	129	1	0	19	150			
Iceland	24	972	9.7	7	204	17	768	8.3	X	0	X	0	0	3	59			
Ireland	13	59	0.9	5	47	8	12	X	X	2	9	0	0	45	67			
Italy	169	2,146	7.3	11	372	158	1,774	1.2	X	3	4	0	0	46	57			
Latvia, Rep	45	775	12.5	6	51	39	723	2.2	X	0	X	0	0	3	43			
Lithuania, Rep	79	646	10.0	9	172	70	473	X	X	0	X	0	0	5	50			
Macedonia, FYR	16	180	7.1	10	163	6	17	X	X	0	X	1	38	1	40			
Moldova, Rep	13	39	1.2	4	19	9	21	X	X	0	X	0	0	0	X			
Netherlands	75	228	6.7	22	74	53	153	X	X	1	260	0	0	18	325			
Norway	118	2,075	6.8	80	1,585	38	490	5.9	X	1	1,555	0	0	23	70			
Poland, Rep	106	2,911	9.6	16	165	90	2,746	3.8	X	7	164	1	5	8	90			
Portugal	24	595	6.5	3	34	21	561	4.2	X	1	0	0	0	10	66			
Romania	39	1,074	4.7	26	1,038	13	35	2.6	X	3	614	0	0	1	647			
Russian Federation	210	51,670	3.1	118	37,406	92	14,264	43.8	5.2	16	14,561	3	15,380	35	6,338			
Slovak Rep	41	1,046	21.8	7	202	34	844	2.4	X	4	203	1	0	7	26			
Slovenia, Rep	14	115	5.7	1	84	13	31	X	X	0	X	1	0	1	1			
Spain	217	4,216	8.4	13	224	204	3,992	3.2	X	14	954	2	55	38	158			
Sweden	241	3,709	9.0	89	2,061	152	1,648	3.3	X	1	97	1	940	30	383			
Switzerland	107	713	18.0	1	17	106	696	X	X	1	17	0	0	8	7			
Ukraine	25	898	1.6	21	725	4	173											

	National Protection Systems										International Protection Systems (a)				
	All Protected Areas (IUCN Categories I-V)			Totally Protected Areas (IUCN Cat. I-III)		Partially Protected Areas (IUCN Cat. IV-V)		% of Protected Areas (IUCN Cat. I-V) at Least			Biosphere Reserves	World Heritage Sites		Wetlands of International Importance (b)	
	Number	Percent of Land Area		Number	Area (000 ha)	Number	Area (000 ha)	100,000 ha in Size	1 million ha in Size	Number	Area (000 ha)	Number	Area (000 ha)	Number	Area (000 ha)
		Area (000 ha)	Area												
<b>NORTH AMERICA</b>	<b>2,333</b>	<b>214,714</b>	<b>11.7</b>	<b>1,243</b>	<b>113,370</b>	<b>1,090</b>	<b>101,344</b>	<b>11.2</b>	<b>2.0</b>	<b>53</b>	<b>22,194</b>	<b>18</b>	<b>20,797</b>	<b>50</b>	<b>14,202</b>
Canada	718	92,110	10.0	431	43,126	287	48,984	15.2	2.9	6	1,050	7	10,664	35	13,038
United States	1,615	122,604	13.4	812	70,244	803	52,360	9.5	1.6	47	21,144	12	10,134	15	1,164
<b>CENTRAL AMERICA</b>	<b>414</b>	<b>14,793</b>	<b>5.6</b>	<b>200</b>	<b>8,346</b>	<b>214</b>	<b>6,446</b>	<b>8.2</b>	<b>0.7</b>	<b>21</b>	<b>10,074</b>	<b>8</b>	<b>2,940</b>	<b>33</b>	<b>1,288</b>
Belize	18	478	20.9	10	197	8	281	11.1	X	0	X	1	96	0	X
Costa Rica	35	702	13.7	27	580	8	122	2.9	X	2	729	1	585	6	146
Cuba	65	1,907	17.4	18	157	47	1,750	6.2	X	4	324	0	0	0	X
Dominican Rep	26	1,523	31.5	15	950	11	573	23.1	3.8	0	X	0	0	0	X
El Salvador	2	5	0.3	1	3	1	2	X	X	0	X	0	0	0	X
Guatemala	30	1,825	16.8	28	1,821	2	4	13.3	X	2	1,236	1	58	3	83
Haiti	3	10	0.4	2	8	1	2	X	X	0	X	0	0	0	X
Honduras	49	1,112	9.9	16	681	33	431	6.1	X	1	500	1	500	3	103
Jamaica	1	2	0.1	1	2	0	0	X	X	0	X	0	0	1	6
Mexico	69	4,553	2.4	46	1,996	23	2,556	13.0	2.9	11	6,688	2	898	6	701
Nicaragua	59	903	7.4	6	389	53	514	1.7	X	0	X	0	0	1	44
Panama	21	1,421	19.1	15	1,365	6	56	19.0	X	1	597	2	804	3	111
Trinidad and Tobago	5	16	3.0	1	2	4	14	X	X	0	X	0	0	1	6
<b>SOUTH AMERICA</b>	<b>810</b>	<b>129,014</b>	<b>7.4</b>	<b>487</b>	<b>81,080</b>	<b>323</b>	<b>47,933</b>	<b>24.4</b>	<b>3.0</b>	<b>29</b>	<b>50,839</b>	<b>10</b>	<b>6,960</b>	<b>41</b>	<b>9,766</b>
Argentina	100	4,658	1.7	76	3,172	24	1,486	12.0	X	7	2,690	2	500	6	420
Bolivia	31	15,602	14.4	13	10,145	18	5,456	48.4	12.9	3	435	0	0	1	5
Brazil	321	35,548	4.2	208	22,316	113	13,232	19.3	1.6	2	29,940	1	170	5	4,537
Chile	72	14,134	18.9	34	8,728	38	5,406	25.0	6.9	7	2,407	0	0	7	100
Colombia	79	9,358	9.0	40	9,013	39	345	22.8	2.5	3	2,514	1	72	0	X
Ecuador	20	11,927	43.1	16	3,903	4	8,024	50.0	5.0	2	1,446	2	1,038	2	90
Guyana	1	59	0.3	1	59	0	0	X	X	0	X	0	0	0	X
Paraguay	18	1,401	3.5	13	1,366	5	35	16.7	X	0	X	0	0	4	775
Peru	19	3,462	2.7	14	3,000	5	462	31.6	5.3	3	2,507	4	2,180	7	2,932
Suriname	13	736	4.7	1	8	12	728	23.1	X	0	X	0	0	1	12
Uruguay	9	46	0.3	2	15	7	31	X	X	1	200	0	0	1	435
Venezuela	124	31,976	36.3	68	19,255	56	12,721	40.3	4.8	1	8,700	1	3,000	5	264
<b>ASIA</b>	<b>1,733</b>	<b>162,877</b>	<b>5.3</b>	<b>629</b>	<b>105,553</b>	<b>1,104</b>	<b>57,324</b>	<b>13.1</b>	<b>1.4</b>	<b>46</b>	<b>13,633</b>	<b>23</b>	<b>4,612</b>	<b>78</b>	<b>5,364</b>
Afghanistan, Islamic State	6	218	0.3	1	41	5	177	X	X	0	X	0	0	0	X
Armenia, Rep	4	214	7.6	4	214	0	0	25.0	X	0	X	0	0	2	492
Azerbaijan	29	476	5.5	12	192	17	284	X	X	0	X	0	0	1	133
Bangladesh	9	98	0.8	0	0	9	98	X	X	0	X	0	0	1	60
Bhutan	9	998	21.2	5	757	4	241	33.3	X	0	X	0	0	0	X
Cambodia	20	2,863	16.2	7	736	13	2,127	50.0	X	0	X	0	0	0	X
China	265	59,807	6.4	66	49,564	199	10,243	15.1	4.2	12	2,514	6	224	7	588
Georgia	16	195	2.8	16	195	0	0	X	X	0	X	0	0	2	34
India	344	14,273	4.8	65	3,447	279	10,826	5.8	X	0	X	5	281	6	193
Indonesia	170	17,509	9.7	100	13,550	70	3,958	20.6	2.9	6	1,482	2	298	2	243
Iran, Islamic Rep	67	8,299	5.1	9	1,081	58	7,218	26.9	1.5	9	2,610	0	0	18	1,358
Iraq	0	0	0.0	0	0	0	0	X	X	0	X	0	0	0	X
Israel	15	308	14.9	1	3	14	305	6.7	X	1	27	0	0	2	0
Japan	65	2,550	6.8	23	1,320	42	1,230	12.3	X	4	116	2	28	10	84
Jordan	9	298	3.4	1	1	8	297	11.1	X	0	X	0	0	1	7
Kazakhstan, Rep	70	7,337	2.7	11	1,268	59	6,069	28.6	1.4	0	X	0	0	2	609
Korea, Dem People's Rep	19	315	2.6	13	161	6	154	5.3	X	1	132	0	0	0	X
Korea, Rep	25	682	6.9	0	0	25	682	4.0	X	1	37	0	0	1	0
Kuwait	2	27	1.5	1	2	1	25	X	X	0	X	0	0	0	X
Kyrgyz Rep	31	688	3.6	11	300	20	389	3.2	X	1	71	0	0	1	630
Lao People's Dem Rep	X	X	X	X	X	X	X	X	X	0	X	0	0	0	X
Lebanon	1	4	0.3	1	4	0	0	X	X	0	X	0	0	0	X
Malaysia	50	1,483	4.5	40	903	10	581	10.0	X	0	X	0	0	1	38
Mongolia	35	16,129	10.3	34	16,079	1	50	40.0	11.4	2	5,367	0	0	0	X
Myanmar	2	173	0.3	1	161	1	13	50.0	X	0	X	0	0	0	X
Nepal	12	1,112	7.8	8	1,017	4	94	33.3	X	0	X	2	208	1	18
Oman	3	3,428	16.1	1	3,400	2	28	33.3	33.3	0	X	1	2,750	0	X
Pakistan	55	3,721	4.8	6	882	49	2,839	20.0	X	1	31	0	0	8	62
Philippines	17	1,453	4.9	7	463	10	990	11.8	X	2	1,174	1	33	1	6
Saudi Arabia	18	4,961	2.3	6	2,837	12	2,124	X	11.1	0	X	0	0	0	X
Singapore	1	3	4.4	0	0	1	3	X	X	0	X	0	0	0	X
Sri Lanka	69	859	13.3	37	530	32	329	X	X	2	9	1	9	1	6
Syrian Arab Rep	X	X	X	X	X	X	X	X	X	0	X	0	0	0	X
Tajikistan, Rep	18	587	4.2	4	87	14	500	5.6	X	0	X	0	0	0	X
Thailand	112	6,688	13.1	74	3,947	38	2,741	17.0	X	3	26	1	622	0	X
Turkey	49	1,071	1.4	23	417	26	655	2.0	X	0	X	1	10	5	66
Turkmenistan, Rep	22	1,977	4.2	9	821	13	1,156	22.7	X	1	35	0	0	1	189
United Arab Emirates	0	0	0.0	0	0	0	0	X	X	0	X	0	0	0	X
Uzbekistan, Rep	12	850	2.1	12	850	0	0	8.3	X	0	X	0	0	0	X
Vietnam	52	994	3.1	9	202	43	792	1.9	X	0	X	1	150	1	12
Yemen	0	0	0.0	0	0	0	0	X	X	0	X	0	0	0	X
<b>OCEANIA</b>	<b>1,212</b>	<b>60,382</b>	<b>7.1</b>	<b>1,028</b>	<b>53,341</b>	<b>184</b>	<b>7,041</b>	<b>10.2</b>	<b>1.1</b>	<b>12</b>	<b>5,093</b>	<b>13</b>	<b>45,159</b>	<b>55</b>	<b>5,668</b>
Australia	966	53,708	7.0	879	48,455	87	5,253	11.4	1.2	12	5,093	11	42,479	49	5,067
Fiji	5	19	1.0	5	19	0	0	X	X	0	X	0	0	0	X
New Zealand	201	6,322	23.6	124	4,732	77	1,590	7.0	0.5	0	X	2	2,680	5	39
Papua New Guinea	3	7	0.0	3	7	0	0	X	X	0	X	0	0	1	590
Solomon Islands	X	X	X	X	X	X	X	X	X	0	X	0	0	0	X

Notes: a. Areas listed often include nationally protected systems. b. Total area of wetlands of international importance for the world is for 891 Ramsar sites; total area for the remaining sites is not available. c. World and regional totals for national protected areas exclude Greenland. World totals exclude Antarctica. World and regional totals include countries not listed here.

