

Inventories of landownership and the demarcation of the boundaries of three protected areas were also carried out for future expropriation.

The Inter-American Development Bank - IDB, USAID, WWF, and the governments of France and Canada have provided funds directly to non governmental organizations working in the areas surrounding protected areas, in general involving programmes for rural extension, co-operativism and environmental education.

Some of the programmes with international funding are:

- The Fundação Museu do Homem Americano received US\$2 million from the IDB, for programmes in the Serra da Capivara National Park, Piauí;
- The Fundação Pro-Natureza - FUNATURA received US\$500,000 from the IDB for the establishment of four Private Natural Heritage Reserves - RPPN in the Cerrado;
- The European Union provided US\$254,770 for the elaboration of the management plan for the Anavilhanas Ecological Station, Amazonas;
- SOS Amazonia received US\$700,000 from USAID and the Nature Conservancy for the elaboration of the management plan for the Serra do Divisor National Park, Acre;
- As of 1997, The International Tropical Timber Organization - ITTO is financing a 5-year project for sustainable management in the Tapajós National Forest, Pará;
- Since 1992, the Overseas Development Administration - ODA, the European Union and the Wildlife Conservation Society, New York, have contributed around US\$ 5 million to the Mamirauá Sustainable Development Reserve, Amazonas (a state protected area). ODA expects to invest a further US\$4 million between 1997 and 2001;
- In February 1997, the Inter-American Development Bank - IDB and the Government of Bahia set aside approximately R\$ 2 million for the creation of the Serra do Conduru State Park (8,400 ha), near the Una Biological Reserve, in southern Bahia. This was the result of collaboration with the Department of Forest Development of Bahia, and resulted in the doubling of the protected area in the region, which holds a

**Table 2-29.** Federal Environmental Protection Areas (APAs) In Brazil.

Name	State	Region	Area (ha)
Petrópolis	RJ	South-east	59,049
Piaçabuçu	AL	North-east	8,600
Bacia do Rio Descoberto	DF/GO	Central-west	32,100
Bacia do Rio São Bartolomeu	DF/GO	Central-west	84,100
Guapi-Mirim	RJ	South-east	14,340
Jericoacoara	CE	North-east	6,800
Cananéia-Iguape e Peruíbe	SP	South-east	202,832
Cairuçú	RJ	South-east	33,800
Guaraqueçaba	PR	South	291,500
Serra da Mantiqueira	MG/SP/RJ	South-east	402,517
Fernando de Noronha	PE	-	2,700
Garapé Gelado	PA	North	21,600
Cavernas do Peruaçu	MG/SP/RJ	South-east	150,000
Carste de Lagoa Santa	MG	South-east	35,600
Morro da Pedreira	MG	South-east	66,200
Serra da Tabatinga	MA/TO	North	61,000
Ibirapuitã	RS	South	318,000
Anhatomirim	SC	South	3,000
Barra do Mamanguape	PB	North-east	14,640
Delta do Parnaíba	MA/PI/CE	North-east	313,800
Costa dos Corais	PE/AL	North-east	413,563
Chapada do Araripe	CE/PE/PI	North-east	1,063,000
Ilhas e Várzeas do Rio Paraná	PR/MS	South/Central-west	1,003,059
Várzea da Ilha Grande	RJ	South-east	1,003,000
<b>TOTAL: 24 APAs</b>			<b>5,604,800</b>

See Figure 1-1 for Brazilian regions and states.

**Source:** Modified from Brazil. MMA. IBAMA. *Relatório Nacional do Brasil, 2ª versão. In: Congresso Latino-Americano de Parques Nacionais e Outras Áreas Protegidas, 1.* Brasília (1997).

world record for plant species richness, with 454 tree species recorded in a single hectare.

Several of these international agreements for loans or donations require the restructuring of the projects in order to ensure best returns from the investment. One of the chief difficulties has been the restrictions imposed by the donors regarding the use of the money to purchase land or to pay salaries for staff in the protected areas - two pressing problems for a very large number of the protected areas.

