



# TOCANTINS ATLAS

Support to land management planning

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Tocantins Atlas: support to land management planning/Planning!  
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Administration of Planning and Central Management of Public Policies.  
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I. Natural resources Tocantins 2. Land use Tocantins.  
3. Land Management Tocantins.

I. Tocantins. Planning Secretariat  
II. Ecological-Economical Zoning Program.

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## **TOCANTINS STATE GOVERNMENT**

Planning Secretariat

Administration of Planning and Central Management of Public Policies  
Ecological-economical Zoning Directorate

# **TOCANTINS ATLAS**

## **Support to land management planning**

Palmas - TO  
May/2008



## GENERAL FIGURES

### CREATION

October the 5<sup>th</sup>, 1988

#### AREA

277,620 sq. km

#### NUMBER OF MUNICIPALITES

139

#### GEOGRAPHIC LOCATION

##### Latitudes

5° 10' 6" South (Upper North: Tocantins River - Tocantins/Maranhão Boundary)

13° 27' 59" South (Lower South: Traíras or Palmas Range - Tocantins/Goiás Boundary)

##### Longitudes

45° 41' 46" West Gr. (Extreme East: EPA Tabatinga Range - Tocantins/Piauí/Bahia Boundary)

50° 44' 33" West Gr. (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 BOUNDARIES

The Tocantins perimeter is about 4,163.7 km, distributed in boundaries with the following 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

##### Average Annual Air Temperature Range

25 °C to 29 °C

##### Average Annual Rainfall

1,200 mm to 2,100 mm

##### Average Annual Hydric Deficit

300 mm to 600 mm

##### Average Annual Hydric Excess

150 mm to 650 mm

#### MAIN RIVERS

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

#### HIGHEST POINT

1340 m (Traíras or das Palmas Range, Goiás boundary)

#### LOWEST POINT

90 m (Esperantina Municipality, Pará boundary)



## FOREWORD

The fifth edition of the Tocantins Atlas is the result of another action that the Tocantins Government is taking to make known the geographic data base of the State's natural resources, devised and updated for the territorial management that is being planned for the State. The Tocantins Atlas brings a wealth of knowledge that is required for the promotion of the State's economic and social development, presently highlighted in the national and international scenarios, under the standpoint of environmental accountability.

The Tocantins Atlas has been devised by a qualified technical staff, aiming to unveil the peculiarities of the Tocantins territory, with a wealth of detail, which will systematically depict the exuberance of its natural resources, its tourism and production potential, its conservation units, Indian lands and its infrastructure.

The advancement of territorial management is a commitment of the present Government, who has as a priority boosting sustainable development, encouraging production activities, implementation of infrastructure, the preservation and conservation of the biodiversity and of the water resources, as a way of ensuring the quality of life of the Tocantins families.

Marcelo de Carvalho Miranda  
Governor



## INTRODUCTION

Year by year SEPLAN has been directing its experiences, efforts and actions aiming to promote socio-economic growth while ensuring the conservation/preservation of the natural resources and of the cultural heritage. To this end, it is improving the systematization of the information that allows the continuous updating of the geographic data base, turning it into one of the main tools to support the decision-making process of the year by year SEPLAN has been directing its experiences, efforts and actions aiming to promote socio-economic growth while ensuring the conservation/preservation of the natural resources and of the cultural heritage. To this end, it is improving the systematization of the information that allows the continuous updating of the geographic data base, turning it into one of the main tools to support the decision-making process of the State Government.

The Tocantins Atlas, updated in this 5th edition, consolidates the systematization of a broad range of information obtained in a series of studies carried-out in Tocantins territory, highlighting the environmental zoning projects, the mapping of the special interest areas for the protection of biodiversity and of the genetic patrimony, and the interventions into the geographic space arising from infrastructure works and agricultural production. The success achieved in the SEPLAN's works is the consequence of a broad range of partnerships with other public sector institutions, private enterprises and of the direct participation of multilateral agencies, like the recent Sustainable Regional Development Project – PDRS, with the World Bank.

Conceived to support the construction of the future, this project synthesizes Tocantins geographic features and constitutes a didactic-educational and technical-scientific document, valuable for the analysis of several public and private institutions, as well as for the State Government.

The uniformity and compatibility of the legends for the several themes were done methodologically, and new products were generated, which originated a broad geographic information system, organized in levels equivalent to the 1:250,000 sheets that cover Tocantins State.

The efforts to devise a data base of this scale and nature were demanding, and were planned within a framework that employed modern technologies combined with the retrieval of data from projects executed well before Tocantins was created, like the RADAMBRASIL.

Our expectative for the next steps, using the technical and operational expertise got from the previous works done, is the extension of the knowledge about the natural and socio-economic resources and the consolidation of a territorial management system, characterized by efficient tools applicable to Tocantins State peculiarities.

José Augusto Pires Paulo  
Planning Secretary

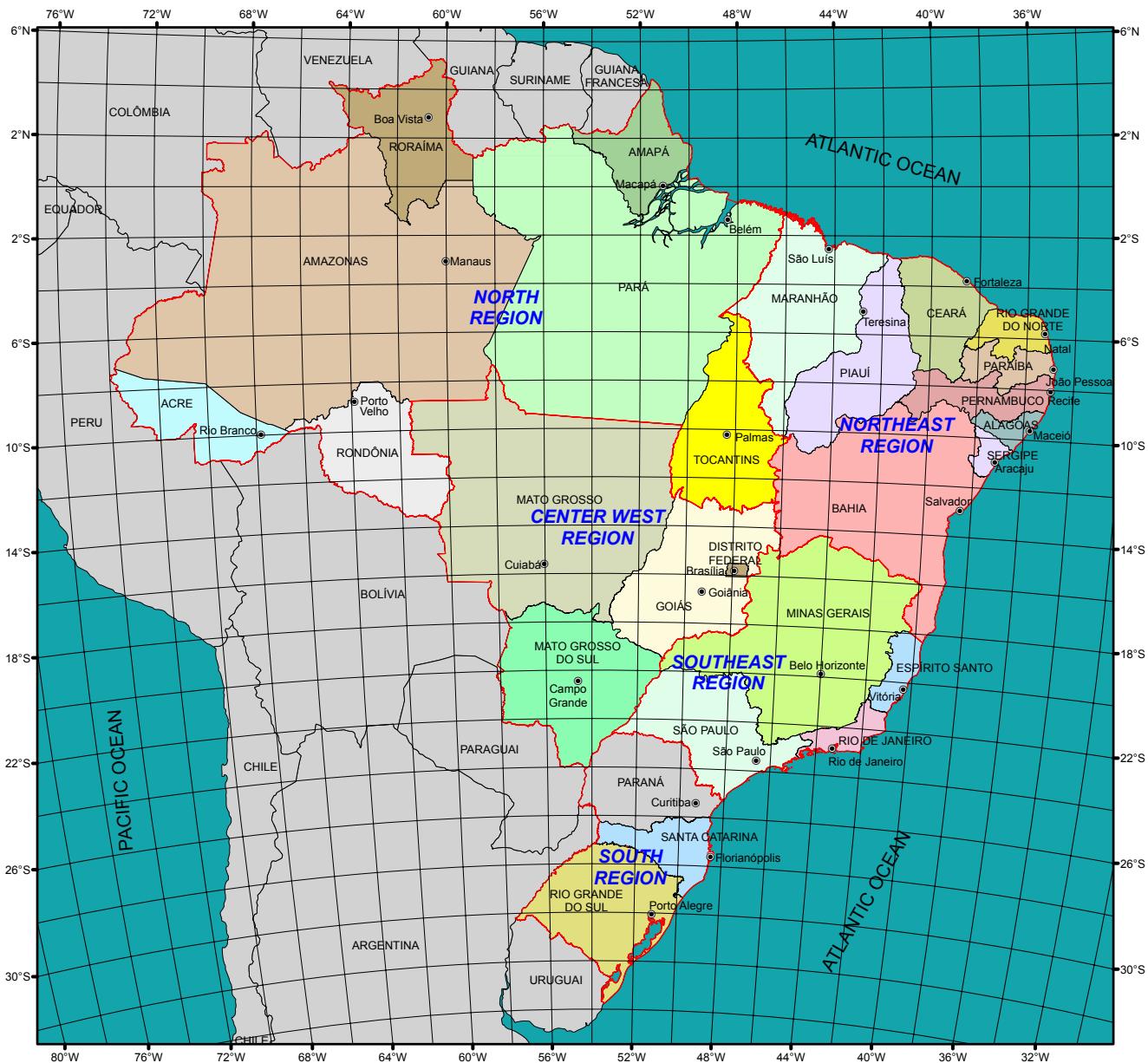


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## FEDERATIVE REPUBLIC OF BRAZIL Political Map



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

400 200 0 400 800 1.200 km

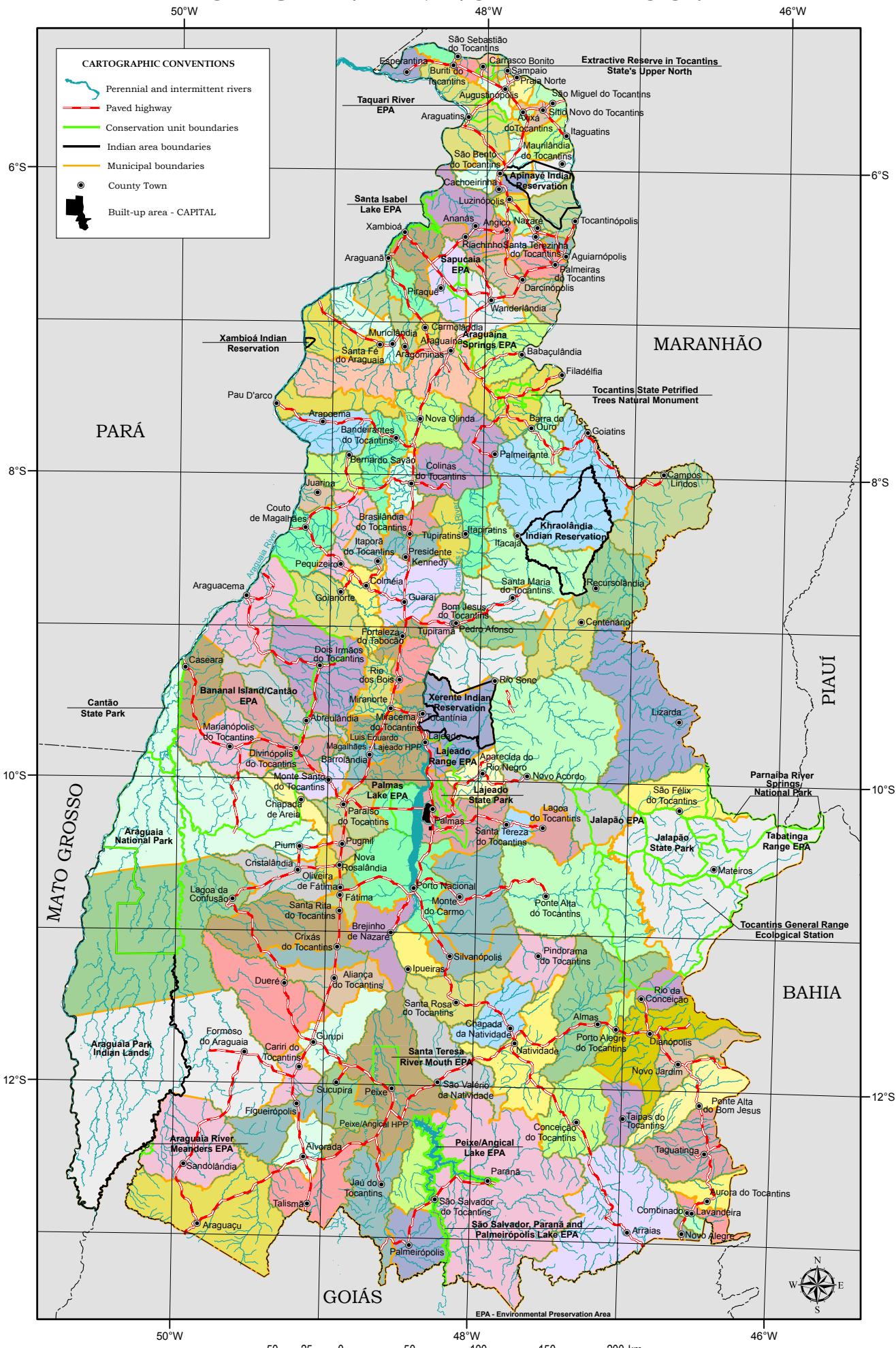
POLYCONIC PROJECTION  
Central Meridian = 54 00' 00" W. Gr.

REGION
NORTH
CENTER WEST
NORtheast
SOUTHEAST
SOUTH

AREA (Sq. km)
3,858,595
1,602,040
1,548,672
924,935
577,723

Tocantins, with 277,620 sq. km, roccupies nearly 3.3% of the National territory, and 7.2% of the North Region.  
The portion of Tocantins belonging to the Legal Amazon is equivalent 5.4% of this territory.

## POLITICAL AND ADMINISTRATIVE DIVISION





Municipalities	Area (Sq. Km)	Population (inhab.) (IBGE - 1996)	Population (inhab.) (IBGE - 2000)	Population (inhab.) (IBGE - 2007)	Year of Creation
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**REGION I - ARAGUATINS**

Aragatins	<b>2,627</b>	<b>22,558</b>	<b>26,010</b>	<b>25,973</b>	<b>1948</b>
Cachoeirinha	352	2,039	2,023	2,171	1993
Esperantina	504	5,963	7,623	8,134	1993
São Bento do Tocantins	1,105	2,834	3,738	4,447	1993
São Sebastião do Tocantins	287	3,516	3,669	4,244	1963

**REGION II - AUGUSTINÓPOLIS**

Augustinópolis	<b>414</b>	<b>13,924</b>	<b>12,964</b>	<b>14,800</b>	<b>1982</b>
Aixixá do Tocantins	150	9,698	8,827	8,917	1963
Buriti do Tocantins	250	7,599	7,842	8,164	1988
Carrasco Bonito	195	2,727	3,218	3,314	1993
Praia Norte	289	5,149	6,781	7,060	1988
Sampaio	201	2,829	2,801	3,672	1988
São Miguel do Tocantins	399	8,304	8,486	10,221	1993
Sítio Novo do Tocantins	324	10,114	9,488	9,302	1963

**REGION III - TOCANINÓPOLIS**

Aguianópolis	235	...	3,145	3,995	1997
Angico	439	2,755	2,889	3,169	1993
Darcinópolis	1,549	3,905	4,273	5,130	1993
Itapuã	740	6,492	6,386	6,074	1945
Luzinópolis	280	...	2,021	2,784	1997
Maurilândia do Tocantins	738	2,721	2,854	3,185	1993
Nazaré	396	7,156	5,150	4,528	1958
Palmeiras do Tocantins	748	3,533	4,622	4,542	1993
Santa Terezinha do Tocantins	270	...	2,455	2,291	1997
Tocantípolis	<b>1,077</b>	<b>22,810</b>	<b>22,777</b>	<b>21,334</b>	<b>1858</b>

**REGION IV - XAMBIOÁ**

Ananás	1,587	9,694	10,512	9,358	1963
Araguanã	834	3,069	4,193	5,000	1993
Piraquê	922	1,785	2,360	3,014	1993
Riachinho	611	3,502	3,670	3,691	1993
Xambioá	<b>1,634</b>	<b>11,183</b>	<b>12,137</b>	<b>10,856</b>	<b>1958</b>

**REGION V - ARAGUAÍNA**

Aragominas	1,173	3,486	6,180	5,469	1993
<b>Araguaína</b>	<b>4,000</b>	<b>105,019</b>	<b>113,143</b>	<b>115,759</b>	<b>1958</b>
Babaçulândia	1,788	8,775	10,329	10,372	1953
Carmolândia	339	1,610	2,008	2,313	1993
Filadélfia	1,998	7,407	8,218	7,787	1948
Muricilândia	1,188	3,039	2,680	2,850	1993
Nova Olinda	1,566	8,724	9,385	10,518	1980
Palmeirante	2,641	3,769	3,610	4,689	1993
Santa Fé do Araguaia	1,677	4,336	5,507	5,610	1993
Wanderlândia	1,373	10,274	10,273	9,317	1980