Data Table 14.2

# Globally Threatened Species: Mammals, Birds, and Higher Plants, 1990s

Source: World Conservation Monitoring Centre and World Conservation Union

	Mammals				Birds				Higher Plants						
	Total Number of Known Species			No. of Species per 10,000 km <sup>2</sup> (a)	Total Number of Known Species			No. of Species per 10,000 km <sup>2</sup> (a)	Total Number of Known Species			No. of Species per 10,000 km <sup>2</sup> (a)			
	All Species	Endemic Species	Threatened Species		Breeding Species	Endemic Species	Threatened Species		All Species (b)	Endemic Species	Threatened Species				
<b>WORLD (c)</b>	<b>4,629</b>	<b>d</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>9,672</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>270,000</b>	<b>e</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>AFRICA</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Algeria	92	2	15	15	192	1	8	32	3,100	250	145	509			
Angola	276	7	17	56	765	13	13	156	5,000	1,260	25	1,017			
Benin	188	0	9	85	307	0	1	138	2,000	X	3	899			
Botswana	164	0	5	43	386	0	7	101	X	17	4	X			
Burkina Faso	147	0	6	49	335	0	1	112	1,100	X	0	369			
Burundi	107	0	5	76	451	0	6	322	2,500	X	1	1,783			
Cameroon	297	13	32	83	690	8	14	193	8,000	156	74	2,237			
Central African Rep	209	2	11	53	537	0	2	137	3,600	100	0	921			
Chad	134	1	14	27	370	0	3	75	1,600	X	12	322			
Congo, Dem Rep	415	28	38	69	929	22	26	153	11,000	1,100	7	1,817			
Congo, Rep	200	1	10	62	449	0	3	140	4,350	1,200	3	1,356			
Côte d'Ivoire	230	1	16	73	535	0	12	170	3,517	62	66	1,118			
Egypt	98	7	15	21	153	0	11	33	2,066	70	84	452			
Equatorial Guinea	184	3	12	131	273	3	4	194	3,000	66	9	2,135			
Eritrea	112	X	6	49	319	0	3	140	X	X	X	X			
Ethiopia	255	31	35	54	626	28	20	133	6,500	1,000	153	1,378			
Gabon	190	2	12	64	466	0	4	157	6,500	X	78	2,197			
Gambia, The	108	0	4	104	280	0	1	269	966	X	0	928			
Ghana	222	1	13	78	529	1	10	186	3,600	43	32	1,264			
Guinea	190	1	11	66	409	0	12	142	3,000	88	35	1,043			
Guinea-Bissau	108	0	4	71	243	0	1	159	1,000	12	0	655			
Kenya	359	21	43	94	844	6	24	221	6,000	265	158	1,571			
Lesotho	33	0	2	23	58	0	5	40	1,576	2	7	1,093			
Liberia	193	0	11	87	372	1	13	168	2,200	103	1	1,037			
Libya	76	5	11	14	91	0	2	17	1,800	134	57	327			
Madagascar	105	84	46	27	202	104	28	53	9,000	6,500	189	2,347			
Malawi	195	0	7	86	521	0	9	230	3,600	49	61	1,592			
Mali	137	0	13	28	397	0	6	81	1,741	11	14	355			
Mauritania	61	1	14	13	273	0	3	59	1,100	X	3	239			
Mauritius	4	2	4	7	27	9	10	46	700	325	222	1,183			
Morocco	105	4	18	30	210	0	11	60	3,600	625	195	1,028			
Mozambique	179	1	13	42	498	0	14	117	5,500	219	92	1,294			
Namibia	154	3	11	36	469	1	8	109	3,128	X	23	729			
Niger	131	0	11	27	299	0	2	60	1,170	X	0	237			
Nigeria	274	6	26	62	681	2	9	153	4,614	205	9	1,036			
Rwanda	151	0	9	110	513	0	6	373	2,288	26	0	1,662			
Senegal	155	0	13	58	384	0	6	144	2,062	26	32	771			
Sierra Leone	147	0	9	77	466	0	12	243	2,090	74	12	1,091			
Somalia	171	11	18	43	422	10	8	107	3,000	500	57	761			
South Africa	247	27	33	51	596	8	16	122	23,000	X	953	4,711			
Sudan	267	11	21	43	680	0	9	110	3,132	50	8	506			
Swaziland	47	0	5	39	364	0	6	303	2,636	4	41	2,197			
Tanzania	316	12	33	70	822	24	30	183	10,000	1,122	406	2,229			
Togo	196	1	8	110	391	0	1	220	2,000	X	0	1,128			
Tunisia	78	1	11	31	173	0	6	69	2,150	X	24	855			
Uganda	338	6	18	118	830	3	10	290	5,000	X	6	1,762			
Zambia	229	3	11	55	605	1	10	145	4,600	211	9	1,105			
Zimbabwe	270	1	9	81	532	0	9	159	4,200	95	94	1,253			
<b>EUROPE</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>7,777</b>	<b>X</b>	<b>X</b>	<b>X</b>			
Albania	68	0	2	48	230	0	7	162	2,965	24	50	2,093			
Austria	83	0	7	41	213	0	5	106	2,950	35	22	1,462			
Belarus, Rep	X	X	4	X	221	0	4	81	X	X	0	X			
Belgium	58	0	6	40	180	0	3	125	1,400	1	3	969			
Bosnia and Herzegovina	X	X	10	X	X	0	2	X	X	X	0	X			
Bulgaria	81	0	13	37	240	0	12	108	3,505	320	94	1,584			
Croatia, Rep	X	X	10	X	224	0	4	126	X	X	0	X			
Czech Rep	X	X	7	X	199	0	6	101	X	X	X	X			
Denmark	43	0	3	27	196	0	2	121	1,200	1	6	741			
Estonia, Rep	65	0	4	40	213	0	2	130	1,630	X	2	992			
Finland	60	0	4	19	248	0	4	78	1,040	X	11	325			
France	93	0	13	25	269	1	7	72	4,500	133	117	1,198			
Germany	76	0	8	23	239	0	5	73	X	X	X	X			
Greece	95	2	13	41	251	0	10	107	4,900	742	539	2,091			
Hungary	72	0	8	34	205	0	10	98	2,148	38	24	1,029			
Iceland	11	0	1	5	88	0	0	41	340	1	1	157			
Ireland	25	0	2	13	142	0	1	75	892	X	9	469			
Italy	90	3	10	29	234	0	7	76	5,463	712	273	1,776			
Latvia, Rep	83	0	4	45	217	0	6	117	1,153	X	0	623			
Lithuania, Rep	68	0	5	37	202	0	4	109	1,200	X	0	646			
Macedonia, FYR	X	X	10	X	X	X	3	X	X	X	X	X			
Moldova, Rep	68	X	2	46	177	X	7	119	X	X	1	X			
Netherlands	55	0	6	35	191	0	3	120	1,170	X	1	758			
Norway	54	0	4	17	243	0	3	77	1,650	1	20	524			
Poland, Rep	84	0	10	27	227	0	6	72	2,300	3	27	738			
Portugal	63	1	13	30	207	2	7	99	2,500	150	240	1,200			
Romania	84	0	16	29	247	0	11	87	3,175	41	122	1,116			
Russian Federation	269	19	31	23	628	13	38	54	X	X	127	X			
Slovak Rep	X	0	8	X	209	X	4	124	X	X	X	X			
Slovenia, Rep	69	0	10	55	207	0	3	164	X	X	11	X			
Spain	82	4	19	22	278	5	10	76	X	X	896	X			
Sweden	60	0	5	17	249	0	4	71	4,916	941	19	1,400			
Switzerland	75	0	6	47	193	0	4	121	1,650	1	9	1,033			
Ukraine	X	1	15	X	263	0	10	85	2,927	1	16	756			
United Kingdom	50	0	4	17	230	0	2	80	1,550	16	28	539			
Yugoslavia, Fed Rep	X	X	12	X	X	X	8	X	X	X	X	X			

	Mammals				Birds				Higher Plants			
	Total Number of Known Species			No. of Species per 10,000 km <sup>2</sup> (a)	Total Number of Known Species			No. of Species per 10,000 km <sup>2</sup> (a)	Total Number of Known Species			No. of Species per 10,000 km <sup>2</sup> (a)
	All Species	Endemic Species	Threatened Species		Breeding Species	Endemic Species	Threatened Species		All Species (b)	Endemic Species	Threatened Species	
<b>NORTH AMERICA</b>	X	X	X	X	X	X	X	X	X	X	X	X
Canada	193	7	7	20	426	3	5	44	2,920	147	649	299
United States	428	101	35	45	650	69	50	68	16,302	4,036	1,845	1,679
<b>CENTRAL AMERICA</b>	X	X	X	X	X	X	X	X	X	X	X	X
Belize	125	0	5	95	356	0	1	271	2,750	150	41	2,090
Costa Rica	205	6	14	120	600	7	13	350	11,000	950	456	6,421
Cuba	31	12	9	14	137	22	13	62	6,004	3,229	811	2,714
Dominican Rep	20	0	4	12	136	0	11	81	5,000	1,800	73	2,965
El Salvador	135	0	2	106	251	0	0	196	2,500	17	35	1,956
Guatemala	250	3	8	114	458	1	4	208	8,000	1,171	315	3,638
Haiti	3	0	4	2	75	0	11	54	4,685	1,623	28	3,345
Honduras	173	1	7	78	422	1	4	190	5,000	148	55	2,252
Jamaica	24	3	4	23	113	25	7	110	2,746	923	371	2,662
Mexico	450	140	64	79	769	89	36	135	25,000	12,500	1,048	4,382
Nicaragua	200	2	4	86	482	0	3	207	7,000	40	78	3,003
Panama	218	14	17	112	732	8	10	376	9,000	1,222	561	4,618
Trinidad and Tobago	100	1	1	125	260	1	3	324	1,982	236	16	2,470
<b>SOUTH AMERICA</b>	X	X	X	X	X	X	X	X	<b>4,958</b>	X	X	X
Argentina	320	49	27	50	897	19	41	140	9,000	1,100	170	1,407
Bolivia	316	20	24	67	X	16	27	X	16,500	4,000	49	3,500
Brazil	394	101	71	43	1,492	180	103	161	55,000	X	463	5,935
Chile	91	17	16	22	296	14	18	71	5,125	2,698	292	1,229
Colombia	359	29	35	75	1,695	63	64	355	50,000	1,500	376	10,479
Ecuador	302	24	28	100	1,388	38	53	460	18,250	4,000	375	6,052
Guyana	193	1	10	70	678	0	3	246	6,000	X	47	2,180
Paraguay	305	2	10	90	556	0	26	164	7,500	X	12	2,208
Peru	344	48	46	69	1,538	109	64	310	17,121	5,356	377	3,448
Suriname	180	0	10	72	603	0	2	240	4,700	X	48	1,870
Uruguay	81	1	5	31	237	0	11	92	2,184	40	11	845
Venezuela	305	17	24	69	1,181	42	22	266	20,000	8,000	107	4,510
<b>ASIA</b>	X	X	X	X	X	X	X	X	<b>5,990</b>	X	X	X
Afghanistan, Islamic State	123	1	11	31	235	0	13	59	3,500	800	6	882
Armenia, Rep	X	3	4	X	X	0	5	X	X	X	0	X
Azerbaijan	X	0	11	X	X	0	8	X	X	X	1	X
Bangladesh	109	0	18	45	295	0	30	122	5,000	X	24	2,074
Bhutan	99	0	20	59	448	0	14	269	5,446	75	20	3,268
Cambodia	123	X	23	47	307	0	18	118	X	X	7	X
China	394	77	75	41	1,100	68	90	114	30,000	18,000	343	3,112
Georgia	X	2	10	X	X	0	5	X	X	X	1	X
India	316	45	75	47	923	55	73	136	15,000	5,000	1,256	2,216
Indonesia	436	206	128	77	1,519	393	104	269	27,500	17,500	281	4,864
Iran, Islamic Rep	140	5	20	26	323	1	14	60	X	X	1	X
Iraq	81	1	7	23	172	1	12	49	X	X	2	X
Israel	92	4	13	72	180	0	8	141	X	X	38	X
Japan	132	38	29	40	>250	21	33	X	4,700	2,000	704	1,418
Jordan	71	0	7	34	141	0	4	68	2,200	X	10	1,069
Kazakhstan, Rep	X	4	15	X	X	0	15	X	X	X	0	X
Korea, Dem People's Rep	X	X	7	X	115	0	19	51	2,898	107	7	1,274
Korea, Rep	49	0	6	23	112	0	19	53	2,898	224	69	1,360
Kuwait	21	0	1	17	20	0	3	17	234	X	0	193
Kyrgyz Rep	X	1	6	X	X	0	5	X	X	X	1	X
Lao People's Dem Rep	172	0	30	61	487	1	27	171	X	X	5	X
Lebanon	54	0	5	53	154	0	5	152	X	X	4	X
Malaysia	286	28	42	90	501	9	34	158	15,000	3,600	510	4,732
Mongolia	134	X	12	25	X	0	14	X	2,272	229	1	429
Myanmar	251	6	31	62	867	4	44	216	7,000	1,071	29	1,742
Nepal	167	1	28	70	611	2	27	255	6,500	315	21	2,716
Oman	56	2	9	20	107	0	5	39	1,018	73	4	371
Pakistan	151	4	13	36	375	0	25	88	4,929	372	12	1,163
Philippines	153	98	49	50	395	184	86	129	8,000	3,500	371	2,604
Saudi Arabia	77	0	9	13	155	0	11	26	1,729	X	6	294
Singapore	45	1	6	113	118	0	9	295	2,000	2	14	5,007
Sri Lanka	88	13	14	47	250	23	11	134	3,000	890	436	1,613
Syrian Arab Rep	63	2	4	24	204	0	7	78	X	X	10	X
Tajikistan, Rep	X	2	5	X	X	0	9	X	X	X	0	X
Thailand	265	7	34	72	616	3	45	168	11,000	X	382	2,999
Turkey	116	1	15	28	302	0	14	72	8,472	2,675	1,827	2,012
Turkmenistan, Rep	X	0	11	X	X	0	12	X	X	X	1	X
United Arab Emirates	25	0	3	12	67	0	4	33	X	X	0	X
Uzbekistan, Rep	X	X	7	X	X	0	11	X	X	X	5	X
Vietnam	213	6	38	67	535	10	47	168	>7,000	1,260	350	X
Yemen	66	2	5	18	143	8	13	39	X	X	X	X
<b>OCEANIA</b>	X	X	X	X	X	X	X	X	<b>5,825</b>	X	X	X
Australia	252	201	58	28	649	353	45	72	15,000	14,074	1,597	1,672
Fiji	4	1	4	3	74	26	9	61	1,307	760	72	1,071
New Zealand	10	4	3	3	150	76	44	51	2,160	1,942	236	727
Papua New Guinea	214	59	57	60	644	80	31	182	10,000	X	95	2,821
Solomon Islands	53	19	20	37	163	44	18	115	2,780	30	43	1,959

