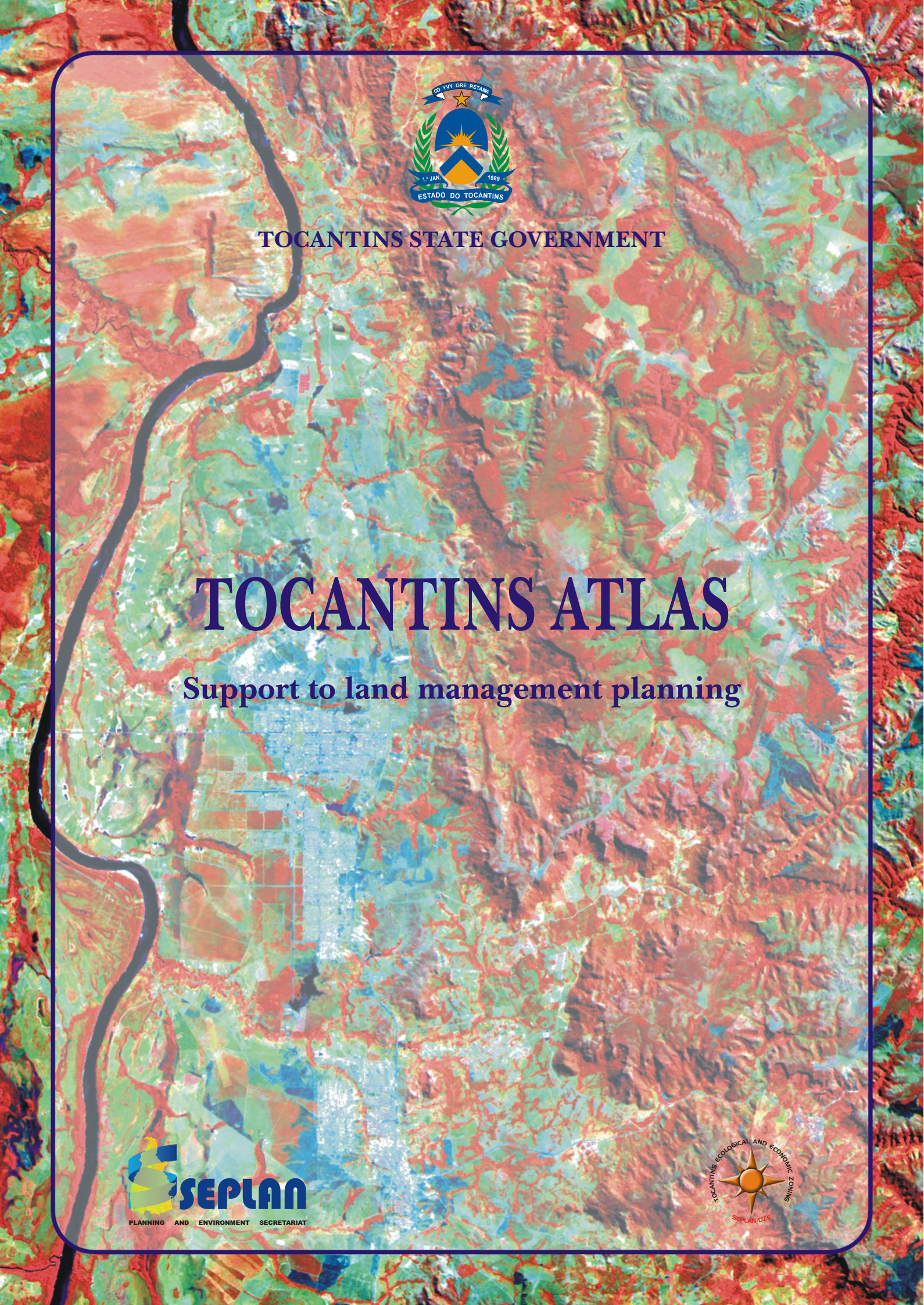

TOCANTINS STATE GOVERNMENT

TOCANTINS ATLAS

Support to land management planning

SEPLAN

PLANNING AND ENVIRONMENT SECRETARIAT

TOCANTINS ECOLOGICAL AND ECONOMIC ZONING

SEPLAN/DZE

TOCANTINS STATE GOVERNMENT

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Governor

João Lisboa da Cruz
Vice-Governor

PLANNING AND ENVIRONMENT SECRETARIAT

Lívio William Reis de Carvalho
Secretary

David Siffert Torres
Executive Secretary

Ecological-economical Zoning Directorate

Ricardo Ribeiro Dias
Director

Geoprocessing and Geosciences Coordination

Eduardo Quirino Pereira
Coordinator

Coordination Team - SEPLAN

Ricardo Ribeiro Dias
Eduardo Quirino Pereira
Lindomar Ferreira dos Santos

Technical Team - SEPLAN

Carmen Roseli Caldas Menezes
Cleudeni Milhomem Brito
Cleusa Aparecida Gonçalves
Eduardo Quirino Pereira
Gonzalo Álvaro Vázquez Fernández
Liliam Aparecida de Souza Pereira
Lindomar Ferreira dos Santos
Ricardo Ribeiro Dias
Simone Dutra Martins Guarda

Cooperators

José Ramiro Lamadrid Marón - Unitins
Girlene Figueiredo Maciel - Unitins

Support Team - SEPLAN

Luciano Ricardo de Souza
Valéria Guimarães Coêlho
Warley da Costa Arruda

Graphic Design and Eletronic Editing

Eduardo Quirino Pereira
Lindomar Ferreira dos Santos
Luciano Ricardo de Souza
Ricardo Ribeiro Dias

English version

Gonzalo Álvaro Vázquez Fernández

English version revision

Mathew Miller

INFRA-STRUCTURE SECRETARIAT

José Edmar Brito Miranda
Secretary

Sérgio Leão
Executive Secretary

Sílvio Leão
Strategic Support Director

Antônio Pereira Barros Júnior
Planning Coordinator

Tocantins Roads Department

Ataíde de Oliveira
General Director

Ricardo de Souza Fava
Technical Director

Tocantins' Atlas: support to land management plannig/Planning and Environment Secretariat, Ecological-economical Zoning Directorate - DZE - Palmas: Seplan, 1999.

49 p.

Content: Administrative, natural resources and land use maps for land management planning.

1. Natural resources - Tocantins. 2. Land use - Tocantins 3. Land management - Tocantins

I. Tocantins Planning and Environment Secretariat. II. Tocantins. Ecological-economic Zonning Program.

Project funded by BIRD/ The World Bank and State Treasure resources under the (Tocantins State Highway Managing Program)

Contact Address
Secretaria do Planejamento e Meio Ambiente
Diretoria de Zoneamento Ecológico-Econômico
Esplanada das Secretarias
Palmas - TO
Tel: +55 63 218.1155 - 218.1150
Fax: +55 63 218.1158 - 218.1150
e-mail: seplanse@zaz.com.br

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Pictures kindly lent by the Communication Secretariat - SECOM, and thecnicians of the Planning and Environment Secretariat - SEPLAN.

TOCANTINS STATE GOVERNMENT
Planning and Environment Secretariat
Ecological-economical Zoning Directorate

TOCANTINS ATLAS

Support to land management planning

Palmas - TO
2000

GENERAL DATA

INCEPTION

october the 5th, 1988

AREA

278.420,7 km^2

NUMBER OF MUNICIPALITES

139

GEOGRAPHIC POSITION

Latitudes

South 5º 10´ 06" (Extreme North: Tocantins River - Tocantins/Maranhão Boundary)

South 13 º 27´ 59" (Extreme South: Traíras or Palmas - Tocantins/Goiás Boundary)

Longitudes

West Gr. 45º 41´ 46" (Extreme East: EPA Tabatinga Range - TO/PI/BA Boundary)

West Gr. 50º 44´ 33" Extreme West: Araguaia River - Tocantins/Mato Grosso Boundary)

Distance between extreme points

North-South distance: 899,5 km

East-West distance: 515,4 km

STATE BOUNDARY

The State perimeter is around 4.163,7 Km long, boundried by the following neighbor States:
Maranhão (1.167,2 Km), Goiás (1.051,4 Km), Pará (790,4 Km), Mato Grosso (565,5 Km), Bahia (554,8 Km) and Piauí (34,4 Km).

CLIMATE DATA

Annual Air Temperature Range

25 ºC a 29 ºC

Annual Rainfall Range

1.200 mm a 2.100 mm

Annual Hydric Deficit Range

300 mm a 600 mm

Annual Hydric Excess Range

150 mm a 650 mm

MAIN RIVERS

Araguaia,Tocantins, Paranã, Javaés, do Sono, Formoso, Santa Teresa, Manuel Alves Grande and do Côco.

HIGHEST POINT

1340 m (Trairas or Palmas Range, Goiás boundary)

LOWEST POINT

90 m (Esperantina municipality, Pará boundary)

Mandacaru Hill
(Catedral Hill) Jalapão

PRESENTATION

For a long time I have aimed to organize a geographic database illustrating natural resources, social and economic information in order to plan Tocantins State land management. This initiative derives from the understanding that the environmental issue must be present at the beginning of every political and decision process, embracing from conception to elaboration of plans, programs and projects.

I trust that the use of the database in this atlas and its technical quality will both ease the conciliation of economic development and environmental conservation based upon the sustainable development concept.

I want to exalt the State of Tocantins´ natural resource potentialities, its water availability and the beauty of its rivers, its lands and productive capacity, the scenic beauties of Ilha do Bananal, Cantão State Park, Jalapão and other conservation units.

It is my wish to give continuity to important advances we have obtained in the land management field, through implementation and execution of integrated environment management projects in Tocantins' administrative regions. Of course I still have a long journey if I seek and rely on land management as a way of combining the productivity desired with Tocantins' peculiarities and the preservation of its environment.

José Wilson Siqueira Campos
Governor

INTRODUCTION

The Planning and Environment Secretariat has prioritized the development of the Ecological and Economic Zoning Program works in order to provide the State with cartographic documentation that may support Tocantins' land management and sustainable development programs, which must be ecologically coherent, economically possible and socially desired.

Amongst other purposes, the Tocantins State Atlas is a key point in the systematization of a geographic database for the State. It complements and exhibits the work done under the Tocantins Agroecological Zoning Program and by SEPLAN.

This program stands out as a pioneering move towards the integration of the Agroecological Zoning activities with the Tocantins State Highway Management Program, which will undoubtedly be adopted by other Brazilian States.

The Atlas, with the future in mind, synthesizes Tocantins' geographic characteristics and constitutes a valuable didactic, educational, technical and scientific document for analysis by numerous private and public entities and the State Government itself.

Methodologically, legends were uniformed and given compatibility for various themes. Also unpublished maps were produced, which originated a broad geographic information system organized in maps, each one equivalent to the 1:250.000-scale sheets that cover the State of Tocantins.

The efforts to elaborate a database that covers a whole state and natured to support land management, were exhaustive and planned within a view that combined the use of modern technologies and recover of well-known programs, such as RADAMBRASIL.

I consider that we have progressed in the geographical knowledge of our State and that we have given the first steps in ordering Tocantins' land occupation process. Nevertheless, let us stress here that we are in a continuity phase, executing the ecological and economic zoning in several of the State regions

.

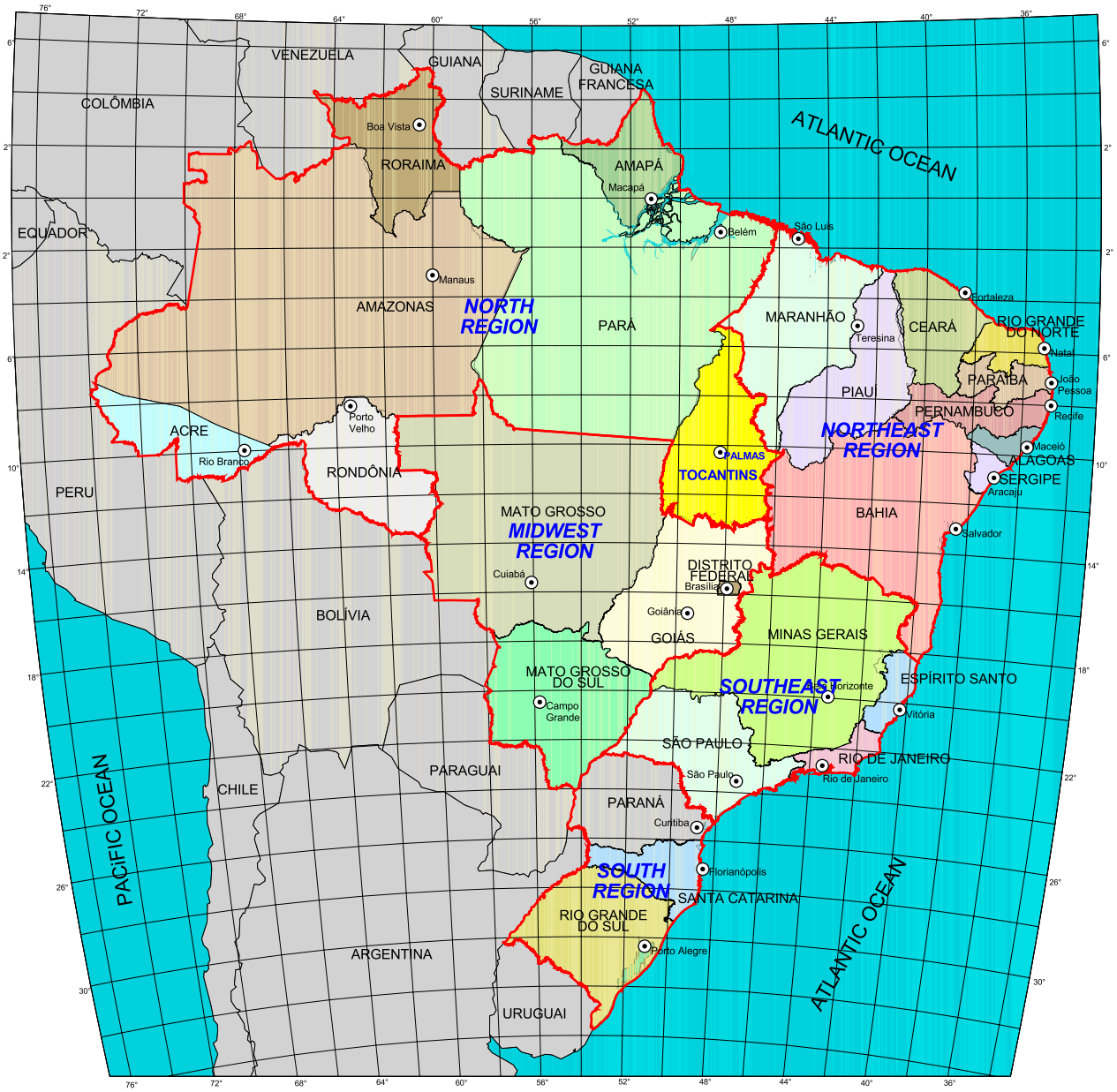
Lívio William Reis de Carvalho
Planning and Environment Secretary

SUMMARY

Pedra da Baliza. Jalapão.

TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

FEDERATIVE REPUBLIC OF BRAZIL
Political Map



SOURCE: Geography and Statistics Brazilian Institute Foundation - IBGE
Geosciences Directorate - DGC

400 0 400 800 1200km

Polyconic Projection
Central Meridian = 54° 00' 00" W. Gr.

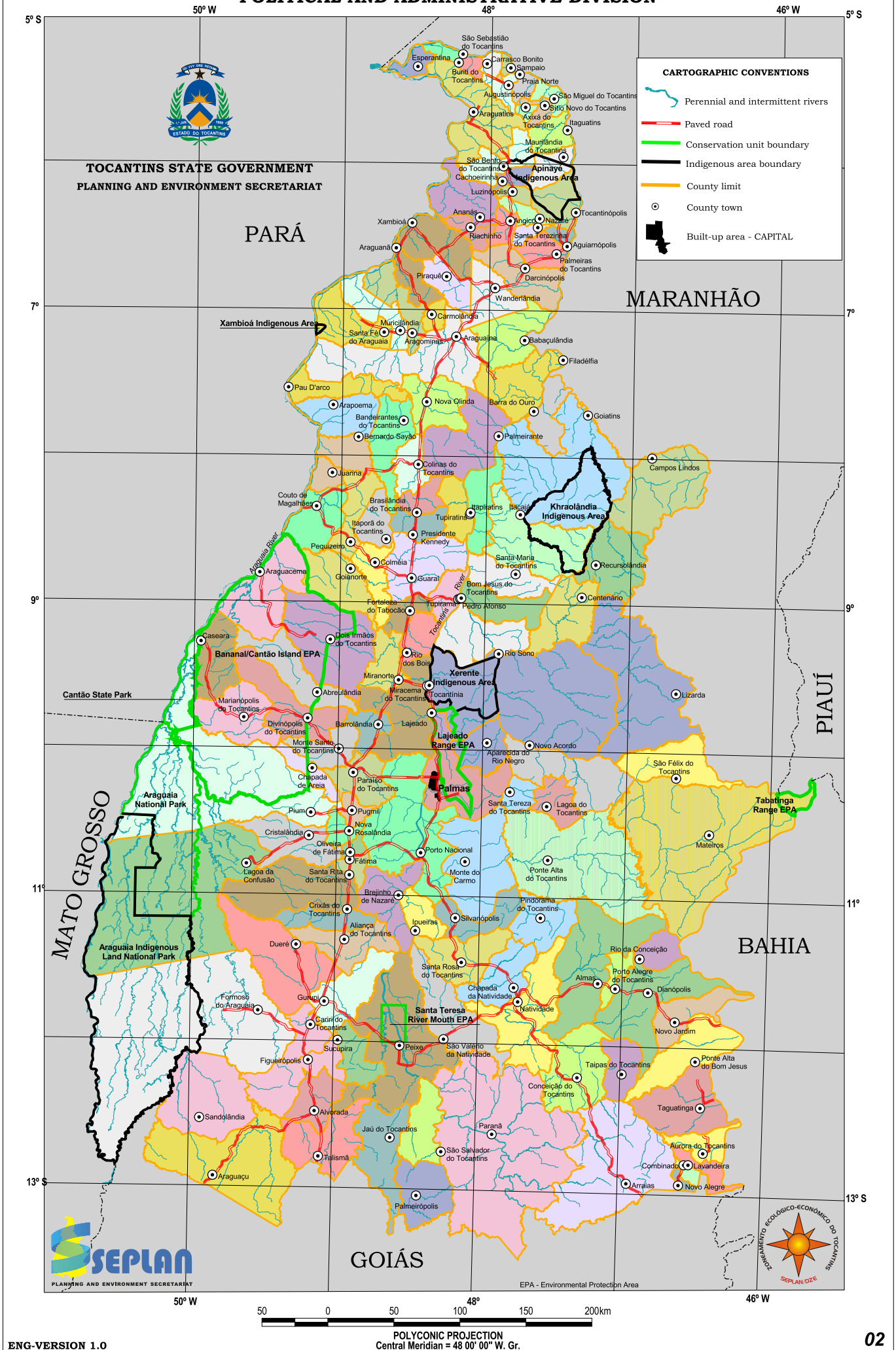
REGION	AREA (km²)
NORTH	3.858.595
NORTHEAST	1.548.672
SOUTHEAST	924.935
SOUTH	577.723
MIDWEST	1.602.040

Tocantins, with 278,420.7 km², represents around 3.3% on the whole national territory, and 7.2% of the North Region.
The portion of Tocantins included into the Legal Amazon is around 5.4% of this land extension.