**REGION VI - COLINAS DO TOCANTINS**

Arapoema	1,552	8,693	7,025	6,839	1963
Bandeirantes do Tocantins	1,672	...	2,608	2,711	1997
Bernardo Sayão	927	4,319	4,551	4,518	1987
Brasilândia do Tocantins	641	1,761	1,923	2,119	1993
<b>Colinas do Tocantins</b>	<b>844</b>	<b>24,474</b>	<b>25,301</b>	<b>29,298</b>	<b>1963</b>
Couto de Magalhães	1,586	4,358	4,335	4,887	1963
Itaporã do Tocantins	919	3,214	2,522	2,989	1963
Juarina	481	2,376	2,333	2,141	1989
Pau D'Arco	1,311	4,875	4,335	4,767	1993
Pequizeiro	1,210	3,574	4,591	4,799	1987
Presidente Kennedy	770	4,146	3,759	3,680	1971
Tupiratins	895	1,313	1,365	2,007	1993

**REGION VII - GOIATINS**

Barra do Ouro	1,106	...	3,579	3,581	1997
Campos Lindos	3,240	5,102	5,638	7,615	1993
<b>Goiatins</b>	<b>6,409</b>	<b>14,207</b>	<b>11,036</b>	<b>11,639</b>	<b>1953</b>

**REGION VIII - GUARÁ**

Araguacema	2,778	4,712	5,414	5,423	1937
Colméia	991	9,141	9,352	8,759	1980
Dois Irmãos do Tocantins	3,757	7,554	7,269	7,060	1963
Fortaleza do Tabocão	622	2,315	2,242	2,101	1993
Goiianorte	1,801	5,134	4,839	5,221	1988
<b>Guaraí</b>	<b>2,268</b>	<b>20,404</b>	<b>20,018</b>	<b>21,669</b>	<b>1968</b>
Miranorte	1,032	10,774	11,802	11,858	1963
Rio dos Bois	845	2,042	2,269	2,092	1993
Tupirama	712	...	1,179	1,405	1997

**REGION IX - PALMAS METROPOLITAN REGION**

Aparecida do Rio Negro	1,160	3,646	3,517	4,018	1987
Brejinho de Nazaré	1,724	5,932	4,877	5,295	1958
Fátima	383	4,219	3,848	3,984	1983
Ipuéiras	815	...	1,166	1,698	1997
Laicado	322	1,397	2,344	2,159	1993
Miracema do Tocantins	2,656	17,483	24,444	19,683	1948
Monte do Carmo	3,617	5,979	5,193	6,387	1963
Oliveira de Fátima	206	...	958	1,081	1997
<b>Palmas</b>	<b>2,219</b>	<b>86,116</b>	<b>137,355</b>	<b>178,386</b>	<b>1989</b>
Porto Nacional	4,450	43,365	44,991	45,289	1861
Tocantínia	2,602	5,169	5,788	6,663	1953

Municipalities	Area (Sq. Km)	Population (inhab.) (IBGE - 1996)	Population (inhab.) (IBGE - 2000)	Population (inhab.) (IBGE - 2007)	Year of Creation
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**REGION X - PEDRO AFONSO**

Bom Jesus do Tocantins	1,333	2,279	2,323	2,710	1993
Centenário	1,955	2,189	2,163	2,386	1993
Itacajá	3,051	6,549	6,815	6,386	1953
Itapiratins	1,244	3,392	3,277	3,421	1993
<b>Pedro Afonso</b>	<b>2,011</b>	<b>8,648</b>	<b>9,028</b>	<b>10,294</b>	<b>1903</b>
Recursolândia	1,217	3,051	3,138	3,665	1993
Santa Maria do Tocantins	1,410	2,187	2,226	2,673	1993

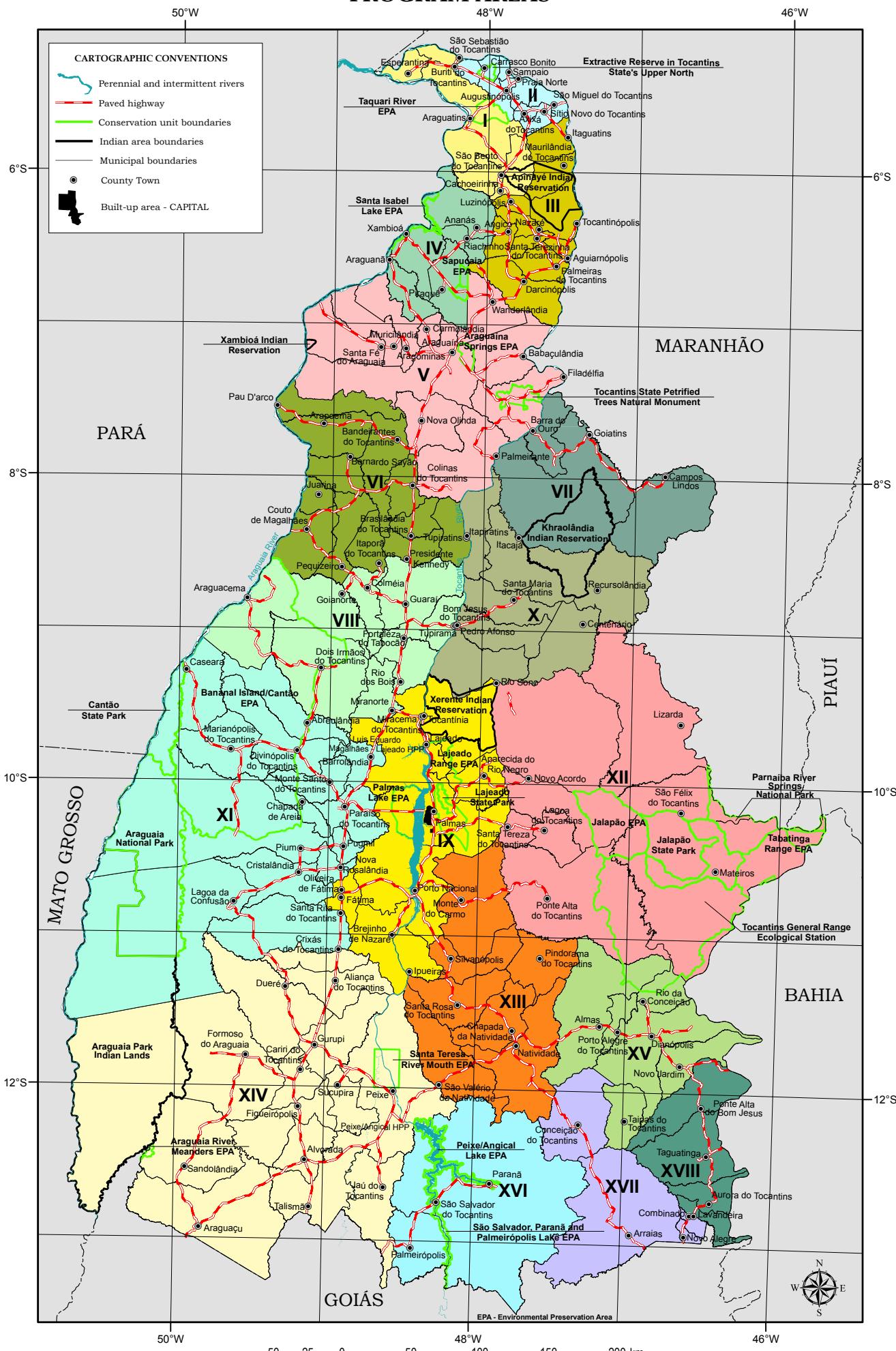
**REGION XI - PARAÍSO DO TOCANTINS**

Abreulândia	1,895	1,957	2,189	2,245	1993
Barrolândia	713	5,477	5,082	5,155	1988
Cascaera	1,692	3,625	3,660	4,667	1987
Chapada da Areia	659	...	1,270	1,239	1997
Cristalândia	1,848	8,670	7,318	6,520	1953
Divinópolis do Tocantins	2,347	6,476	5,776	6,359	1987
Lagoa da Confusão	10,565	4,956	6,168	8,220	1993
Marianópolis do Tocantins	2,091	2,605	3,332	4,473	1987
Monte Santo do Tocantins	1,092	...	1,869	1,858	1997
Nova Rosália	489	3,591	3,190	3,772	1988
<b>Paraiso do Tocantins</b>	<b>1,297</b>	<b>34,251</b>	<b>36,130</b>	<b>40,290</b>	<b>1963</b>
Pium	10,013	6,733	5,540	6,403	1953
Pugmil	402	...	1,989	2,165	1997
Santa Rita do Tocantins	3,275	...	1,852	2,260	1997

**REGION XII - NOVO ACORDO**

Lagoa do Tocantins	911	2,618	2,530	3,179	1993
Lizarda	5,723	4,085	3,787	3,634	1953
Matetôros	9,592	1,490	1,646	1,737	1993
<b>Novo Acordo</b>	<b>2,675</b>	<b>2,963</b>	<b>3,057</b>	<b>3,754</b>	<b>1958</b>
Ponte Alta do Tocantins	6,491	6,579	6,172	6,569	1958
Rio Sono	6,357	6,531	6,089	6,167	1982
Santa Terezinha do Tocantins	540	2,155	2,114	2,297	1988
São Félix do Tocantins	1,909	1,155	1		

## **PROGRAM AREAS**



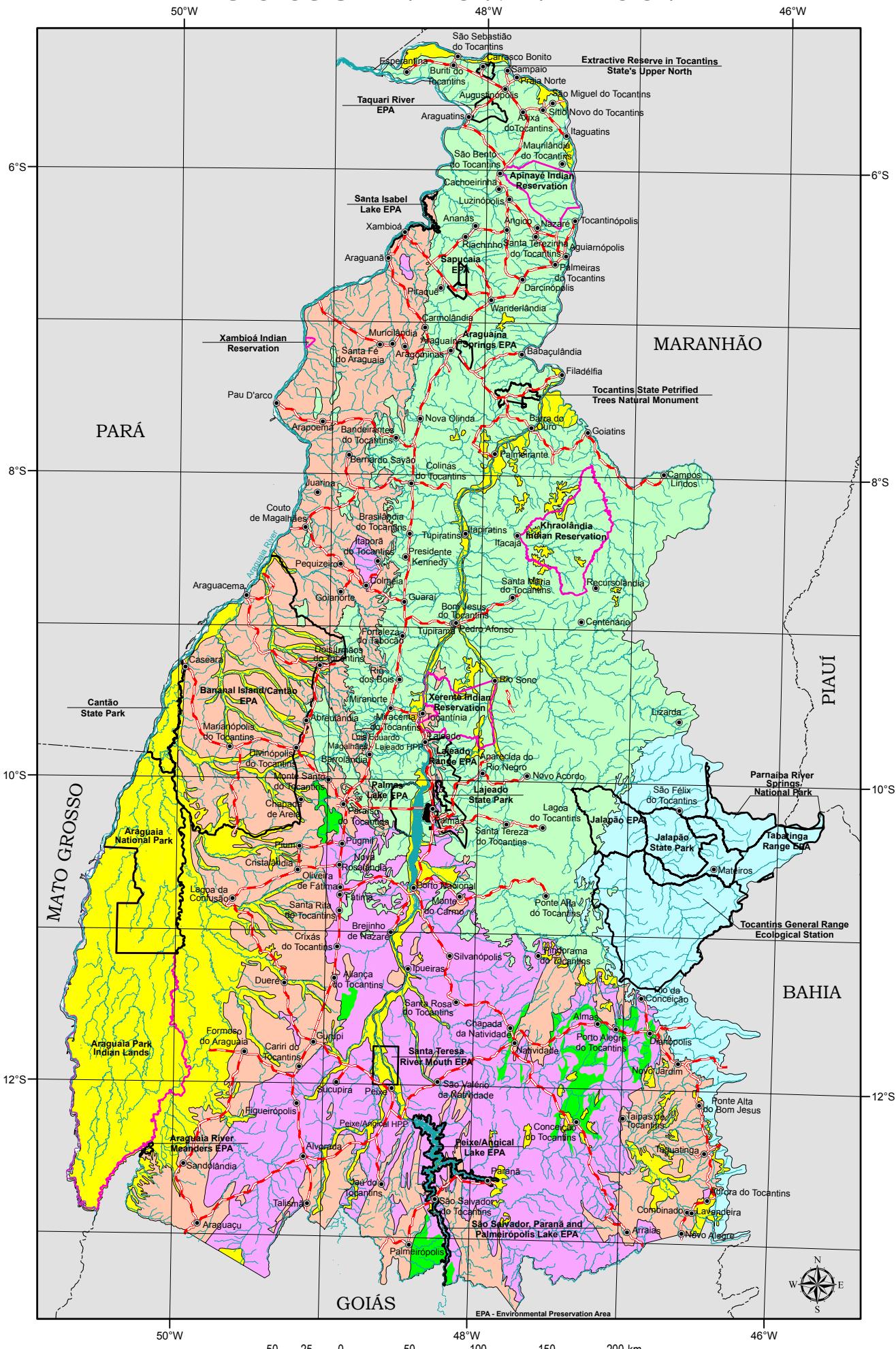


- Cenozoic Covers (45,345.8 sq. km - 16.3%)
- São Francisco River Sedimentary Basin (20,580.8 sq. km - 7.4%)
- Parnaíba River Sedimentary Basin (92,257.2 sq. km - 33.2%)
- Medium and Upper Proterozoic Folds BELT (64,084.7 sq. km - 23.0%)
- Archean and Lower Proterozoic Metavolcanic-sedimentary Sequence (3,624.3 sq. km - 1.3%)
- Archean and Lower Proterozoic Metavolcanic-sedimentary Complex (52,527.9 sq. km - 18.8%)

#### CARTOGRAPHIC CONVERSIONS

-  Perennial and intermittent rivers
-  Paved highway
-  Conservation unit boundaries
-  Indian area boundaries
-  Built-up area - CAPITAL
-  County Town
-  Geological environment boundaries

## GEOLOGICAL ENVIRONMENT DIVISION





## HUMID CLIMATE



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



**B2rA'a'** - humid climate with little or no hydric deficiency.

## SUB-HUMID CLIMATE



**C2rA'a'** - humid sub-humid climate with little hydric deficiency.



**C2wA'a'** - humid sub-humid climate with moderate hydric deficiency.

## DRY SUB-HUMID CLIMATE



**C1dA'a'** - dry sub-humid climate with moderate hydric deficiency.

## CARTOGRAPHIC CONVERSIONS



Perennial and intermittent rivers



Paved highway



Conservation unit boundaries



Built-up area - CAPITAL



County Town



Indian Reservation boundaries

## TECHNICAL NOTE

The Tocantins State climatic regionalization was done employing the Thornthwaite Method, taking into account the humidity, aridity and thermal efficiency (potential evapotranspiration) representative indexes, directly derived from rainfall, from temperature and from the other elements resulting from Thornthwaite-Mather hydric balance.

**B1wA'a'** - humid climate with moderate hydric deficiency during winter, potential evapotranspiration presenting an average annual variation between 1,400 and 1,700 mm, distributed in summer around 290 and 480 mm during the three consecutive hottest months.