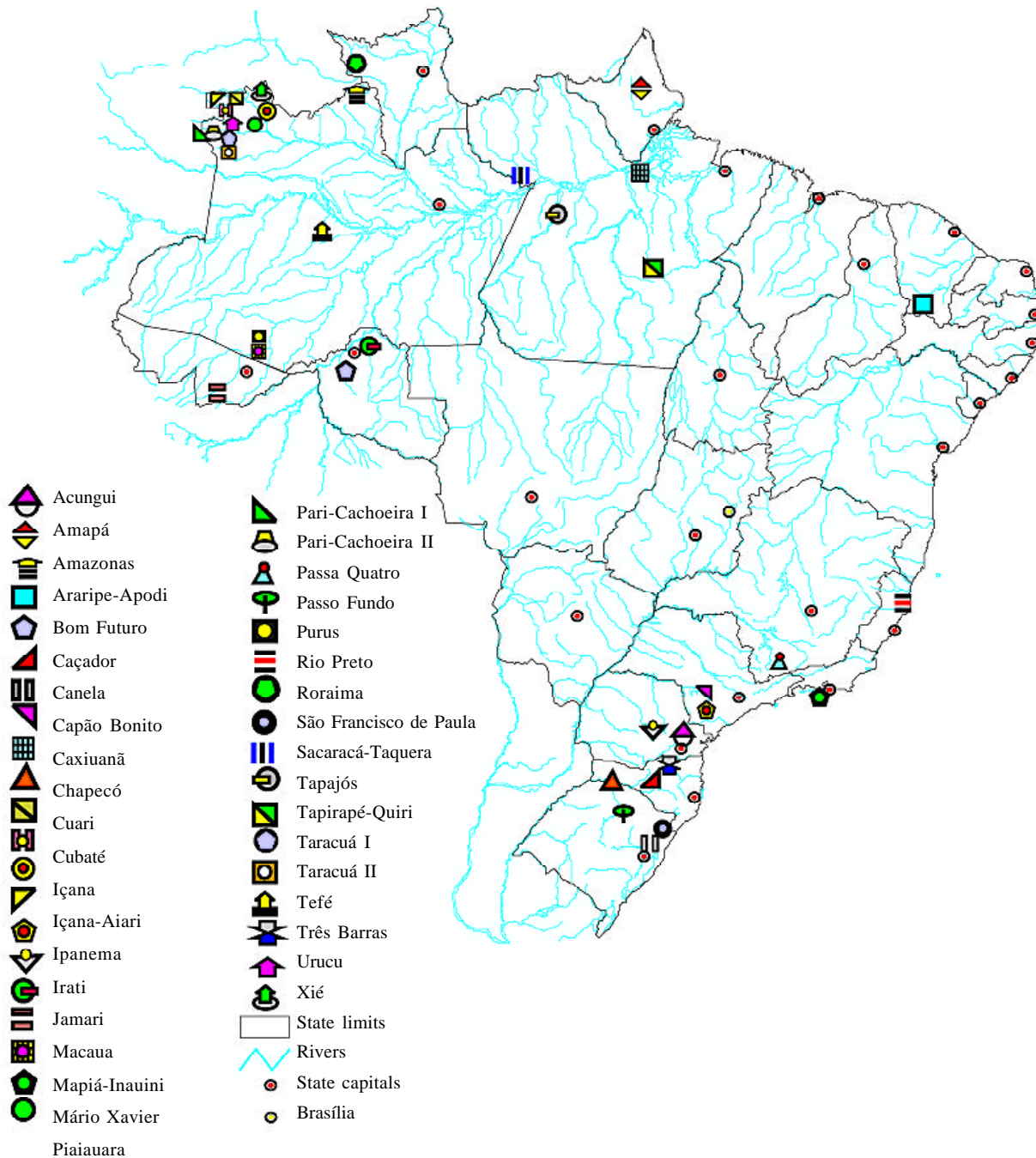
Despite this, some of the greatest advances in the conservation of the biological diversity of Brazil have been the result of international partnerships, a good example being the tropical rain forests which are benefiting from the Pilot Programme for the Brazilian Tropical Forests - PPG-7 (Programa Piloto para Proteção das Florestas Tropicais do Brasil). In this programme, some of the most important advances have been in the part dealing with the setting up and equipping of protected areas in the Amazon Forest.