SEPLAN
PLANNING AND ENVIRONMENT SECRETARIAT

ZONEAMENTO ECOLÓGICO-ECONÔMICO DO TOCANTINS
SEPLAN/DZE

POLITICAL AND ADMINISTRATIVE DIVISION



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02

TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

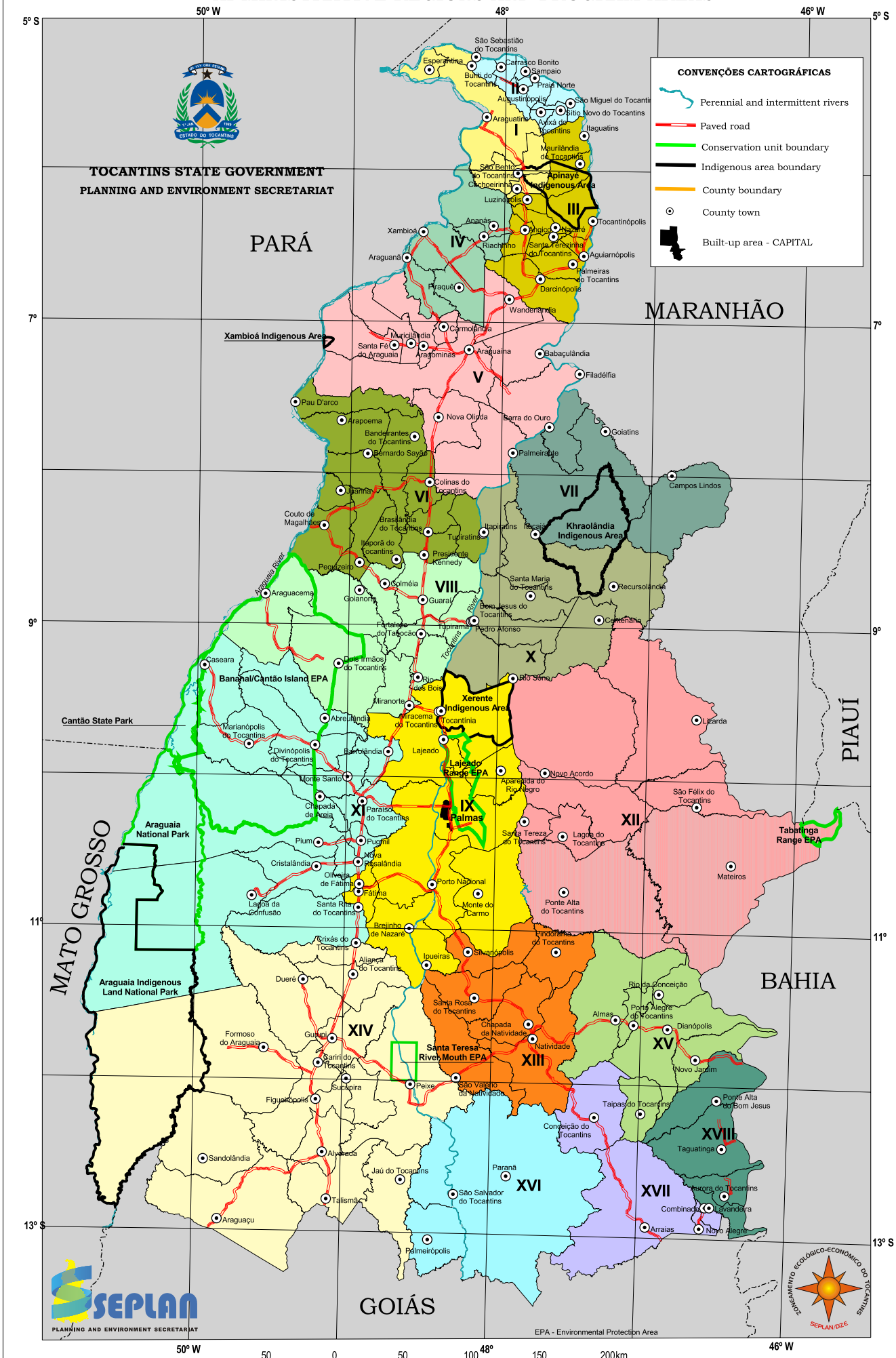
Municipalities	Area (km²)	Popul. (inhab.) (IBGE - 1996)	Popul. (inhab.) (IBGE - 1999)	Inception Year
REGION I - ARAGUATINS				
Araguatins	**2.297**	**22.558**	**24.544**	**1948**
Cachoeirinha	354	2.039	2.154	1993
Esperantina	483	5.963	6.528	1993
São Bento do Tocantins	1.438	2.834	2.398	1993
São Sebastião do Tocantins	289	3.516	4.044	1963
REGION II - AUGUSTINÓPOLIS				
Augustinópolis	**395**	**13.924**	**19.712**	**1982**
Axixá do Tocantins	105	9.698	9.591	1963
Buriti do Tocantins	272	7.599	7.564	1988
Carrasco Bonito	196	2.727	3.250	1993
Praia Norte	295	5.149	5.637	1988
Sampaio	202	2.829	2.394	1988
São Miguel do Tocantins	409	8.304	9.091	1993
Sítio Novo do Tocantins	275	10.114	14.318	1963
REGION III - TOCANTINÓPOLIS				
Aguiarnópolis	240	...	2.947	1997
Angico	564	2.755	2.331	1993
Darcinópolis	1.555	3.905	4.226	1993
Itaguatins	828	6.492	7.107	1945
Luzinópolis	281	...	1.712	1997
Maurilândia do Tocantins	792	2.721	3.243	1993
Nazaré	392	7.156	5.353	1958
Palmeiras do Tocantins	750	3.533	4.063	1993
Santa Terezinha do Tocantins	277	...	2.041	1997
Tocantinópolis	**1.082**	**22.810**	**20.435**	**1858**
REGION IV - XAMBIOÁ				
Ananás	1.398	9.694	10.547	1963
Araguanã	869	3.069	3.530	1993
Piraquê	1.179	1.785	2.127	1993
Riachinho	686	3.502	3.461	1993
Xambioá	**1.388**	**11.183**	**11.399**	**1958**
REGION V - ARAGUAÍNA				
Aragominas	1.067	3.486	4.009	1993
Araguaína	**3.920**	**105.019**	**114.948**	**1958**
Babaçulândia	1.916	8.775	8.633	1953
Carmolândia	354	1.610	1.362	1993
Filadélfia	1.997	7.407	7.373	1948
Muricilândia	1.248	3.039	3.289	1993
Nova Olinda	1.724	8.724	9.492	1980
Palmeirante	2.472	3.769	3.862	1993
Santa Fé do Araguaia	1.684	4.336	4.987	1993
Wanderlândia	1.379	10.274	11.178	1980
REGION VI - COLINAS DO TOCANTINS				
Arapoema	1.559	8.693	5.933	1963
Bandeirantes do Tocantins	1.678	...	2.015	1997
Bernardo Sayão	931	4.319	4.425	1987
Brasilândia do Tocantins	644	1.761	1.804	1993
Colinas do Tocantins	**847**	**24.474**	**26.628**	**1963**
Couto de Magalhães	1.592	4.358	4.108	1963
Itaporã do Tocantins	877	3.214	3.030	1963
Juarina	483	2.376	2.832	1989
Pau D'Arco	1.308	4.875	5.976	1993
Pequizeiro	1.230	3.574	3.868	1987
Presidente Kennedy	774	4.146	4.487	1971
Tupiratins	899	1.313	1.416	1993
REGION VII - GOIATINS				
Barra do Ouro	1.111	...	3.150	1997
Campos Lindos	3.254	5.102	6.254	1993
Goiatins	**6.436**	**14.207**	**10.827**	**1953**
REGION VIII - GUARAÍ				
Araguacema	2.790	4.712	4.828	1937
Colméia	1.026	9.141	9.318	1980
Dois Irmãos do Tocantins	3.773	7.554	6.859	1963
Fortaleza do Tabocão	624	2.315	2.634	1993
Goianorte	1.809	5.134	5.110	1988
Guaraí	**2.277**	**20.404**	**19.795**	**1968**
Miranorte	1.036	10.774	10.600	1963
Rio dos Bois	849	2.042	2.434	1993
Tupirama	716	...	1.128	1997
REGION IX - PALMAS METROPOLITAN REGION				
Aparecida do Rio Negro	1.165	3.646	3.946	1987
Brejinho de Nazaré	1.729	5.932	4.681	1958
Fátima	385	4.219	3.266	1983
Ipueiras	817	...	1.168	1997
Lajeado	301	1.397	1.665	1993
Miracema do Tocantins	**2.667**	**17.483**	**15.985**	**1948**
Monte do Carmo	3.360	5.979	5.429	1963
Oliveira de Fátima	247	...	711	1997
Palmas	**2.475**	**86.116**	**121.919**	**1989**
Porto Nacional	**4.464**	**43.365**	**43.035**	**1861**
Tocantínia	2.595	5.169	4.693	1953

Municipalities	Area (km²)	Popul. (inhab.) (IBGE - 1996)	Popul. (inhab.) (IBGE - 1999)	Inception Year
REGION X - PEDRO AFONSO				
Bom Jesus do Tocantins	1.338	2.279	1.928	1993
Centenário	1.896	2.189	2.361	1993
Itacajá	3.432	6.549	5.946	1953
Itapiratins	1.241	3.392	3.671	1993
Pedro Afonso	**2.050**	**8.648**	**7.852**	**1903**
Recursolândia	1.859	3.051	3.509	1993
Santa Maria do Tocantins	1.412	2.187	2.359	1993
REGION XI - PARAÍSO DO TOCANTINS				
Abreulândia	1.903	1.957	2.005	1993
Barrolândia	705	5.477	4.474	1988
Caseara	1.699	3.625	4.169	1987
Chapada de Areia	662	...	956	1997
Cristalândia	1.816	8.670	7.804	1953
Divinópolis do Tocantins	2.357	6.476	5.449	1987
Lagoa da Confusão	10.603	4.956	6.075	1993
Marianópolis do Tocantins	2.100	2.605	2.809	1987
Monte Santo do Tocantins	1.083	...	1.640	1997
Nova Rosalândia	490	3.591	3.886	1988
Paraíso do Tocantins	**1.331**	**34.251**	**35.884**	**1963**
Pium	10.057	6.733	5.157	1953
Pugmil	399	...	1.382	1997
Santa Rita do Tocantins	3.288	...	1.531	1997
REGION XII- NOVO ACORDO				
Lagoa do Tocantins	909	2.618	3.120	1993
Lizarda	5.826	4.085	4.037	1953
Mateiros	5.914	1.490	1.776	1993
Novo Acordo	**2.539**	**2.963**	**3.408**	**1958**
Ponte Alta do Tocantins	10.082	6.579	6.695	1958
Rio Sono	6.383	6.531	5.930	1982
Santa Tereza do Tocantins	544	2.155	2.568	1988
São Félix do Tocantins	1.916	1.155	1.377	1993
REGION XIII - NATIVIDADE				
Chapada da Natividade	1.678	...	3.276	1997
Natividade	**3.211**	**11.623**	**9.370**	**1734**
Pindorama do Tocantins	1.565	4.716	4.446	1963
Santa Rosa do Tocantins	1.803	3.764	3.720	1988
São Valério da Natividade	2.547	4.807	5.893	1988
Silvanópolis	1.305	4.974	4.516	1980
REGION XIV- GURUPI				
Aliança do Tocantins	1.586	7.201	6.124	1988
Alvorada	1.217	10.219	9.308	1963
Araguaçu	5.188	9.801	9.642	1958
Cariri do Tocantins	1.067	2.473	2.092	1993
Crixás do Tocantins	991	...	1.204	1997
Dueré	3.466	4.190	3.950	1958
Figueirópolis	1.939	6.084	6.056	1980
Formoso do Araguaia	13.511	18.385	20.003	1963
Gurupi	**1.847**	**64.725**	**70.423**	**1958**
Jaú do Tocantins	2.181	3.437	3.719	1993
Peixe	5.111	8.740	7.505	1895
Sandolândia	3.542	3.495	4.020	1993
Sucupira	1.230	1.303	1.102	1993
Talismã	2.165	...	1.595	1997
REGION XV- DIANÓPOLIS				
Almas	4.106	7.747	7.883	1958
Dianópolis	**3.230**	**14.882**	**16.192**	**1884**
Novo Jardim	1.315	2.010	2.396	1993
Porto Alegre do Tocantins	482	2.463	2.656	1988
Rio da Conceição	761	1.035	1.234	1993
Taipas do Tocantins	1.277	1.722	1.457	1993
REGION XVI - PARANÃ				
Palmerópolis	1.710	7.395	6.714	1980
Paranã	**12.161**	**9.270**	**8.476**	**1857**
São Salvador do Tocantins	1.428	2.229	1.886	1993
REGION XVII - ARRAIAS				
Arraias	**5.419**	**11.551**	**11.774**	**1914**
Combinado	192	4.915	5.001	1987
Conceição do Tocantins	1.915	4.393	4.754	1963
Novo Alegre	132	1.981	2.029	1993
REGION XVIII - TAGUATINGA				
Aurora do Tocantins	756	4.382	3.076	1963
Lavandeira	522	...	1.055	1997
Ponte Alta do Bom Jesus	1.813	4.715	4.445	1958
Taguatinga	**2.447**	**13.711**	**14.918**	**1868**

ZONEAMENTO ECOLÓGICO-ECONÔMICO DO TOCANTINS
SEPLAN/DZE

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
1999

ADMINISTRATIVE REGIONS AND PROGRAM-AREAS



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TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

Cenozoic Covers (45.345km² - 16,3%)

São Francisco Sedimentary Basin (20.580,8km² - 7,4%)

Parnaíba Sedimentary Basin (92.257,2km² - 33,2%)

Upper and Medium Proterozoic Folds Belt (64.084,7km² - 23,0%)

Archean and Lower Proterozoic Metavolcanic Sedimentary Sequence (3.624,3 km² - 1,3%)

Archean and Lower Proterozoic Metamorphic Complex (52.527,9km² - 18,8%)

CARTOGRAPHIC CONVENTIONS

Perennial and intermittent rivers

Paved road

Conservation unit boundary

Indigenous area boundary

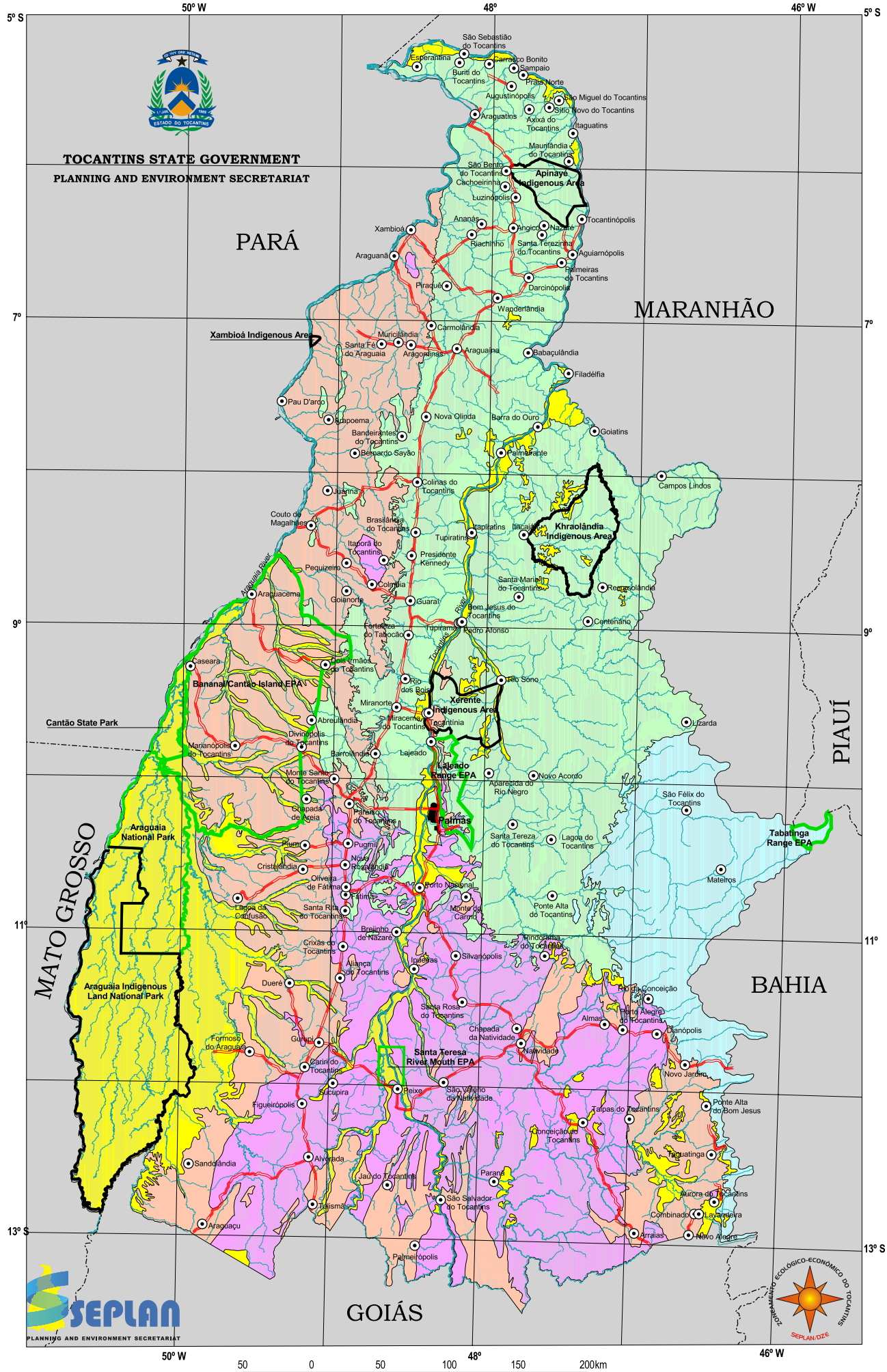
Built-up area - CAPITAL

County town

Geological environment boundary

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
1999

GEOLOGICAL ENVIRONMENT DIVISION



POLYCONIC PROJECTION
Central Meridian = 48 00' 00" W. Gr.

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TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

HUMID CLIMATE

B1wA'a' - humid climate with moderate hydric deficiency.

B2rA'a' - humid climate with little or none hydric deficiency.

HUMID SUBHUMID CLIMATE

C2rA'a' - humid subhumid climate with little hydric deficiency.

C2wA'a' - humid subhumid climate with moderate hydric deficiency.

DRY SUBHUMID CLIMATE

C1dA'a' - dry subhumid climate with moderate hydric deficiency.

CARTOGRAPHIC CONVENTIONS

Perennial and intermittent rivers

Paved road

Conservation unit boundary

Built-up area - CAPITAL

County town

Indigenous area boundary

TECHNICAL NOTE

Tocantins State climate regions were defined using the Thornwaite Method, considering the representative indexes of humidity, aridity and thermal efficiency (potential evapotranspiration) derived directly from rain, temperature and other elements resultant from the Thornwaite-Mather hydric balance.

B1wA'a' - humid climate with moderate hydric deficiency during winter, potential evapotranspiration presenting an annual average variation between 1.400 and 1.700 mm, having about 390 and 480 mm distributed along the three consecutive summer hottest months.

B2rA'a' - humid climate with little or none hydric deficiency, potential evapotranspiration presenting an annual average of 1.700 mm, having about 500 mm distributed along the three consecutive summer hottest months.