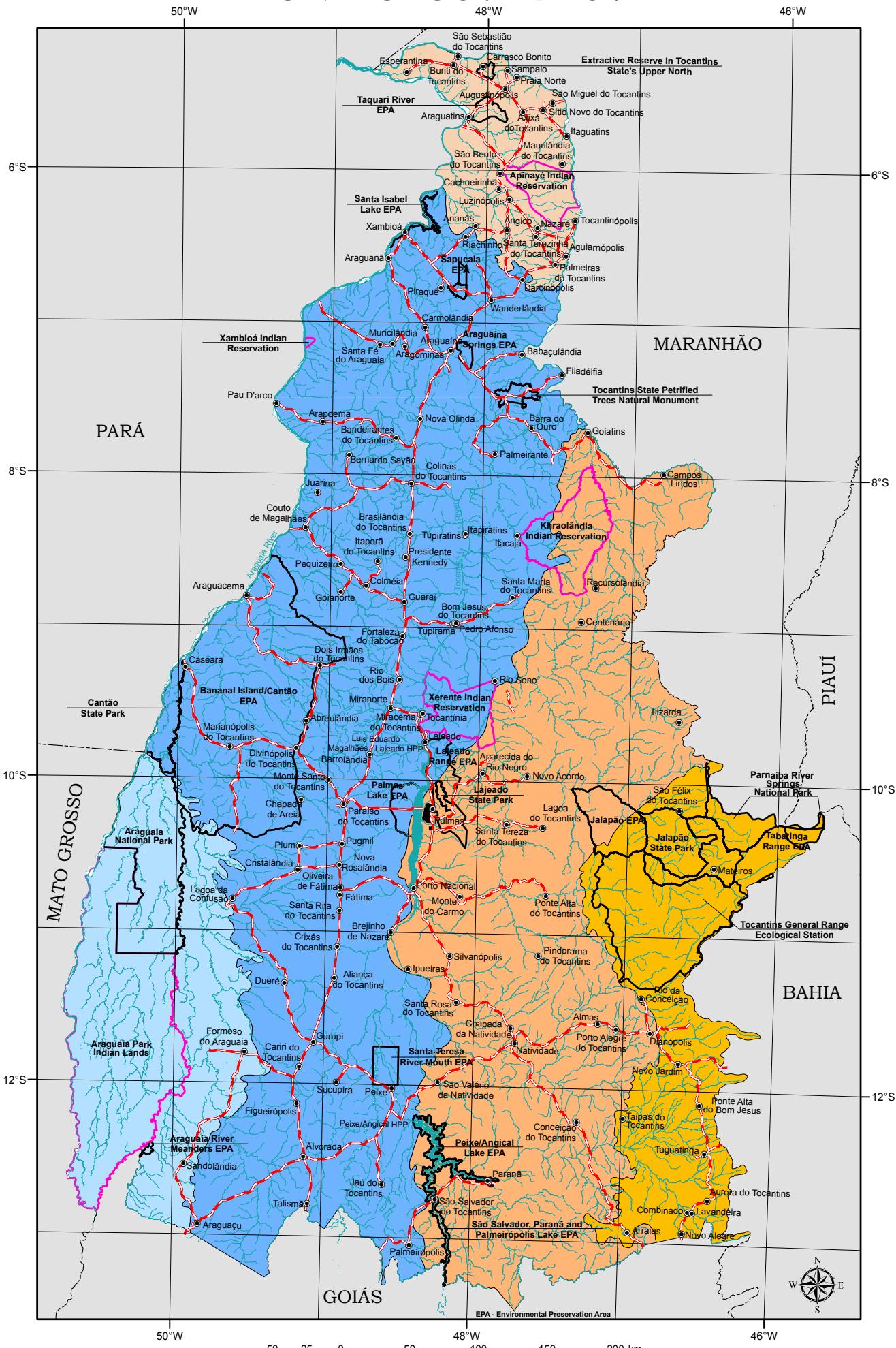
**B2rA'a'** - humid climate with little or no hydric deficiency, average annual evapotranspiration potential of 1,700 mm, distributed in summer around 500 mm during the three consecutive hottest months.

**C2rA'a'** - humid sub-humid climate with little hydric deficiency, average annual evapotranspiration potential of 1,600 mm, distributed in summer around 410 mm during the three consecutive hottest months.

**C2wA'a'** - humid sub-humid climate with moderate hydric deficiency, average annual evapotranspiration potential of 1,500 mm, distributed in summer around 420 mm during the three consecutive hottest months.

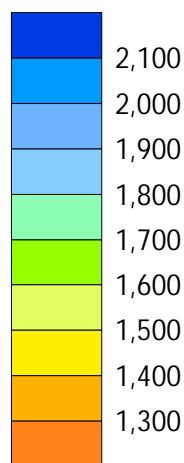
**C1dA'a'** - dry sub-humid climate with moderate hydric deficiency, average annual evapotranspiration potential of 1,300 mm, distributed in summer around 360 mm during the three consecutive hottest months.

## CLIMATIC REGIONALIZATION





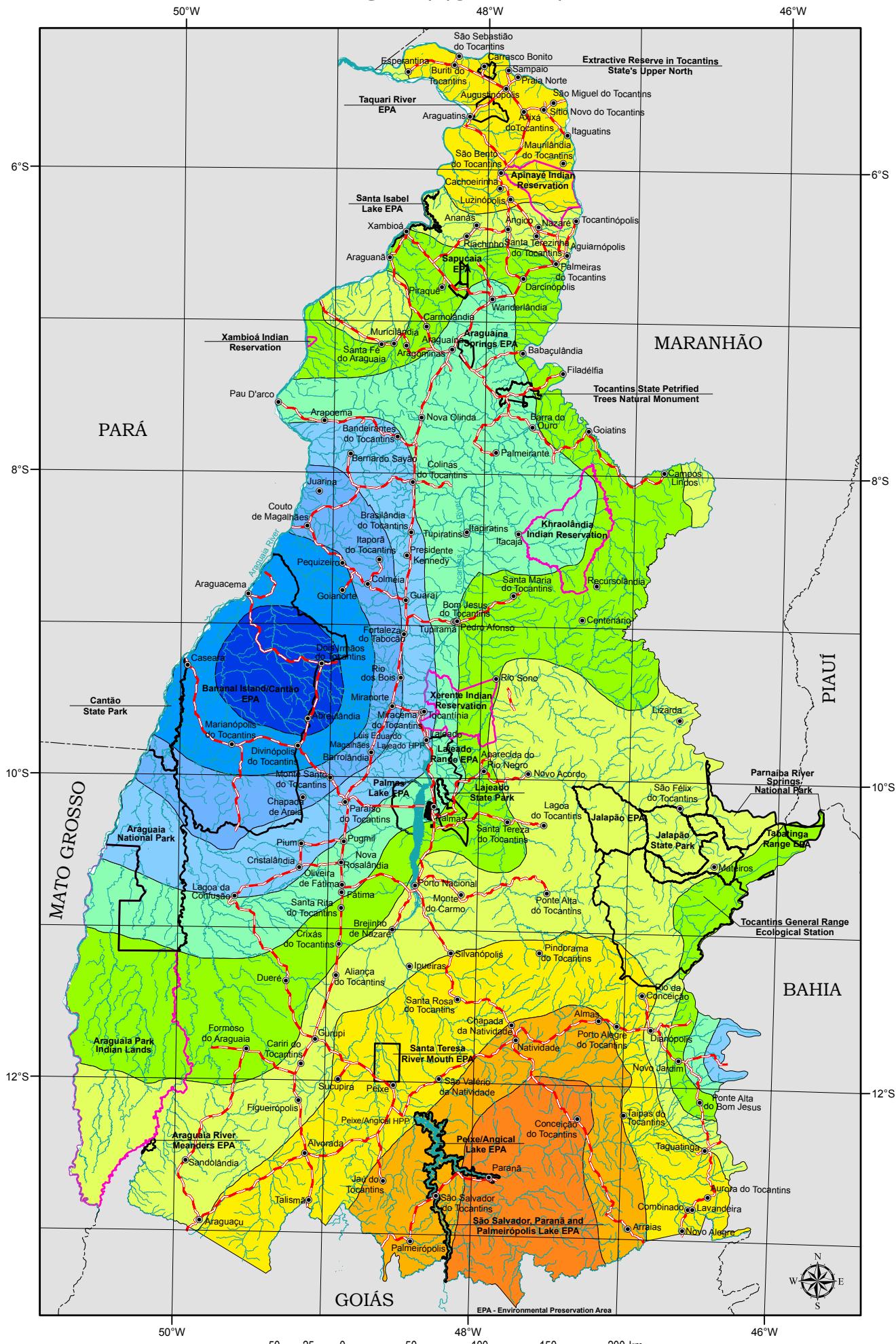
## AVERAGE ANNUAL RAINFALL (mm)



## CARTOGRAPHIC CONVERSIONS

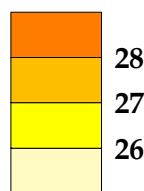
- Perennial and intermittent rivers
- Paved highway
- Conservation unit boundaries

- Built-up area - CAPITAL
- P County Town
- Indian Reservation boundaries

**AVERAGE ANNUAL RAINFALL**



## AVERAGE ANNUAL AIR TEMPERATURE (°C)

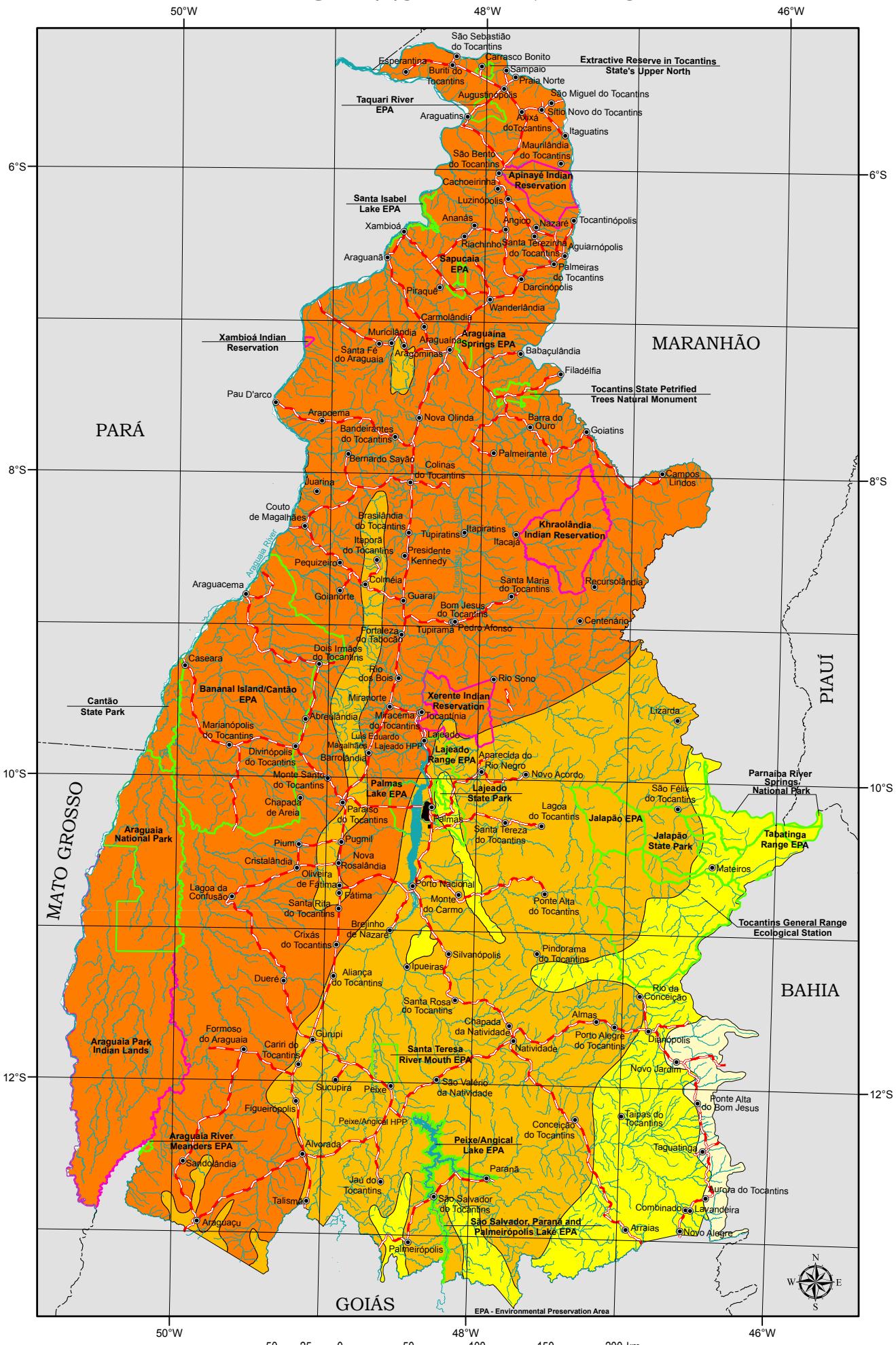


## CARTOGRAPHIC CONVERSIONS

- Perennial and intermittent rivers
- Paved highway
- Conservation unit boundaries

- Built-up area - CAPITAL
- County Town
- Indian Reservation boundaries

## AVERAGE ANNUAL AIR TEMPERATURE



## VEGETATION



Riverside woods on the banks of the Novo River, Mateiros, Jalapão.



Physiognomy of Cerrado (Savanna) field with grass-woods stratus soil coverage.



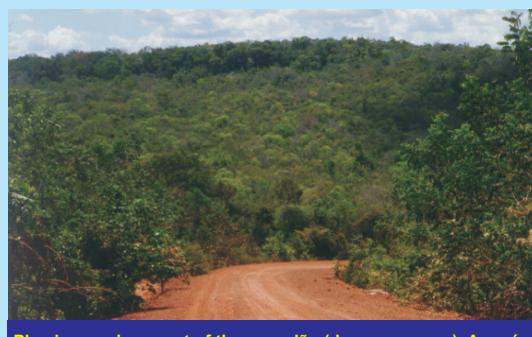
Grasslands with gallery forest and park field.



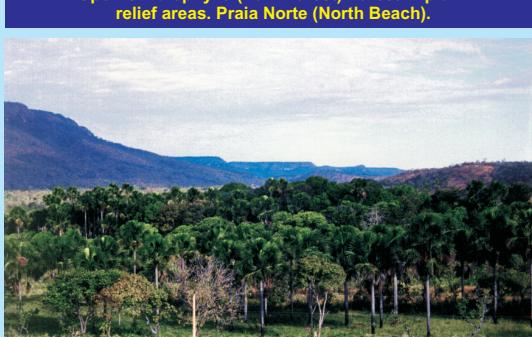
Aspect of secondary vegetation with palm trees presenting young and adult babaçu palm individuals.



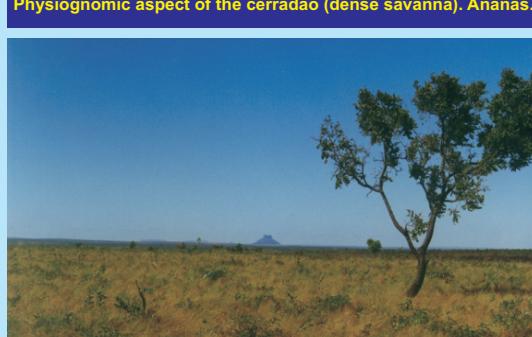
Open Ombrophylla (Rain Forest) Forest in plain relief areas. Praia Norte (North Beach).



Physiognomic aspect of the cerradão (dense savanna). Ananás.



A palm tree area with buriti palm trees. Palmas.



Grassland aspect. Mateiros, Jalapão.