Table 2-30. National Forests In Brazil.

Name	State	Forest type	Legislation	Area( ha)
<b>South Region</b>				<b>15,020</b>
01 Açungui	PR	Mixed ombrophilous forest	Edict 559/68	728
02 Caçador	SC	Mixed ombrophilous forest	Edict 560/68	710
03 Canela	RS	Mixed ombrophilous forest	Edict 561/68	517
04 Chapecó	SC	Mixed ombrophilous forest and seasonal deciduous forest	Edict 560/68	1,606
05 Ibirama	SC	Closed ombrophilous forest	Dec. 95,818/88	570
06 Irati	PR	Mixed ombrophilous forest	Edict 559/68	3,495
07 Passo Fundo	RS	Area of transition savannah mixed ombrophilous forest	Edict 561/68	1,328
08 São Francisco de Paula	RS	Steppe and mixed ombrophilous forest	Edict 561/68	1,607
09 Três Barras	SC	Mixed ombrophilous forest	Edict 560/68	4,459
<b>South-East Region</b>				<b>13,181</b>
10 Capão Bonito	SP	Ecotone	Edict 558/68	4,344
11 Ipanema	SP	Ecotone	Dec. 530/92	5,179
12 Mário Xavier	RJ	Closed ombrophilous forest	Dec. 93,369/86	493
13 Passa Quatro	MG	Ecotone	Dec. 568/68	335
14 Rio Preto	ES	Closed ombrophilous forest	Dec. 98,845/90	2,830
<b>North-East Region</b>				<b>38,626</b>
15 Araripe-Apodi	CE	Ecotone	Dec. 9,226/46	38,626
<b>North Region</b>				<b>15,052,460</b>
16 Altamira	PA	Not classified	Dec. 2,483/98	589,012
17 Amapá	AP	Closed ombrophilous forest	Dec. 96,630/89	412,000
18 Amazonas	AM	Closed ombrophilous forest, area of ecological transition and <i>campinarana</i> (tall forest on sandy soil)	Dec. 97,546/89	1,573,100
19 Bom Futuro	RO	Open ombrophilous forest and closed ombrophilous forest	Dec. 96,188/88	280,000
20 Carajás	PA	Not classified	Dec. 2,486/98	411,948
21 Caxiuanã	PA	Closed ombrophilous forest	Dec. 239/61	200,000
22 Cubatê	AM	<i>Campinarana</i> (tall forest on sandy soil)	Dec. 99,105/90	416,532
23 Cuiari	AM	Closed ombrophilous forest and ecotone	Dec. 99,109/90	109,518
24 Humaitá	AM	Not classified	Dec. 2,485/98	468,790
25 Içana	AM	ecotone	Dec. 99,110/90	200,561
26 Içana-Aiari	AM	Open ombrophilous forest, area of ecological transition and <i>campinarana</i> (tall forest on sandy soil)	Dec. 99,108/90	491,400
27 Itacaiunas	PA	Not classified	Dec. 2,480/98	141,400
28 Itaituba I	PA	Not classified	Dec. 2,481/98	220,034
29 Itaituba II	PA	Not classified	Dec. 482/98	440,500
30 Jamari	RO	Open ombrophilous forest and closed ombrophilous forest	Dec. 90,224/84	215,000
31 Macauã	AC	Closed ombrophilous forest	Dec. 96,189/88	173,475
32 Mapiá-Inauini	AM	Open ombrophilous forest and closed ombrophilous forest	Dec. 98,051/89	311,000
33 Pari-Cachoeira I	AM	Closed ombrophilous forest	Dec. 98,440/89	18,000
34 Pari-Cachoeira II	AM	Closed ombrophilous forest, ecotone and <i>campinarana</i> (tall forest on sandy soil)	Dec. 98,440/89	654,000
35 Piraiauara	AM	Ecotone and <i>campinarana</i> (tall forest on sandy soil)	Dec. 98,111/90	631,436
36 Purus	AM	Closed ombrophilous forest	Dec. 96,190/88	256,000
37 Roraima	RR	open ombrophilous forest and closed ombrophilous forest <i>campinarana</i> (tall forest on sandy soil) and ecological sanctuary	Dec. 97,545/89	2,664,685
38 Saracá-Taquera	PA	Closed ombrophilous forest	Dec. 98,704/89	429,600
39 Tapajós	PA	Open ombrophilous forest and closed ombrophilous forest	Dec. 73,684/74	600,000
40 Tapirapé-Aquiri	PA	Open ombrophilous forest and closed ombrophilous forest	Dec. 97,720/89	190,000
41 Taracúá I	AM	Area of ecological transition and <i>campinarana</i> (tall forest on sandy soil)	Dec. 99,112/90	647,744
42 Taracúá II	AM	Area of ecological transition and <i>campinarana</i> (tall forest on sandy soil)	Dec. 99,113/90	559,504
43 Tefé	AM	Closed ombrophilous forest	Dec. 97,629/89	1,020,000
44 Urucu	AM	Closed ombrophilous forest	Dec. 99,106/90	66,496
45 Xingu	PA	Not classified	Dec. 2,484/98	252,790
46 Xié	AM	Ecotone	Dec. 99,107/90	407,935
<b>TOTAL: 46 FLONAs (National Forests)</b>				<b>15,119,287</b>