Notes: a. Values are standardized using a species-area curve. b. Includes flowering plants only. c. World and regional totals include countries not listed. d. Includes cetaceans. e. World total includes vascular plants. Threatened species data are as of 1996, except for higher plants, which are as of June 1993.

Data Table 14.3

## Globally Threatened Species: Reptiles, Amphibians, and Fish, 1990s

Sources: World Conservation Monitoring Centre and World Conservation Union

WORLD {c}	Reptiles				Amphibians				Freshwater Fish	
	Total Number of Known Species	No. of Species		Total Number of Known Species	No. of Species		Total Number of Known Species			
	All Species	Endemic Species	Threatened Species	All Species	Endemic Species	Threatened Species	All Species	Threatened Species (b)		
	6,900	X	X	4,522	X	X	25,000 d	X	X	
AFRICA	X	X	X	X	X	X	X	X	X	
Algeria	X	4	1	X	X	0	X	X	1	
Angola	X	18	5	X	X	22	X	X	0	
Benin	X	1	2	X	X	0	X	X	0	
Botswana	157	2	0	41	38	0	10	92	0	
Burkina Faso	X	3	1	X	X	0	X	X	0	
Burundi	X	0	0	X	X	2	X	X	0	
Cameroon	X	20	3	X	X	66	X	X	26	
Central African Rep	X	0	1	X	X	0	X	X	0	
Chad	X	1	1	X	X	0	X	X	0	
Congo, Dem Rep	X	33	3	X	X	53	X	X	1	
Congo, Rep	X	1	2	X	X	1	X	X	0	
Côte d'Ivoire	X	3	4	X	X	3	X	X	0	
Egypt	83	0	6	18	6	0	1	70	0	
Equatorial Guinea	X	3	2	X	X	2	X	X	0	
Eritrea	X	X	3	X	X	0	X	X	0	
Ethiopia	X	8	1	X	X	34	X	X	0	
Gabon	X	3	3	X	X	4	X	X	0	
Gambia, The	X	1	1	X	X	0	X	79	0	
Ghana	X	1	4	X	X	4	X	X	0	
Guinea	X	3	3	X	X	3	X	X	0	
Guinea-Bissau	X	2	3	X	X	1	X	X	0	
Kenya	187	17	5	49	88	11	23	X	20	
Lesotho	X	2	0	X	X	1	X	8	1	
Liberia	62	2	3	28	38	4	17	X	0	
Libya	X	1	3	X	X	0	X	X	0	
Madagascar	252	227	17	66	144	149	2	38	13	
Malawi	124	6	0	55	69	3	0	31	0	
Mali	16	3	1	3	X	1	0	X	0	
Mauritania	X	1	3	X	X	0	X	X	0	
Mauritius	11	8	6	19	0	0	0	X	0	
Morocco	X	11	2	X	X	1	0	X	1	
Mozambique	X	5	5	X	62	1	0	15	2	
Namibia	X	26	3	X	32	2	1	7	102	
Niger	X	X	1	X	X	0	X	X	0	
Nigeria	>135	7	4	X	>109	1	0	X	260	
Rwanda	X	1	0	X	X	1	0	X	0	
Senegal	X	1	7	X	X	1	0	X	83	
Sierra Leone	X	1	3	X	X	2	0	X	0	
Somalia	193	49	2	49	27	3	0	7	3	
South Africa	299	91	19	61	95	48	9	19	94	
Sudan	X	7	3	X	X	1	0	X	0	
Swaziland	102	1	0	85	40	0	0	33	40	
Tanzania	284	64	4	63	124	48	0	28	19	
Togo	X	1	3	X	X	3	0	X	0	
Tunisia	X	1	2	X	X	0	0	X	0	
Uganda	149	2	1	52	50	1	0	17	291	
Zambia	X	2	0	X	83	1	0	20	X	
Zimbabwe	153	2	0	46	120	3	0	36	112	
EUROPE	X	X	X	X	X	X	X	X	X	
Albania	31	0	1	22	13	0	0	9	39	
Austria	14	0	1	7	20	0	0	10	60	
Belarus, Rep	8	X	0	3	10	0	0	4	X	
Belgium	8	0	0	6	17	0	0	12	X	
Bosnia and Herzegovina	X	X	X	X	X	X	1	X	X	
Bulgaria	33	0	1	15	17	0	0	8	8	
Croatia, Rep	X	X	X	X	X	X	1	X	X	
Czech Rep	X	X	X	X	X	X	X	X	20	
Denmark	5	0	0	3	14	0	0	9	41	
Estonia, Rep	5	0	0	3	11	0	0	7	30	
Finland	5	0	0	2	5	0	0	2	66	
France	32	0	3	9	32	3	2	9	53	
Germany	12	0	0	4	20	0	0	6	71	
Greece	51	3	6	22	15	2	1	6	98	
Hungary	15	0	1	7	17	0	0	8	X	
Iceland	0	0	0	0	0	0	0	0	7	
Ireland	1	0	0	1	3	0	0	2	25	
Italy	40	0	4	13	34	8	4	11	45	
Latvia, Rep	7	0	0	4	13	0	0	7	109	
Lithuania, Rep	7	0	0	4	13	0	0	7	X	
Macedonia, FYR	X	X	1	X	X	X	X	X	X	
Moldova, Rep	9	0	1	6	13	X	0	9	82	
Netherlands	7	38	0	4	16	0	0	10	X	
Norway	5	0	0	2	5	0	0	2	X	
Poland, Rep	9	0	0	3	18	0	0	6	104	
Portugal	29	2	0	14	17	0	1	8	28	
Romania	25	0	2	9	19	0	0	7	87	
Russian Federation	58	0	5	5	23	0	0	2	290	
Slovak Rep	X	0	0	X	X	0	0	X	X	
Slovenia, Rep	21	0	0	17	X	0	1	X	98	
Spain	53	9	6	15	25	3	3	7	50	
Sweden	6	0	0	2	13	0	0	4	X	
Switzerland	14	0	0	9	18	0	0	11	48	
Ukraine	19	1	2	6	16	0	0	5	X	
United Kingdom	8	0	0	3	7	0	0	2	36	
Yugoslavia, Fed Rep	X	X	1	X	X	X	X	X	X	

	Reptiles				Amphibians				Freshwater Fish	
	Total Number of Known Species			No. of Species per 10,000 km <sup>2</sup> (a)	Total Number of Known Species			No. of Species per 10,000 km <sup>2</sup> (a)	Total Number of Known Species	
	All Species	Endemic Species	Threatened Species		All Species	Endemic Species	Threatened Species		All Species	Threatened Species(b)
<b>NORTH AMERICA</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Canada	41	0	3	4	41	0	1	4	177	13
United States	280	75	28	29	233	149	24	24	822	123
<b>CENTRAL AMERICA</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Belize	107	2	5	81	32	1	0	24	63	0
Costa Rica	214	38	7	125	162	38	1	95	130	0
Cuba	102	82	7	46	41	44	0	19	28	4
Dominican Rep	105	22	10	62	35	15	1	21	16	0
El Salvador	73	4	6	57	23	0	0	18	16	0
Guatemala	231	19	9	105	99	31	0	45	220	0
Haiti	102	29	6	73	46	23	1	33	16	0
Honduras	152	19	7	68	56	30	0	25	46	0
Jamaica	36	26	8	35	21	21	4	20	6	0
Mexico	687	394	18	120	285	195	3	50	384	86
Nicaragua	161	5	7	69	59	2	0	25	50	0
Panama	226	25	7	116	164	22	0	84	101	1
Trinidad and Tobago	70	3	5	87	26	3	0	32	76	0
<b>SOUTH AMERICA</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Argentina	220	72	5	34	145	46	5	23	410	1
Bolivia	208	19	3	44	112	33	0	24	389	0
Brazil	468	184	15	51	502	366	5	54	X	12
Chile	72	36	1	17	41	31	3	10	44	4
Colombia	584	111	15	122	585	225	0	123	X	5
Ecuador	374	121	12	124	402	163	0	133	706	1
Guyana	X	2	8	X	X	14	0	X	X	0
Paraguay	120	3	3	35	85	3	0	25	X	0
Peru	298	93	9	60	315	153	1	63	X	0
Suriname	151	0	6	60	95	8	0	38	300	0
Uruguay	X	1	0	X	X	4	0	X	X	0
Venezuela	259	61	14	58	199	121	0	45	X	5
<b>ASIA</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Afghanistan, Islamic State	103	4	1	26	6	1	1	2	84	0
Armenia, Rep	46	0	3	32	6	0	0	4	X	0
Azerbaijan	52	0	3	26	8	0	0	4	X	5
Bangladesh	119	1	13	49	19	0	0	8	X	0
Bhutan	19	2	1	11	24	0	0	14	X	0
Cambodia	82	1	9	32	28	0	0	11	>215	5
China	340	79	15	35	263	156	1	27	686	28
Georgia	46	0	7	24	11	0	0	6	X	3
India	389	187	16	57	197	120	3	29	X	4
Indonesia	511	305	19	90	270	111	0	48	X	60
Iran, Islamic Rep	164	27	8	30	11	5	2	2	269	7
Iraq	81	1	2	23	6	0	0	2	X	2
Israel	X	1	5	X	X	0	0	X	26	0
Japan	66	27	8	20	52	44	10	16	186	7
Jordan	X	0	1	X	X	0	0	X	26	0
Kazakhstan, Rep	37	0	1	6	10	0	1	2	X	5
Korea, Dem People's Rep	19	1	0	8	14	X	0	6	X	0
Korea, Rep	25	2	0	12	14	2	0	7	130	0
Kuwait	29	0	2	24	2	0	0	2	X	0
Kyrgyz Rep	23	0	1	9	3	0	0	1	X	0
Lao People's Dem Rep	66	1	7	23	37	1	0	13	244	4
Lebanon	X	2	2	X	X	0	0	X	X	0
Malaysia	268	73	14	85	158	61	0	50	449	14
Mongolia	21	0	0	4	8	0	0	2	70	0
Myanmar	203	38	20	51	75	10	0	19	X	1
Nepal	80	1	5	33	36	10	0	15	120	0
Oman	64	10	4	23	X	0	0	X	3	3
Pakistan	172	23	6	41	17	4	0	4	156	1
Philippines	190	158	7	62	63	55	2	21	X	26
Saudi Arabia	84	4	2	14	X	0	0	X	8	0
Singapore	X	X	1	X	X	0	0	X	73	1
Sri Lanka	144	75	8	77	39	20	0	21	65	8
Syrian Arab Rep	X	2	3	X	X	0	0	X	X	0
Tajikistan, Rep	38	0	1	16	2	1	0	1	X	1
Thailand	298	36	16	81	107	17	0	29	>600	14
Turkey	102	8	12	24	18	2	2	4	>152	18
Turkmenistan, Rep	80	X	2	22	2	0	0	1	X	5
United Arab Emirates	37	1	2	18	X	0	0	X	5	1
Uzbekistan, Rep	51	0	0	15	2	0	0	1	X	3
Vietnam	180	43	12	57	80	27	1	25	X	3
Yemen	77	31	2	21	X	1	0	X	5	0
<b>OCEANIA</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Australia	748	628	37	83	205	178	25	23	216	37
Fiji	25	11	6	20	2	2	1	2	X	0
New Zealand	40	36	11	13	3	3	1	1	29	8
Papua New Guinea	280	77	10	79	197	117	0	56	282	13
Solomon Islands	61	12	4	43	17	9	0	12	X	0