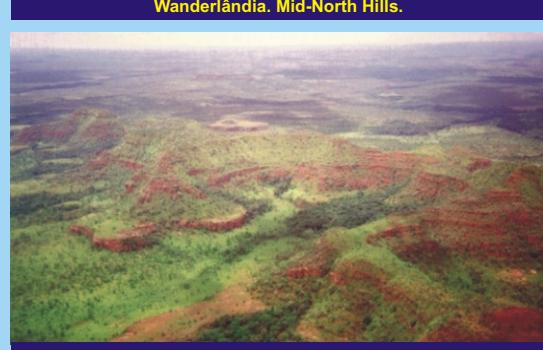
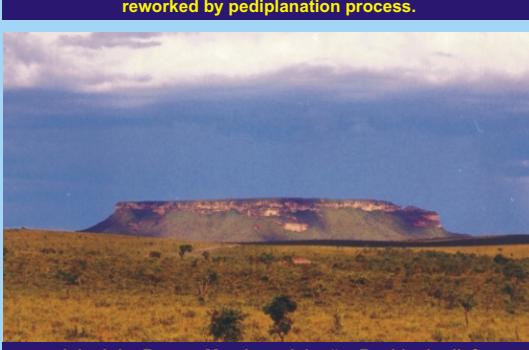
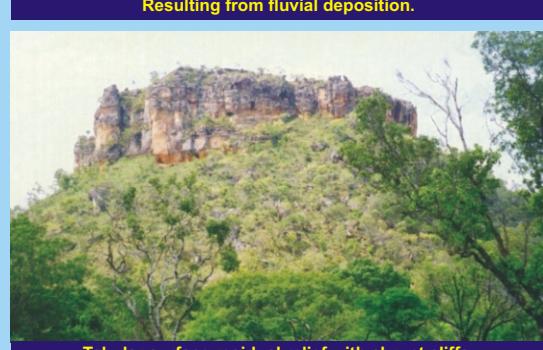
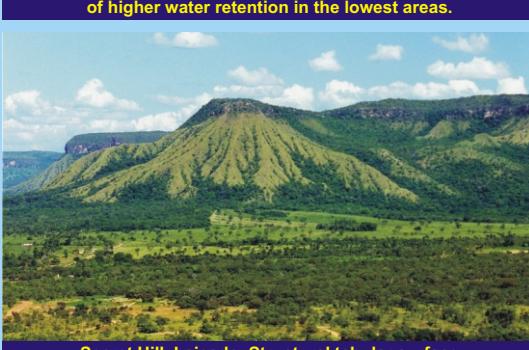
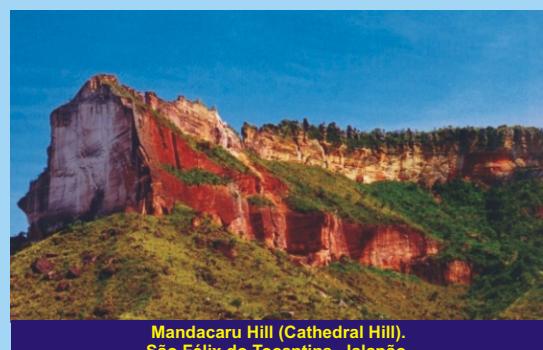


Aspect of strict sense cerrado.



Seasonal forest on the hillside of the Lajeado Range. Palmas.

## RELIEF





## STRUCTURAL FORMS

(Structural Tabular Surfaces and Structural Plateaus)

## EROSIVE FORMS

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

## TYPES OF DISSECTIONS

(Dissected in Ridges, Dissected in Mesas, Dissected in Tabular Interfluve, Dissected in Plateaus, Dissected in Hills, Dissected in Leveled Top Hills, Dissected in Gullies, Dissected in Groups of Mesas, Dissected in Ridges and Mesas, Dissected in Hills and Gullies, Dissected in Gullies and Mesas and Dissected in Hills with Imbedded Valleys)

## ACCUMULATION FORMS

(Fluvial Terraces, Fluvial Plains and Floodable Accumulation Areas)

## CARTOGRAPHIC CONVERSIONS

-  Perennial and intermittent rivers
-  Paved highway
-  Conservation unit boundaries

-  Built-up area - CAPITAL
-  County Town
-  Indian Reservation boundaries

**STRUCTURAL FORMS:** relief with structure conditioned topography. In this case, morphodynamic processes generate relief forms in conformity with geological structure. The more resistant layers surpass the surface.

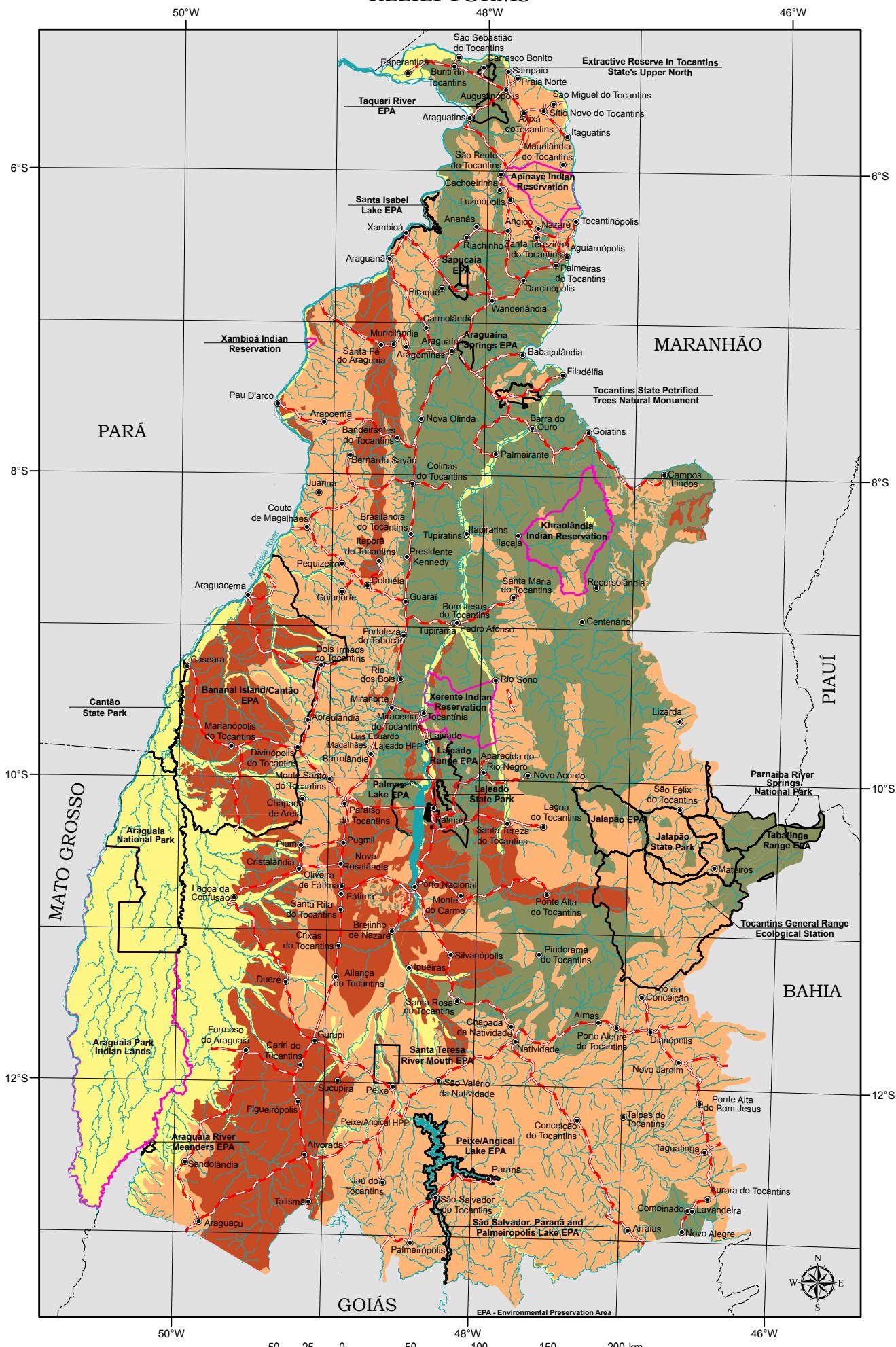
**EROSIVE FORMS:** relief forms constituted from predominantly erosive processes, where a lowering of the tops has occurred, leading to the leveling of the relief.

**DISSOCIATION FORMS:** relief forms carved by erosive agents, with a differential relief dissection, mainly along the hydrographic network.

**ACCUMULATION FORMS:** relief resulting from sediment deposits, in fluvial, swamp and lake regions, normally subject to flooding.



## RELIEF FORMS





A (declivity equal or lower than 5%): predominance of gentle slopes, on which, in most of the soils, the run-off is slow or medium. The descending slope, by itself, does not hinder or make difficult the work of any usual type of agricultural machinery. The hydric erosion presents no major problem. In some kinds of soils, simple conservation practices are recommended. For those more subject to erosion with longer ramp lengths, more complex practices may be necessary, such as terrace systems and contour practices.

B (declivity over 5% and equal or inferior to 10%): predominance of sloping surface areas, generally with undulated relief, on which the run-off, for most the soils, is medium or fast. The declivity, by itself, does not normally hinder the use of agricultural machinery. In some cases, the hydric erosion presents little problems that may be controlled by simple measures, but most of the times, complex soil conservation techniques are required in order to have lands with this declivity support intensive farming.

C (declivity over 10% and equal or inferior to 15%): predominance of inclined or hilly areas, where run-off is fast in most of the soils. Since the slope is not very complex, most of agricultural machinery can be used. Soils of this class are prone to erosion, except those very permeable and not very sandy, like some latosols. In all of these scenarios, soil conservation practices are recommended and necessary.

D (declivity over 15% and equal or inferior to 30%): predominance of inclined or strongly inclined areas, where run-off is fast to very fast in most of the soils. They can only be tilled mechanically in contour lines by simple machinery powered by animals or with limitations and special care by tracklayer tractors. Those lands are not suitable for intensive agriculture. They're suited to natural grazing fields or for silviculture.

E (declivity over 30% and equal or inferior to 45%): predominance of strongly sloped areas, where run-off is very fast. The soils can only be tilled mechanically with simple machinery powered by animals, but with serious limitations. Such lands are unsuitable for agriculture and restricted for pastures. They are suitable for silviculture.

F (declivity over 45%): predominance of steep areas, in mountainous regions, where no kind of agricultural machinery can be used. The run-off is always very fast, and the soils susceptible to hydric erosion. They cannot be mechanically tilled, not even by simple machines of animal traction; only through hand held tools and implements. These lands are unsuitable for agricultural use.

## CARTOGRAPHIC CONVERSIONS



Perennial and intermittent rivers



Built-up area - CAPITAL



Paved highway



County Town

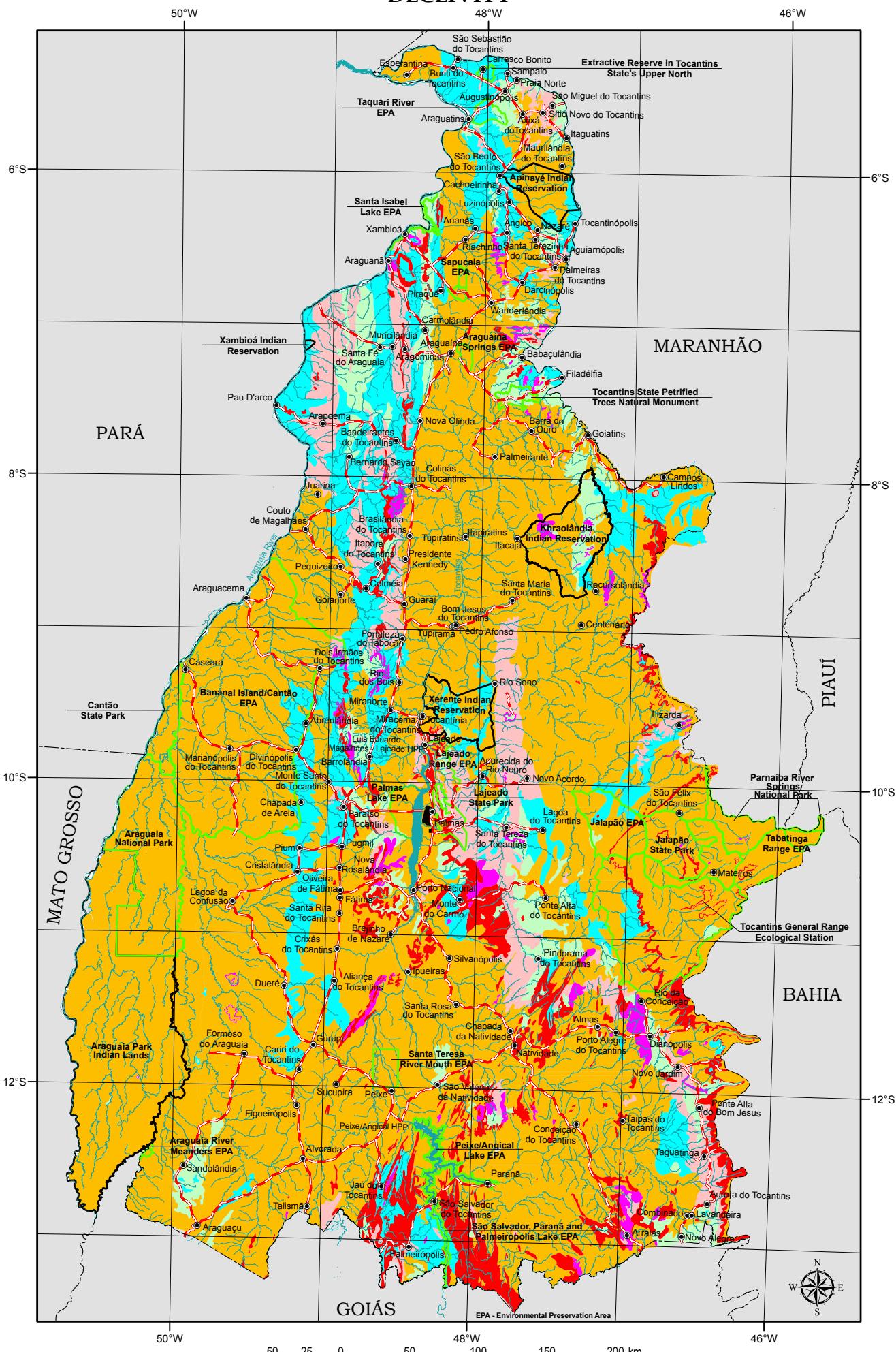


Conservation unit boundaries



Indian Reservation boundaries

## **DECLIVITY**





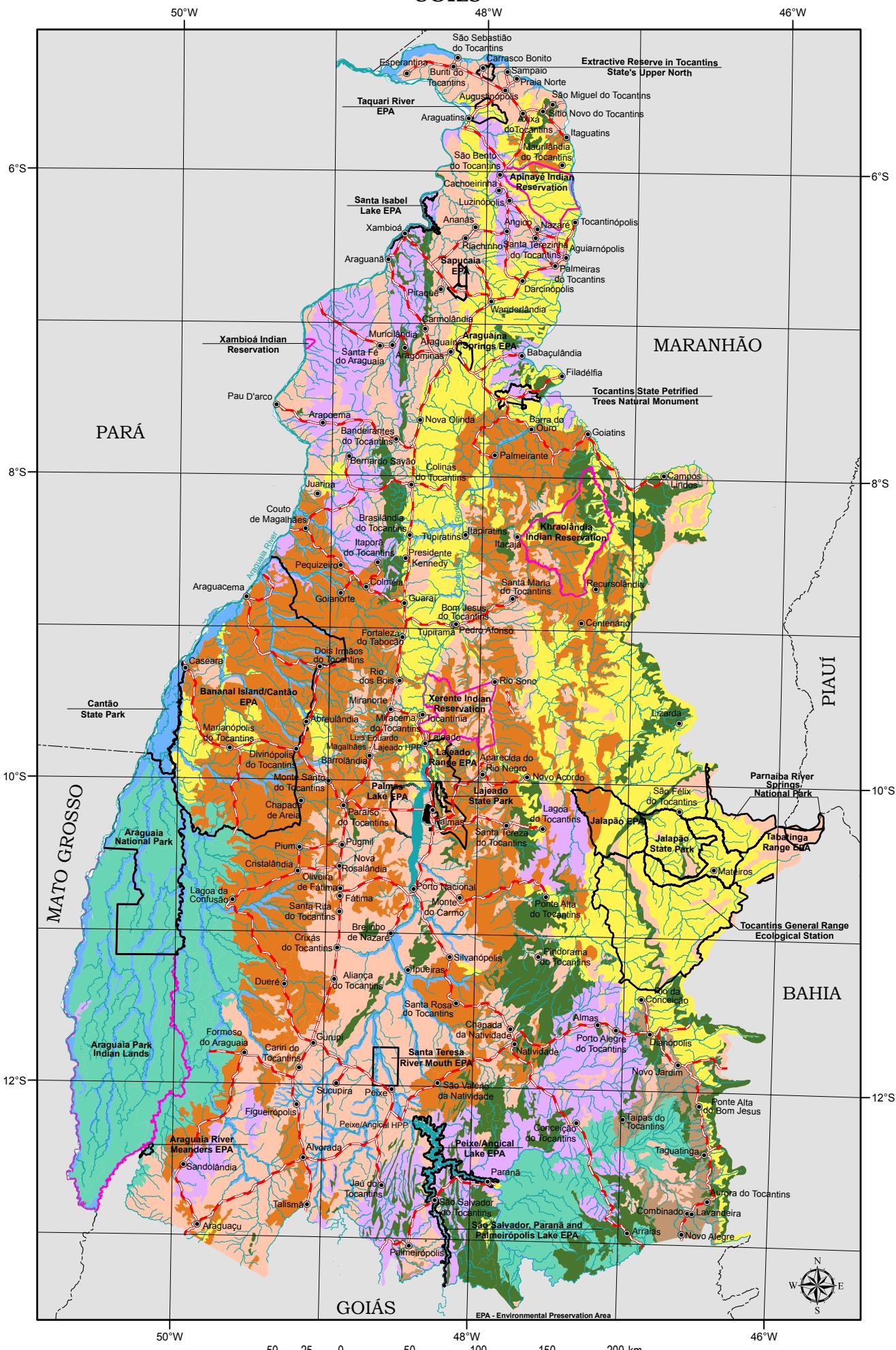
- Concretionary Soils - (63,468.1 sq. km - 22.8%)
- Latossoils - (61,648.8 sq. km - 22.1%)
- Quartzose Sands - (52,555.8 sq. km - 18.9%)
- Plinthic soils - (30,800.6 sq. km - 11.1%)
- Podzolic soils - (28,158.7 sq. km - 10.1%)
- Lithic Soils - (23,484.8 sq. km - 8.4%)
- Hydromorphic Soils - (14,089.2 sq. km - 5.1%)
- Cambisoils - (4,214.7 sq. km - 1.5%)

#### CARTOGRAPHIC CONVERSIONS

-  Perennial and intermittent rivers
-  Paved highway
-  Conservation unit boundaries

-  Built-up area - CAPITAL
- P County Town
-  Indian Reservation boundaries

SOILS





**VERY LOW TO LOW:** comprises areas composed of soils of great agricultural potential. These are deep, porous and well permeable soils - even when mostly clay, friable, situated in plain relief, with declivities that rarely go over 3%. The landscape eco-dynamic is stable (pedogenesis > morphogenesis) and the surface draining processes are diffuse and slow. (74,839.5 sq. km - 26.9%).