See Figure 1-1 for Brazilian regions and states; Dec. = Decree

Source: IBAMA. Diretoria de Ecossistemas - DIREC. *Relatório Nacional do Brasil, 2ª versão. In: Congresso Latino-Americano de Parques Nacionais e Outras Áreas Protegidas, 1. Brasília (1997).*



**Figure 2-23.** Location of National Forests. Seven created in 1998 are not included.  
**Source:** Brazil, MMA (1997).

This is being done as part of the Subprogramme for Protected Areas and Management of Natural Resources, which involves projects for biodiversity conservation and the sustainable use of natural resources. The subprogramme is comprised of six projects, two of which, 'Extractivist Reserves' and 'Indigenous Lands', are already underway. Three more, 'Parks and Reserves', 'Management of Natural Resources in Inundated Forest' and 'Monitoring and Control of Deforestation and Forest Fires', are in preparation, and the sixth, 'Support for Forest Management', will begin when the agreements have been signed.

By the third trimester of 1997, of the US\$273.16 million already invested or ear-marked for the PPG-7, a little more than US\$50 million was allocated to this subprogramme: US\$ 9.4 million for the Extractivist Reserve component; US\$22.7 million for the Indigenous Lands and US\$18.7 million for Forest Management (Table 2-37).

The Extractivist Reserve Project - RESEX is testing economic, social and environmental administration models, as well as working on the perfection of traditional methods and procedures used by local populations in administering

Table 2-31. Federal Extractivist Reserves ( RESEXs) in Brazil.

Name	State	Municipality	Decree	Area (ha)	Estim. Pop.	Principal Managed Resource
Alto Juruá	AC	Cruzeiro do Sul, Marechal Thaumaturgo de Azevedo	98,863, 23rd January 1990	506,186	3,600	Rubber
Chico Mendes	AC	Rio Branco, Xapuri, Brasília, Sena Madureira, Assis Brasil, Plácido de Castro	99,144, 12th March 1990	970,570	7,500	Brazil nuts, cobaíba. rubber
Rio Cajari	AP	Laranjal do Jari, Masagão	99,145, 12th March 1990	481,650	3,800	Brazil nuts, cobaíba. rubber, acaí
Rio Ouro Preto	RO	Guajará-Mirim	99,166, 12th March 1990	204,583	700	Brazil nuts, cobaíba. Rubber
Pirajubáé	SC	Florianópolis	533, 20th May 1992	1,444	600	Shellfish, fish, crustaceans
Ciriaco	MA	Imperatriz	534, 20th May 1992	7,050	1,150	Babassu, subsistence agriculture
Extremo Norte do est. de Tocantins	TO	Carrasco Bonito	534, 20th May 1992	9,280	800	Babassu, fish, subsistence agriculture
Mata Grande	MA	Imperatriz	534, 20th May 1992	10,450	500	Babassu, fish, subsistence agriculture
Quilombo de Frexal	MA	Marizal	534, 20th May 1992	9,542	900	Babassu, fish, subsistence agriculture
Médio Juruá	AM	Carauari	No number, 4th March 1997	253,226	700	Rubber, fish
Arraial do Cabo	RJ	Arraial do Cabo	No number, 3rd January 1997	600	600	Fishing
<b>TOTAL: 11 Extractivist Reserves [RESEXs]</b>				<b>2,454,581</b>	<b>20,850</b>	