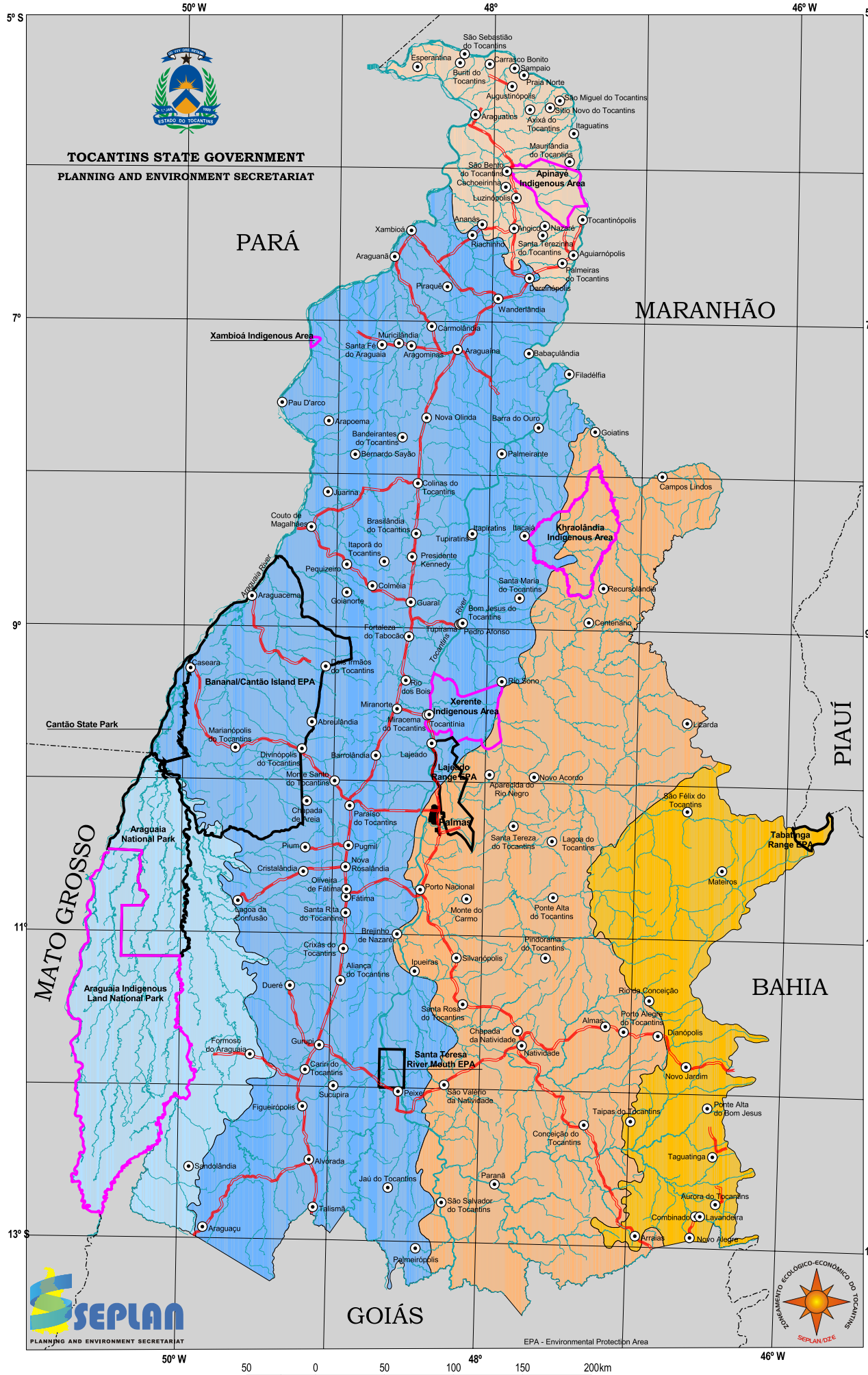
C2rA'a' - humid subhumid climate with little hydric deficiency, potential evapotranspiration presenting an annual average of 1.600 mm, having about 410 mm distributed along the three consecutive summer hottest months.

C2wA'á' - humid subhumid climate with moderate hydric deficiency during winter, potential evapotranspiration presenting an annual average of 1.500 mm, having about 420 mm distributed along the three consecutive summer hottest months.

C1dA'a' - dry subhumid climate with moderate hydric deficiency during winter, potential evapotranspiration presenting an annual average of 1.300 mm, having about 360 mm distributed along the three consecutive summer hottest months.

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
1999

CLIMATIC REGIONALIZATION



POLYCONIC PROJECTION
Central Meridian = 48 00' 00" W. Gr.

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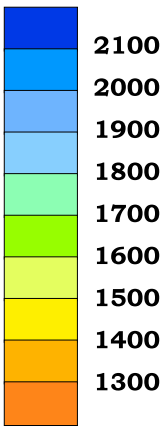
TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

AVERAGE ANNUAL RAIN (mm)

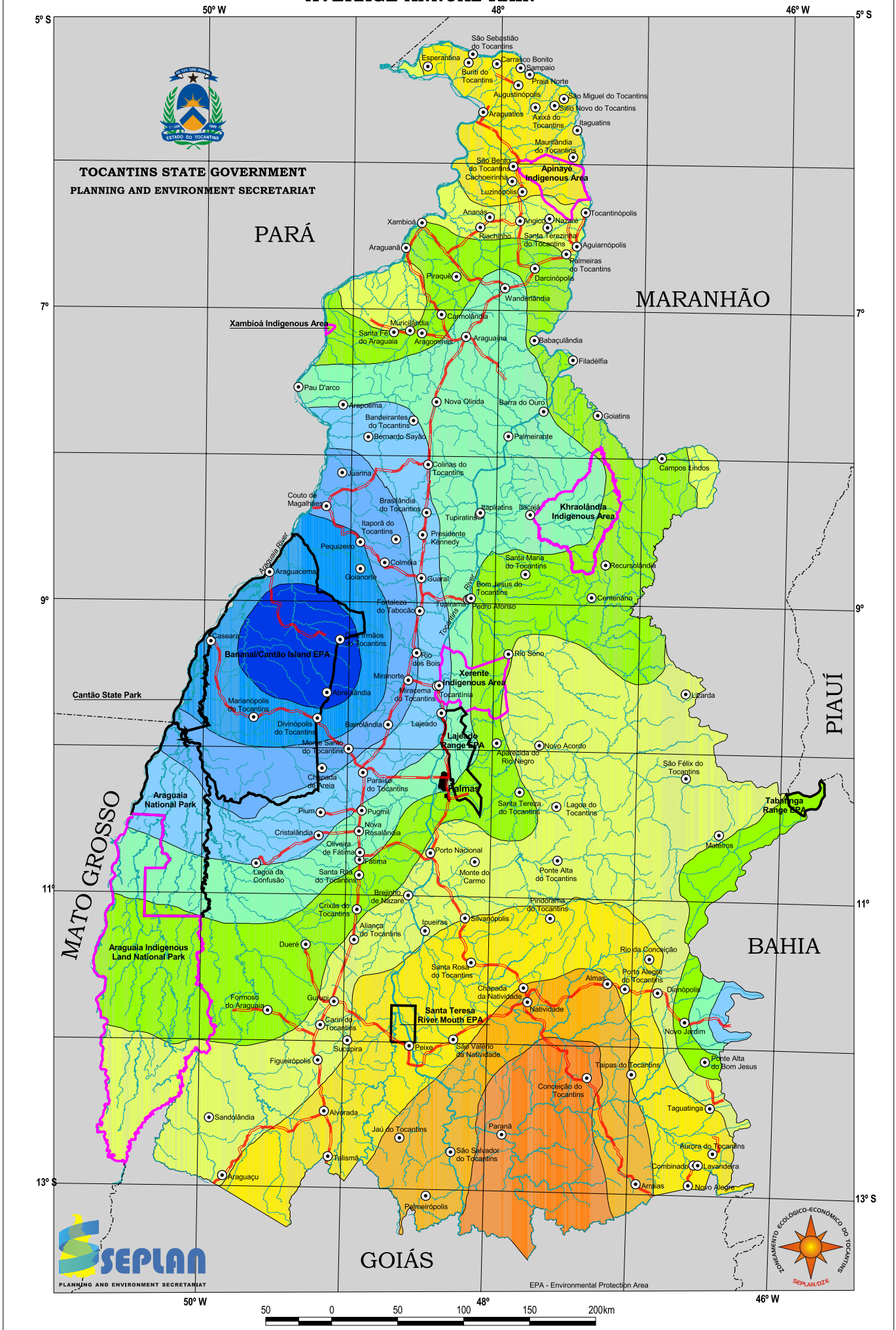


CARTOGRAPHIC CONVENTIONS

- Perennial and intermittent rivers
- Paved road
- Conservation unit boundary
- Indigenous area boundary
- Built-up area - CAPITAL
- County town

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
1999

AVERAGE ANNUAL RAIN

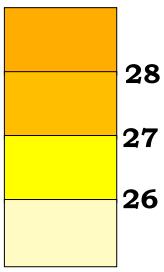


POLYCONIC PROJECTION
Central Meridian = 48 00' 00" W. Gr.

ENG-VERSION 1.0

TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

AVERAGE ANNUAL AIR TEMPERATURE (°C)

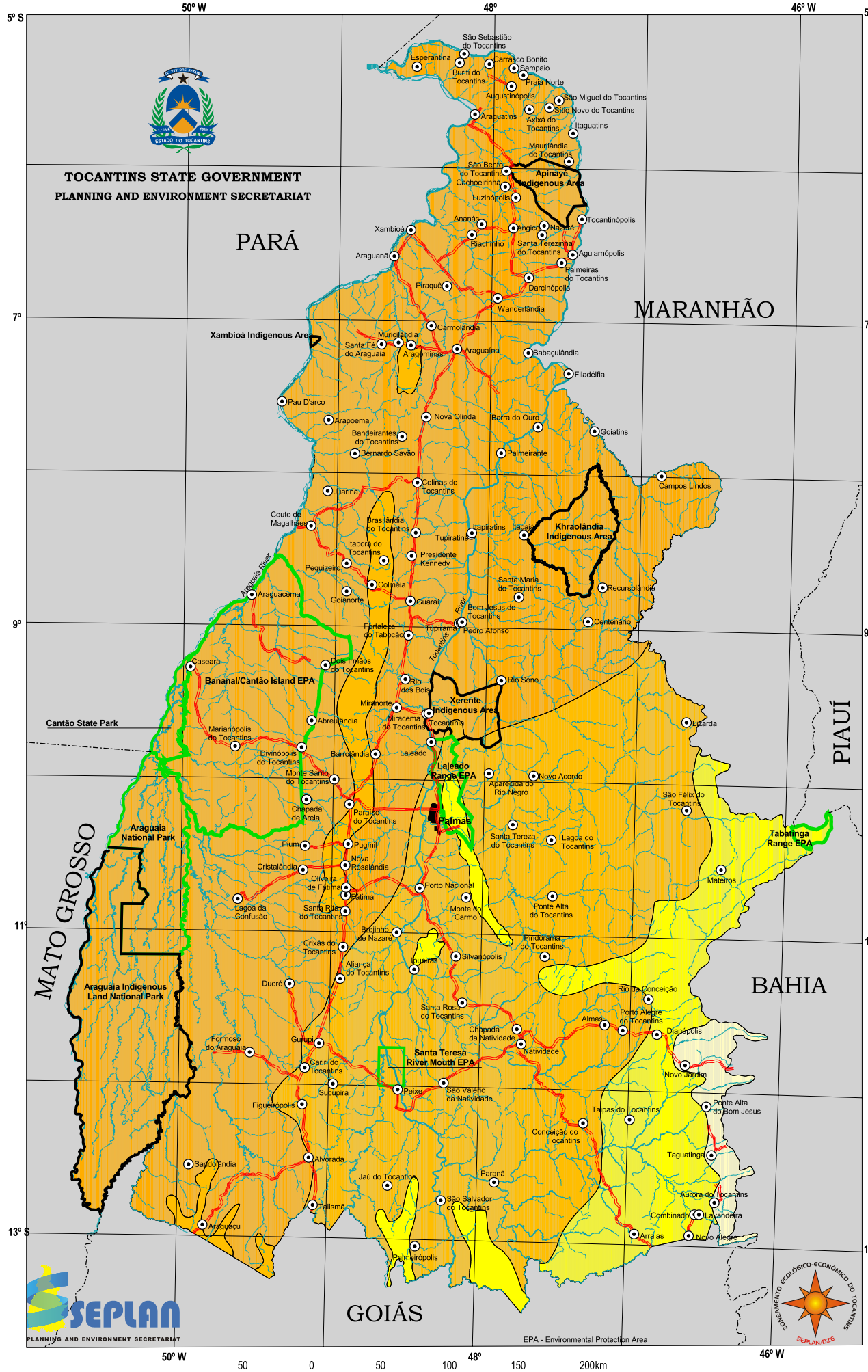


CARTOGRAPHIC CONVENTIONS

- Perennial and intermittent rivers
- Paved road
- Conservation unit boundary
- Built-up area - CAPITAL
- County town
- Indigenous area boundary

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
1999

AVERAGE ANNUAL AIR TEMPERATURE



POLYCONIC PROJECTION
Central Meridian = 48 00' 00" W. Gr.

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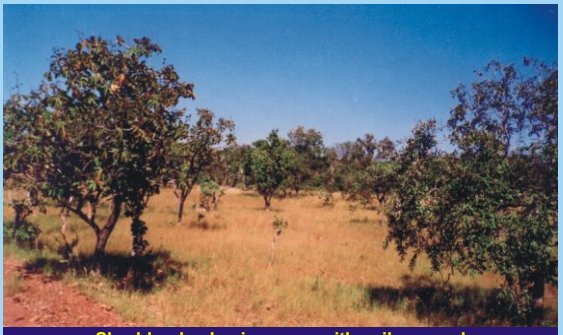
VEGETATION

Riverside woods at the edges of Rio Novo. Mateiros. Jalapão.



Shrublands physiognomy with soil covered by a grass-wood stratus.

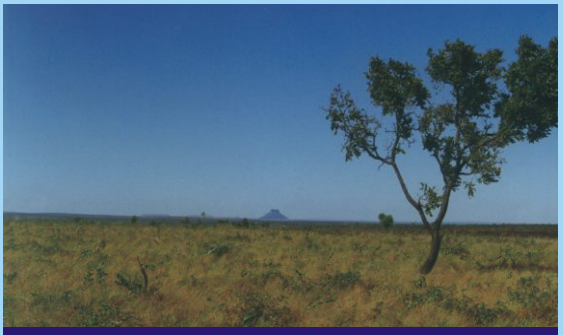
Grassland with gallery forest and Savannah shrubland.

Secondary vegetation aspect presenting young and adult individuals of Babaçu palm trees.

Open rain forest on plain relief. Praia Norte.

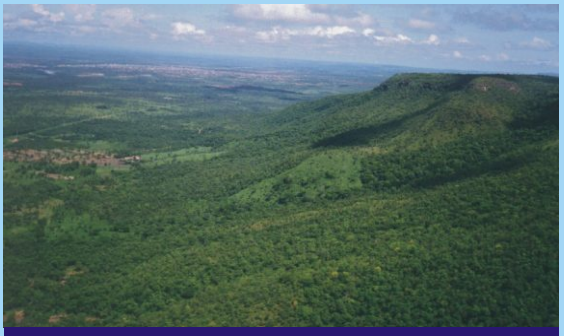
Physiognomic aspect of Dense Savannah. Ananás.

Palm tree wood featured with Buriti presence. Palmas.



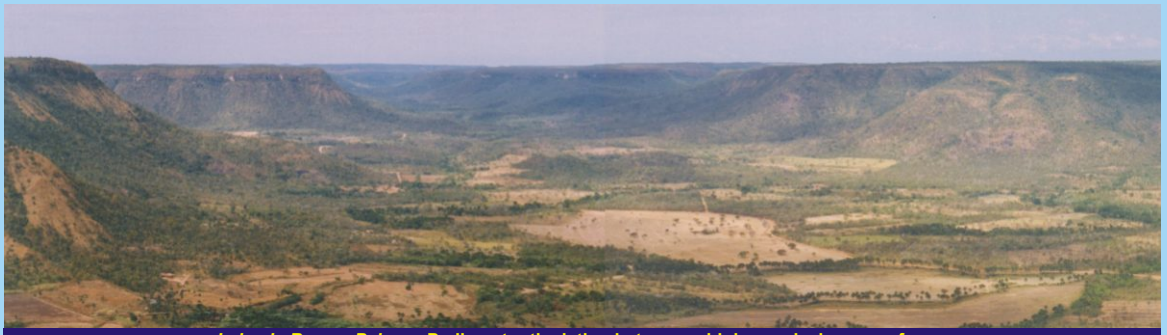
Savannah grassland aspect. Mateiros. Jalapão.

Strict-meaning Savannah aspect.



Hillside seasonal forest on Lajeado Range. Palmas.

RELIEF



Lajeado Range. Palmas. Pediment articulation between a higher and a lower surfaces.
Planalto residual do Tocantins / Depressão do Tocantins.

Grande Range. São Salvador do Tocantins. Ridge dissected relief. Southern Tocantins Plateau

Morro Mandacaru (Morro Catedral).
São Félix do Tocantins. Jalapão.

Bananal Lowland. Periodically flooded region higher water retention at lower areas.

Araguaia River alluvial islands. Pium.
Fluvial deposition result.

Segredo Hill. Lajeado. Pediplanation process on a tabular structured surface.

Middle North Chapadas. Wanderlândia.
Tabular surface residual relief with abrupt cliffs.

Jalapinha Range. Mateiros. Jalapão. Residual relief.
Medium São Francisco sedimentary plateau.

Itacajá. Terrace dissected relief.

TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

STRUCTURAL FORMS

(Structural tabular surfaces and structural plateaus.)

EROSIVE FORMS

(Erosive tabular surfaces, pediplane surfaces, Inselbergs and fluvial terraces.)

DISSECTION FORMS

(Dissected in ridges, Dissected in mesas, Dissected in tabular interrills, Dissected in plateaus, Dissected in rounded hills, Dissected in plain top hills, Dissected in gullies, Dissected in groups of mesas, Dissected in ridges and mesas, Dissected in gullies and mesas and Dissected in low hills with imbedded valleys.)

ACCUMULATION FORMS

(Fluvial terraces, Fluvial lowlands and flooding accumulation areas.)

CARTOGRAPHIC CONVENTIONS

Perennial and intermitent rivers

Paved roads

Conservation unit boundary

Indigenous area boundary

Built-up area- CAPITAL

⊙ County town

STRUCTURAL FORMS : relief with structure conditioned topography. In this case, morfodinamic processes relief forms in conformity with geological structure. The most resistant layers surpasses the surface.

EROSIVE FORMS : relief forms that are mainly originated from erosive processes, where there had been a lowering of the tops which trends to a relief leveling.

DISSECTION FORMS : relief forms engraved by erosive processes, presenting a differentiable dissection on the landscape, mainly along the hydrografy.

ACCUMULATION FORMS : sediment resulting relief, in fluvial regions, usually subject to flooding.

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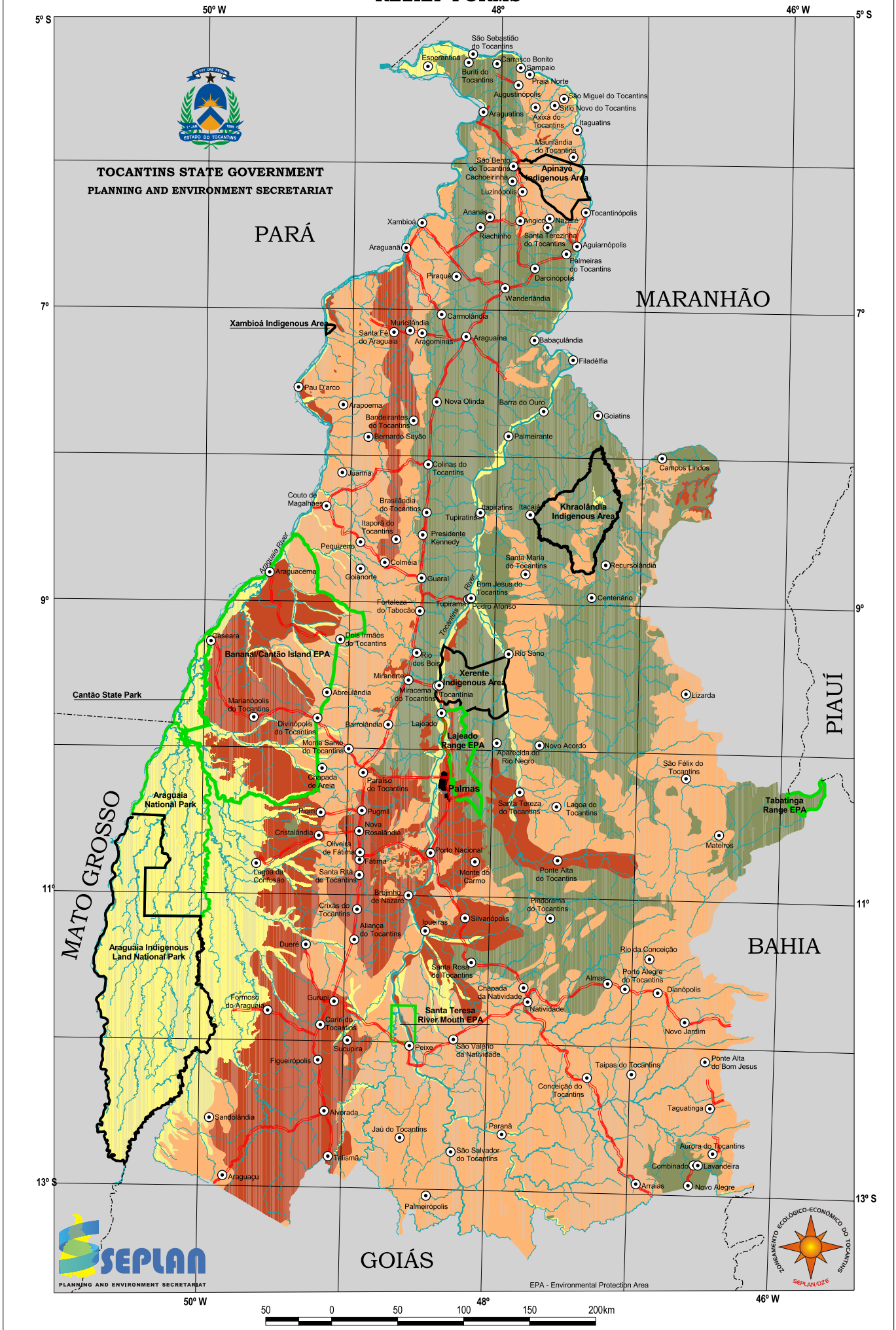
DZE
1999

RELIEF FORMS



POLYCONIC PROJECTION
Central Meridian = 48 00' 00" W. Gr.