**SLIGHT:** comprises areas composed of soils varying between well and strongly drained. These are deep soils and are situated in soft undulate relief (predominating slopes between 3 and 8%). The landscape eco-dynamic varies between stable to transition (pedogenesis  $\geq$  morphogenesis). The run-off processes are diffuse and slow, eventually with concentrated run-offs. (110,477.8 sq. km - 39.7%).

**MODERATE:** comprises areas composed of soils varying between deep to shallow, with permeable profiles and little differences between horizons. They normally occur in undulated relief (8 to 20% declivity). The landscape eco-dynamic transitional (pedogenesis  $\approx$  morphogenesis). The run-off processes are diffuse and slow, predominating the concentrated type. (25,803.8 sq. km - 9.0%).

**STRONG:** most of this class soils are shallow, with moderate drainage that have few aggregating agents and a bulk structure, without cohesion at the surface horizon (A). Organic matter is unexpressive and restricted to this horizon. They usually occur on heavily undulated relief (slopes mainly from 20 to 45%) and have a somewhat restricted permeability, which makes them prone to erosion. The landscape eco-dynamic is unstable (pedogenesis < morphogenesis). The run-off processes are diffuse and fast, concentrated, and even mass movements of collapsing, creeping and flowage can be expected. (19,648.1 sq. km - 7.0%).

**VERY STRONG:** comprises areas composed of shallow to very shallow soils, with outcropping rocks. The predominant relief varies from mountainous to scarped, with declivities equal or higher than 45%. The landscape eco-dynamic is very unstable (pedogenesis << morphogenesis). The run-off processes are concentrated. The mass movements are of the sliding, landslide, creeping and flowage, with casual collapse of blocks. (34,750.2 sq. km - 12.5%).

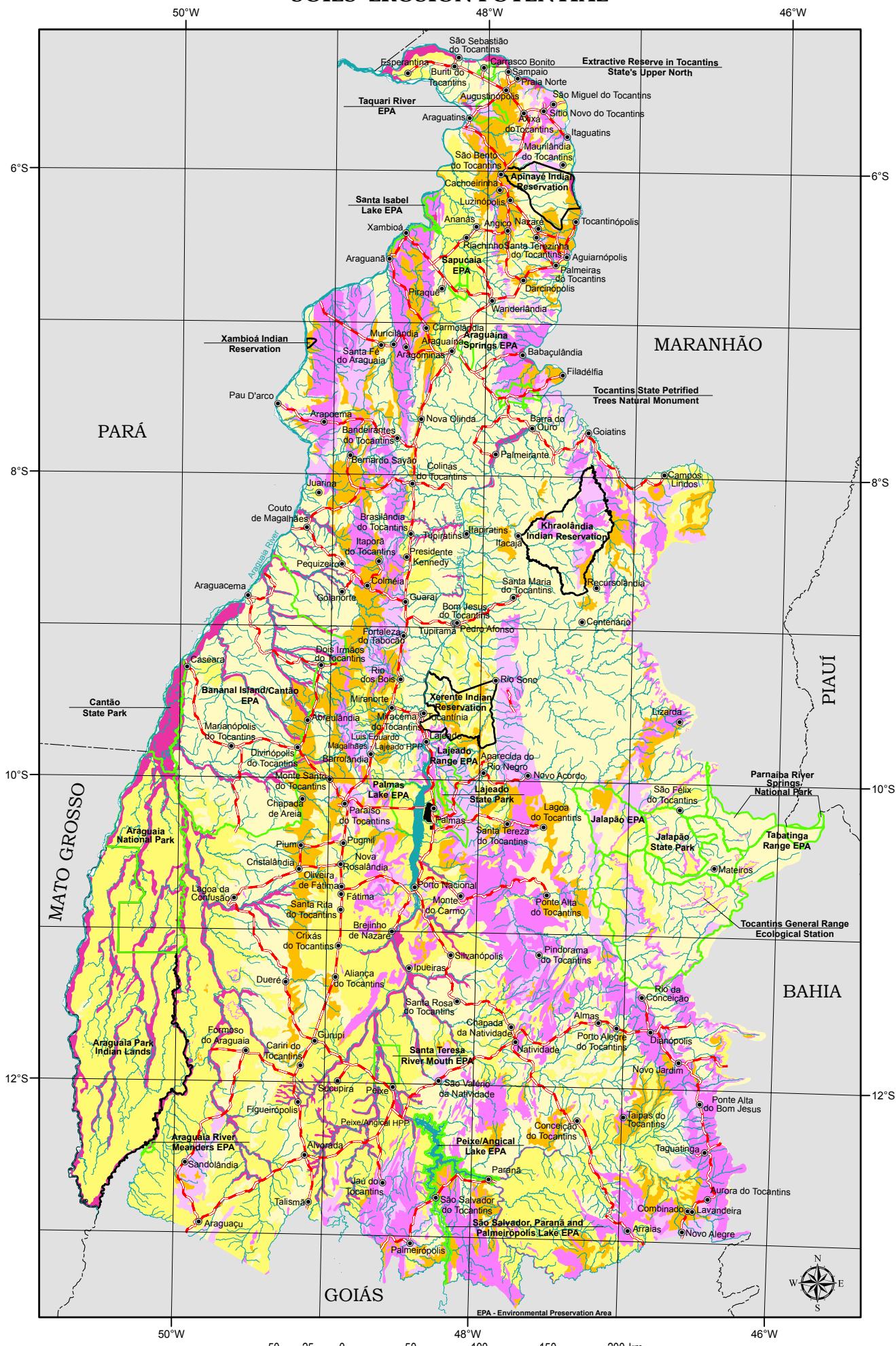
**SPECIAL:** the condition of the majority of the soils regarding this class varies from imperfectly drained to poorly drained, with normally high watertable. The landscape eco-dynamic is very unstable and of the transitional type (pedogenesis < or  $\approx$  morphogenesis). The processes involved are of concentrated run-offs along the water flow, remobilization and deposition of fine sediments, as well as diffuse and slow run-offs in the plains, fluvial terraces and lakeshores, and eventual floods. (13,621.3 sq. km - 4.9%).

#### CARTOGRAPHIC CONVENTIONS

- Perennial and intermittent rivers
- Paved highway
- Conservation unit boundaries

- Built-up area - CAPITAL
- County Town
- Indian Reservation boundaries

## SOILS' EROSION POTENTIAL





- Deciduous Seasonal Forest (1,756.9 sq. km - 0.6%)**
- Semideciduous Seasonal Forest (5,272.0 sq. km - 1.9%)**
- Open Ombrophyllo (Rain Forest) Forest (15,195.5 sq. km - 5.4%)**
- Dense Ombrophyllo (Rain Forest) Forest (11,836.4 sq. km - 4.3%)**
- Cerrado (Savanna) (244,359.9 sq. km - 87.8%)**

#### CARTOGRAPHIC CONVERSIONS

- |   |   |
|---|---|
|  Perennial and intermittent rivers |  Built-up area - CAPITAL         |
|  Paved highway                     |  County Town                     |
|  Conservation unit boundaries    |  Indian Reservation boundaries |

**DECIDUAL SEASONAL FOREST REGION:** this region presents a type of vegetation with large discontinuous areas, from north to south, between the Open Ombrophyllo (Rain Forest) Forest and the Savanna, and from east to west, between the Semideciduous Seasonal Forest and the Prairie Savanna (caatinga), where the vegetation's deciduous feature is reinforced by the substrate's hydric availability. It occurs under the form of forest disjunctions, presenting a dominating macro or mesofanerophytes stratum predominantly caduciphollum.

**SEMIDECIDUAL SEASONAL FOREST REGION:** it's a type of vegetation predominantly constituted of fanerophytes with leaf gems protected from the drought by scales, with esclerophyllas or deciduous membranous adult leaves. Occur mainly in altitude areas and/or at the State's south and southeast.

**OPEN OMBROPHYLLO (RAIN FOREST) FOREST REGION:** this type of vegetation constitutes a transition area between the Amazon Forest and the Extra-Amazonian regions, characterized by a gradual reduction in cover density. It occurs mainly in rough relief areas and characterizes the transition between the Cerrado (Savanna) and the Dense Ombrophyllo (Rain Forest) Forest.

**DENSE OMBROPHYLLO (RAIN FOREST) FOREST REGION:** its main ecological features are in the Ombrophyllo (Rain Forest) environments that characterize the Amazon Forest floristic region. It's composed of macrofanerophytes and mesofanerophytes vegetation, as well as of abundant wooden lianes northeast region.

**CERRADO (SAVANNA) REGION:** is a region with predominantly open xerophytic vegetation, dominated and marked by an herbaceous stratum. Occurs in almost all of the State, mainly in seasonal climate (about 6 dry months), but also found in Ombrophyllo (Rain Forest) climate, where obligatorily covers leached and/or soils with aluminum.

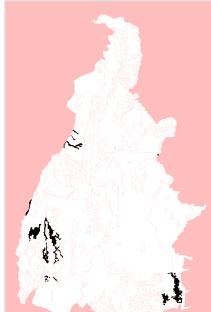


## PHYTOECOLOGICAL REGIONS

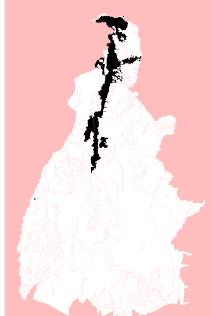
Decidual Seasonal Forest  
Legal Reserve=80%



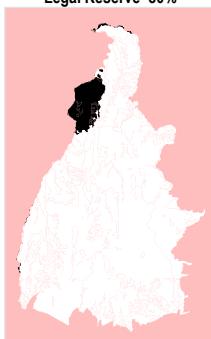
Semidecidual Seasonal Forest  
Legal Reserve=80%



Open Ombrophylla (Rain Forest)  
Forest  
Legal Reserve=80%



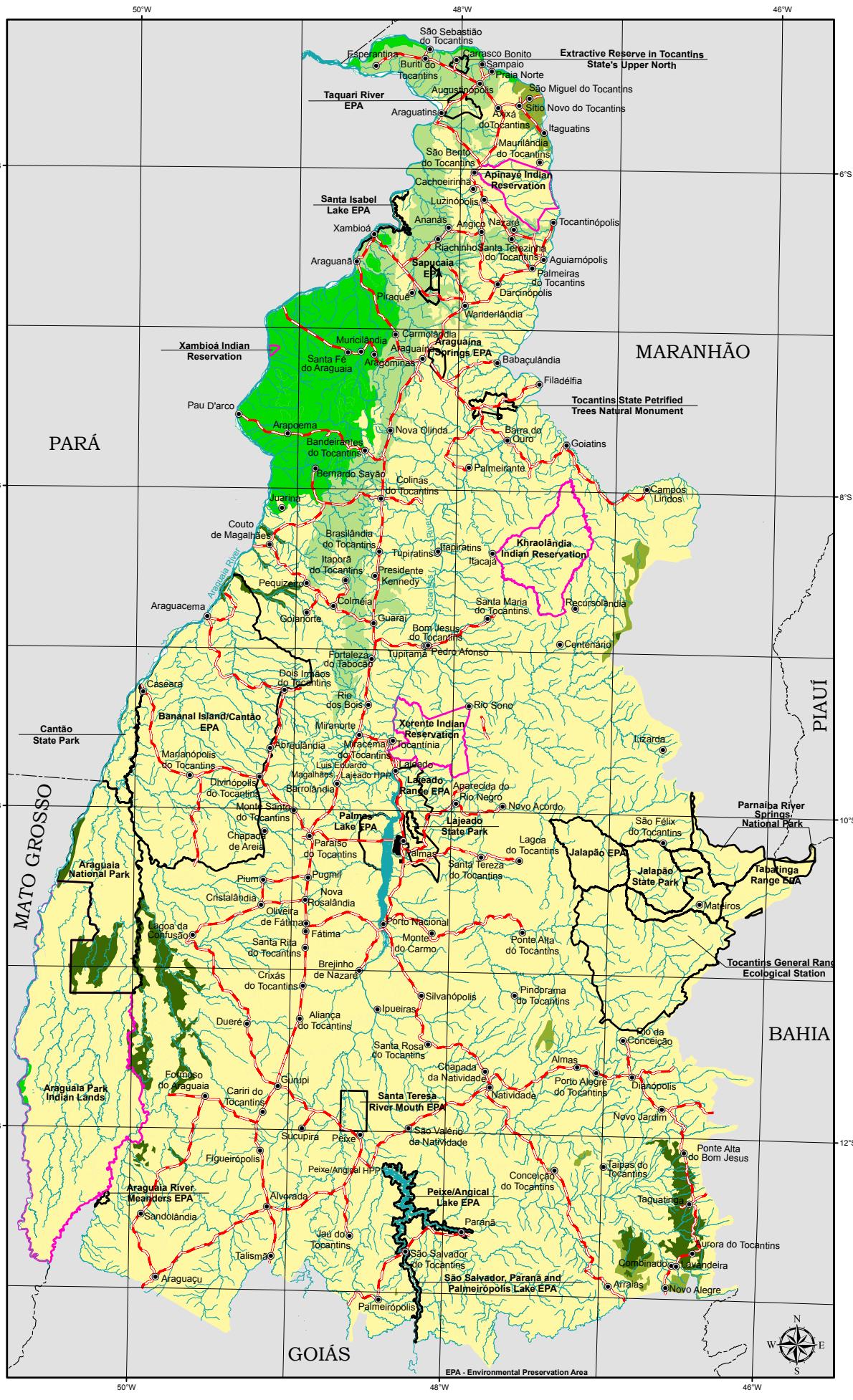
Dense Ombrophylla (Rain Forest)  
Forest  
Legal Reserve=80%



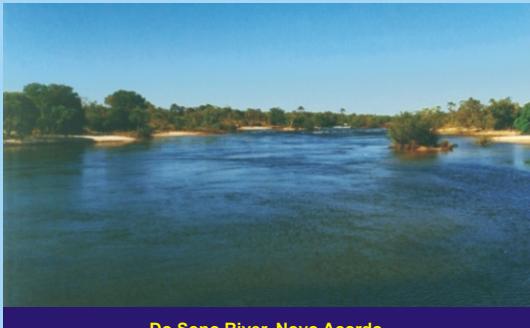
Cerrado (Savanna)  
Legal Reserve  
35% above Parallel 13  
20% below Parallel 13



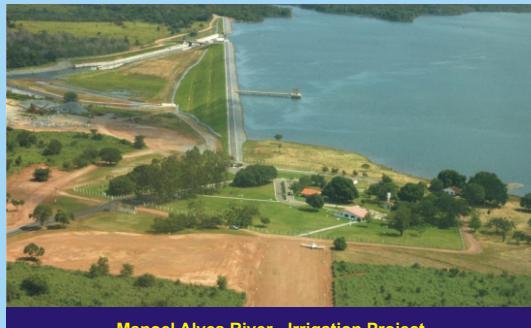
## PHYTOECOLOGICAL REGIONS



## HIDROGRAPHY



Do Sono River. Novo Acordo.