Notes: a. Values are standardized using a species-area curve. b. Threatened species include a few marine species. c. World totals include countries not listed. d. World total includes both marine and freshwater fish species; freshwater species make up around 40-50 percent of this estimate. Threatened species data are as of 1996.

Data Table 14.4

# Endangered Species Management Programs, 1996

Sources: World Conservation Union, International Species Information System, and other multiple sources

Species, Common Name	Species, Scientific Name (a)	Distribution (b)	IUCN Status (c)	Species Management Programs (d)	Estimated Wild Population	Zoo Census (1996)			
						Number of Zoos of Species	Number of Captive Animals	Number of Captive Births	Crude Rate of Change (e)
<b>AMPHIBIANS</b>									
Salamander, Japanese Giant	<i>Andrias japonicus</i>	Japan	VU	J	X	5	7	0	0.90
Toad, Puerto Rican Crested	<i>Peltophryne lemur</i>	Puerto Rico, British Virgin Islands	VU	S	<300	17	126	0	1.24
<b>REPTILES</b>									
Alligator, Chinese	<i>Alligator sinensis</i>	China	CR	S, UK	800-1,000	20	181	22	1.09
Boa, Dumeril's Ground	<i>Acrantophis dumerili</i>	Madagascar	VU	S	X	43	188	13	0.99
Boa, Madagascar Tree	<i>Sanzinia madagascariensis</i>	Madagascar	VU	UK	X	32	193	21	1.13
Boa, Madagascar	<i>Acrantophis madagascariensis</i>	Madagascar	VU	A	X	10	57	7	1.09
Boa, Mona Island	<i>Epicrates monensis monensis</i>	Puerto Rico	EN	S	X	1	11	3	0.58
Boa, Virgin Islands	<i>Epicrates monensis granti</i>	Puerto Rico, Virgin Islands	EN	S	X	13	56	0	0.86
Crocodile, Cuban	<i>Crocodylus rhombifer</i>	Cuba	EN	S	3,000-6,000	15	52	0	1.00
Crocodile, W. African Dwarf	<i>Osteolaemus tetraspis</i>	Central and West Africa	VU	A, UK	X	45	141	2	1.03
Gecko, Standing's Day	<i>Phelsuma standingi</i>	Madagascar	VU	UK	X	37	315	68	1.21
Gila Monster	<i>Heloderma suspectum (f)</i>	Mexico, Puerto Rico	VU	E, UK	X	81	318	3	1.00
Iguana, Cayman Is. Ground	<i>Cyclura nubila lewisi</i>	Cayman Islands	CR	S	X	5	22	12	1.04
Iguana, Fiji Banded	<i>Brachylophus fasciatus</i>	Fiji, Tonga, Vanuatu [int.]	EN	Au	>10,000	13	46	0	1.02
Iguana, Jamaican	<i>Cyclura collei</i>	Jamaica	CR	S	X	6	104	0	1.27
Iguana, Rhinoceros	<i>Cyclura cornuta (f)</i>	Dominican Rep., Haiti, Puerto Rico	VU	UK	X	37	147	22	1.00
Lizard, Beaded	<i>Heloderma horridum (f)</i>	Guatemala, Mexico	VU	E, UK	X	40	167	29	1.09
Lizard, Giant Girdled	<i>Cordylus giganteus</i>	South Africa	VU	A	>150,000	16	55	6	1.02
Lizard, Striped Legless	<i>Delma impar</i>	Australia	VU	Au	X	2	51	0	2.29
Skink, Chevron	<i>Oligosoma homolanotum</i>	New Zealand	VU	Au	X	1	3	0	X
Skink, Robust	<i>Cyclodina alani</i>	New Zealand	VU	Au	<20,000	1	7	0	1.00
Tortoise, African Pancake	<i>Malacochersus tornieri</i>	Kenya, Tanzania	VU	UK	>20,000	47	228	11	1.05
Tortoise, Aldabra Giant	<i>Geochelone gigantea</i>	Seychelles	VU	Au	155,000	85	278	0	X
Tortoise, Geometric	<i>Psammobates geometricus</i>	South Africa	EN	A	2,000-4,000	1	10	0	1.03
Tortoise, Radiated	<i>Geochelone radiata</i>	Madagascar, Mauritius, Reunion	VU	A, S	2-2.5 million	54	412	25	1.00
Turtle, Western Swamp	<i>Pseudemidura umbrina</i>	Australia	CR	Au	55	1	135	38	1.24
<b>BIRDS</b>									
Amazon, Green-cheeked	<i>Amazona viridigenalis</i>	Mexico, Puerto Rico [int.], U.S. [int.]	EN	E, UK	3,000-6,500	37	118	3	0.99
Amazon, Red-browed	<i>Amazona rhodocorytha</i>	Brazil	EN	E	X	7	35	2	1.11
Amazon, Red-tailed	<i>Amazona brasiliensis</i>	Brazil	EN	E	3,500-4,500	4	18	0	1.02
Amazon, St. Vincent	<i>Amazona guildingii</i>	St. Vincent	VU	S	700-800	4	14	0	0.98
Cassowary, Southern	<i>Casuarius casuarius</i>	Australia, Indonesia, PNG	VU	UK	1,500-3,000	52	125	12	1.04
Cockatoo, Philippine	<i>Cacatua haematuropygia</i>	Philippines	CR	E	1,000-4,000	6	24	0	1.14
Cockatoo, Salmon-crested	<i>Cacatua moluccensis</i>	Indonesia, Singapore [int.]	VU	E, J	X	100	330	14	1.01
Cockatoo, Yellow-crested	<i>Cacatua sulphurea citrinocristata (g)</i>	Hong Kong [int.], Indonesia, Singapore	EN	E	2,376	28	62	3	1.06
Condor, California	<i>Gymnogyps californianus</i>	United States [re-int.]	CR	S	27	2	104	17	1.08
Crane, Red-crowned	<i>Grus japonensis</i>	East Asia, Mongolia	VU	E, J, S, UK	1,700	49	152	12	1.01
Crane, Wattled	<i>Grus carunculatus</i>	Africa	VU	J, S, UK	13,000-15,000	37	109	8	1.00
Crane, White-napped	<i>Grus vipio</i>	East Asia, Mongolia	VU	E, J, S, UK	4,500	59	197	29	1.02
Crowned-pigeon, Southern	<i>Goura scheepmakeri</i>	Indonesia, Papua New Guinea	VU	E, S	X	11	25	6	1.04
Crowned-pigeon, Victoria	<i>Goura victoria</i>	Indonesia, Papua New Guinea	VU	E, S	X	51	127	15	1.06
Crowned-pigeon, Western	<i>Goura cristata</i>	Indonesia	VU	E, S	X	37	84	15	0.94
Duck, Freckled	<i>Stictonetta naevosa</i>	Australia	VU	Au	X	5	81	0	1.06
Eagle, Stellar's Sea	<i>Haliaeetus pelagicus</i>	Japan, North and South Korea, Russia	VU	J	6,000-7,000	5	20	0	1.01
Griffon, Cape	<i>Gyps coprotheres</i>	Southern Africa	VU	A	X	5	36	2	1.05
Honeyeater, Regent	<i>Xanthomyza phrygia</i>	Australia	EN	Au	<1,000	1	14	7	0.40
Ibis, Northern Bald	<i>Geronticus eremita</i>	North Africa and Middle East	VU	E, J	X	55	708	94	1.04
Ibis, Southern Bald	<i>Geronticus calvus</i>	Lesotho, South Africa, Swaziland	VU	A	10,000	5	47	4	1.34
Kiwi, Brown	<i>Apteryx australis mantelli (g)</i>	New Zealand	VU	Au	X	11	50	14	1.01
Macaw, Blue-throated	<i>Ara glaucogularis</i>	Argentina (?), Bolivia, Paraguay (?)	EN	E	<1,000	9	36	4	1.11
Macaw, Hyacinthine	<i>Anodorhynchus hyacinthinus</i>	Bolivia, Brazil, Paraguay	VU	E, UK	3,000	86	320	11	1.05
Macaw, Red-fronted	<i>Ara rubrogenys</i>	Bolivia	EN	E, UK	1,000	38	154	12	0.97
Malleefowl	<i>Leipoa ocellata</i>	Australia	VU	Au	>4,000 (?)	5	66	29	1.18
Owl, Blackiston's Fish	<i>Ketupa blakistoni</i>	China, Japan, Russia	EN	J	680-900	1	1	0	X
Parakeet, Antipodes	<i>Cyanoramphus unicolor</i>	New Zealand	VU	Au	2,000-3,000	5	12	2	0.82
Parakeet, Blue-throated	<i>Pyrrhura cruentata</i>	Brazil	VU	UK	X	6	52	4	1.11
Parakeet, Golden	<i>Aratinga quarouba</i>	Brazil	EN	E	X	31	166	17	1.01
Parrot, Orange-bellied	<i>Neophema chrysogaster</i>	Australia	EN	Au	150	1	24	7	2.11
Parrot, Thick-billed	<i>Rhynchopsitta pachyrhyncha</i>	Mexico, United States [re-int.]	EN	S, UK	X	26	108	8	1.08
Peafowl, Congo	<i>Afropavo congensis</i>	Democratic Republic of Congo	VU	E, S	X	18	96	41	0.99
Pelican, Dalmatian	<i>Pelecanus crispus</i>	Asia, Middle East, Southeast Europe	VU	E	6,400-8,600	18	100	16	1.01
Pheasant, Edwards	<i>Lophura edwardsi</i>	Vietnam	CR	E	Extinct (?)	31	146	38	1.22
Pigeon, Mauritius Pink	<i>Columba mayeri</i>	Mauritius	CR	E, S	77	32	233	51	1.14
Rail, Guam	<i>Rallus owstoni</i>	Guam	EW	S	0	13	53	7	0.91
Starling, Bali (Bali Mynah)	<i>Leucopsar rothschildi</i>	Indonesia	CR	E, J, S, UK	30-35	106	572	155	1.03
Stork, Oriental	<i>Ciconia boyciana</i>	Japan, Northeast Asia	EN	J	2,500	8	52	13	1.09
Teal, Brown	<i>Anas aucklandica (f)</i>	New Zealand	VU	Au	X	7	61	8	1.00
<b>MAMMALS</b>									
Addax	<i>Addax nasomaculatus</i>	North Africa and the Sahel	EN	Au, E, S, UK	<250	62	514	93	1.02
Anoa, Lowland	<i>Bubalus depressicornis</i>	Indonesia	EN	E	<4,000	24	76	11	1.05
Anteater, Giant	<i>Myrmecophaga tridactyla (f)</i>	Central and South America	VU	E	X	29	64	12	0.59
Ass, Asiatic Wild	<i>Equus hemionus (f)</i>	Central and Western Asia	VU	E	X	37	194	14	0.97
Ass, Somali Wild	<i>Equus africanus somaliensis (g)</i>	Ethiopia, Somalia	CR	E	100-250	8	29	2	0.96
Babirusa	<i>Babirusa babirusa (f)</i>	Indonesia	VU	E, S	<8,500	37	135	24	1.05
Bandicoot, Eastern Barred	<i>Perameles gunnii</i>	Australia	VU	Au	X	7	60	39	1.16
Banteng	<i>Bos javanicus (f)</i>	Southeast Asia	EN	E	X	28	313	28	1.04
Bear, Sloth	<i>Melursus ursinus (f)</i>	Bangladesh, India, Nepal, Sri Lanka	VU	E, S	5,000-15,000	23	59	6	1.08
Bear, Spectacled	<i>Tremarctos ornatus</i>	South America	VU	E, S	>20,000	55	133	9	0.90
Bilby, Greater	<i>Macrotis lagotis sagitta (g)</i>	Australia	VU	Au	X	1	3	0	1.44
Bison, European	<i>Bison bonasus (f)</i>	Eastern Europe [re-int.], Russia [re-int.]	EN	E	1,870	40	249	40	0.80
Cheetah	<i>Acinonyx jubatus (f)</i>	Africa	VU	A, Au, E, J, S	9,000-12,000	117	666	70	0.82
Chimpanzee	<i>Pan troglodytes (f)</i>	Africa	EN	J, S, UK	105,000	146	2,697	76	1.01
Chimpanzee, Pygmy (Bonobo)	<i>Pan paniscus</i>	Democratic Republic of Congo	EN	E, S	10,000-20,000	17	98	5	1.04