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TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

Class A (slope equal or lower than 5%): predominance of areas with slight slope and gentle relief, where the run-off is slow or medium in most part of soils. This class of slope, by itself, does not restrict the use of standard agricultural machinery. Hydric erosion does not offer big problems. Simple soil conservation systems are recommended for some kinds of soils. On the other hand, more complex systems may be necessary such as terraces or cultivated contour practices in areas of long slopes with high erodibility.

Class B (slope greater than 5% to 10%): predominance of areas where undulated relief is common and run-off is medium or fast on most soils. The slope by itself usually does not restrict the use of agricultural machinery. In some cases, hydric erosion offers little problems which may be controlled with simple practices, but most of the time complex conservation practices are necessary for cultivating these kinds of lands.

Class C (slope greater than 10% to 15%): predominance of hilly areas, where run-off is very fast for most soils. Since declivity is not very complex, most part of agricultural machinery may be used. Soils on this slope class are easily eroded, except those with high permeability and not much sandy, such as some kind of latossols. For any situation, adequate conservation practices are necessary.

Class D (slope greater than 15% to 45%): predominance of areas with very fast run-off for most soils. May be worked only in contour line with animal traction machinery or under certain limitations and special care with tracklayer tractors. Intensive tillage is not recommended for the lands in this situation. They are more suitable for natural grassing or forestation.

Class E (slope greater than 30% to 45%): predominance of steep areas, where run-off is very fast. Soils may be mechanically worked only with simple animal-traction machinery and with serious limitations. Lands under this situation are nor suitable for agriculture and may be used for grassing. They are more suitable for forestation.

Class F (declivity higher than 45%): Predominance of steep areas, in mountainous regions, where no kind of agricultural machinery may be used. Run-off is always very fast and the soils in these classes are very susceptible to hydric erosion. They cannot be mechanically worked, even by simple animal-traction machinery. Only manual tools may be used. Lands in this class are unsuitable for agricultural use.

CARTOGRAPHIC CONVENTIONS

Perennial and intermittent rivers

Paved roads

Conservation unit boundary

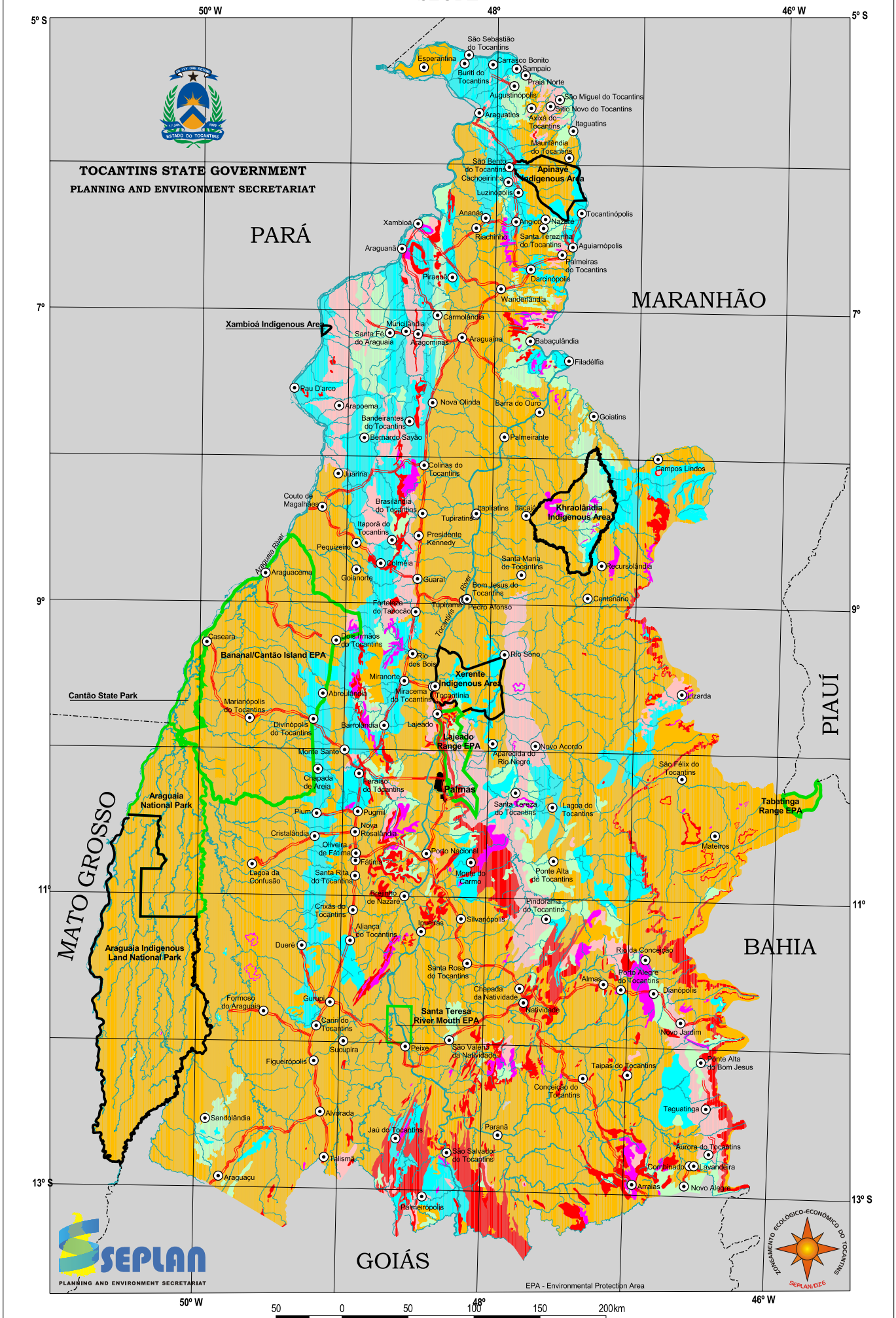
Indigenous area boundary

Built-up area - CAPITAL

⊙ County town

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
2000

SLOPE



ENG - VERSION 1.0

TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

Soil Groups ***(Area - % of total State)***

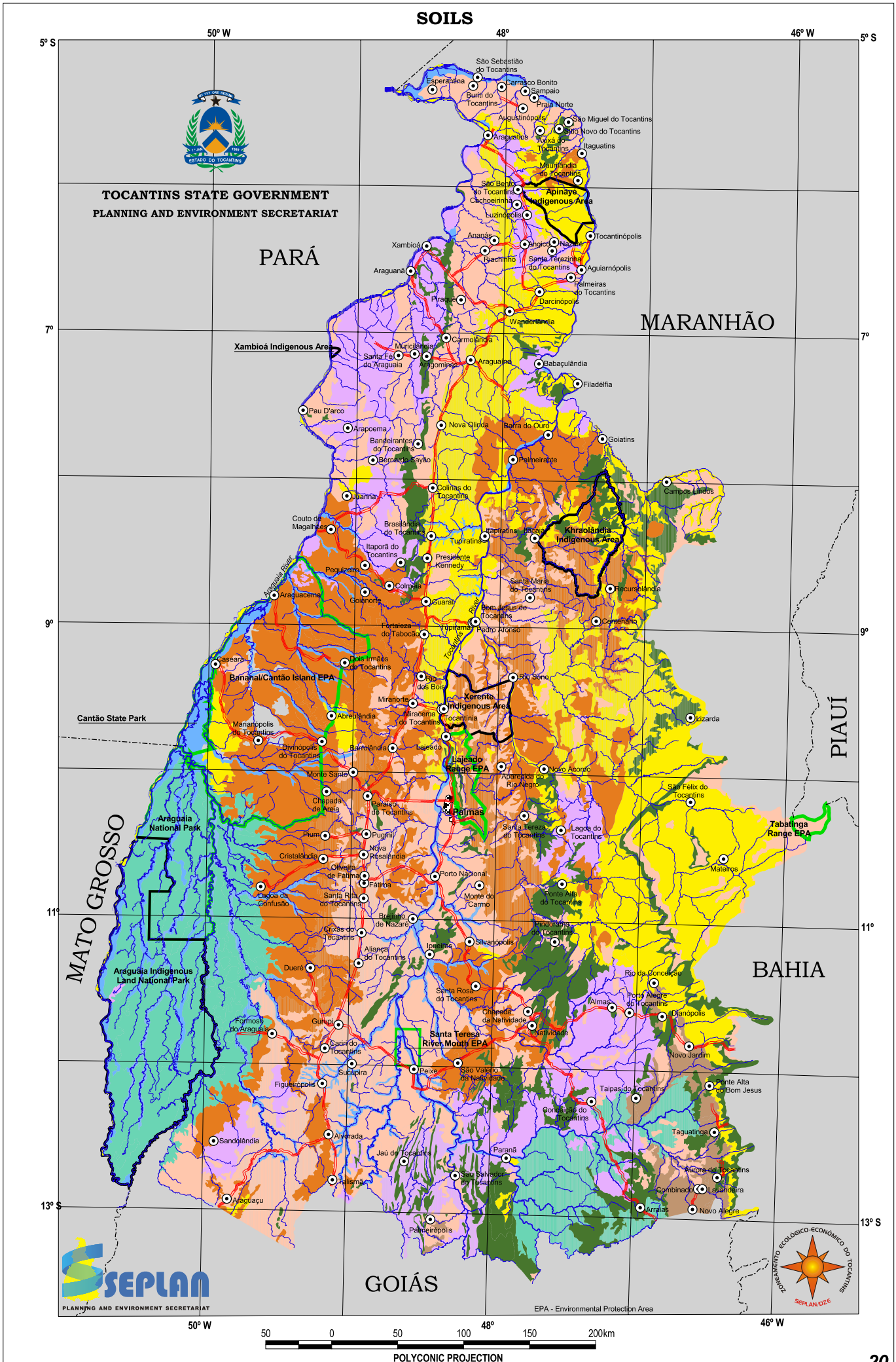
- Concretionary soils - (63.468,1 km² - 22,8%)
- Latosols - (61.648,8 km² - 22,1%)
- Sandy Soils - (52.555,8 km² - 18,9%)
- Plinthic soils - (30.800,6 km² - 11,1%)
- Podzolic Soils - (28.158,7 km² - 10,1%)
- Lithic Soils - (23.484,8 km² - 8,4%)
- Hydromorphic and alluvial soils - (14.089,2 km² - 5,1%)
- Cambisols - (4.214,7 km² - 1,5%)

CARTOGRAPHIC CONVENTIONS

- Perennial and intermittent rivers
- Paved road
- Conservation unit boundary
- Indigenous area boundary
- Built-up area- CAPITAL
- County town

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
2000

SOILS



POLYCONIC PROJECTION
Central Meridian = 48 00' 00" W. Gr.

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TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

VERY LOW TO LOW: areas with soils of great agricultural significance. The soils usually are deep, porous, well permeable, even when they are very clayey, friable, located on plan and gentle relief with slope mostly less than 3%. The landscape dynamics is stable (pedogenesis > morphogenesis) and surface run-off processes are diffuse and slow (74,839.5 km2 ; 26.9% of the whole State).

SLIGTH: areas with well to very well drained deep soils on gentle undulated relief where predominate slopes between 3% and 8%. The landscape dynamics vary from stable to a transitional one (pedogenesis $\geq$ morphogenesis). Run-off processes are diffuse and slow, with rare concentrated run-off events. (110,447.8 km2; 39.7%)

MODERATE: areas with well drained, permeable, deep to moderate deep soils in which there exists homogeneous morphological in the whole soil profile. They occur usually on undulated relief with slopes from 8% to 20%. The landscape dynamics is transitional (pedogenesis $\geqslant$ morphogenesis). The urface run-off processes are diffuse and slow with rare concentrated occurence events. (25,083.8 km2 ; 9.0%)

STRONG: most soils in this class are not very deep, with moderate drainage, few aggregating agents and bulk structure, without cohesion on the surface horizon (A). Organic matter is very low and restricted to this horizon. They usually occur on heavily undulated relief (slopes from 20 to 45% predominance) and have restricted permeability, which causes them to be very erodible. Its landscape ecodynamics is unstable (pedogenesis < morphogenesis). Its surface run-off processes are diffuse and fast, concentrated, being possible even mass movements, such as creeping and flowage. (19,648.1 km2 ; 7.0%).

VERY STRONG: areas with shallow and very shallow soils, with presence of rock outcropping. The predominant relief varies from mountainous to scarped, with slope higher than 45%. Its landscape ecodynamic is very unstable (pedogenesis << morphogenesis). Surface run-off processes are concentrated. Mass movements are sliding, landslide, creeping and flowage, with casual block fall. (13,621.3 km2 ; 4.9%)

SPECIAL: poorly to very poorly drained soils, with usually high watertable. Landscape ecodynamics is unstable and transitional (pedogenesis < or$\cong$ morphogenesis). The processes involved are: run-off along riverside, movement and deposition of fine sediments, as well as diffuse and slow run-off on lowlands, fluvial terraces and lake margins, besides casual floods. (13,621.3 km2 ; 4.9%).

CARTOGRAPHIC CONVENTIONS

Perennial and intermittent rivers

Conservation unit boundary

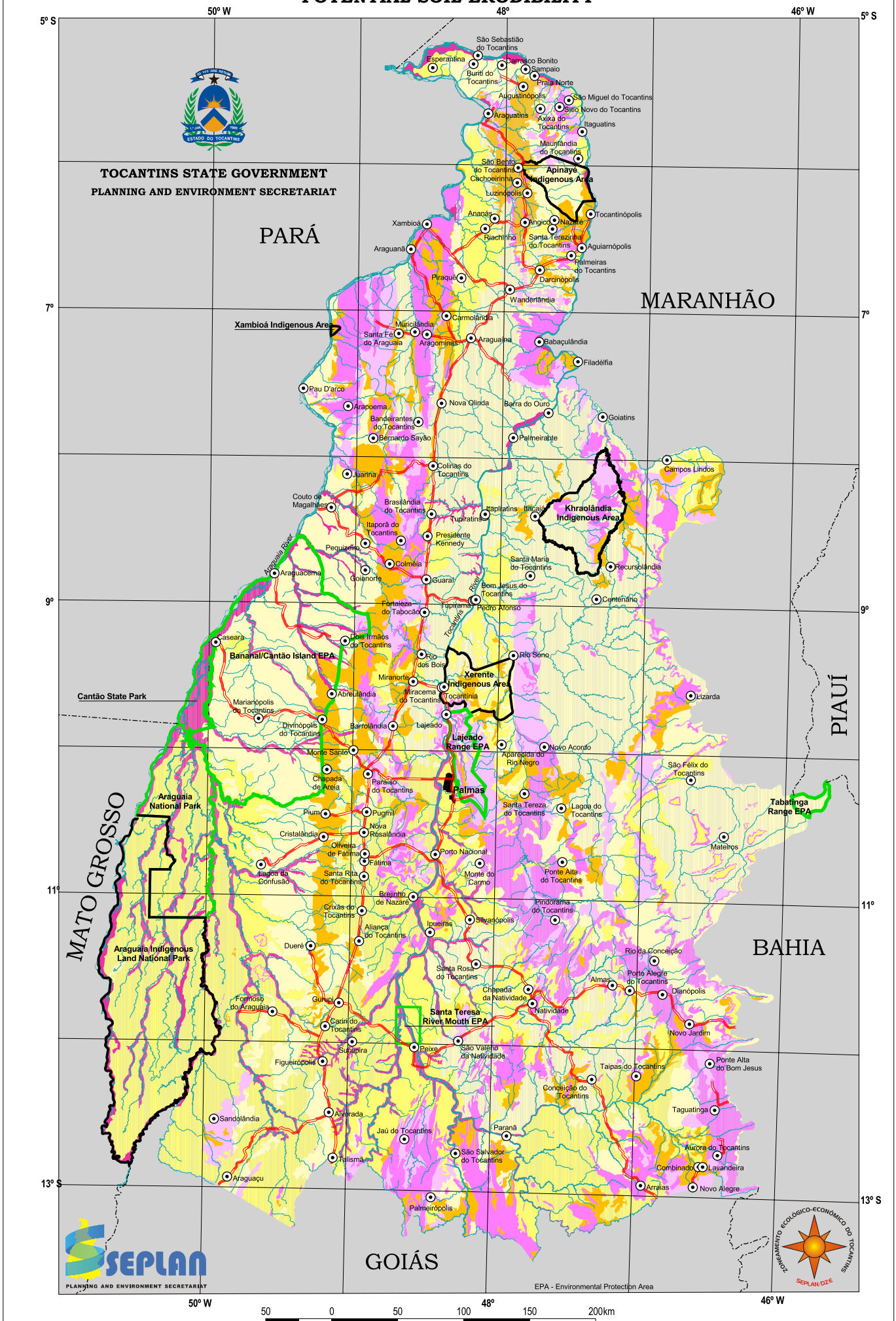
Indigenous area boundary

Built-up area - CAPITAL

County town

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
1999

POTENTIAL SOIL ERODIBILITY



POLYCONIC PROJECTION
Central Meridian = 48 00' 00" W. Gr.

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TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

Decidual forest (Floresta Estacional Decidual) (1.756,9 km² - 0,6%)

Semi-decidual forest (Floresta Estacional Semidecidual) (5.272,0 km² - 1,9%)

Open rain forest (Floresta Ombrófila Aberta) (15.195,5 km² - 5,4%)

Dense rain forest (Floresta Ombrófila Densa) (11.836,4 km² - 4,3%)

Savannah (Cerrado) - (244.359,9 km² - 87,8%)

CARTOGRAPHIC CONVENTIONS

Perennial and intermittent rivers

Paved road

Conservation unit boundary

Built-up area- CAPITAL

County town

Indigenous area boundary

DECIDUAL SEASONAL FOREST REGION: this regions presents a kind of vegetation with large continuous areas, found, from north to south, between the Semi-decidual Seasonal Forest and Praire (Savanna Estépica - caatinga), where the deciduous feature of the vegetation is closely related to the water availability. It happens in the form of forest discontinuity, with a predominantly caduciphollium stratum.

SEMI-DECIDUAL SEASONAL FOREST REGION: this is a type of vegetation mainly constituted by phanerophytes with leaf gems protected against drought by scales, having decidual adult leaves. It is observed mainly on high lands or in the southern and southeastern Tocantins.