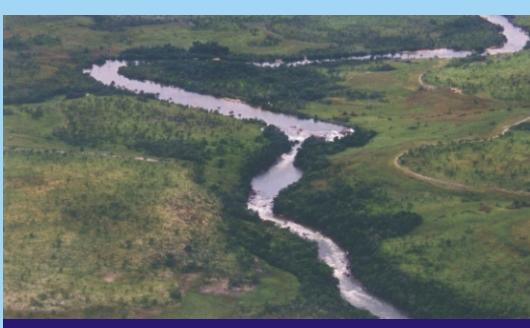
Manoel Alves River - Irrigation Project



Côco River. Caseara. Cantão Ecotourism Center. Pium.



Javaés River. Formoso do Araguaia.



Novo River. Mateiros (Jalapão).



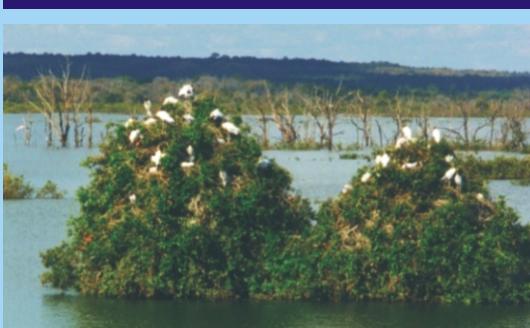
Tocantins River. Palmas.



Lakes region. Cantão Ecotourism Center. Pium.



Araguaia River. Cantão Region



Formoso River. Formoso do Araguaia.



Paraná River. Paraná.

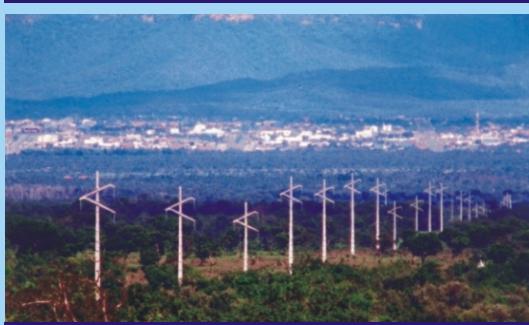
## INFRASTRUCTURE



**Isamu Ikeda Hydroelectric Power Plant. Ponte Alta do Tocantins.**



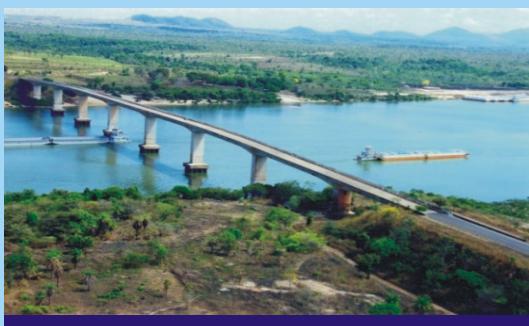
**Luis Eduardo Magalhães Hydroelectric Power Plant.  
(Lajeado HPP). Lajeado.**



**138 kV transmission line. Palmas.**



**500 kV transmission line. Eletronorte/Furnas systems  
interconnection. Miracema do Tocantins.**



**Araguaia Waterway.**



**TO-010 Road between Palmas-Lajeado.**



**Abattoir. Gurupi Industrial District.**



**Palmas International Airport**



**North-South Railway. Aguiarnópolis/Araguaina Branch.**



**Bridge Pedro Afonso-Tupirama, over Tocantins River.**



## HYDROGRAPHIC SYSTEMS

(Area - % the State total)

 ARAGUAIA RIVER (104,791.8 sq. km - 37.7%)

 TOCANTINS RIVER (172,828.2 sq. km - 62.3%)

## CARTOGRAPHIC CONVENTIONS



Perennial and intermittent rivers



Built-up area - CAPITAL



Paved highway



County Town



Conservation unit boundaries

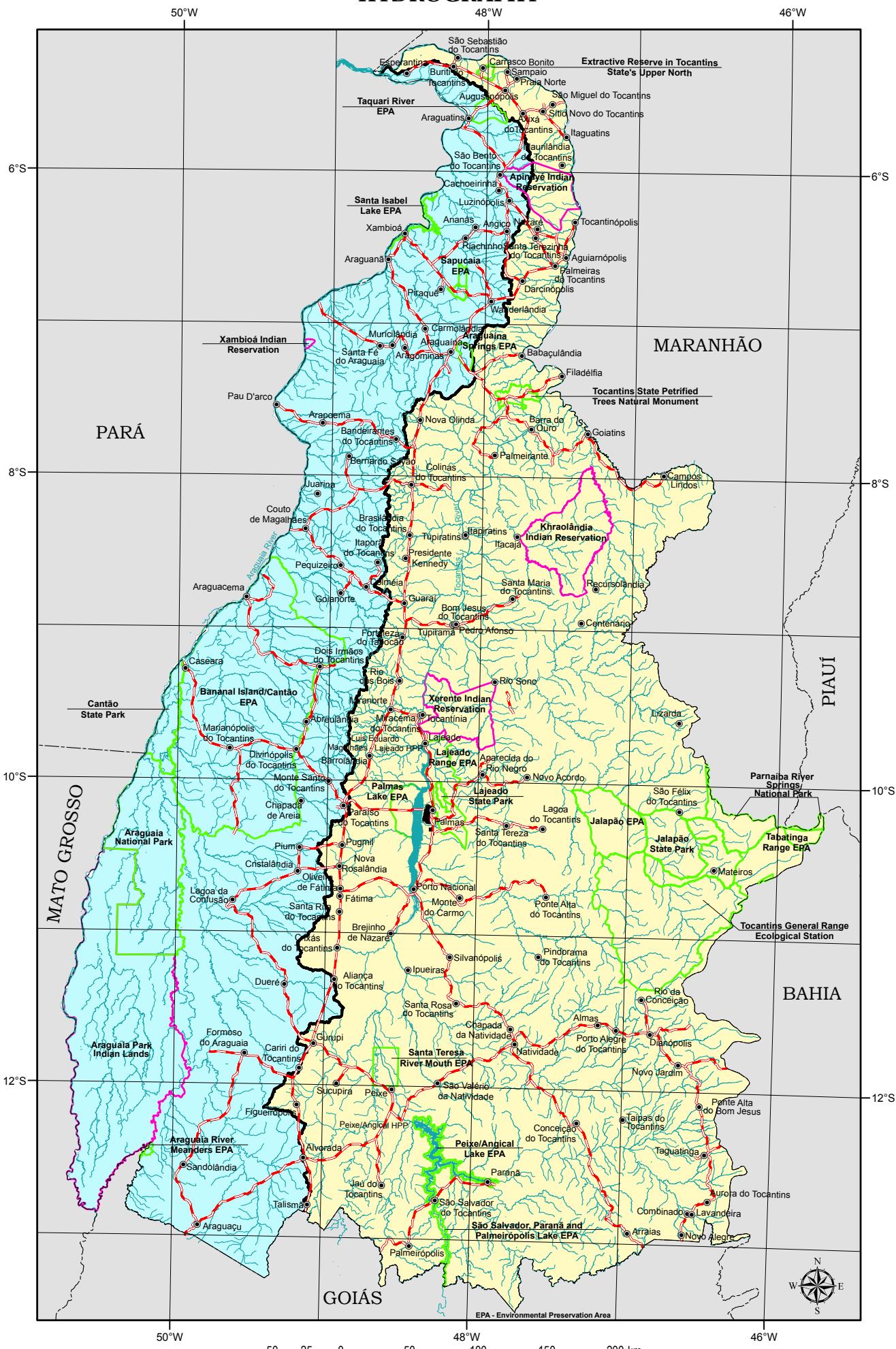


Watershed



Indian Reservation boundaries

## **HYDROGRAPHY**





## ARAGUAIA RIVER HYDROGRAPHIC SYSTEM

*(Area 104,791.8 sq. km - 37.7% of the State total)*

- A1 - Araguaia River Basin (18,063.8 sq. km - 6.5%)
- A2 - Riozinho River Basin (10,923.7 sq. km - 3.9%)
- A3 - Javaés River Basin (12,329.6 sq. km - 4.5%)
- A4 - Formoso River Basin (20,654.3 sq. km - 7.5%)
- A5 - Pium River Basin (5,044.5 sq. km - 1.8%)
- A6 - Côco River Basin (5,022.4 sq. km - 1.8%)
- A7 - Caiapó River Basin (5,382.1 sq. km - 1.9%)
- A8 - Lajeado River Basin (5,985.1 sq. km - 2.2%)
- A9 - Bananal River Basin (2,853.9 sq. km - 1.0%)
- A10 - Barreiras River Basin (1,738.2 sq. km - 0.6%)
- A11 - Cunhás River Basin (2,776.3 sq. km - 1.0%)
- A12 - Jenipapo River Basin (1,576.5 sq. km - 0.6%)
- A13 - Muricizal River Basin (3,375.6 sq. km - 1.2%)
- A14 - Lontra River Basin (3,835.9 sq. km - 1.4%)
- A15 - Corda River Basin (3,508.6 sq. km - 1.3%)
- A16 - Piranhas River Basin (1,741.3 sq. km - 0.6%)

## TOCANTINS RIVER HYDROGRAPHIC SYSTEM

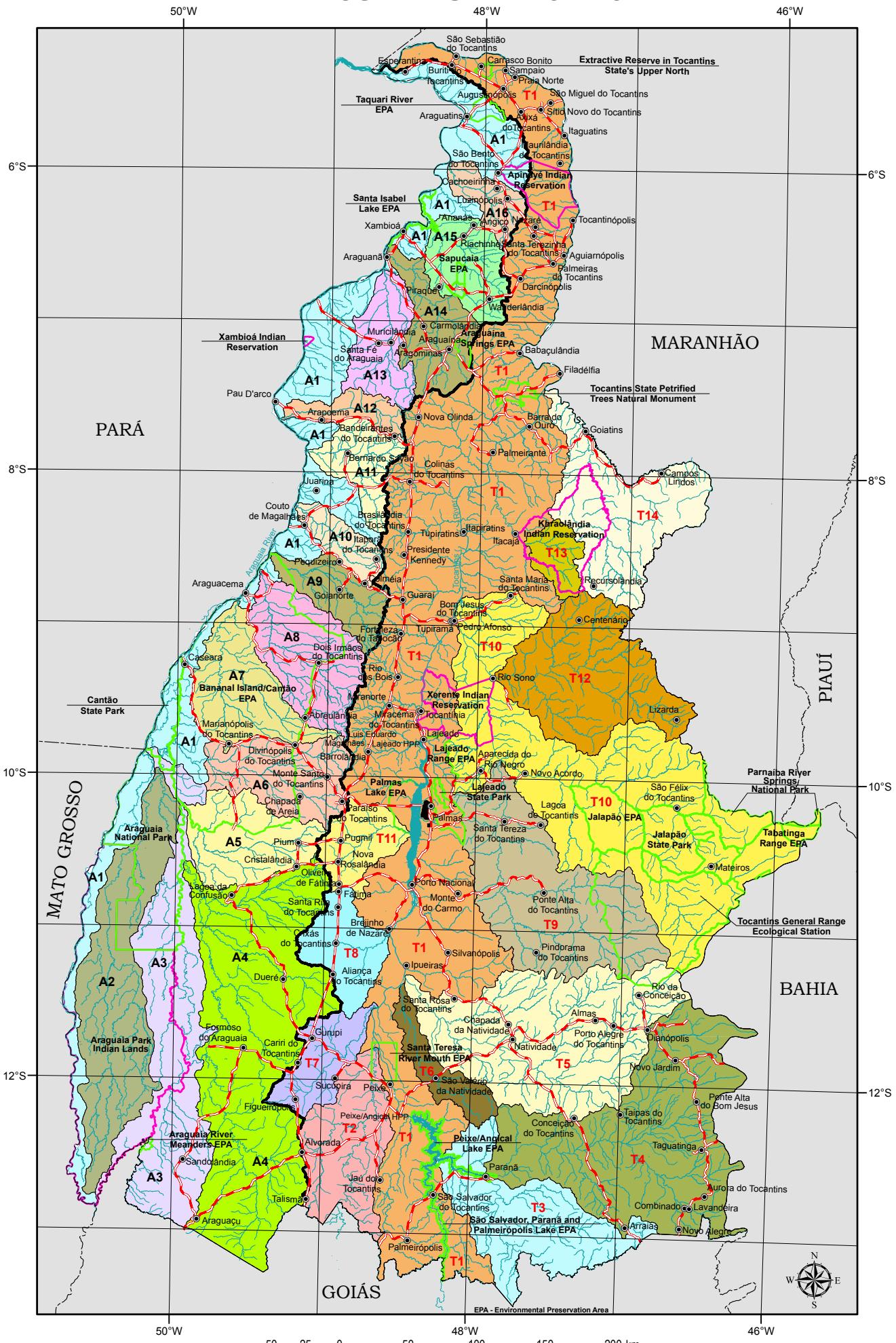
*(Area 172,828.2 sq. km - 62.3% of the State total)*

- T1 - Tocantins River Basin (57,776.7 sq.km - 20.8%)
- T2 - Santa Tereza River Basin (5,950.9 sq.km - 2.1%)
- T3 - Paraná River Basin (8,175.5 sq.km - 2.9%)
- T4 - Palma River Basin (17,055.2 sq.km - 6.1%)
- T5 - Manuel Alves da Natividade River Basin (14,917.1 sq.km<sup>2</sup> - 5.4%)
- T6 - São Valério River Basin (2,189.2 sq.km - 0.8%)
- T7 - Santo Antônio River Basin (3,057.4 sq.km - 1.1%)
- T8 - Crixás River Basin (3,407.4 sq.km - 1.2%)
- T9 - Balsas River Basin (12,352.5 sq.km - 4.5%)
- T10 - Sono River Basin (25,572.5 sq.km - 9.2%)
- T11 - Mangues River Basin (2,797.8 sq.km<sup>2</sup> - 1.0%)
- T12 - River Basin Perdida (9,522.7 sq.km - 3.4%)
- T13 - Manuel Alves Pequeno River Basin (1,552.6 sq.km - 0.6%)
- T14 - Manuel Alves Grande River Basin (8,500.7 sq.km - 3.1%)

### CARTOGRAPHIC CONVENTIONS

- |  |                                   |  |                         |
|--|-----------------------------------|--|-------------------------|
|  | Perennial and intermittent rivers |  | Built-up area - CAPITAL |
|  | Paved highway                     |  | County Town             |
|  | Conservation unit boundaries      |  | Watershed               |
|  | Indian Reservation boundaries     |  |                         |

# HYDROGRAPHIC WATERSHEDS





<b>HYDROELECTRIC POWER PLANTS (HPPs) IN OPERATION - Output (MW)</b>		<b>Estimated Reservoir Area (sq. km)</b>
Agrotrafo HPP	14.04	
Bagagem HPP	0.48	
Corujão HPP	0.68	
Diacal HPP	0.005	
Dianópolis HPP	0.005	
Fazenda Jedai HPP	0.10	
Isamu Ikeda HPP	27.60	13.16
Lajeadinho HPP	1.80	
Lajes HPP	2.06	
Luís Eduardo Magalhães HPP	902.50	630.00
Peixe Angical HPP	452.00	294.00
Ponte Alta HPP	0.28	
Sobrado HPP	0.004	
Taguatinga HPP	1.80	
Total (In Operation)	1,403.35	