Species, Common Name	Species, Scientific Name (a)	Distribution (b)	IUCN Status (c)	Species Management Programs (d)	Estimated Wild Population	Zoo Census (1996)			Crude Rate of Change (e)
						Number of Zoos Housing Species	Number of Captive Animals	Number of Births	
Chuditch	<i>Dasyurus geoffroii</i>	Australia	VU	Au	2,500-4,400	2	65	49	1.24
Deer, Swamp	<i>Cervus duvauceli</i> (f)	India, Nepal	VU	S	>5,000	23	222	46	0.98
Dog, African Wild	<i>Lycaon pictus</i> (f)	Africa	EN	A, E, S	3,000-5,000	43	241	60	1.03
Dog, Bush	<i>Speothos venaticus</i>	Panama, South America	VU	B, E	X	24	84	19	1.05
Drill	<i>Mandrillus leucophaeus</i> (f)	Cameroon, Equatorial Guinea, Nigeria	EN	E, J, S	<10,000	8	46	5	1.02
Elephant, African	<i>Loxodonta africana</i> (f)	Africa	EN	E, S	581,175	101	282	1	0.81
Elephant, Asian	<i>Elephas maximus</i> (f)	South and Southeast Asia	EN	E, J, S	38,000-51,000	131	460	14	0.90
Ferret, Black-footed	<i>Mustela nigripes</i>	United States	EW	S	60	14	198	161	X
Fossa	<i>Cryptoprocta ferox</i>	Madagascar	VU	E	X	7	29	2	1.03
Fox, Rodrigues Flying	<i>Pteropus rodricensis</i>	Mauritius (Rodrigues)	CR	S	350	17	557	156	1.16
Gazelle, Dama	<i>Gazella dama</i>	North Africa and the Sahel	EN	E	X	15	62	5	0.84
Gibbon, Black	<i>Hylobates concolor</i> (f)	Cambodia, China, Vietnam	EN	E, J	10,000	46	183	16	1.04
Gibbon, Pileated	<i>Hylobates pileatus</i>	Cambodia, Laos, Thailand	VU	E	30,000	15	55	1	1.01
Gibbon, Silvery	<i>Hylobates moloch</i> (f)	Indonesia	CR	E	1,000	18	67	5	1.02
Gorilla, Western Lowland	<i>Gorilla gorilla gorilla</i>	West Central Africa	EN	E, S	>110,000	95	643	38	X
Hippopotamus, Pygmy	<i>Hexaprotodon liberiensis</i> (f)	West Africa	VU	E, S, UK	X	61	164	11	0.98
Horse, Przewalski Wild	<i>Equus przewalskii</i>	China, Mongolia	EW	Au, E, S	X	69	548	35	0.98
Kowari	<i>Dasyercus byrnei</i>	Australia	VU	E	X	26	136	24	1.15
Lechwe, Kafue	<i>Kobus leche kafuensis</i>	Zambia	VU	UK	X	13	133	24	0.95
Lemur, Black	<i>Eulemur macaco macaco</i>	Madagascar	VU	E, J, S, UK	X	42	171	14	0.95
Lemur, Mongoose	<i>Eulemur mongoz</i> (f)	Comoros, Madagascar	VU	E, S	X	23	173	28	1.03
Lemur, Ring-tailed	<i>Lemur catta</i>	Madagascar	VU	S	X	167	1,087	128	1.00
Lemur, Ruffed	<i>Varecia variegata</i> (f)	Madagascar	EN	Au, E, J, S	X	158	895	135	1.05
Leopard, Amur	<i>Panthera pardus orientalis</i>	China, North and South Korea, Russia	CR	E	28-31	44	144	16	1.03
Leopard, Clouded	<i>Neofelis nebulosa</i> (f)	China, South and Southeast Asia	VU	E, S	X	57	185	11	1.02
Leopard, North Persian	<i>Panthera pardus saxicolor</i>	Afghanistan, Iran, Turkmenistan	EN	E	X	60	142	14	1.01
Leopard, Snow	<i>Uncia uncia</i>	Himalayan region	EN	E, J, S	4,500-7,350	142	467	36	1.00
Lion, African	<i>Panthera leo</i> (e)	Africa	VU	S	30,000-100,000	192	825	97	1.04
Lion, Asiatic	<i>Panthera leo persica</i>	India	EN	E	300	29	73	7	0.99
Loris, Pygmy	<i>Nycticebus pygmaeus</i>	Cambodia (?), China, Laos, Vietnam	VU	E, S, UK	300-500	28	160	27	1.08
Macaque, Celebes Black	<i>Macaca nigra</i> (f)	Indonesia	EN	UK	X	35	247	22	1.01
Macaque, Lion-tailed	<i>Macaca silenus</i>	India	EN	E, J, S, UK	3,600-5,000	53	356	21	1.02
Mala	<i>Lagorhynchus h. hirsutus</i> (g)	Australia	CR	Au	0	1	10	1	1.06
Marmoset, Geoffroy's Tufted-ear	<i>Callithrix geoffroyi</i>	Brazil	VU	E, UK	X	35	223	78	1.08
Marmoset, Goeldi's	<i>Callimico goeldii</i>	Bolivia, Brazil, Colombia, Peru	VU	E, S	X	64	309	28	0.97
Mink, European	<i>Mustela lutreola</i> (f)	Europe	EN	E	X	7	40	15	1.03
Monkey, Colombian Spider	<i>Ateles fusciceps robustus</i>	Colombia, Panama	VU	E	X	31	145	14	1.03
Monkey, Diana	<i>Cercopithecus diana</i> (f)	West Africa	VU	E, UK	X	47	144	12	0.97
Monkey, Douc	<i>Pygathrix nemaeus</i> (f)	Cambodia, China, Laos, Vietnam	EN	E	X	7	42	3	0.72
Numbat	<i>Myrmecobius fasciatus</i>	Australia	VU	Au	<2,000	1	21	0	1.56
Orangutan	<i>Pongo pygmaeus</i> (f)	Brunei, Indonesia, Malaysia	VU	Au, E, J, S, UK	21,500-29,771	118	616	27	0.99
Oryx, Arabian	<i>Oryx leucorhinus</i>	Middle East	EN	E, S	X	61	625	54	1.00
Oryx, Scimitar-horned	<i>Oryx dammah</i>	Israel (int.), North Africa	CR	Au, E, S	X	80	897	165	0.81
Panda, Giant	<i>Ailuropoda melanoleuca</i>	China	EN	S	1,100	5	9	0	0.84
Panda, Lesser (Red)	<i>Ailuurus fulgens</i> (f)	China, Laos, Myanmar, South Asia	EN	Au, E, J, S, UK	X	112	350	64	1.02
Peccary, Chacoan	<i>Catagonus wagneri</i>	Argentina, Bolivia, Paraguay	EN	S	X	1	11	10	1.82
Pudu, Southern	<i>Pudu pudu</i>	Argentina, Chile	VU	E	X	31	151	42	1.09
Rat, Greater Stick-nest	<i>Leporillus conditor</i>	Australia	EN	Au	<2,500	4	19	8	0.82
Rhinoceros, Black	<i>Diceros bicornis</i> (f)	Africa	CR	Au, E, J, S, UK	2,400	57	170	5	1.07
Rhinoceros, Great Indian	<i>Rhinoceros unicornis</i>	Bhutan, India, Nepal	EN	E, J, S, UK	2,000	27	66	3	1.00
Rhinoceros, Sumatran	<i>Dicerorhinus sumatrensis</i> (f)	Southeast Asia	CR	S	250-400	2	4	0	0.88
Sika, Tonkin	<i>Cervus nippon pseudaxis</i>	Vietnam	CR	E	X	14	140	39	1.08
Tamarin, Cotton-top	<i>Saguinus oedipus</i> (f)	Colombia	EN	Au, E, J, S	2,000-3,000	138	705	152	1.00
Tamarin, Golden Lion	<i>Leontopithecus r. rosalia</i>	Brazil	CR	Au, E, S	<650	98	338	69	0.99
Tamarin, Golden-headed Lion	<i>Leontopithecus chrysomelas</i>	Brazil	EN	E	6,000-15,500	55	285	42	1.03
Tapir, Malayan	<i>Tapirus indicus</i>	Southeast Asia	VU	E, J	<1,500	50	126	8	1.02
Tiger, Amur	<i>Panthera tigris altaica</i>	China [ex?], North Korea [ex?], Russia	CR	E, J, S	330-371	120	348	47	1.00
Tiger, Sumatran	<i>Panthera tigris sumatrae</i>	Indonesia	CR	Au, E, J, S, UK	400-500	56	133	10	1.01
Tree-kangaroo, Goodfellow's	<i>Dendrolagus goodfellowi</i>	Papua New Guinea	EN	E, S	X	10	49	3	1.00
Tree-kangaroo, Huon	<i>Dendrolagus matschiei</i>	Papua New Guinea	EN	E, S	X	31	99	8	1.03
Wildcat, Scottish	<i>Felis silvestris grampia</i>	United Kingdom	VU	UK	X	3	9	4	1.05
Wolf, Red	<i>Canis rufus</i> (f)	United States	CR	S	92	31	134	7	1.02
Wolverine	<i>Gulo gulo</i> (f)	North America, North Europe, Mongolia	VU	E	X	18	33	5	1.05
Zebra, Grevy's	<i>Equus grevyi</i>	Ethiopia, Kenya	EN	E, J, S	X	70	332	25	0.99
Zebra, Hartman's Mountain	<i>Equus zebra hartmannae</i> (g)	Angola, Namibia, South Africa	EN	E, S	7,350	21	77	7	0.92

Notes: a. Scientific names follow the "1996 IUCN Red List of Threatened Animals" nomenclature. b. From the "1996 IUCN Red List": [int] = introduced; [re-int] = reintroduced; [ex?] = believed to be extinct; [?] = unknown if the species is currently found in the area. c. IUCN threatened status: CR = critically endangered; EN = endangered; EW = extinct in the wild; VU = vulnerable. d. A = African Propagation Program (APP); Au = Australasian Species Management Program (ASMP); B = Zoological Society of Brazil Species Program (SZB); E = European Endangered Species Programs (EEP); J = Species Survival Committees Japan (SSC); S = North America Species Survival Plan (SSP); UK = United Kingdom Joint Management of Species Committee (JMISC). e. A rate > 1 indicates a net population increase; a rate < 1, a net population decrease; and a rate = 1 indicates that the captive population is stable. f. Zoo census data include all subspecies being held in captivity. g. IUCN status listed applies to the species; the subspecies is not listed separately under the "1996 IUCN Red List."