State, see Figure 1.1. Pop. = Population; Estim. = Estimated.

Source: Modified from IBAMA. *Relatório Nacional do Brasil, 2ª versão. In: Congresso Latino-Americano de Parques Nacionais e Outras Áreas Protegidas, 1 Brasília (1997).*



**Figure 2-24.** Location of Brazilian Extractivist Reserves.

**Source:** Brazil, MMA (1997).

renewable natural resources. It is based on the development of joint administration by Government and society, and is concentrated in four reserves: Alto Juruá (Acre), Chico Mendes (Acre), Rio Preto (Rondônia), and Rio Cajari (Amapá).

The specific aims of the project are:

- Mapping and the resolution of landownership in the four reserves;
- Enhancement of their productive and commercial potential;
- Their maintenance and the sustainable management of their natural resources;

- Support for the management and participative administration of the project.

The project is being executed by IBAMA, via the National Centre for Sustained Development of Traditional Communities (Centro Nacional de Desenvolvimento Sustentado das Populações Tradicionais).

The Project for Protection of Indigenous Lands and Peoples in the Amazon Region (Projeto de Proteção às Terras e Populações Indígenas da Amazônia Legal) is carried out by The National Indian Foundation (Fundação Nacional do Índio - FUNAI). It is contributing to the protection and

preservation of indigenous lands (vital for conservation of biodiversity) in the Amazon, by providing Indians with better living conditions and also dealing with questions of landownership. The project is identifying 42 areas, reviewing the borders of four, and demarcating another 58. Other aspects of the project involve setting up a system for guarding and protecting the areas, promoting training in indigenous matters, examining alternatives for demarcation, and providing support for management of Indian lands.

The Amazon Forest Management Project (Projeto de Apoio ao Manejo Florestal na Amazônia) has contributed to a change in the practices of the forestry sector of the region. Both timber and non-timber-connected practices have been redirected towards sustainable forestry management, which will contribute to an improvement in the living conditions of the communities involved. The project covers public and private areas, and is comprised of the following components: strategic analyses to help form public policy; support for and the promotion of promising lines of forestry management for different systems of production; development of a pilot operational system for monitoring and control over forest activities; and support for forest management in the Tapajós National Forest. The project is being carried out by The Secretariat for Co-ordination of Amazonia (Secretaria de Coordenação da Amazônia) of the MMA, the Directorate for Renewable Natural Resources (Diretoria de Recursos Naturais Renováveis - DIREN) of IBAMA, state environmental agencies, NGOs and local communities.

The Parks and Reserves Project envisages the establishment of large corridors identified as of major importance for biodiversity conservation in both the Amazon and the Atlantic forest (Figure 2-29) (see Chapter IV).

### 2.3.3 Private Natural Heritage Reserves - RPPNs

Another major advance in biodiversity conservation in Brazil has been the establishment of the protected area category of the Private Natural Heritage Reserve (Reserva Particular do Patrimônio Natural - RPPN), regulated by Federal Decree No. 98.914, 31st January 1990. This conservation mechanism is being very successful, and many RPPNs have been created, most especially since 1992.

The RPPN is the latest of a series of different protected area categories which privilege private initiative. The Brazilian Forest Code (Código Florestal) of 1934 made provision for 'protective forests' as opposed to 'production forests'. These would remain in private hands and would be non-transferable and designated for conservation in perpetuity.