OPEN RAIN FOREST REGION: this kind of vegetation represents a transition between the Amazon forest and extra-Amazon regions, evidence of a gradual diminishing of cover density. Occurs mainly in mountainous areas and feature the transition between Savannah (Cerrado) and Dense rain forest (Floresta Ombrófila Densa).

DENSE RAIN FOREST REGION: its main ecological feature is the rainy environment it occupies, which marks the Amazon forest floristic region. It is featured by abundant vegetation of macro and mesofanerophytes, lianes and epiphytes, thus being different from other vegetation formations. Such kind of forest is observed in the northwestern part of the state.

SAVANNAH REGION: it is a region with open xerophytic vegetation, dominated by a herbaceous stratum. It occurs in almost the whole state, mainly under seasonal climate (more or less 6 dry months), and is also found in rainy climate, when it usually covers leached soils.

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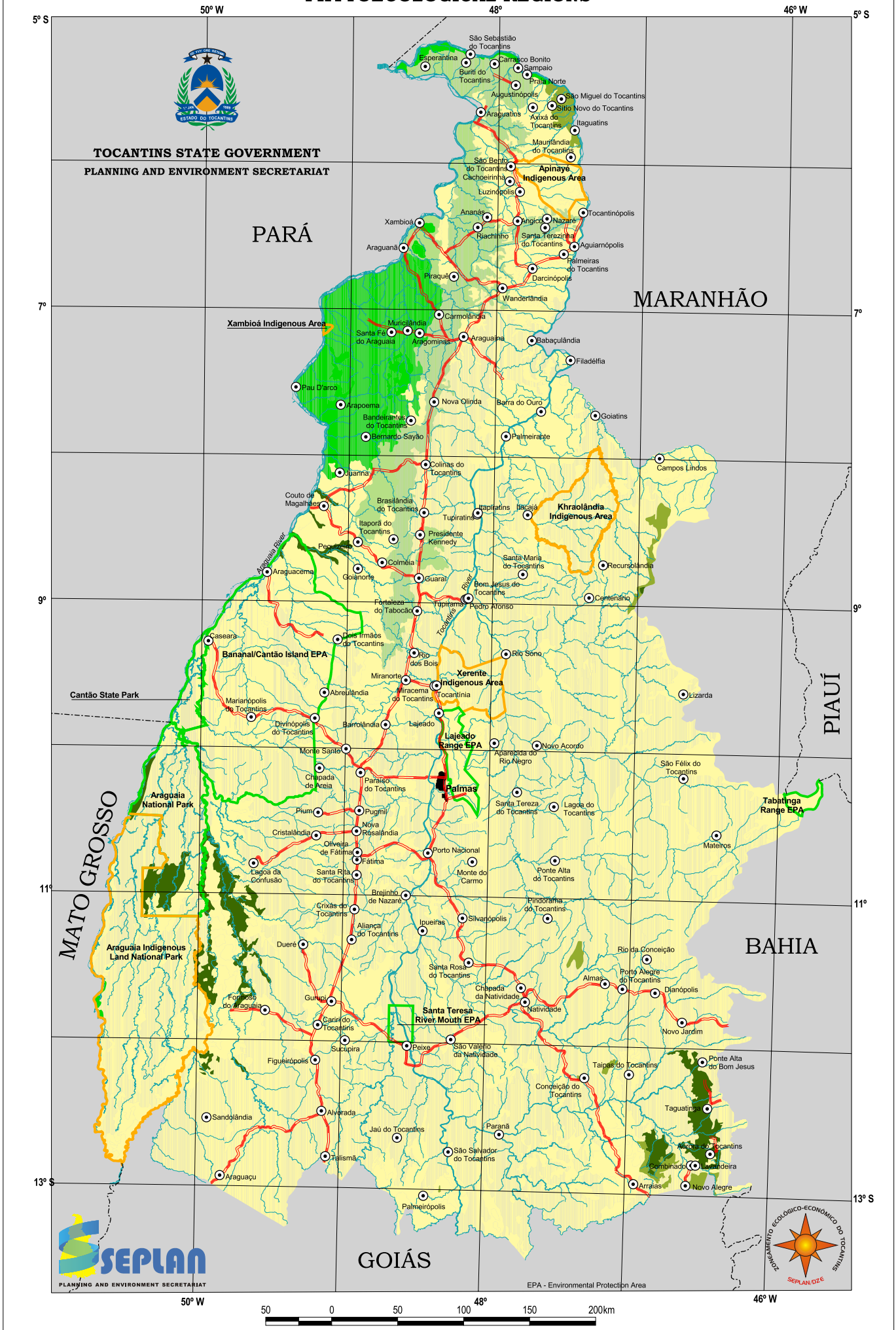
DZE
1999

PHYTOECOLOGICAL REGIONS



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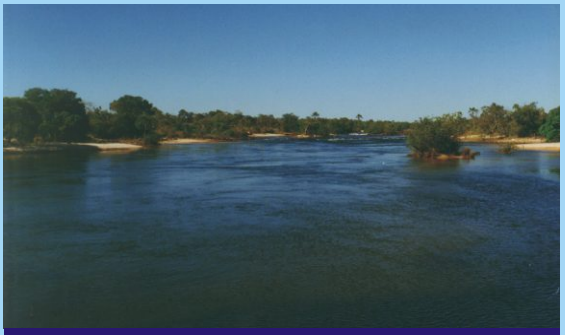
HIDROGRAPHY

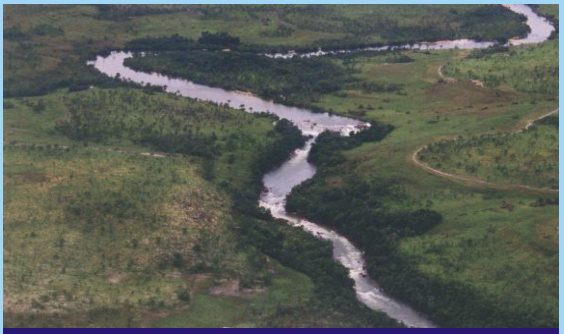


Do Sono River. Novo Acordo.

Palma River. Paranã.

Côco River. Caseara. Cantão Ecotourism Center. Pium.

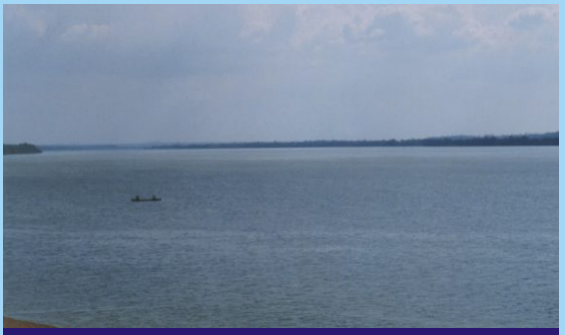
Javaés River. Formoso do Araguaia.



Novo River. Mateiros (Jalapão).

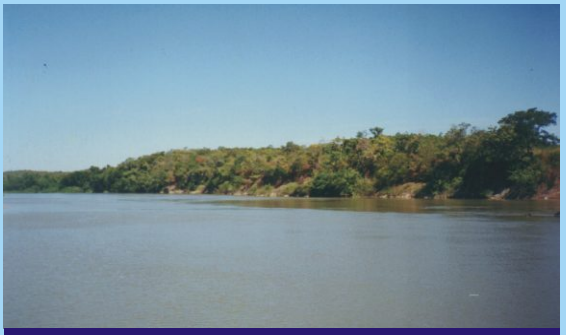
Tocantins River. Palmas.

Lakes region. Cantão Ecotourism Center. Pium.



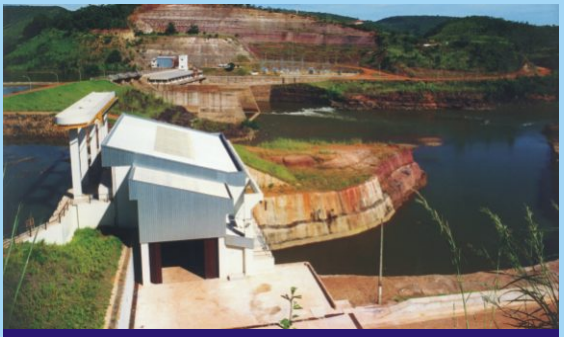
Araguaia River. Araguatins.

Formoso River. Formoso do Araguaia.



Paranã River. Paranã.

INFRASTRUCTURE



Isamu Ikeda Hydroelectric Power Plant. Ponte Alta do Tocantins.

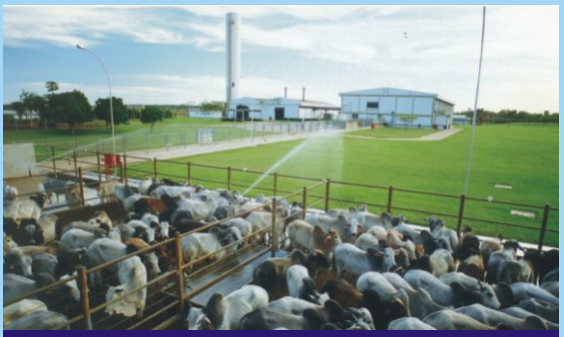
Luis Eduardo Magalhães Hydroelectric Power Plant.
(UHE Lajeado). Lajeado.

138 kV transmission line. Palmas.

500 kV transmission line. Connection between the systems
Eletronorte and Furnas. Miracema do Tocantins.

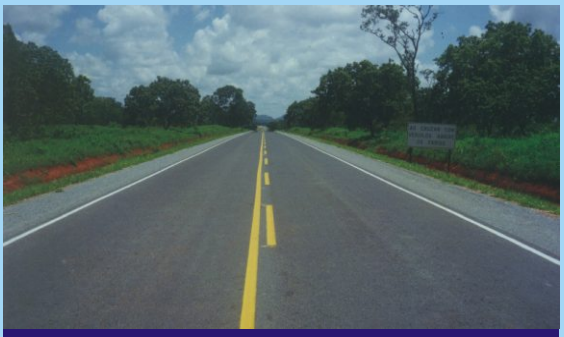
Araguaia Waterway.

TO-010 Highway between Palmas and Lajeado.



Slaughter house. Gurupi Industrial District.

Palmas airport.



TO-050 Highway between Porto Nacional and Silvanópolis.

Bridge on the TO-126 Highway between
Aguiarnópolis and Tocantinópolis.

TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

HYDROGRAPHIC SYSTEMS

(Area - % of State total)

ARAGUAIA RIVER (104.990,8 km² - 37,7%)

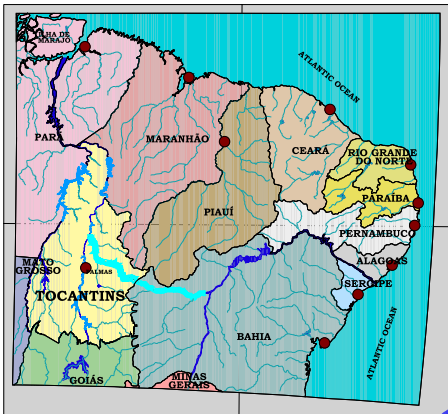
TOCANTINS RIVER (173.429,9 km² - 62,3%)

CARTOGRAPHIC CONVENTIONS

- Perennial and intermittent rivers
- Paved road
- Conservation Unit boundary
- Indigenous area boundary
- Built-up area - CAPITAL
- County town
- Hydrographic system divider

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
1999

HYDROGRAPHY



TRANSPOSITION OF WATERS TO THE NORTHEAST (PLANNED)

TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

MARANHÃO

PARÁ

PIAUÍ

MATO GROSSO

GOIÁS

BAHIA

Xambioá Indigenous Area

Apinajé Indigenous Area

Khraolândia Indigenous Area

Xerente Indigenous Area

Nascentes do Araguaia EPA

Bananal/Cantão Island EPA

Cantão State Park

Araguaia National Park

Araguaia Indigenous Land National Park

Meandros do Araguaia EPA

Lajeado Range EPA

Lago de Palmas EPA

Palmas

Santa Teresa River Mouth EPA

Tabatinga Range EPA

Transposition of waters to the Northeast (planned)

São Sebastião do Tocantins, Esperantina, Carrasco Bonito, Sampaio, Buriti do Tocantins, Praia Norte, Augustinópolis, São Miguel do Tocantins, Araguatins, São Novo do Tocantins, Caixa do Tocantins, Itaguatins, Maurilândia, Tocantinópolis, São Bento do Tocantins, Cachoeirinha, Luzinópolis, Ananás, Tocantinópolis, Xambioá, Nazaré, Riachinho, Santa Terezinha do Tocantins, Aguiarnópolis, Araguanã, Palmeiras do Tocantins, Piraquê, Darcinópolis, Wanderlândia, Carmolândia, Muricilândia, Araguaína, Santa Fé do Araguaia, Aragominas, Babaçulândia, Filadélfia, Pau D'arco, Arapoema, Nova Olinda, Barra do Ouro, Goiatins, Bandeirantes do Tocantins, Bernardo Sayão, Palmeirante, Colinas do Tocantins, Campos Lindos, Juarina, Couto de Magalhães, Brasilândia do Tocantins, Itaporã do Tocantins, Tupiratins, Itapiratins, Pugmil, Presidente Kennedy, Pequizeiro, Colmeia, Araguaçema, Goianorte, Guaraí, Santa Maria do Tocantins, Recursolândia, Bom Jesus do Tocantins, Cauelândia, Tupirama, Pedro Afonso, Fortaleza do Tabocão, Caseara, Dois Irmãos do Tocantins, Rio dos Bois, Rio Sono, Miranorte, Miracema do Tocantins, Tocantínia, Lizarda, Abreulândia, Marianópolis do Tocantins, Divinópolis do Tocantins, Barrolândia, Lajeado, Monte Santo, Novo Acordo, Aparecida do Rio Negro, São Félix do Tocantins, Chapada de Areia, Paraíso do Tocantins, Santa Tereza do Tocantins, Lagoa do Tocantins, Pium, Pugmil, Nova Rosalândia, Cristalândia, Oliveira de Fátima, Fátima, Porto Nacional, Lagoa da Confusão, Santa Rita do Tocantins, Monte do Carmo, Ponte Alta do Tocantins, Brejinho de Nazaré, Crixás do Tocantins, Aliança do Tocantins, Ipueiras, Silvanópolis, Fortaleza do Tocantins, Dueré, Rio da Conceição, Santa Rosa do Tocantins, Porto Alegre do Tocantins, Almas, Dianópolis, Formoso do Araguaia, Gurupi, Chapada da Natividade, Natividade, Carrasco do Tocantins, Peixe, São Valério da Natividade, Novo Jardim, Sucupira, Figueirópolis, Ponte Alta do Bom Jesus, Taipas do Tocantins, Conceição do Tocantins, Alvorada, Sandolândia, Jaú do Tocantins, Paraná, Tagualtinga, São Salvador do Tocantins, Aurora do Tocantins, Lavandeira, Dois Irmãos, Arraias, Novo Alegre, Araguaçu, Palmeirópolis

Araguaia River, Tocantins River

SEPLAN
PLANNING AND ENVIRONMENT SECRETARIAT

ZONEAMENTO ECOLÓGICO-ECONÔMICO DO TOCANTINS
SEPLAN/DZE

EPA - Environmental Protection Area

50° W 48° 46° W
5° S 7° 9° 11° 13° S

50 0 50 100 150 200km

POLYCONIC PROJECTION
Central Meridian = 48 00' 00" W. Gr.

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TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

ARAGUAIA RIVER HYDROGRAPHIC SYSTEM
(Area : 104.990,8 km2 - 37,7% of State total)

A1 - Araguaia River watershed (15.980,5 km2 - 5,7%)
A2 - Riozinho River watershed (10.737,7 km² - 3,9%)
A3 - Javaés River watershed (12.433,7 km² - 4,5%)
A4 - Formoso River watershed (20.736,7 km² - 7,4%)
A5 - Pium River watershed (5.016,5 km² - 1,8%)
A6 - Côco River watershed (6.713,6 km² - 2,4%)
A7 - Caiapó River watershed (5.569,5 km² - 2,0%)
A8 - Lajeado River watershed (6.066,4 km² - 2,2%)
A9 - Bananal River watershed (2.880,4 km² - 1,0%)
A10 - Mato da Banana River watershed (1.672,9 km² - 0,6%)
A11 - Cunhãs River watershed (2.710,3 km² - 1,0%)
A12 - Jenipapo River watershed (1.686,8 km² - 0,6%)
A13 - Muricizal River watershed (3.291,8 km² - 1,2%)
A14 - Lontra River watershed (3.926,0 km² - 1,4%)
A15 - Corda River watershed (3.511,8 km² - 1,3%)
A16 - Piranhas River watershed (2.056,2 km² - 0,7%)

TOCATINS RIVER HYDROGRAPHIC SYSTEM
(Area of 173.429,9 km² - 62,3% of State total)

T1 - Araguaia River watershed (59.513,3 km2 - 21,5%)
T2 - Santa Teresa River watershed (5.974,9 km² - 2,1%)
T3 - Paranã River watershed (7.949,3 km² - 2,9%)
T4 - Palma River watershed (17.373,0 km² - 6,2 %)
T5 - Manuel Alves da Natividade River watershed (14.938,0 km² - 5,4%)
T6 - São Valério River watershed (2.135,2 km² - 0,8%)
T7 - Santo Antônio River watershed (3.030,0 km² - 1,1%)
T8 - Crixás River watershed (3.477,2 km² - 1,2%)
T9 - Balsas River watershed (12.386,7 km² - 4,4%)
T10 - Sono's River watershed (24.041,5 km² - 8,6%)
T11 - Mangues River watershed (2.852,6 km² - 1,0%)
T12 - Perdida River watershed (9.611,4 km² - 3,5%)
T13 - Manuel Alves Pequeno River watershed (1.513,3 km² - 0,5%)
T14 - Manuel Alves Grande River watershed (8.633,5 km² - 3,1%)

CARTOGRAPHIC CONVENTIONS

Perennial and intermittent rivers

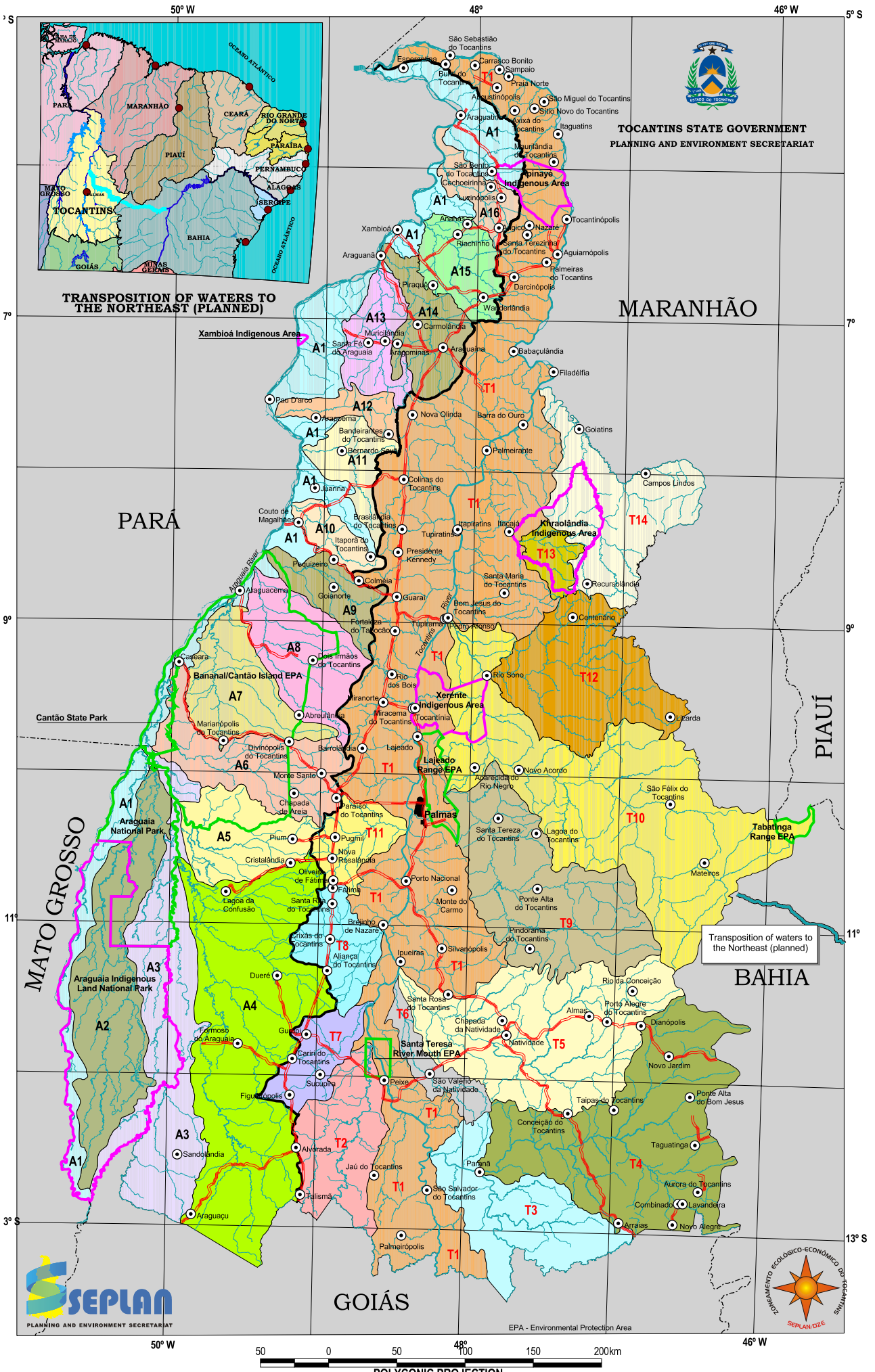
Paved roads

Built-up Area - CAPITAL

County town

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
1999

HYDROGRAPHIC WATERSHEDS



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TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