Data Table 14.5

## Action on Global Agreements

Sources: Multiple sources

	Convention on Biological Diversity		Received GEF Technical Assistance for CBD Strategies or Action Plans from: (a)	Became a Party to the Ramsar Convention (b)	Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES)			IUCN Goal of 10% of Land Area Protected (c)	Capacity for Ex-Situ Conservation			
	Year Signed	Year Ratified			Became a Party to	No. of Reports Expected	No. of Reports Received		% Reporting Requirements Met	Number of Zoos and Aquaria (d)	Average	
											Average No. of Vertebrate Species per Zoo	Average No. of Species per Zoo
<b>WORLD</b>					<b>2,071</b>	<b>1,494</b>	<b>72</b>	<b>No</b>	<b>2,107</b>	<b>X</b>	<b>X</b>	
<b>AFRICA</b>					<b>635</b>	<b>408</b>	<b>64</b>	<b>No</b>	<b>66</b>	<b>X</b>	<b>X</b>	
Algeria	1992	1995	UNDP	1984	1984	13	9	69	No	2	X	
Angola	1992	X	X	X	X	X	X	X	No	X	X	
Benin	1992	1994	UNDP	X	1984	13	4	31	No	X	X	
Botswana	1992	1995	X	1997	1978	19	17	90	Yes	X	X	
Burkina Faso	1992	1993	UNDP	1990	1990	7	5	71	Yes	X	X	
Burundi	1992	1997	X	X	1988	9	3	33	No	X	X	
Cameroon	1992	1994	UNEP	X	1981	16	12	75	No	X	X	
Central African Rep	1992	1995	UNDP	X	1980	17	9	53	No	X	X	
Chad	1992	1994	UNDP	1990	1989	8	3	38	No	X	X	
Congo, Dem Rep	1992	1994	UNDP	1996	1976	21	15	71	No	3	X	
Congo, Rep	1992	1996	UNDP	X	1983	14	14	100	No	1	X	
Côte d'Ivoire	1992	1994	UNEP	1996	1995	2	0	0	No	1	65	
Egypt	1992	1994	UNEP	1998	1978	19	2	11	No	2	325	
Equatorial Guinea	X	1994	UNDP	X	1992	5	1	20	X	X	X	
Eritrea	X	1996	World Bank	X	1995	2	0	0	No	X	X	
Ethiopia	1992	1994	X	X	1989	8	6	75	No	X	X	
Gabon	1992	1997	UNDP	1987	1989	8	7	88	No	1	X	
Gambia, The	1992	1994	UNEP	1997	1977	20	6	30	No	X	X	
Ghana	1992	1994	X	1988	1976	21	17	81	No	1	39	
Guinea	1992	1993	UNDP	1993	1981	16	10	63	No	X	X	
Guinea-Bissau	1992	1995	UNDP	1990	1990	7	0	0	X	X	X	
Kenya	1992	1994	W. Bank/UNEP	1990	1979	18	11	61	No	4	26	
Lesotho	1992	1995	UNDP	X	X	X	X	X	No	X	X	
Liberia	1992	X	X	X	1981	16	8	50	No	1	86	
Libya	1992	X	X	X	X	X	X	X	No	2	115	
Madagascar	1992	1996	UNEP	X	1975	22	21	96	No	3	63	
Malawi	1992	1994	UNEP	1997	1982	15	13	87	Yes	1	41	
Mali	1992	1995	UNDP	1987	1994	3	3	100	No	X	X	
Mauritania	1992	1996	UNEP	1983	X	X	X	X	No	X	X	
Mauritius	1992	1992	UNEP	X	1975	22	19	86	No	1	4	
Morocco	1992	1995	UNEP	1980	1976	21	12	57	No	5	255	
Mozambique	1992	1995	UNEP	X	1981	16	13	81	No	1	X	
Namibia	1992	1997	X	1995	1991	6	5	83	Yes	X	X	
Niger	1992	1995	UNDP	1987	1975	22	12	55	No	X	X	
Nigeria	1992	1994	X	X	1975	22	9	41	No	7	43	
Rwanda	1992	1996	UNDP	X	1981	16	3	19	Yes	X	X	
Senegal	1992	1994	UNDP	1977	1977	20	17	85	Yes	1	X	
Sierra Leone	X	1994	X	X	1995	2	1	50	No	X	X	
Somalia	X	X	X	X	1986	11	1	9	No	X	X	
South Africa	1993	1995	UNDP	1975	1975	22	21	96	No	22	204	
Sudan	1992	1995	UNDP	X	1983	14	7	50	No	1	X	
Swaziland	1992	1994	UNDP	X	1997	X	X	X	No	X	X	
Tanzania	1992	1996	X	X	1980	17	14	82	Yes	X	X	
Togo	1992	1995	X	1995	1979	18	15	83	No	X	X	
Tunisia	1992	1993	World Bank	1981	1975	22	22	100	No	2	125	
Uganda	1992	1993	World Bank	1988	1991	6	4	67	No	X	X	
Zambia	1992	1993	UNDP	1991	1981	16	11	69	No	1	X	
Zimbabwe	1992	1994	UNDP	X	1981	16	13	81	No	2	89	
<b>EUROPE</b>					<b>362</b>	<b>326</b>	<b>90</b>	<b>No</b>	<b>699</b>	<b>X</b>	<b>X</b>	
Albania	X	1994	World Bank	1996	X	X	X	X	No	X	X	
Austria	1992	1994	X	1983	1982	15	15	100	Yes	22	117	
Belarus, Rep	1992	1993	X	note	1995	2	1	50	No	2	211	
Belgium	1992	1996	X	1986	1984	13	13	100	No	11	215	
Bosnia and Herzegovina	X	X	X	X	X	X	X	X	No	X	X	
Bulgaria	1992	1996	X	1976	1991	6	5	83	No	3	127	
Croatia, Rep	1992	1996	World Bank	1991	X	X	X	X	No	3	X	
Czech Rep	1993	1993	World Bank	1993	1993	4	4	100	Yes	13	183	
Denmark	1992	1993	X	1978	1977	20	20	100	Yes	17	112	
Estonia, Rep	1992	1994	UNEP	1994	1992	5	3	60	Yes	1	315	
Finland	1992	1994	X	1975	1976	21	16	76	No	4	51	
France	1992	1994	X	1986	1978	19	18	95	Yes	114	106	
Germany	1992	1993	X	1976	1976	21	21	100	Yes	212	197	
Greece	1992	1994	X	1975	1993	4	4	100	No	X	X	
Hungary	1992	1994	UNEP	1975	1985	12	10	83	No	6	180	
Iceland	1992	1994	X	1978	X	X	X	X	No	X	X	
Ireland	1992	1996	X	1985	X	X	X	X	No	2	135	
Italy	1992	1994	X	1977	1979	18	18	100	No	31	86	
Latvia, Rep	1992	1995	UNDP	1995	1997	X	X	X	Yes	1	391	
Lithuania, Rep	1992	1996	World Bank	1993	X	X	X	X	Yes	2	164	
Macedonia, FYR	X	X	X	1991	X	X	X	X	No	X	X	
Moldova, Rep	1992	1995	X	X	X	X	X	X	No	1	207	
Netherlands	1992	1994	X	1980	1984	13	12	92	No	15	252	
Norway	1992	1993	X	1975	1976	21	20	95	No	4	97	
Poland, Rep	1992	1996	UNEP	1978	1990	7	5	71	No	13	257	
Portugal	1992	1993	X	1981	1981	16	11	69	No	4	245	
Romania	1992	1994	X	1991	1994	3	2	67	No	2	126	
Russian Federation	1992	1995	UNEP	1977	1992	5	4	80	No	17	250	
Slovak Rep	1993	1994	World Bank	1993	1993	4	3	75	Yes	3	177	
Slovenia, Rep	1992	1996	X	1991	X	X	X	X	No	2	125	
Spain	1992	1993	X	1982	1986	11	11	100	No	19	178	
Sweden	1992	1993	X	1975	1975	22	22	100	No	15	97	
Switzerland	1992	1994	X	1976	1975	22	21	96	Yes	36	84	
Ukraine	1992	1995	World Bank	1991	X	X	X	X	No	8	233	
United Kingdom	1992	1994	X	1976	1976	21	21	100	Yes	112	112	
Yugoslavia, Fed Rep	1992	X	X	X	X	X	X	X	No	2	228	