**Table 2-32.** Number of state protected areas in Brazil according to use and category (IUCN), by state

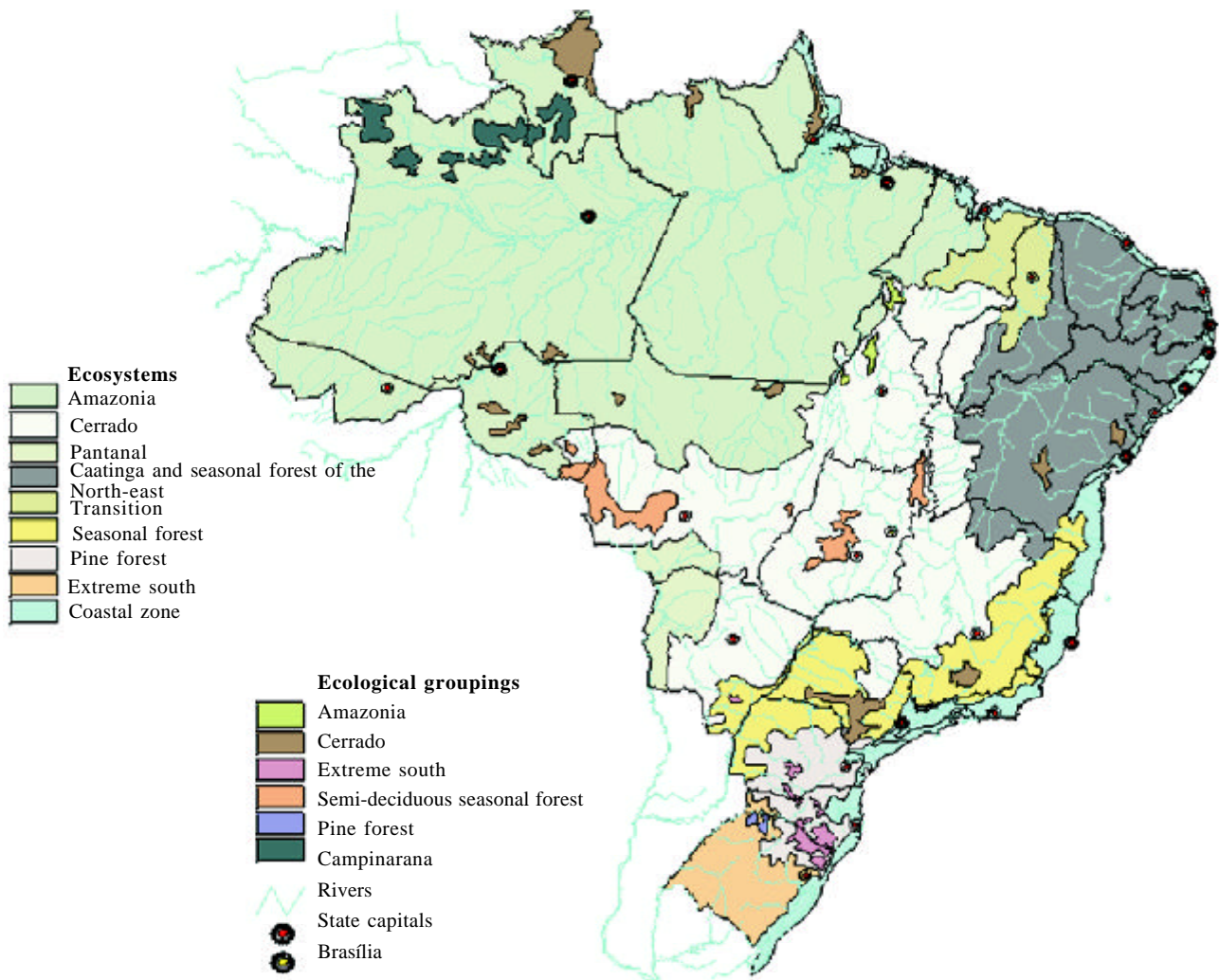
State/Region*	Areas of Indirect Use		Areas of Direct Use	
	Area (km <sup>2</sup> )	Number	Area (km <sup>2</sup> )	Number
<b>Central-West</b>	<b>590,448</b>	<b>25</b>	<b>391,958</b>	<b>9</b>
DF	15,737	7	71,256	4
GO	32,158	5	3,244	2
MS	765	3	-	0
MT	541,788	10	317,458	3
<b>North-East</b>	<b>778,474</b>	<b>62</b>	<b>7,040,692</b>	<b>53</b>
AL	892	2	19,700	2
BA	17,105	9	489,074	21
CE	59	1	33,119	4
MA	748,312	3	6,321,569	7
PB	2,647	4	-	0
PE	8,287	41	24,195	14
RN	1,172	2	1,880	1
SE	-	0	54,413	3
PI	-	0	96,742	1
<b>North</b>	<b>3,293,759</b>	<b>16</b>	<b>13,081,345</b>	<b>41</b>
AC	-	0	-	0
AM	2,320,012	4	5,831,191	7
AP	5,811	2	23,000	1
PA	24,897	1	6,009,711	3
RO	942,739	8	1,062,607	27
RR	-	0	-	0
TO	300	1	154,836	3
<b>South-East</b>	<b>1,052,045</b>	<b>107</b>	<b>2,115,792</b>	<b>53</b>
ES	10,334	10	26,729	6
MG	113,765	27	186,897	5
RJ	89,873	14	87,217	10
SP	838,163	56	1,824,949	32
<b>South</b>	<b>254,327</b>	<b>57</b>	<b>1,156,402</b>	<b>28</b>
RS	87,645	20	54,058	4
SC	108,524	7	1,100	1
PR	58,158	30	1,101,244	23
<b>TOTAL</b>	<b>5,969,143</b>	<b>267</b>	<b>23,796,189</b>	<b>184</b>