#### **PROJECTED HYDROELECTRIC POWER PLANTS - Output (MW)**

Araguanã HPP	960.00	2,297.00
Caetana HPP	10.00	
Cachoeira da Velha HPP	81.00	
Fumaça HPP	5.00	
Ipueiras HPP	520.00	944.00
Manual Alves Grande HPP	134.00	
Natividade I HPP	72.00	
Novo Acordo HPP	160.00	76.33
Santa Isabel HPP	1,087.00	159.00
São Domingos HPP	315.00	
Serra Quebrada HPP	1,328.00	386.00
Sono IIIB HPP	930.00	
Tupiratins HPP	820.00	370.00
Total (Projected)	6,422.00	

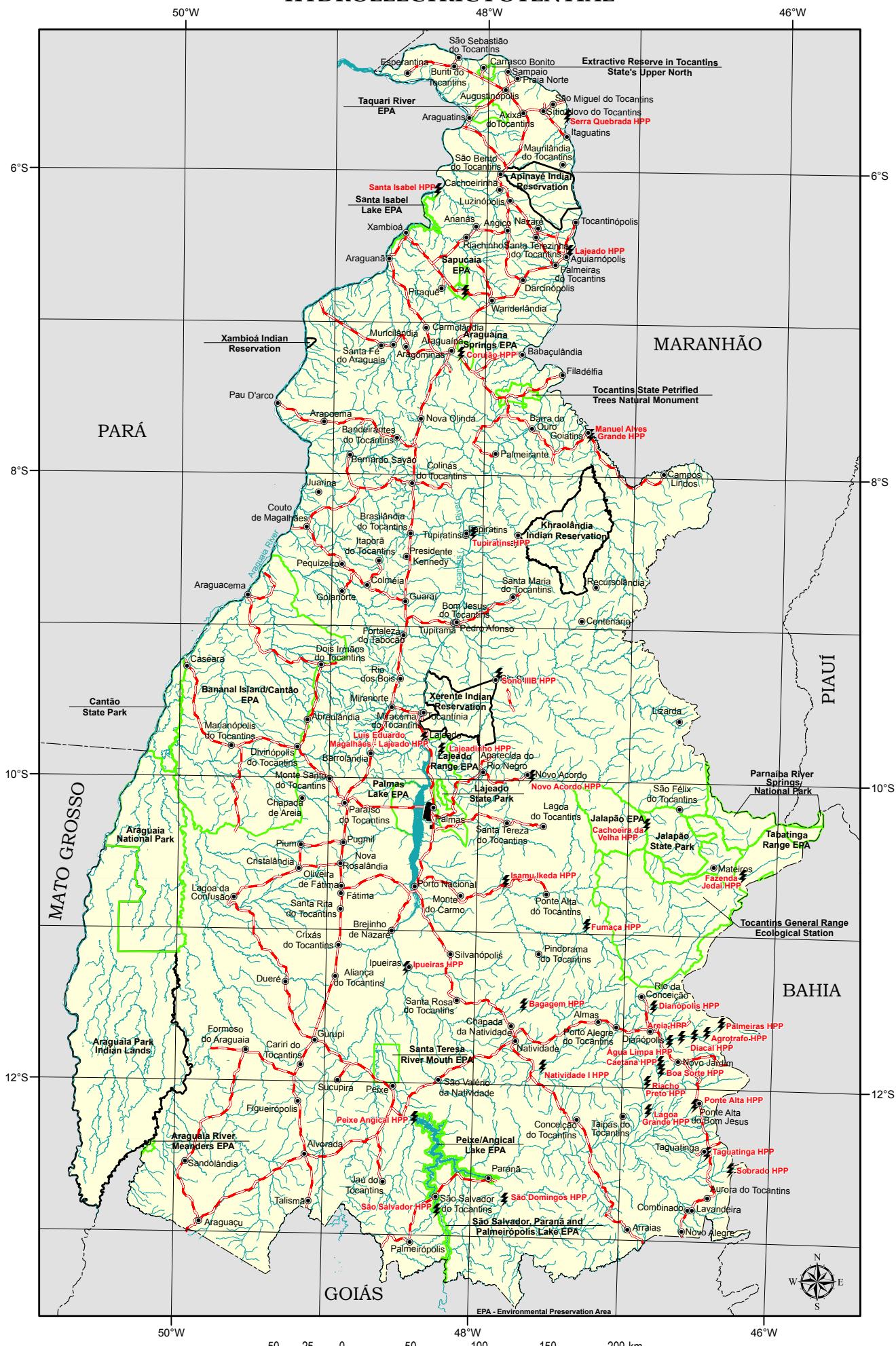
#### **HYDROELECTRIC POWER PLANTS UNDER CONSTRUCTION - Output (MW)**

Areia HPP	0.01	
Água Limpa HPP	0.01	
Boa Sorte HPP	0.02	
Estreito HPP	1,087.00	590.00
Lagoa Grande HPP	21.51	
Porto Franco HPP	0.03	
Riacho Preto HPP	0.01	
São Salvador HPP	104.00	104.00
Total (Under Construction)	1,212.59	

#### **CARTOGRAPHIC CONVENTIONS**

-  Perennial and intermittent rivers
-  Built-up area - CAPITAL
-  Paved highway
- County Town
-  Conservation unit boundaries
-  Hydroelectric Power Plant
-  Indian Reservation Limits
-  Hydroelectric Power Plant Reservoir (existing, planned and under construction)

## HYDROELECTRIC POTENTIAL





## Road

- Paved Road
- Road under paving
- Implemented Road
- Planned Road
- Dirt Road

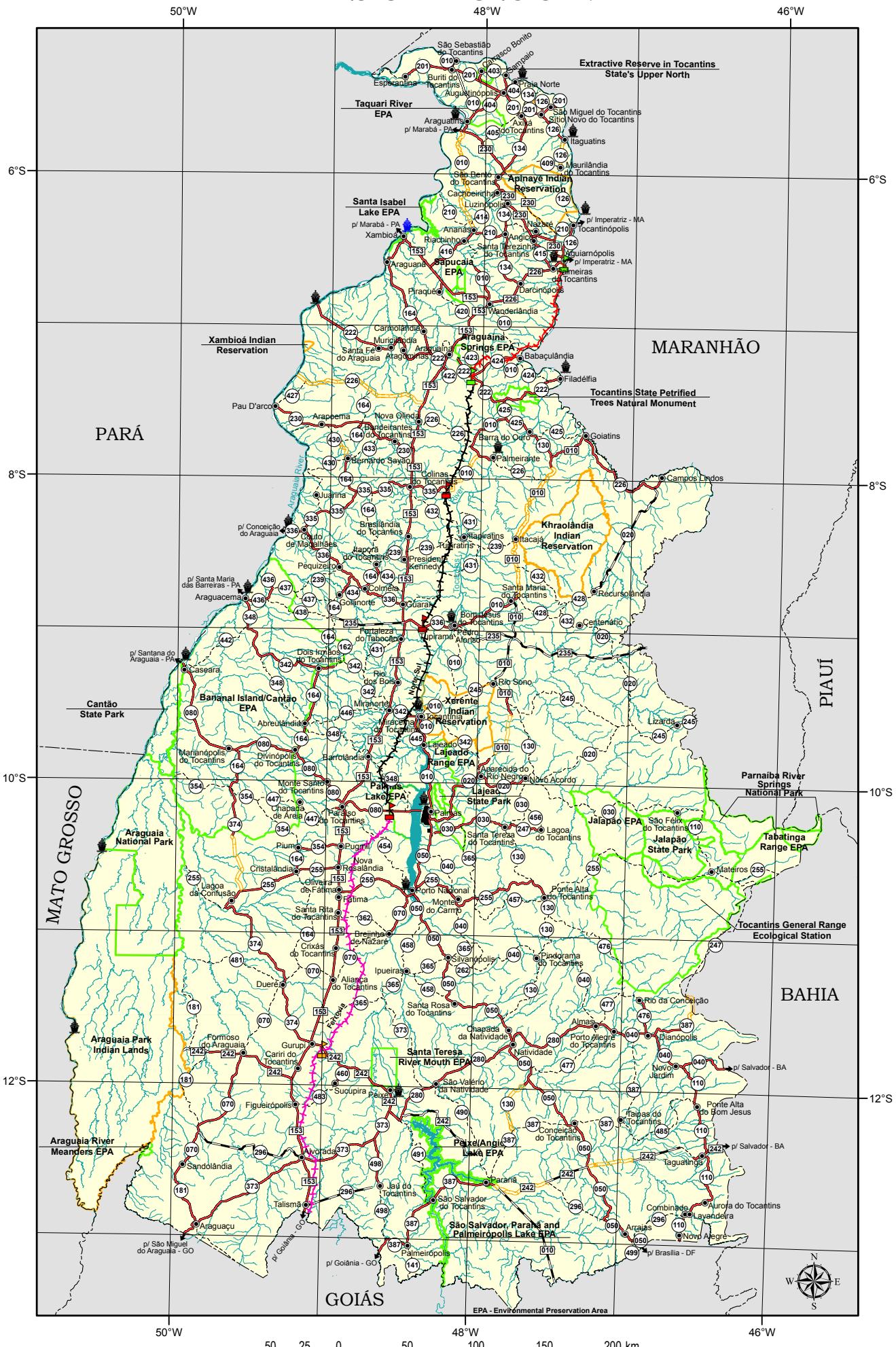
## North-South Railway

- +++++ Built Railway
- ++++++ Railway under Construction
- ++++++ Projected Railway

## CARTOGRAPHIC CONVERSIONS

- m North-South Railway Compound built
- m North-South Railway Compound under construction
- m Projected North-South Railway Compound
- í River Port
- í Planned river port
- State Road
- Federal Road
- Perennial and intermittent rivers
- Conservation unit boundaries
- Indian Reservation boundaries
- Built-up area - CAPITAL
- P County Town

## **TRANSPORTATION SYSTEM**



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

- 1 Merging of the Tocantins and Araguaia rivers
- 2 Middle Tocantins Depressions and Plateaus
- 3 Darcinópolis Plateaus
- 4 Ananás and Araguaína Depressions and Plateaus
- 5 Capivara River Plateaus
- 6 Palmeirante Depression
- 7 Cangalha Plateaus and Ranges
- 8 Parnaíba Basin Highlands and Plateaus
- 9 Sono River Regions Plateaus
- 10 Rio Sono and Itacajá rivers Plateaus and Depressions
- 11 Tocantins Longitudinal Depressions
- 12 Ponte Alta do Tocantins Plateaus
- 13 Jalapão Plateaus

**II - MEDIUM AND UPPER PROTEROZOIC FOLD BELT DOMAIN**

- 14 Xambioá Peaks and Ranges
- 15 Xambioá Depression
- 16 Medium Araguaia Depression
- 17 Tocantins and Araguaia Interrill Plateaus
- 18 Cordilheiras Range
- 19 Cristalândia and Abreulândia Depressions
- 20 Caseara and Sandolândia Depressions
- 21 Dianópolis Plateau
- 22 Taipas do Tocantins and Combinado Plateaus
- 23 Tocantins Southern Plateau

**III - CENOZOIC SEDIMENTARY BASIN DOMAIN**

- 24 Araguaia Plains

**IV - METAMORPHIC COMPLEX AND ARCHEAN AND LOWER PROTEROZOIC VULCAN-SEDIMENTARY SEQUENCE DOMAIN**

- 25 Upper Tocantins Depression
- 26 Natividade and Santa Rosa do Tocantins Depressions and Hills
- 27 Conceição do Tocantins Depressions and Hills

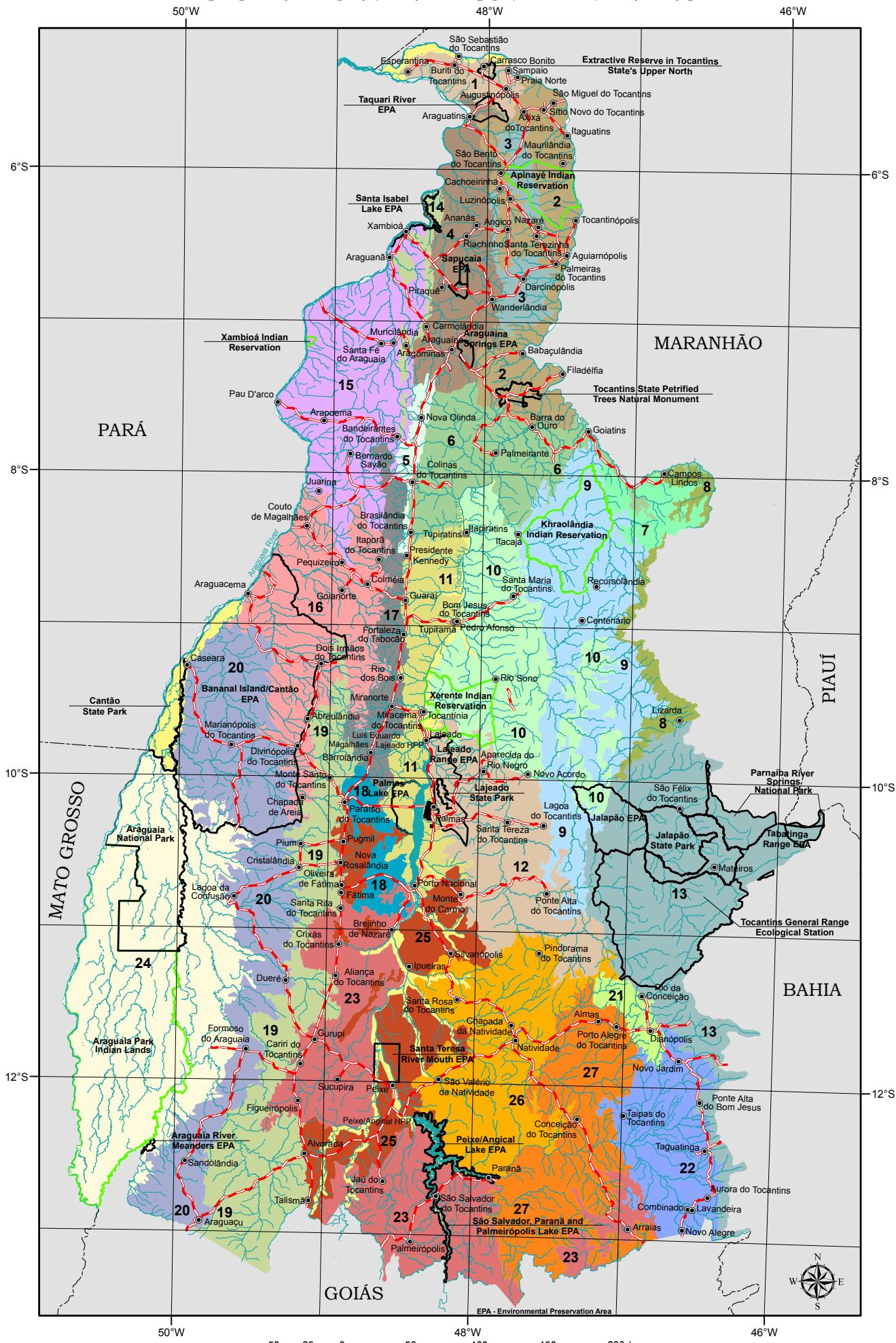
**V - ALUVIAL AREAS AZONAL DOMAIN**

- 28 Fluvial Plains

**CARTOGRAPHIC CONVERSIONS**

-  Perennial and intermittent rivers
-  Paved highway
-  Conservation unit boundaries