	Convention on Biological Diversity		Received GEF Technical Assistance for CBD Strategies or Action Plans from: (a)	Became a Party to the Ramsar Convention (b)	Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES)			IUCN Goal of 10% of Land Area Protected (c)	Capacity for EX-Situ Conservation Average			
	Signed	Ratified			Party to	No. of Reports Expected	No. of Reports Received		% Reporting Requirements Met	Number of Zoos and Aquaria (d)	No. of Vertebrate Species per Zoo	Average No. of Species per Zoo
<b>NORTH AMERICA</b>						<b>44</b>	<b>42</b>	<b>95.5</b>	<b>Yes</b>	<b>522</b>	<b>X</b>	<b>X</b>
Canada	1992	1992	X	1981	1975	22	22	100.0	Yes	58	99	108
United States	1993	X	X	1987	1975	22	20	90.9	Yes	464	127	140
<b>CENTRAL AMERICA</b>						<b>201</b>	<b>143</b>	<b>71.1</b>	<b>No</b>	<b>120</b>	<b>X</b>	<b>X</b>
Belize	1992	1993	UNDP	X	1981	16	12	75.0	Yes	1	45	45
Costa Rica	1992	1994	UNDP	1992	1975	22	18	81.8	Yes	3	85	85
Cuba	1992	1994	UNEP	X	1990	7	6	85.7	Yes	6	143	157
Dominican Rep	1992	1996	X	X	1987	10	10	100.0	Yes	2	184	199
El Salvador	1992	1994	UNDP	X	1987	10	4	40.0	No	1	127	127
Guatemala	1992	1995	UNDP	1990	1980	17	15	88.2	Yes	4	46	46
Haiti	1992	1996	X	X	X	X	X	X	No	X	X	X
Honduras	1992	1995	X	1993	1985	12	3	25.0	No	1	X	X
Jamaica	1992	1995	X	1998	1997	X	X	X	No	1	40	40
Mexico	1992	1993	UNDP	1986	1991	6	6	100.0	No	83	142	146
Nicaragua	1992	1995	X	1997	1977	20	18	90.0	No	X	X	X
Panama	1992	1995	UNEP	1990	1978	19	16	84.2	Yes	2	63	63
Trinidad and Tobago	1992	1996	UNDP	1993	1984	13	12	92.3	No	2	184	184
<b>SOUTH AMERICA</b>						<b>235</b>	<b>175</b>	<b>74.5</b>	<b>No</b>	<b>130</b>	<b>X</b>	<b>X</b>
Argentina	1992	1994	UNDP	1992	1981	16	16	100.0	No	12	135	141
Bolivia	1992	1994	X	1990	1979	18	12	66.7	Yes	4	405	409
Brazil	1992	1994	X	1993	1975	22	11	50.0	No	79	132	133
Chile	1992	1994	X	1981	1975	22	16	72.7	Yes	2	208	208
Colombia	1992	1994	UNEP	X	1981	16	12	75.0	No	6	165	169
Ecuador	1992	1993	X	1991	1975	22	17	77.3	Yes	2	18	18
Guyana	1992	1994	X	X	1977	20	15	75.0	No	1	62	62
Paraguay	1992	1994	X	1995	1977	20	13	65.0	No	3	35	35
Peru	1992	1993	UNDP	1992	1975	22	16	72.7	No	2	97	97
Suriname	1992	1996	UNDP	1985	1981	16	16	100.0	No	X	X	X
Uruguay	1992	1993	UNDP	1984	1975	22	15	68.2	No	6	123	123
Venezuela	1992	1994	UNDP	1988	1978	19	16	84.2	Yes	12	246	247
<b>ASIA</b>						<b>619</b>	<b>402</b>	<b>64.9</b>	<b>No</b>	<b>497</b>	<b>X</b>	<b>X</b>
Afghanistan, Islamic State	1992	X	X	X	1986	11	0	0.0	No	1	X	X
Armenia, Rep	1992	1993	UNDP	1993	X	X	X	X	No	1	195	195
Azerbaijan	1992	X	X	X	X	X	X	X	No	1	103	103
Bangladesh	1992	1994	X	1992	1982	15	12	80.0	No	1	X	X
Bhutan	1992	1995	UNDP	X	X	X	X	X	Yes	1	X	X
Cambodia	X	1995	X	X	1997	X	X	X	Yes	X	X	X
China	1992	1993	UNDP	1992	1981	16	16	100.0	No	134	64	64
Georgia	X	1994	World Bank	1997	1996	1	0	0.0	No	2	108	114
India	1992	1994	UNDP	1982	1976	21	20	95.2	No	91	96	96
Indonesia	1992	1994	X	1992	1979	18	17	94.4	No	23	136	140
Iran, Islamic Rep	1992	1996	UNDP	1975	1976	21	13	61.5	No	1	X	X
Iraq	X	X	X	X	X	X	X	X	No	1	X	X
Israel	1992	1995	X	1997	1980	17	7	41.2	Yes	6	177	178
Japan	1992	1993	X	1980	1980	17	16	94.1	No	166	153	174
Jordan	1992	1993	UNDP	1977	1979	18	4	22.2	No	X	X	X
Kazakhstan, Rep	1992	1994	UNDP	X	X	X	X	X	No	3	265	268
Korea, Dem People's Rep	1992	1994	UNDP	X	X	X	X	X	No	1	X	X
Korea, Rep	1992	1994	X	1997	1993	4	3	75.0	No	4	194	194
Kuwait	1992	X	X	X	X	X	X	X	No	1	44	44
Kyrgyz Rep	X	1996	UNDP	X	X	X	X	X	No	X	X	X
Lao People's Dem Rep	X	1996	X	X	X	X	X	X	X	X	X	X
Lebanon	1992	1994	UNDP	X	X	X	X	X	No	X	X	X
Malaysia	1992	1994	UNDP	1995	1978	19	16	84.2	No	6	260	260
Mongolia	1992	1993	UNDP	X	1996	1	0	0.0	Yes	X	X	X
Myanmar	1992	1994	X	X	1997	X	X	X	No	X	X	X
Nepal	1992	1993	X	1988	1975	22	18	81.8	No	1	X	X
Oman	1992	1995	UNDP	X	X	X	X	X	Yes	1	X	X
Pakistan	1992	1994	X	1976	1976	21	18	85.7	No	3	117	117
Philippines	1992	1993	X	1994	1981	16	14	87.5	No	6	108	108
Saudi Arabia	X	X	X	X	1996	1	0	0.0	No	3	78	78
Singapore	1993	1995	X	X	1987	10	10	100.0	No	3	300	320
Sri Lanka	1992	1994	X	1990	1979	18	11	61.1	Yes	1	326	326
Syrian Arab Rep	1993	1996	UNDP	X	X	X	X	X	X	X	X	X
Tajikistan, Rep	X	1997	X	X	X	X	X	X	No	1	212	216
Thailand	1992	X	X	X	1983	14	9	64.3	Yes	6	158	158
Turkey	1992	1997	X	1994	1996	1	0	0.0	No	3	142	142
Turkmenistan, Rep	X	1996	X	X	X	X	X	X	No	1	192	192
United Arab Emirates	1992	X	X	X	1990	7	4	66.7	No	3	253	253
Uzbekistan, Rep	X	1995	UNDP	X	1997	X	X	X	No	2	220	227
Vietnam	1993	1994	X	1985	1994	3	2	66.7	No	2	108	108
Yemen	1992	1996	UNDP	X	1997	X	X	X	No	X	X	X
<b>OCEANIA</b>						<b>58</b>	<b>50</b>	<b>86.2</b>	<b>No</b>	<b>73</b>	<b>X</b>	<b>X</b>
Australia	1992	1993	X	1975	1976	21	20	95.2	No	48	115	123
Fiji	1992	1993	UNDP	X	1997	X	X	X	No	X	X	X
New Zealand	1992	1993	X	1976	1989	8	8	100.0	Yes	20	65	69
Papua New Guinea	1992	1993	X	1993	1976	21	17	81.0	No	3	63	66
Solomon Islands	1992	1995	UNEP	X	X	X	X	X	X	X	X	X

Notes: a. Global Environment Facility (GEF) funds can be used to prepare national strategies, action plans, or programs for the Convention on Biological Diversity (CBD). The implementing agencies are the World Bank, the United Nations Environment Programme (UNEP), and the United Nations Development Programme (UNDP) as listed. b. Convention on Wetlands of International Importance, Especially as Waterfowl Habitat (Ramsar, Iran, 1971). c. This goal refers to land area within one of the five IUCN recognized protection categories. d. Includes private collections and institutions that focus on breeding rare wildlife.

## Sources and Technical Notes

### Data Table 14.1

#### National and International Protection of Natural Areas, 1997

**Sources:** National protected areas: Protected Areas Data Unit of the World Conservation Monitoring Centre (WCMC), unpublished data (WCMC, Cambridge, U.K., May 1997). Biosphere reserves: United Nations Educational, Scientific, and Cultural Organization (UNESCO), Man and the Biosphere Programme, *List of Biosphere Reserves* (UNESCO, Paris, April 1996). World heritage sites: UNESCO World Heritage Centre, *World Heritage List* (UNESCO, Paris, December 1996). Wetlands of international importance: Ramsar Convention Bureau, *List of Wetlands of International Importance* (Ramsar Convention Bureau, Gland, Switzerland, December 1997).

All protected areas combine natural areas of at least 1,000 hectares in five World Conservation Union (IUCN) management categories. Totally protected areas are maintained in a natural state, are closed to extractive uses, and encompass three management categories:

Category I. Scientific reserves and strict nature reserves possess outstanding, representative ecosystems. Public access is generally limited, with only scientific research and educational use permitted.

Category II. National parks and provincial parks are relatively large areas of national or international significance not materially altered by humans. Visitors may use them for recreation and study.

Category III. Natural monuments and natural landmarks contain unique geological formations, special animals or plants, or unusual habitats.

Partially protected areas are areas that may be managed for specific uses, such as recreation or tourism, or areas that provide optimum conditions for certain species or communities of wildlife. Some extractive use within these areas is allowed. They encompass two management categories:

Category IV. Managed nature reserves and wildlife sanctuaries are protected for specific purposes, such as conservation of a significant plant or animal species.

Category V. Protected landscapes and seascapes may be entirely natural or may include cultural landscapes (e.g., scenically attractive agricultural areas).

Nationally protected areas listed in this table do not include locally or provincially protected sites, or privately owned areas.

Protected areas at least 100,000 hectares and 1 million hectares in size refer to all IUCN category I–V protected areas that fall within these two classifications. The totals consist of an aggregation of single sites, and it is likely that some sites are not con-

tiguous blocks. These data do not account for agglomerations of protected areas that together might exceed 100,000 or 1 million hectares.

International protection systems usually include sites that are listed under national protection systems. Biosphere reserves are representative of terrestrial and coastal environments that have been internationally recognized under UNESCO's Man and the Biosphere Programme. They have been selected for their value to conservation and are intended to foster the scientific knowledge, skills, and human values necessary to support sustainable development. Each reserve must contain a diverse, natural ecosystem of a specific biogeographical province, large enough to be an effective conservation unit. For further details, refer to M. Udvardy, *A Classification of the Biogeographical Provinces of the World* (IUCN, Morges, Switzerland, 1975), and to *World Resources 1986*, Chapter 6. Each reserve also must include a minimally disturbed core area for conservation and research and may be surrounded by buffer zones where traditional land uses, experimental ecosystem research, and ecosystem rehabilitation may be permitted. Several countries share biosphere reserves. These sites are counted only once in continental and world totals.

World heritage sites represent areas of "outstanding universal value" for their natural features, their cultural value, or for both natural and cultural values. The table includes only natural and mixed natural and cultural sites. Any party to the World Heritage Convention may nominate natural sites that contain examples of a major stage of Earth's evolutionary history; a significant ongoing geological process; a unique or superlative natural phenomenon, formation, or feature; or a habitat for a threatened species. Several countries share world heritage sites. These sites, referred to as international heritage sites, are counted only once in continental and world totals.

Any party to the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar, Iran, 1971) that agrees to respect a site's integrity and to establish wetland reserves can designate wetlands of international importance. There are 14 sites that are inscribed on both the Ramsar and the World Heritage lists.

### Data Table 14.2

#### Globally Threatened Species: Mammals, Birds, and Higher Plants, 1990s

**Sources:** Total and endemic species of mammals and birds: World Conservation Monitoring Centre (WCMC), unpublished data (WCMC, Cambridge, U.K., April 1997). Threatened species of mammals and birds: WCMC and World Conservation Union (IUCN), *1996 IUCN Red List of Threatened Ani-*

*mals* (IUCN, Gland, Switzerland, 1996). Higher plants data: WCMC, *Biodiversity Data Sourcebook* (World Conservation Press, Cambridge, U.K., 1994).

The total number of known species may include introductions in some instances. Data on mammals, in most cases, exclude cetaceans (whales and porpoises), except where otherwise indicated. Total bird species listed includes only birds that breed in that country, not those that migrate or winter there. Only flowering plants are listed under total higher plants species numbers.

The number of endemic species refers to those species known to be found only within the country listed. The number of total endemic plant species listed for each country includes flowering plants, ferns, and conifers and cycads.

Figures are not necessarily comparable among countries because taxonomic concepts and the extent of knowledge vary (for the latter reason, country totals of species and endemics may be underestimates). In general, numbers of mammals and birds are fairly well known, whereas plants have not been as well inventoried.

The number of threatened species listed for all countries includes full species that are critically endangered, endangered, or vulnerable, but excludes introduced species, species whose status is insufficiently known (categorized by IUCN as "data deficient" [DD]), those known to be extinct, and those for which a status has not been assessed (categorized by IUCN as "not evaluated" [NE]). If a species is listed under the DD or NE categories, it should not be treated as a nonthreatened species, but as one that has not been assessed. Threatened species data for animals presented in Data Tables 14.2 and 14.3 reflect estimates presented in the IUCN *Red List*. Bird Life International compiles and provides bird status assessments for the IUCN *Red List*. Threatened species data for birds are from *Birds to Watch 2: The World List of Threatened Birds* (Collar *et al.*, BirdLife International, Cambridge, U.K., 1994). The number of threatened species of birds is listed for countries included within their breeding or wintering ranges.

This is the first time that all known mammal and bird species have been assessed. This is also the first time that the new IUCN categories and criteria are being applied to assess the risk of extinction of species. A brief description of the new system is presented below. For more detailed information, please refer to the 1996 IUCN *Red List*.

The IUCN classifies threatened species as "all full species categorized at the global level as Critically Endangered, Endangered, or Vulnerable." The definitions for these categories follow:

Critically Endangered: "When a taxon is facing an extremely high risk of extinction in the wild in the immediate future as defined by any of the criteria A–E." (See below.)

Endangered: "When a taxon is not Critically Endangered but is facing a very high risk of extinction in the wild in the near future as defined by any of the criteria A–E."

Vulnerable: "When a taxon is not Critically Endangered or Endangered but is facing a high risk of extinction in the wild in the medium-term future as defined by any of the criteria A–E."

For each threat category there are five criteria (A–E, see below) used to assess species status. This process provides a more rigorous approach from that used prior to revisions of the IUCN criteria. Species need to meet only one of the five criteria to be listed under that particular threat category. The five criteria are:

- A—Declining population rate;
- B—Small population and decline or fluctuation;
- C—Small population size and decline rate;
- D—Very small population/very restricted distribution; and
- E—Quantitative analysis indicating the probability of extinction in the wild (e.g., Population Viability Analysis).

In addition, there are subcriteria that provide further information on the reasons to list a species, potential causes of threat, etc.