OPERATIONAL HIDROELECTRIC POWER PLANTS - Power (MW)

UHE* Agrotrafo	9,80
UHE Bagagem	0,28
UHE Corujão	0,64
UHE Diacal	5,10
UHE Dianópolis	5,00
UHE Isamu Ikeda	28,60
UHE Lajeadinho	1,80
UHE Lajes	2,40
UHE Palmeiras	5,00
UHE Ponte Alta	0,30
UHE Sobrado	5,00
UHE Taguatinga	1,80

PROJECTED HIDROELECTRIC POWER PLANTS - Power (MW)

UHE Água Limpa	14,00
UHE Areia	9,00
UHE Cachoeira da Velha	44,00
UHE Caetana	10,00
UHE Estreito	1.200,00
UHE Ipueiras	600,00
UHE Manuel Alves Grande	134,00
UHE Natividade I	72,00
UHE Peixe	800,00
UHE Santa Isabel	2.200,00
UHE São Domingos	315,00
UHE Serra Quebrada	1.328,00
UHE Sono IIIB	930,00
UHE Tupiratins	1.000,00

HIDROELECTRIC POWER PLANTS UNDER CONSTRUCTION - Power (MW)

UHE Fumaça	5,00
UHE Luis Eduardo Magalhães	850,00

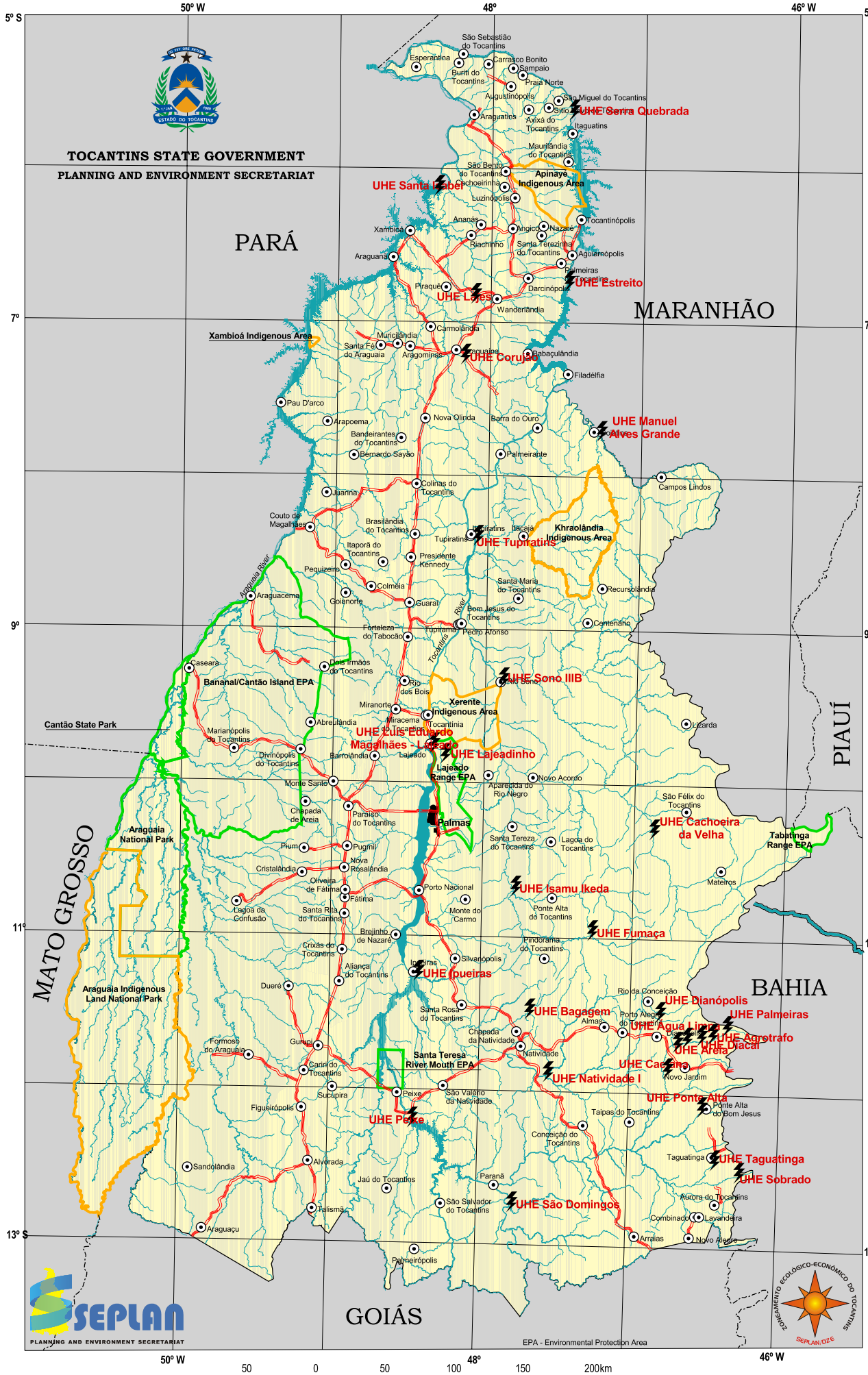
* UHE - Hydroelectric Power Plant

CARTOGRAPHIC CONVENTIONS

- Perennial and intermittent rivers
- Paved road
- Conservation unit boundary
- Indigenous area boundary
- Built-up area - CAPITAL
- County town
- Hydroelectric power plant (EPP)
- Hydroelectric power plant lake (existent, planned and under construction)

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
2000

HYDROELECTRIC POTENTIAL



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TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

Paved road

Road being paved

Road under construction

Road pavement contracted

Road base and pavement contracted

Final engineer project contracted

Dirt road

Norte-Sul Railway (under construction)

CARTOGRAPHIC CONVENTIONS

River port

Planned river port

State road

Federal road

Perennial and intermittent rivers

Conservation Unit boundary

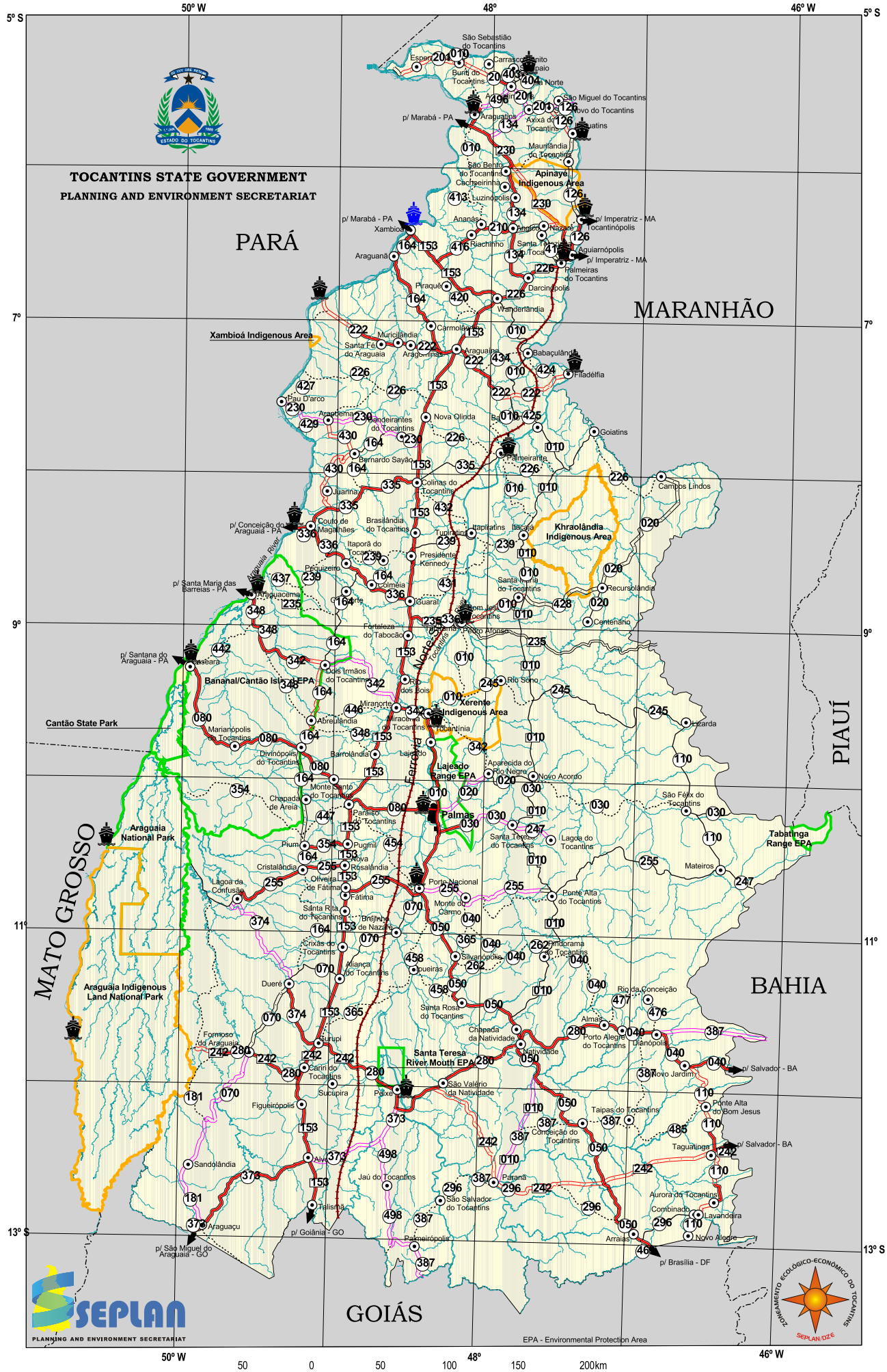
Indigenous area boundary

Built-up area - CAPITAL

County town

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
1999

HIGHWAY AND RAILWAY SYSTEM



POLYCONIC PROJECTION
Central Meridian = 48 00' 00" W. Gr.

ENG-VERSION 1.0

TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

I-PALEO-MESOZOIC AND MESO-CENOZOIC SEDIMENTARY BASINS DOMAIN

1 Tocantins and Araguaia confluence
2 Médio Tocantins depressions and flat highlands
3 Darcinópolis flat highlands
4 Ananás and Araguaína Depressions and Plateaus
5 Capivara River Plateau
6 Palmeirante Depression
7 Cangalha flat highlands and Range
8 Parnaíba Basin "Chapada" and Plateau
9 Sono's River region Plateaus
10 Sono's River and Itacajá Plateaus and Depression
11 Tocantins Longitudinal Depressions
12 Ponte Alta do Tocantins flat highlands
13 Jalapão "Chapadas"

II - MEDIUM AND UPPER PROTEROZOIC FOLD BELT DOMAIN

14 Xambioá Ranges
15 Xambioá Depression
16 Médio Araguaia Depression
17 Tocantins and Araguaia Interrill flat highlands
18 Cordilheiras Range
19 Cristalândia, Abreulândia and Formoso do Araguaia Depressions
20 Caseara and Sandolândia Depressions
21 Dianópolis flat highland
22 Taipas do Tocantins and Combinado Plateaus
23 Southern Tocantins flat highland

III - CENOZOIC SEDIMENTARY BASINS DOMAIN

24 Araguaia lowlands

IV - ARCHEAN VOLCANO-SEDIMENTARY AND LOWER PROTEROZOIC SEQUENCE AND METAMORPHIC COMPLEX DOMAIN

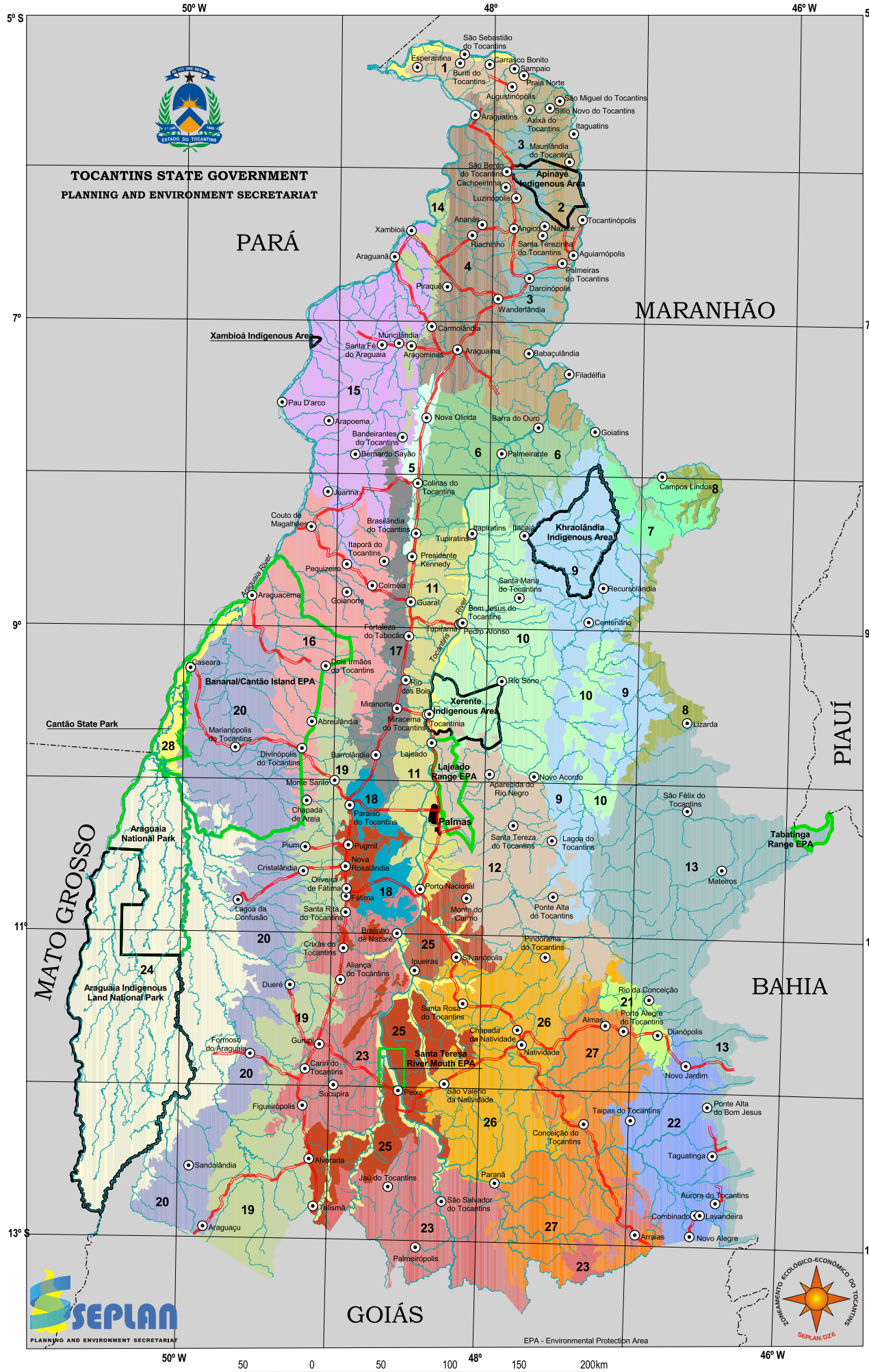
25 Alto Tocantins Depression
26 Natividade and Santa Rita do Tocantins Depression and Hills
27 Conceição do Tocantins Depression and Hills

V - AZONAL ALLUVIAL AREAS DOMAIN

28 Fluvial lowlands

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
1999

AGROECOLOGIAL REGIONS



ENG-VERSION 1.0

POLYCONIC PROJECTION
Central Meridian = 48 00' 00" W. Gr.

TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

I - AREAS OF HIGH INVESTMENT FOR PRODUCTION

Floresta Ombrófila (Rain forest) phytoecological region

- Annual tillage and intensive grazing areas (13.568,8km² - 4,9%)
- Intensive grazing and annual tillage areas (8.658,8 km² - 3,1%)

Floresta Estacional (Seasonal forest) phytoecological region

- Annual tillage and intensive grazing areas (2.188,5 km² - 0,8%)

Cerrado (Savannah) Phytoecological region

- Annual tillage and intensive grazing areas (51.851,9 km² - 18,6%)
- Intensive grazing and annual tillage areas (30.975,7 km² - 11,1%)

II - AREAS OF MEDIUM INVESTMENT USE FOR PRODUCTION

Cerrado (Savannah) Phytoecological region

- Semi-intensive grazing and/or silviculture areas (14.291,3km² - 5,1%)

III - AREAS OF LOW INVESTMENT FOR PRODUCTION

Cerrado (Savannah) Phytoecological region

- Silviculture and/or extensive grazing areas (8.880,4 km² - 3,2%)
- Extensive grazing areas (79.260,9 km² - 28,6%)

IV - SPECIAL AREAS FOR PRODUCTION

Cerrado (Savannah) Phytoecological region

- Intensive grazing and annual tillage areas (9.228,2km² - 3,3%)

V - CRITICAL AREAS

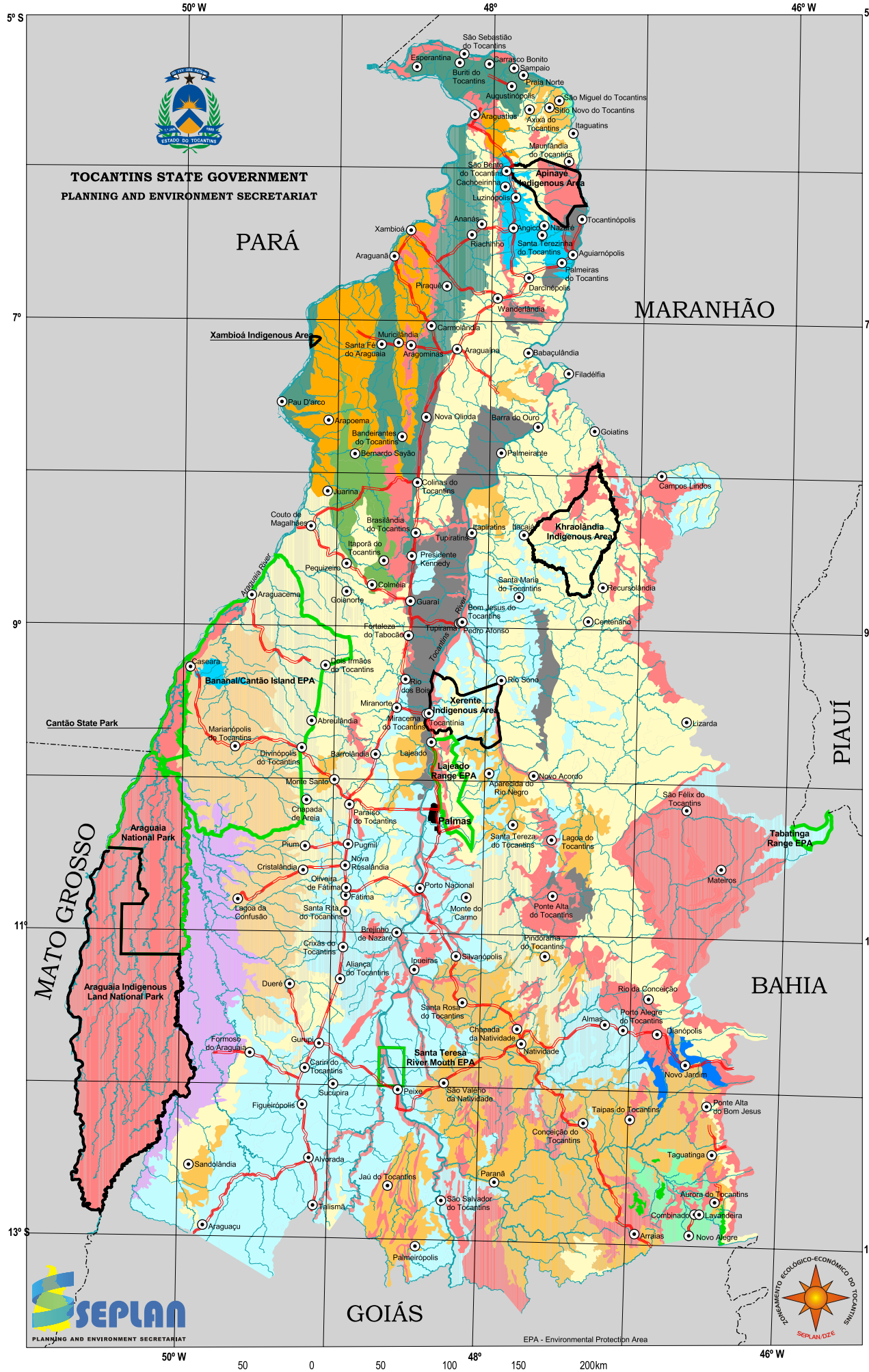
- Natural conservation areas (59.516,2 km² - 21,3%)

CARTOGRAPHIC CONVENTIONS

- Perennial and intermittent rivers
- Paved road
- Built-up area - CAPITAL
- County town
- Conservation Unit boundary
- Indigenous area boundary

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
1999

LAND USE POTENTIAL

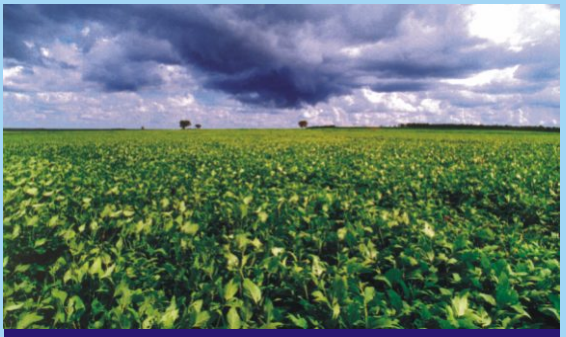


ENG-VERSION 1.0

POLYCONIC PROJECTION
Central Meridian = 48 00' 00" W. Gr.

LAND USE

Rice plantation. Lagoa da Confusão.



Soybean plantation. Campos Lindos.

Beef cattle.

Extensive animal housbandry. Jalapão.

Rio Formoso Project.

Pineapple plantation. Palmas.

Fish culture. Porto Nacional.

Land tilled for soybean plantation.
Prodecer III. Pedro Afonso.

Planted grassland in Floresta ombrófila environment. Araguaína.

Familiar agriculture. Jalapão.

Graciosa beach. Palmas.

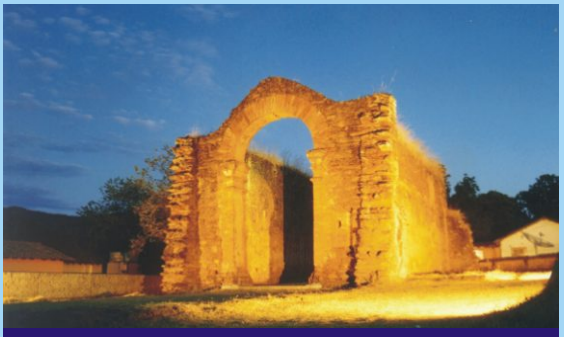
Joaquim Theotônio Segurado Avenue. Palmas.

Dunes. Mateiros. Jalapão.

Rafting down Novo River rapids. Mateiros. Jalapão.

Karajá Tribe natives. Araguaia National Park Indian Land.
Ilha do Bananal.

Do Meio Beach. Araguacema.



Nossa Senhora dos Petros Church ruins. Natividade.

Divino Espirito Santo party. Natividade.

Roncador waterfall. Taquarussu.

TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

Forest formations - riverside woods, dense rain forest, open rain forest, decidual seasonal forest, semi-decidual seasonal forest and secondary forest. (36.502,1km2 - 13,1%)

Grassland - either natural or planted grassland areas (74.982,5 km2 - 26,9%)

Tilling land - dry farming, central pivot and inundation irrigated and silviculture areas. (2.784,2 km2 - 1,0%)

Savannah (Cerrado) vegetation: savannah grasslands, dense savannah and shrubland. (157.373,4 km2 - 56,6%)

Rivers, lakes, dams and wiers. (6.474,0 km2 - 2,3%)

Other - mining areas and areas compromised with urban use. (304,5 km2 - 0,1%)

CARTOGRAPHIC CONVENTIONS

Perennial and intermittent rivers

Paved road

Conservation unit boundary

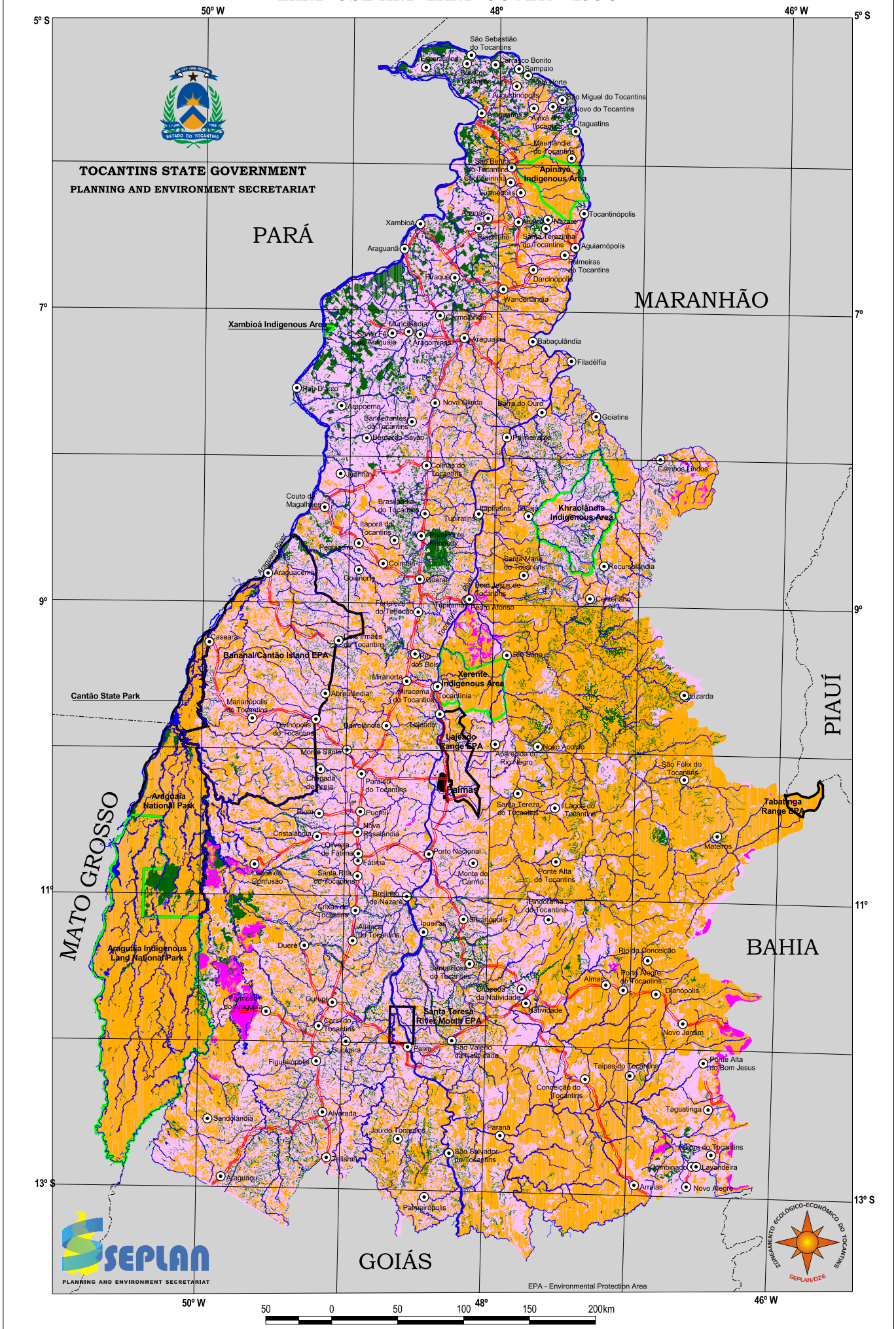
Indigenous area boundary

Built-up area - CAPITAL

County town

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
1999

LAND USE AND LAND COVER - 1996



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TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

(Area - State %)

Potential conservation areas (9.702,1 km2 - 3,5%)

Indigenous areas (19.895,1 km2 - 7,2%)

Legally restricted use implanted areas (29.776,5 km² - 10,7%)

High restriction

State Park (889,3 km² - 0,3%)

National Park (5.623,1 km² - 2,0%)

Low restriction

Environmental Protection Area - EPA (23.264,2 km² - 8,4%)

TECHNICAL NOTE

NATIONAL AND STATE PARK

Areas with exceptional natural attributes, conciliating integral protection of fauna, flora and natural scenes, with educational, recreational and scientific use.

INDIGENOUS AREAS

Areas traditonally occupied by native peoples, those inhabited by them on a permanent basis, those used for their productive activities and those indispensable for environmental resources preservation necessary for their welfare and physical and cultural reproduction, in accordance with their customs and traditions.

ENVIRONMENTAL PROTECTION AREA

Areas interesting for environment protection, in order to guarantee human populations welfare and conserve or improve local ecological conditions.

CARTOGRAPHIC CONVENTIONS

Perennial and intermittent rivers

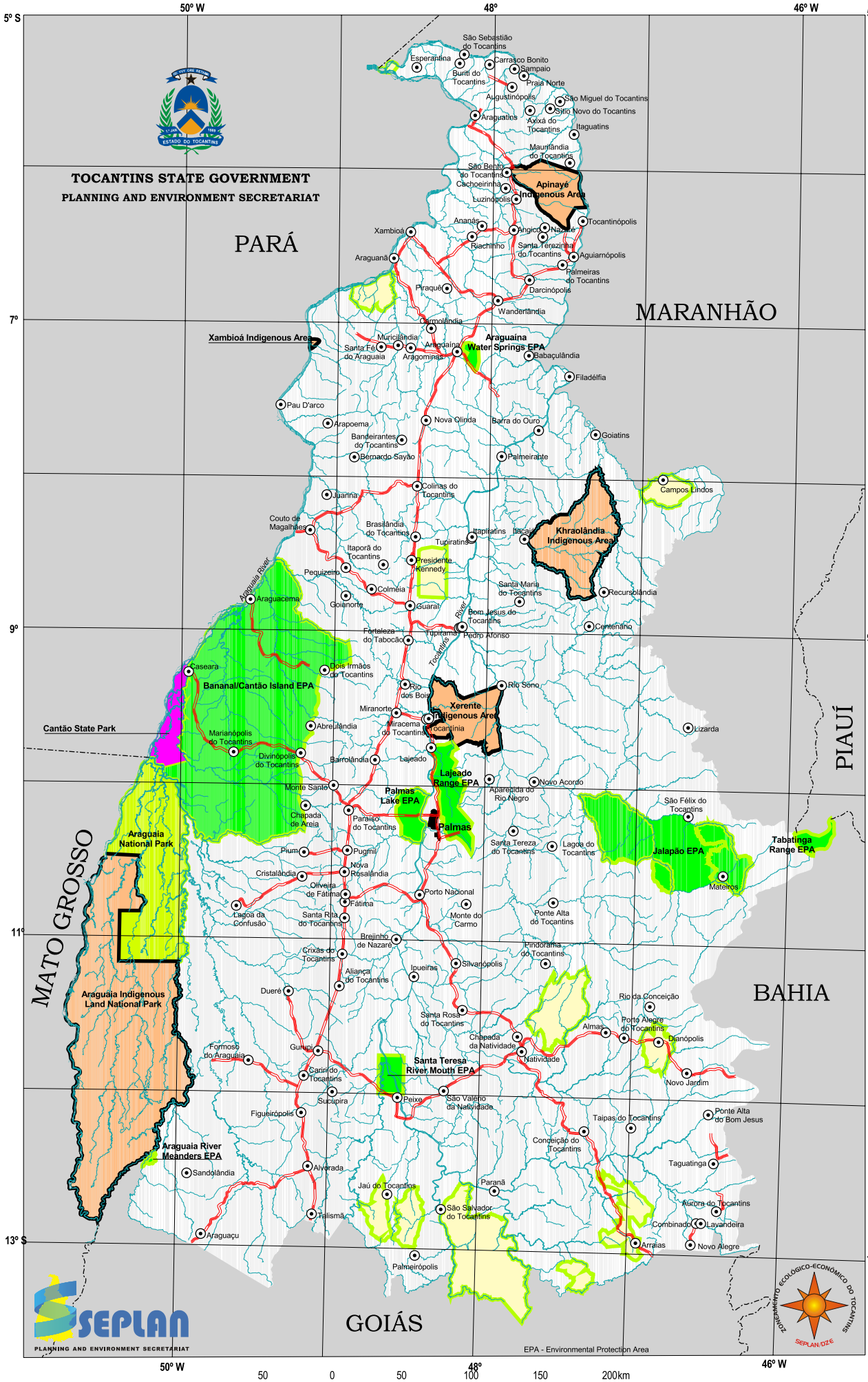
Paved road

Built-up Area - CAPITAL

⊙ County town

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
2000

INSTITUTIONAL AREAS AND CONSERVATION UNITS



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TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMET SECRETARIAT

NATURAL AND ECOLOGICAL ATTRACTIONS

- Forestal park
- Forestal reserve / Preservation
- Beach
- Cave
- Sportive fishing practice
- Waterfall
- Mountain climbing
- Gliding practice
- Thermal waters

HISTORICAL AND CULTURAL ATTRACTIONS

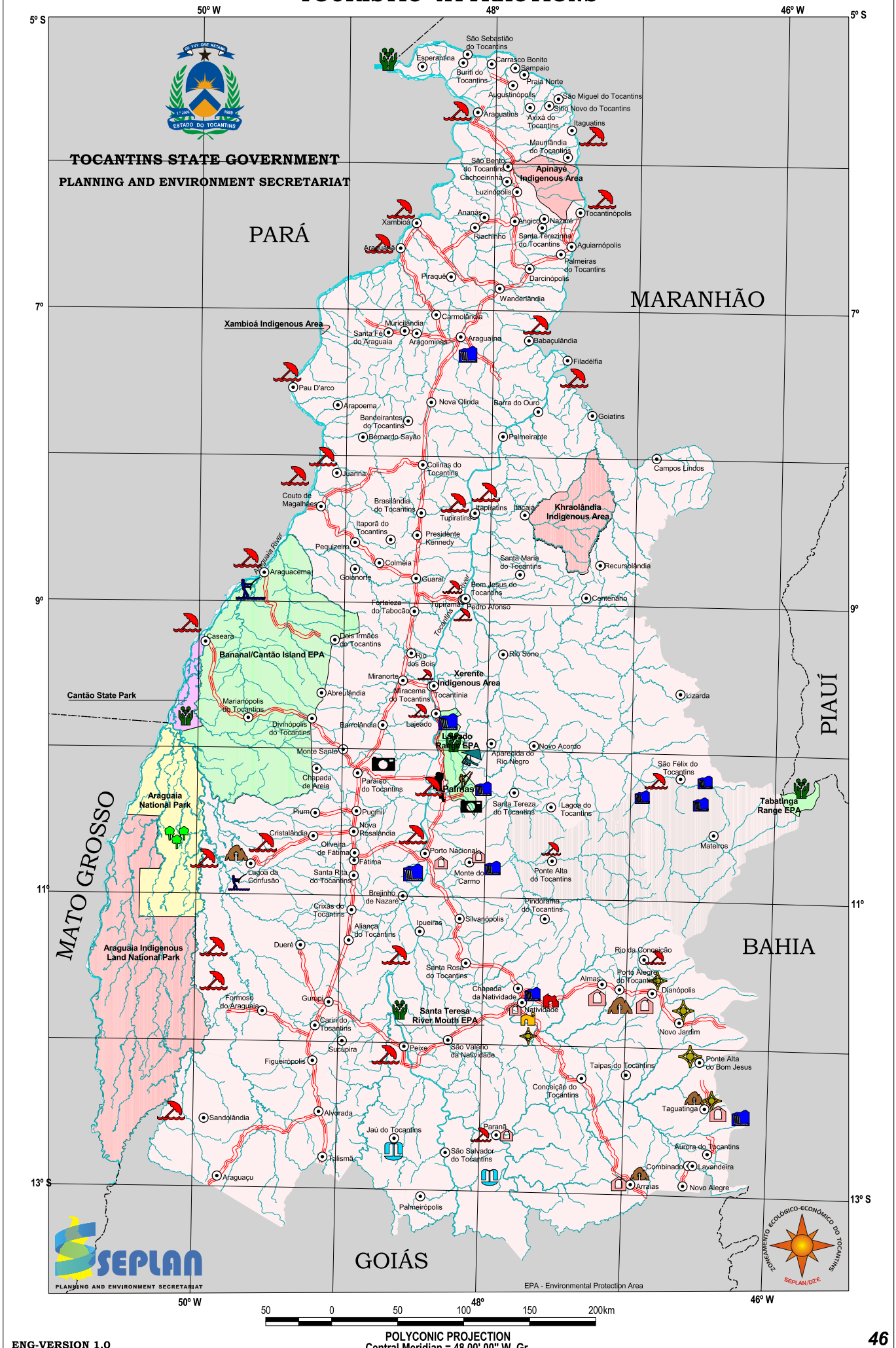
- Historic ruins
- Belvedere
- Historical architecture
- Heritage / Preservation
- Religous temple
- Touristic site

CARTOGRAPHIC CONVENTIONS

- Perennial and intermittent rivers
- Paved road
- Built-up area - CAPITAL
- ⊙ County town