\* See Figure 1-1 for Brazilian regions and states.

Source: Marino, M. *Levantamento da Localização e Representatividade das Áreas Naturais Protegidas no Brasil*. PNMA, Brasília (1997).

The 1965 Forest Code extinguished this category but did, however, allow landowners to register areas 'in perpetuity' so long as it was in the public interest. Twelve years later, the Brazilian Forestry Development Institute (Instituto Brasileiro de Desenvolvimento Florestal - IBDF) Edict No. 327 created the category of 'Wildlife Refuge' (Refúgio de Fauna), which was later, in 1988, modified by Edict No. 217, and subsequently given the name of 'Private Flora and Fauna Reserve' (Reservas Particulares de Flora e Fauna).

The current category of the 'Private Natural Heritage Reserve' was created by IBAMA in 1990, and Decree No. 1.992, 5th June 1996 regulated their creation and management. RPPNs cannot be deforested and no extractivist activities are permitted. The area decreed is strictly protected as a gene bank, with total and irrevocable protection.



**Figure 2-25.** Brazilian ecosystems.

**Source:** Brazil, MMA (1997).

About 150 RPPNs have already been established, covering more than 341,057.34 ha, and varying in size from 1 to 104,000 ha (Table 2-38). The landowner has the option of transforming all or part of his land into a RPPN.

One of the most successful examples of a RPPN is that of Ecotropica-Fundação de Apoio à Vida which maintains three reserves in the Pantanal of Mato Grosso: the Dorochê Reserve of 26,518 ha in the municipality of Poconé; the Acurizal Reserve of 13,200 ha in the municipality of Corumbá; and the Penha Reserve of 13,100 ha, also in the municipality of Corumbá.

The Serviço Social do Comércio - SESC maintains a 54,000-ha reserve between the Rios São Lourenço and Cuiabá, also in the Pantanal of Mato Grosso. The SESC Pantanal Project plans to set up a holiday centre for ecotourism, as well as

research programmes, and environmental education projects in an area of 4,000 ha alongside the RPPN. The project is supported by NGOs and the 54,000 ha RPPN will strictly be protected and used only for scientific research and conservation programmes.

To be classified as a RPPN, an area must have features relevant for protecting biodiversity or be a place of natural beauty or where environmental recovery would preserve fragile or threatened ecosystems.

RPPN owners, be they individuals or companies, do not pay land tax on the part of their property classified as a RPPN; they have priority in obtaining resources from the National Environment Fund - FNMA; they are protected against fires, hunting or deforestation; and can count on IBAMA's support in the management of the area.