*Number of species per 10,000 square kilometers* provides a relative estimate for comparing numbers of species among countries of differing size. Because the relationship between area and species number is nonlinear (i.e., as the area sampled increases, the number of new species located decreases), a species-area curve has been used to standardize these species numbers. The curve predicts how many species a country would have, given its current number of species, if it was a uniform 10,000 square kilometers in size. This number is calculated using the formula:  $S = cA^z$ , where  $S$  = the number of species,  $A$  = area, and  $c$  and  $z$  are constants. The slope of the species-area curve is determined by the constant  $z$ , which is approximately 0.33 for large areas containing many habitats. This constant is based on data from previous studies of species-area relationships. In reality, the constant  $z$  would differ among regions and countries because of differences in species' range size (which tend to be smaller in the tropics) and differences in varieties of habitats present. For example, a tropical country with a broad variety of habitats would be expected to have a steeper species-area curve than a temperate, homogenous country because one would predict a greater number of species per unit area. Species-area curves also are steeper for islands than for mainland countries. At present, there are insufficient regional data to estimate separate slopes ( $z$ ) for each country; therefore, these species estimates should be interpreted with caution.

### Data Table 14.3

#### Globally Threatened Species: Reptiles, Amphibians, and Fish, 1990s

**Sources:** Total and endemic species data: World Conservation Monitoring Centre (WCMC), unpublished data (WCMC, Cambridge, U.K., April 1997). Threatened species data: WCMC and World Conservation Union (IUCN), *1996 IUCN Red List of Threatened Animals* (IUCN, Gland, Switzerland, 1996).

For definitions of *all species*, *endemic species*, and *threatened species*, refer to the Technical Notes for Data Table 14.2. The world total for the number of known freshwater fish species also includes marine species. Of this total, around 40 to 45 percent are estimated to be freshwater species. Threatened marine turtles and most threatened marine fish are excluded from country totals. However, a few marine fish species are included in the threatened category. This is the first time that the IUCN *Red List* criteria are applied to marine fish; the categories for marine fish should therefore be taken as a preliminary assessment that needs further evaluation.

*The number of species per 10,000 square kilometers* provides a relative estimate for comparing numbers of species among countries of differing size. For details, refer to the Technical Notes for Data Table 14.2.

### Data Table 14.4

#### Endangered Species Management Programs, 1996

**Sources:** Species, distribution, and IUCN status: World Conservation Monitoring Centre (WCMC) and World Conservation Union (IUCN), *1996 IUCN Red List of Threatened Animals* (IUCN, Gland, Switzerland, 1996). Species management programs: IUCN/Species Survival Commission (SSC), Conservation Breeding Specialist Group (CBSG), F. Swengel, T. Hill, and E. Sullivan (eds.), *Global Zoo Directory 1996* (IUCN/SSC CBSG, Apple Valley, Minnesota, 1996); Christine Hopkins, Australasian Regional Association of Zoological Parks and Aquaria (personal communication), and Kevin Willis, American Zoo and Aquarium Association (AZA) (personal communication).

Estimated wild population data come from a variety of sources. The following list includes published and on-line sources: N.J. Collar, M.J. Crosby, and A.J. Stattersfield, *Birds to Watch 2: The World List of Threatened Birds* (BirdLife International, Cambridge, U.K., 1994); National Council for Nature Conservation and Bialowieza National Park, *1995 European Bison Pedigree Book* (Bialowieza National Park, Poland, 1995); IUCN/SSC Asian Rhino Specialist Group, *Asian Rhinos: Status, Survey and Conservation Action Plan* (IUCN, Gland, Switzerland, 1997); IUCN/SSC Pigs and Peccaries Specialist Group and Hippo Specialist Group, *Pigs, Peccaries and Hippos: Status, Survey and Conserva-*

*tion Action Plan* (IUCN, Gland, 1993); IUCN/SSC Primate Specialist Group, *African Primates: Status, Survey and Conservation Action Plan* (IUCN, Gland, 1996); J. Ballou, R. Lacy, and S. Ellis, *Leontopithecus II: The Second Population and Habitat Viability Assessment for the Lion Tamarins (Leontopithecus): Review Draft Report* (CBSG, Apple Valley, Minnesota, 1997); Mary Emanoil (ed.) and IUCN/SSC, *Encyclopedia of Endangered Species* (Gale Research Inc., Detroit, Michigan, 1994); B. Peyton *et al.*, "Status of Wild Andean Bears and Policies for their Management", in Proceedings from 10th International Conference on Bear Research and Management, Fairbanks, Alaska, July 1995; IUCN, *Species*, No. 28 (IUCN, Gland, June 1997), p. 47; IUCN/SSC Crocodile Specialist Group, *Status Survey and Conservation Action Plan: Revised Action Plan for Crocodiles* (IUCN, Gland, 1996). Available online at: <http://www.flmnh.ufl.edu/natsci/herpetology/act-plan/a-plan01.htm>; AZA, *Species Survival Plan 1995–96 Reports*. Available online at: <http://www.aza.org/aza/ssp.html>; IUCN/SSC African Rhino Specialist Group, "Rhino Information," International Rhino Foundation. Available online at: <http://www.rhinos-irf.org/rhinos/black.html>. IUCN/SSC African Elephant Specialist Group, "African Elephant Database." Available online at: <http://www.iucn.org/themes/ssc/aed/home.htm>; E. Kemf and P. Jackson, *Asian Elephants in the Wild: A WWF Species Status Report*, "The Status of the Asian Elephant." Available online at: <http://www.wwf.org/species/elephants/page5.htm>.

Estimated wild populations data were also provided by the following personal communications: Chris Banks, Melbourne Zoo, Australia; John Behler, Chair, IUCN/SSC Tortoise and Freshwater Turtle Specialist Group, Wildlife Conservation Society, New York; William Branch, Chair, IUCN/SSC African Reptile and Amphibian Specialist Group, Port Elizabeth Museum, South Africa; Kelly Cosgrave, Robust Skink Captive Coordinator, Auckland Zoo, New Zealand; Ardith Eudey, Vice-Chair for Asia, IUCN/SSC Primate Specialist Group California State University–Fullerton, Upland, California; Richard Gibson, Herpetology Department Head and Jersey Wildlife Preservation Trust, U.K.; Peter Gober, U.S. Fish and Wildlife Service (USFWS) Black-Footed Ferret Recovery Program Coordinator, Pierre, South Dakota; Jane Hendron, Information and Education Specialist, USFWS California Condor Recovery Program, Ventura, California; International Crane Foundation, Baraboo, Wisconsin; Peter Jackson, Chair, IUCN/SSC Cat Specialist Group, Switzerland; B. Kelly, USFWS Red Wolf Project, Manteo, North Carolina; Sharon Matola, Chair, IUCN/SSC Tapir Specialist Group, Belize Zoo, Belize; Alan Mootnick, International Center for Gibbon Studies, Santa Clarita, California; Luiz Paulo Pinto, Brazil Projects Coordinator, Conservation International, Belo Horizonte, Brazil; Christopher Servine, Co-Chair, IUCN/SSC Bear Specialist Group, University of Montana; USFWS Caribbean Field Office; Chris Wemmer, Chair, IUCN/SSC Deer Specialist Group Conservation

and Research Center, Front Royal, Virginia; and Shuyi Zhang, Institute of Zoology, Chinese Academy of Sciences, Beijing. Zoo census data: International Species Information System (ISIS) species abstracts, available online at: <http://www.world-zoo.org/abstract/abstract.htm> and unpublished data (ISIS, Apple Valley, Minnesota, 1996).

**Species:** the list of species presents a selection of those being managed in zoos around the world. Zoos captive breed far more taxa than those species managed in organized programs. Species in this table are those mammals, birds, amphibians, and reptiles that: (a) have an ongoing management plan recognized and approved by regional zoo associations (e.g., the American Zoo and Aquarium Association [AZA], the European Association of Zoos and Aquaria [EAZA], etc.); (b) are listed as threatened or extinct in the wild under the 1996 *IUCN Red List of Threatened Animals*; and (c) are housed in zoos that are members of the International Species Information System (ISIS). Although there are other threatened species being bred in captivity, the institutions breeding them are not members of ISIS and therefore their data are not readily available. The species' common and scientific names follow the *IUCN Red List* nomenclature, and thus species may have been given different names by ISIS and the Conservation Breeding Specialist Group (CBSG).

**Distribution:** the countries or regions where species are found in the wild follow the *IUCN Red List*. For birds, regions include migratory ranges. Where possible, the table indicates if a species has been reintroduced ("re-int," i.e., the species has been reestablished after disappearing from that particular area), introduced ("int," i.e., the species was not found in that area before its introduction), is believed to be extinct ("ex?"), or whether it is unknown if the species is currently found in the area ("?"). For more detailed information on distribution, please refer to the original source.

**IUCN status** refers to species that fall within the IUCN categories of Critically Endangered (CR), Endangered (EN), Vulnerable (VU), or Extinct in the Wild (EW). For a description of the categories CR, EN, or VU, please refer to the Sources and Technical Notes for Data Table 14.2. The category EW is described by IUCN as species "known only to survive in captivity or as a naturalized population well

outside the past range." The status of several subspecies being managed in captivity was not listed separately under the *IUCN Red List*; therefore, the status for the whole species was listed in this table. For example, IUCN does not list a separate status for the subspecies of yellow-crested cockatoo (*Cacatua sulphurea citrinocristata*), but lists the species (*Cacatua sulphurea*) as endangered; therefore, the subspecies is also listed as endangered in this table.

**Species management programs** are active, regionally organized efforts of managed cooperation among zoos, usually for species at risk in the wild, although a few programs were initiated as a result of a need to maintain the species in captivity and not because of the species' threatened status. According to the AZA, species management programs breed species in captivity to "maintain a healthy and self-sustaining captive population that is both genetically diverse and demographically stable." There are species management programs in North America, Europe, Australasia, Japan, South Africa, Central and South America, India, and China. It is important to note, however, that for many taxa, zoos are past the first stage of trying to breed the species and are into the second stage of trying not to breed them too fast, because the available space in many zoos is full or because space needs to be made for more threatened taxa. Several species management programs include reintroduction of the species into the wild, and in some cases, these programs have been responsible for returning a species to its former habitat. However, species reintroduction is not the goal of all species management programs.

**Estimated wild population:** accurate numbers for wild populations are known for only a few well-studied species. Most figures presented here are estimates based on a number of different methodologies from extrapolating population estimates using remaining habitat to actual population counts; therefore, caution is recommended when using these figures. Figures for the California condor, the black-footed ferret, and the red wolf are all as of November 1, 1997. At that time, 13 more condors were scheduled to be released into the wild by the end of 1997.

**Zoo census** data include data from ISIS-member zoos exclusively. As of 1996, 495 institutions (about half of the world's recognized zoos) were ISIS members. This table underestimates the number of

institutions, animals, and births in the world because other institutions that are breeding species in captivity are not members of ISIS. ISIS receives, archives, and analyzes standardized information from its member institutions on 255,000 living specimens and on 850,000 of their ancestors for 6,500 species using the within-zoo Animal Records Keeping System software and a pooled central database at ISIS. Of the non-ISIS-member institutions, some collaborate with species management programs while others do not. Ones that do not cooperate may breed species but with little consideration for maintaining a genetically diverse population. Special breeding facilities that may collaborate in species management programs also exist in the country of origin of some species.

**Number of zoos housing species:** this is number of ISIS-member zoos housing the species.

**Number of captive animals** includes all living individuals of a species housed in ISIS-member zoos as of December 1996. Not all individual animals participate in the species management programs. For many species, the figures include all subspecies being held in zoos, and this is indicated as such in the table.

**Number of captive births** refer to the total births minus deaths within the first 30 days of life that occurred during the last 6 months of 1996.

**Crude rate of change** is an indicator of captive population stability or the annual population increase or decrease per 100. A figure of 1.00 means the captive population is stable, whereas 0.90 indicates a 10 percent decrease in the captive population. This indicator is the net result of all processes including births, deaths, imports, exports, capture, escapes, etc. With the increasing number of species being managed in captivity, many zoos are scaling down their breeding programs for certain species to make space for more important taxa or because they lack the resources to continue expanding. However, the reason for the population's increase or decrease is not taken into account when calculating the crude rate of change. A declining population that is significantly bred in captivity often means intentional shrinkage to make room for other taxa in zoos, rather than failure of captive propagation. Therefore, this variable should not be taken as a measure of the ability to breed any particular species in captivity but should instead be used in combination with other information.