ECOLOGICAL AND ECONOMIC ZONING DIRECTORATE
DZE
1999

TOURISTIC ATTRACTIONS

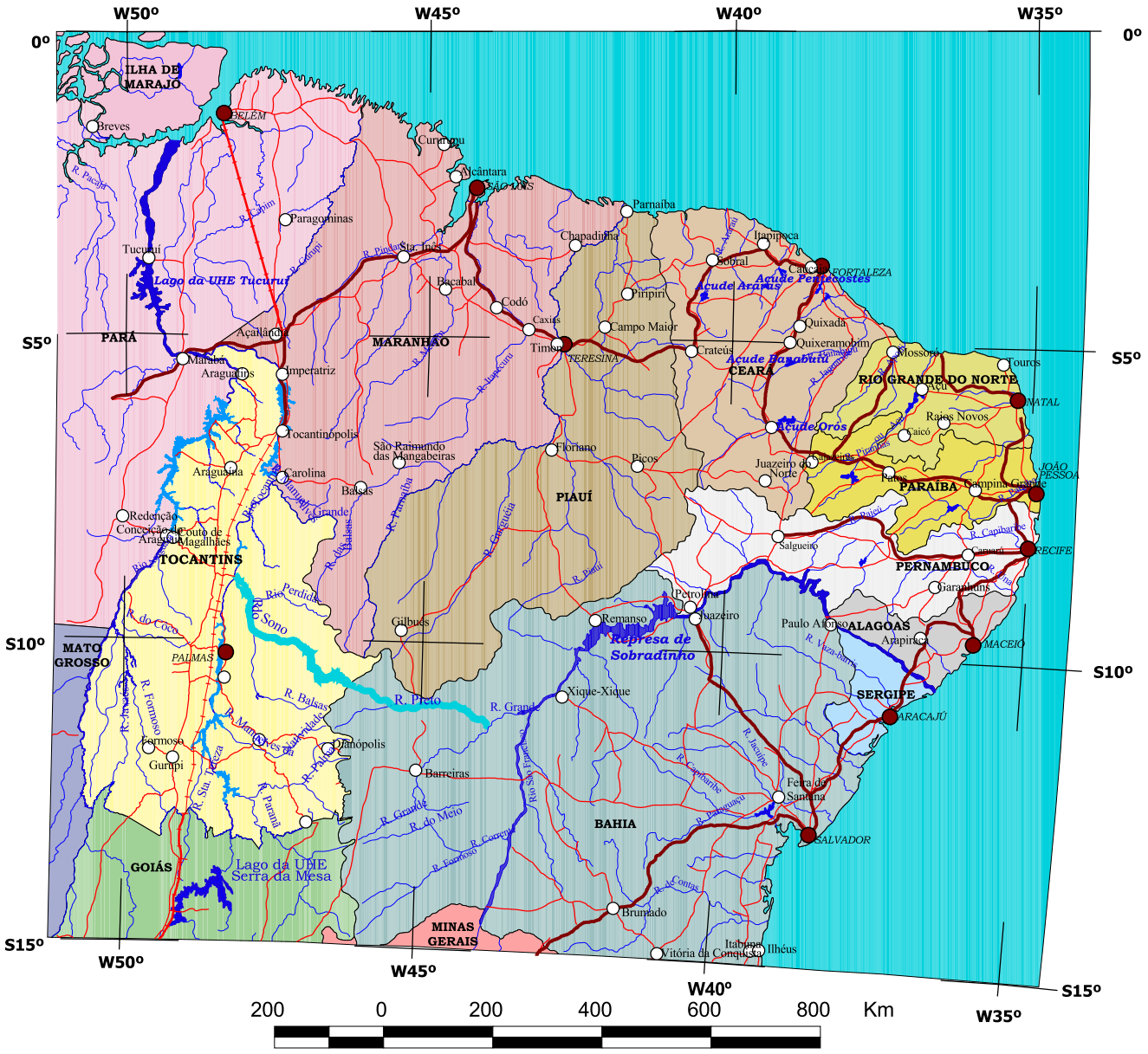


POLYCONIC PROJECTION
Central Meridian = 48 00' 00" W. Gr.

ENG-VERSION 1.0

TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

WATER TRANSPOSITION FROM TOCANTINS TO BRAZIL'S NORTHEAST



Scale 1:12.500.000
Polyconic Projection
Central Meridian = 54° 00' 00" W. Gr.

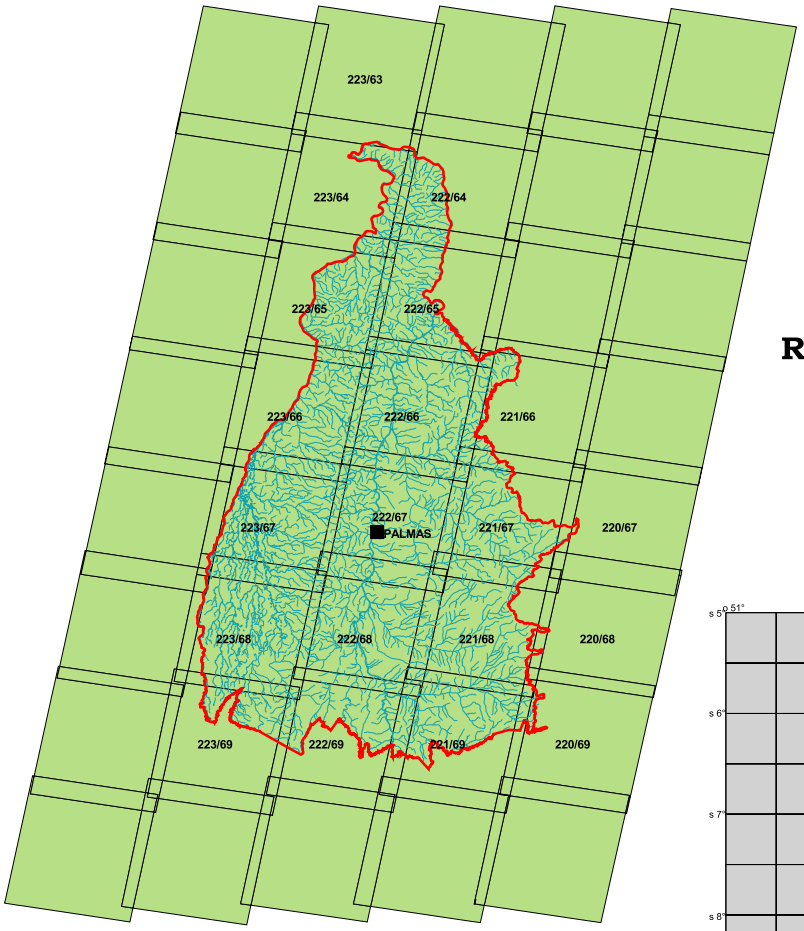
CARTOGRAPHIC CONVENTIONS

- Paved road
- Railroad
- Planned railroad
- Perennial and intermittent rivers
- Lake and dam
- Planned lakes and dams
- Transposition of waters to the Northeast (planned)

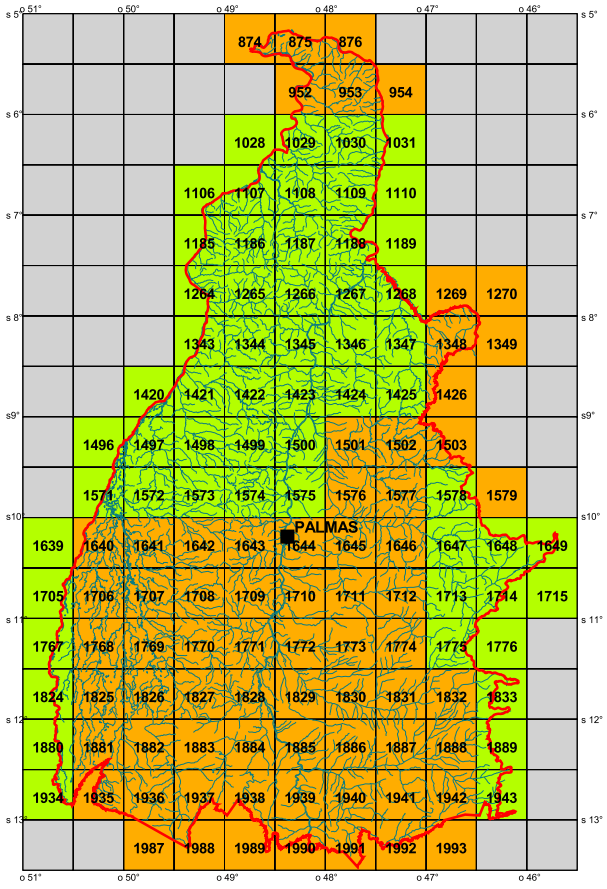
SEPLAN
PLANNING AND ENVIRONMENT SECRETARIAT

ZONEAMENTO ECOLÓGICO-ECONÔMICO DO TOCANTINS
SEPLAN/DZE

TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT



LANDSAT WORLD REFERENCE SYSTEM



INDEX MAP
Scale 1:100.000

Executed by DSG

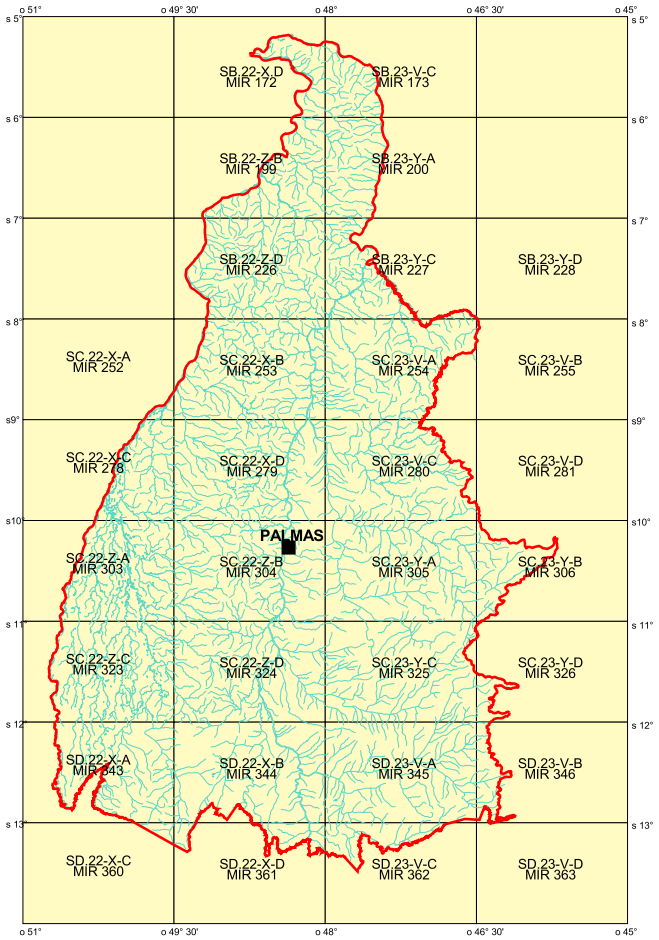
Executed by IBGE

SEPLAN
PLANNING AND ENVIRONMENT SECRETARIAT

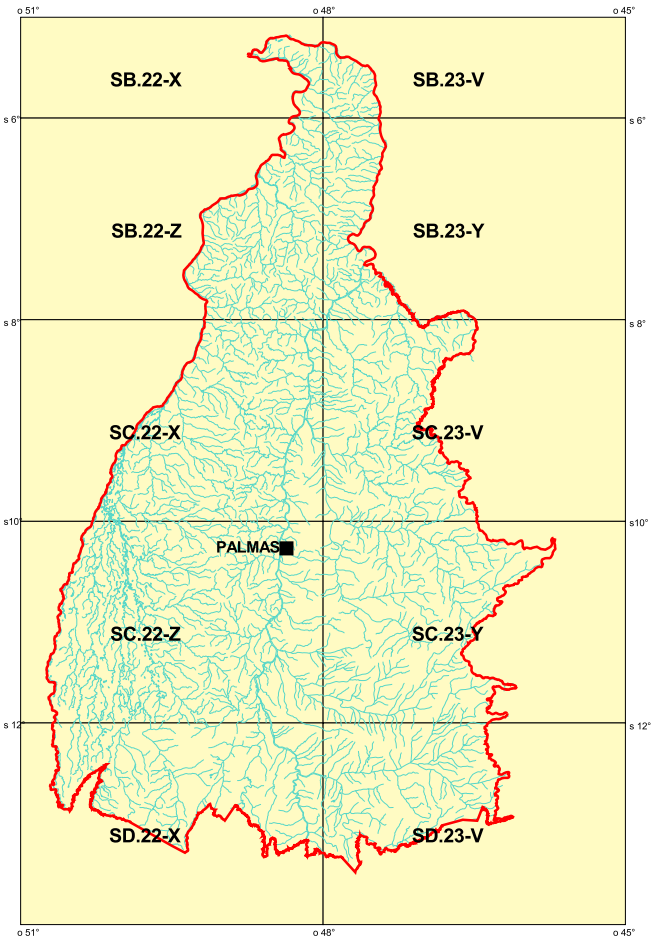
ZONEAMENTO ECOLÓGICO-ECONÔMICO DO TOCANTINS
SEPLAN/DZE

TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

INDEX MAP
Scale 1:250.000



INDEX MAP
Scale 1:500.000



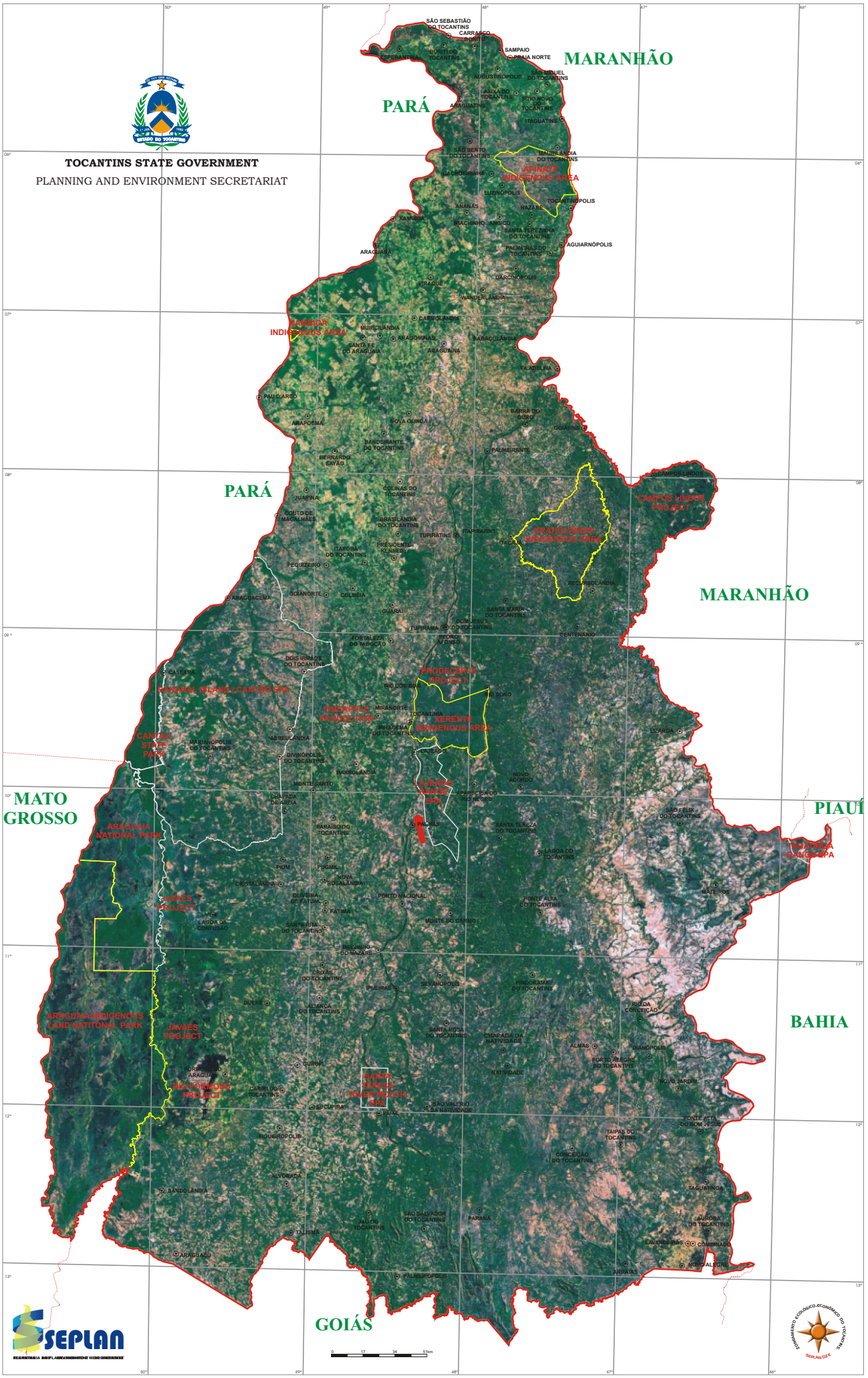
SEPLAN
PLANNING AND ENVIRONMENT SECRETARIAT

ZONEAMENTO ECOLÓGICO-ECONÔMICO DO TOCANTINS
SEPLAN/DZE

TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT

VARIABLES	1999	2002	2020
Total population (inhab.)	1,134,895*	1,300,000	2,510,000
Urban (inhab.)	820,529	988,000	2,208,000
Rural (inhab.)	314,366	312,000	302,000
Demographic density (inhab./km^2)	4.08	4.67	9.02
Illiteracy rate (%)	21.0	8.0	3.0
Infant mortality (‰)	21.0	16.0	10.0
Generation of eletric power (MW)	154.0	1,174.0	8,361.0
Area covered by EPP lakes (km^2)	56.0	676.0	8,526.0
Water volume of EPP lakes (billions of m^3)	1.5	7.3	106.5
Paved roads (km)	4,805.0	8,104.0	12,500.0
Sanitation - treated water - % of urban population attended	90	95	100
Sanitation - sewage – % of urban population attended	6	45	90
Agricultural area - Total (ha)	430,665.0	557,085.0	1,361,073.0
Agricultural area - Irrigated (ha)	66,059.0	180,000.0	390,000.0
Agricultural area - Dry farm (ha)	364,606.0	377,085.0	971,073.0
Agricultural production - Total (ton.)	644,801	2,943,000	6,247,500
Irrigated rice	288,138	900,000	1,950,000
Dry farm rice	153,520	432,000	480,000
Maize	97,106	702,000	780,000
Soybean	104,604	843,000	2,926,500
Bean	1,433	66,000	111,000
GDP (US$ 1,000.00 - US$ 1.0 = R$ 1.75)	1,115,245.0	1,492,422.0	6,690,171.0
Primary sector - Total	437,760.0	590,845.0	2,341,234.0
Vegetal production	70,354.0	81,428.0	300,960.0
Animal production	367,405.0	509,417.0	2,040,274.0
Industry	95,760,0	213,017.0	1,070,297.0
Services	581,725.0	688,560.0	3,278,640.0
Per Capita average rate (US$ 1.0 = R$ 1.75)	982.3	1,147.8	2,664.9
Revenues - Total (US$ 1,000.00 / US$ 1.0 = R$ 1.75)	661,752.0	880,792.0	4,897,100.0
Ordinary revenues	136,284.0	181,395.0	1,008,534.0
Tax revenues	381,378.0	507,614.0	2,822,271.0
Transference revenues	426,427.0	567,574.0	3,155,642.0
Other revenues	99,041.0	131,824.0	732,925.0

* IBGE. Other data produced by SEPLAN.


TOCANTINS STATE GOVERNMENT
PLANNING AND ENVIRONMENT SECRETARIAT
MARANHÃO
PARÁ
PARÁ
MARANHÃO
MATO GROSSO
PIAUÍ
BAHIA
GOIÁS
KRAHOLÂNDIA INDIGENOUS AREA
APINAYÉ INDIGENOUS AREA
KARAJÁ INDIGENOUS AREA
KRAHOLÂNDIA INDIGENOUS AREA
CAMPOS LINDOS PROJECT
PRODECER III PROJECT
PIRANAMBU PROJECT
XERENTE INDIGENOUS AREA
CANTÃO STATE PARK
CANTÃO STATE PARK
ARAGUAIA NATIONAL PARK
JAVAÉS PROJECT
JAVAÉS PROJECT
ARAGUAIA INDIGENOUS LAND NATITONAL PARK
RIO FORMOSO PROJECT
SANTA TEREZA RIVER SOUTH AREA
LAJEADO RANCH EPA
LAJEADO RANCH EPA
SANTA TEREZA RIVER SOUTH AREA
SEPLAN
ZONEAMENTO ECOLÓGICO-ECONÔMICO DO TOCANTINS
SEPLAN/ZEE