-  Built-up area - CAPITAL
-  County Town
-  Indian Reservation boundaries

**GEO-ENVIRONMENTAL COMPARTMENTING**



## I - INTENSIVE USE PRODUCTION AREAS

### *Ombrophylla (Rain Forest) Forest Phytoecological Region*

- Short and long cycle crops and/or intensive cattle raising areas (13,568.8 sq. km - 4.9%)
- Intensive cattle raising and/or short and long cycle crops areas (8,658.8 sq. km - 3.1%)
- Seasonal Forest Phytoecological Region**
- Short and long cycle crops and/or intensive cattle raising areas (2,188.5 sq. km - 0.8%)

### *Cerrado (Savanna) Phytoecological Region*

- Short and long cycle crops and/or intensive cattle raising areas (51,851.9 sq. km - 18.6%)
- Intensive cattle raising and/or short and long cycle crops areas (30,975.7 sq. km - 11.1%)

## II - MEDIUM INTENSITY USE PRODUCTION AREAS

### *Cerrado (Savanna) Phytoecological Region*

- Semi-intensive cattle raising and/or silviculture areas (14,291.3 sq. km - 5.1%)

## III - LOW INTENSITY USE PRODUCTION AREAS

### *Cerrado (Savanna) Phytoecological Region*

- Silviculture and/or extensive cattle raising areas (8,880.4 sq. km - 3.2%)
- Extensive cattle raising areas (79,260.9 sq. km - 28.6%)

## IV - SPECIAL PRODUCTION AREAS

### *Cerrado (Savanna) Phyto-Ecologic Region*

- Intensive cattle raising and/or short and long cycle crops areas (9,228.2 sq. km - 3.3 %)

## V - LIMITED USE OR LEGALLY RESTRICTED AREAS

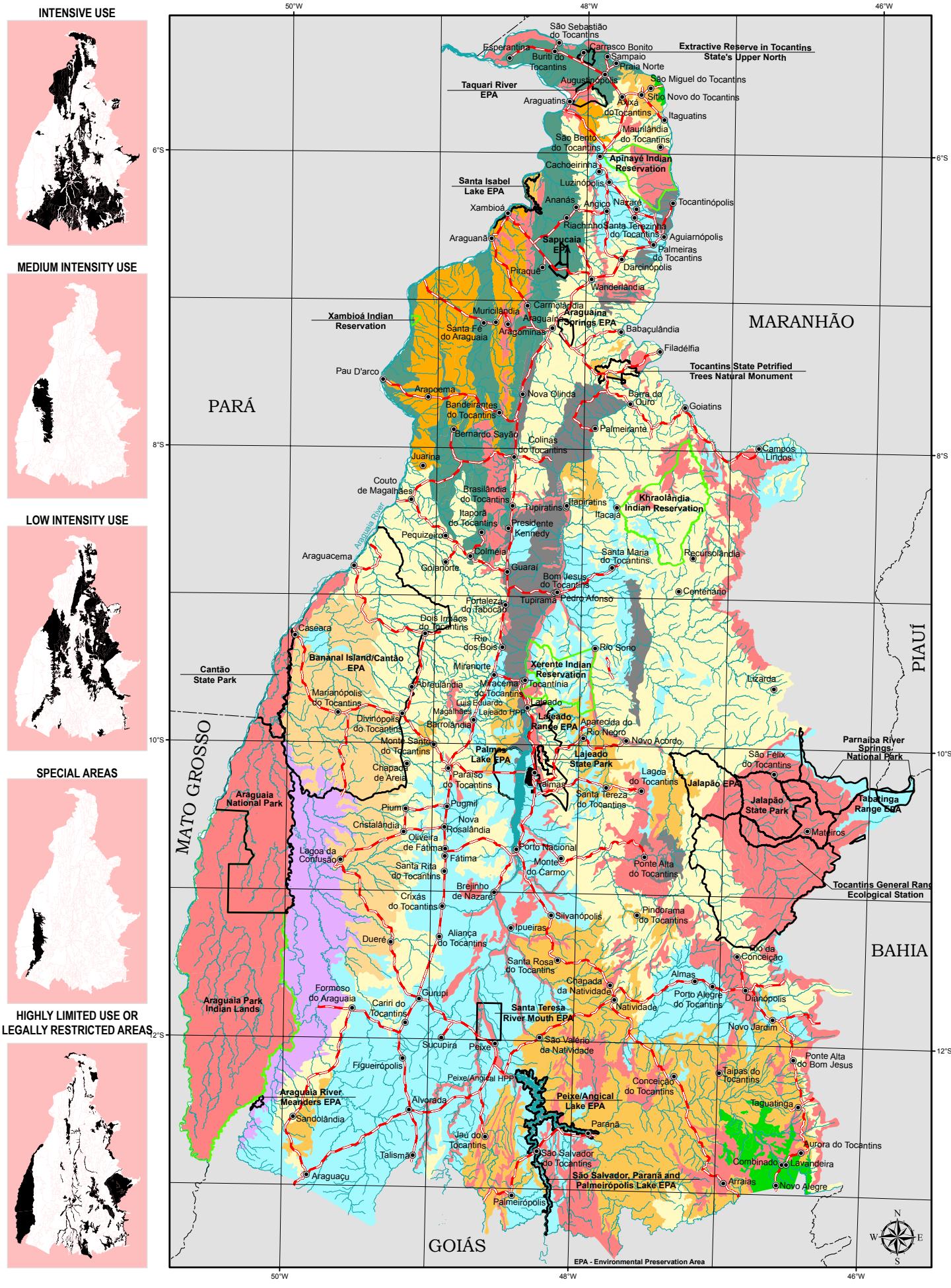
- Conservation area or areas with high natural limitations for use (59,516.2 sq. km - 21.3%)

## CARTOGRAPHIC CONVERSIONS

-  Perennial and intermittent rivers
-  Paved highway
-  Conservation unit boundaries

-  Built-up area - CAPITAL
-  County Town
-  Indian Reservation boundaries

## LAND USE POTENTIAL





## Ecologic-Economic Zones – Tocantins State Northern region

- A – Areas for human settlement (21,036 sq km – 63.7%)
- B – Environmental Conservation and Cultural Heritage Areas (9,438 sq. km – 28.8%)
  - B1 – Natural Environments Conservation Areas (4,741 sq. km – 14.4%)
  - B2 – Tocantins-Araguaia Ecological Corridor Areas (4,423 sq. km – 13.6%)
  - B3 – Natural Cavities occurrence Areas (274 sq. km – 0.8%)
- C – Priority Areas for Integral Protection Conservation Units (813 sq. km – 2.4%)
- D – Areas for Sustainable Use Conservation Units (146 sq. km – 0.4%)
- E – Federal Administration Areas (1.542 sq. km – 4.7%)
  - E1 – Extractivist Reserve
  - E2 - Indian area boundaries

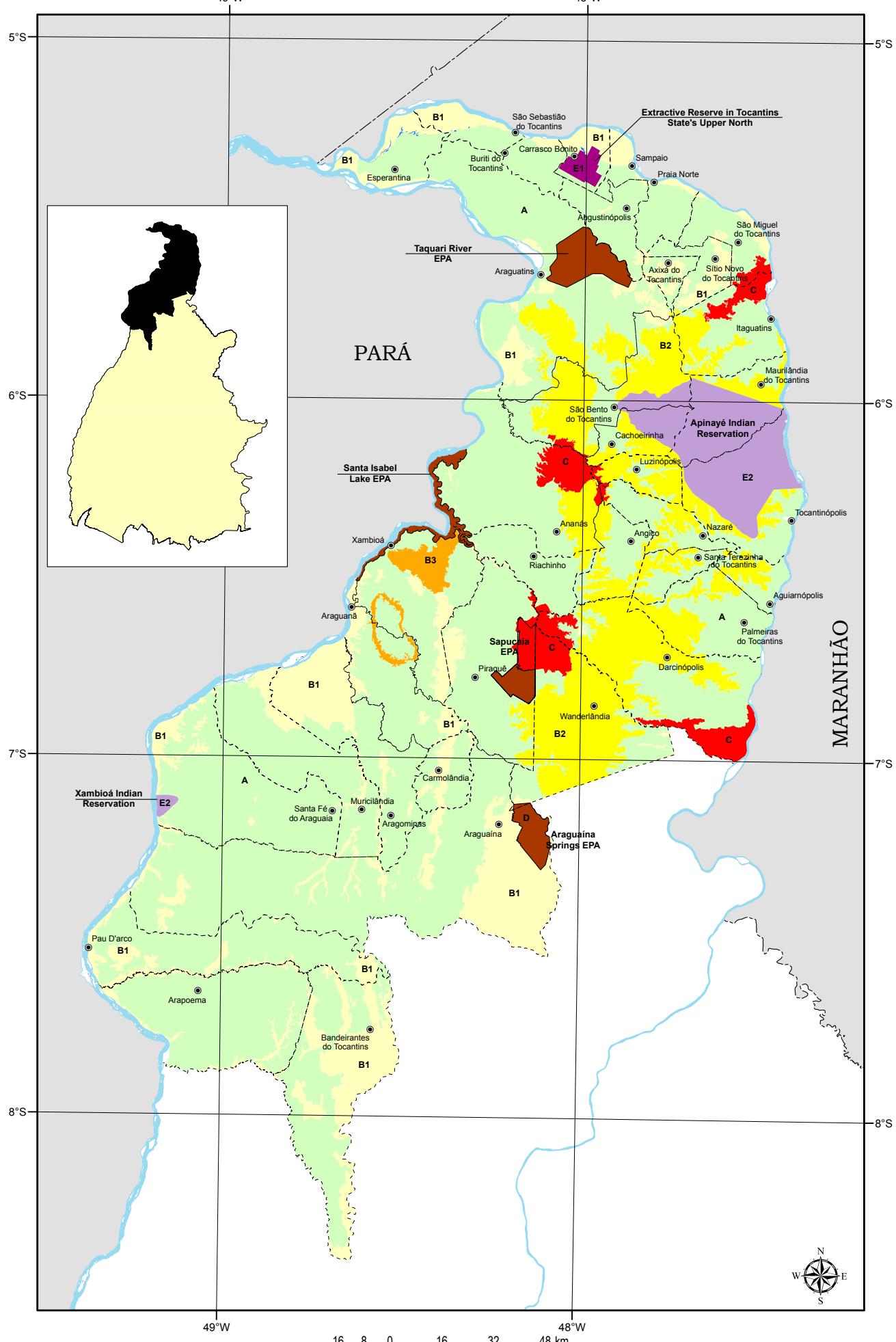
Note: These values do not include the area occupied by water bodies (rivers, streams, lakes etc.)

## CARTOGRAPHIC CONVENTIONS

-  Perennial and intermittent rivers
- P County Town
- Municipal boundaries



## NORTHERN TOCANTINS ECOLOGICAL-ECONOMIC ZONING PLAN



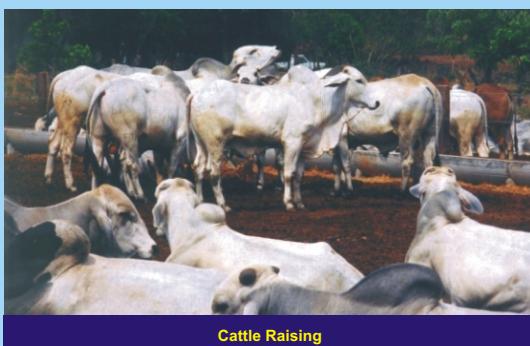
## LAND USE



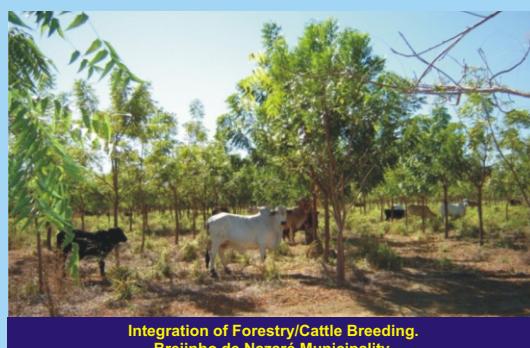
Rice crop. Xavante Farm. Dueré Municipality.



Soybean Crop. Campos Lindos.



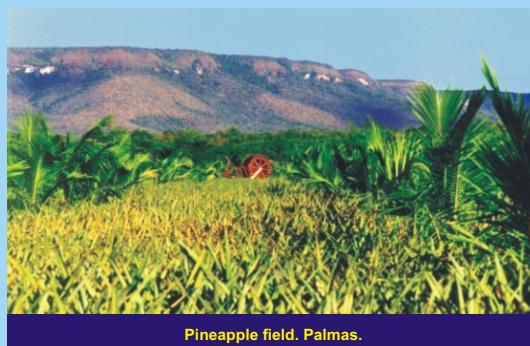
Cattle Raising



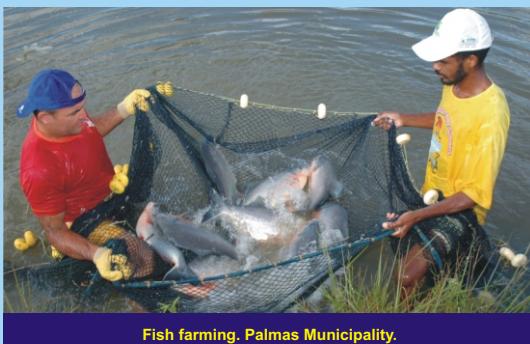
Integration of Forestry/Cattle Breeding.  
Brejinho de Nazaré Municipality.



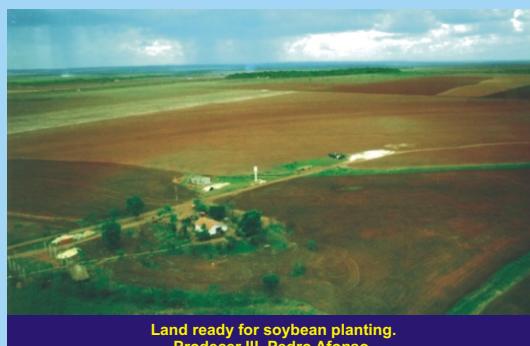
Rio Formoso Project.



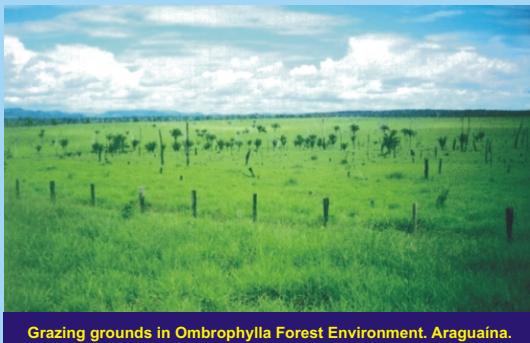
Pineapple field. Palmas.



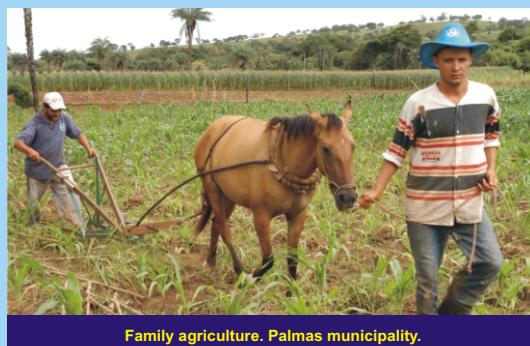
Fish farming. Palmas Municipality.



Land ready for soybean planting.  
Prodecer III. Pedro Afonso.



Grazing grounds in Ombrophylla Forest Environment. Araguaína.



Family agriculture. Palmas municipality.

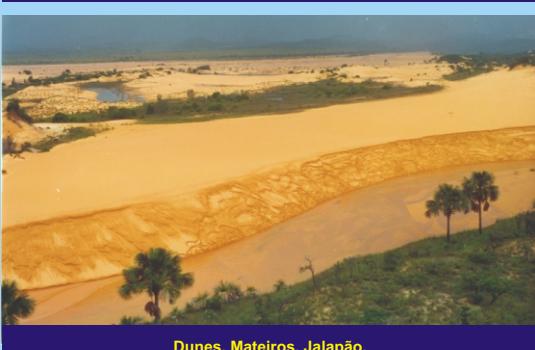
## TOURISM



President Fernando Henrique Cardoso Bridge (of Friendship and of the National Integration). TO-080 Road. Linking Palmas to Paraiso



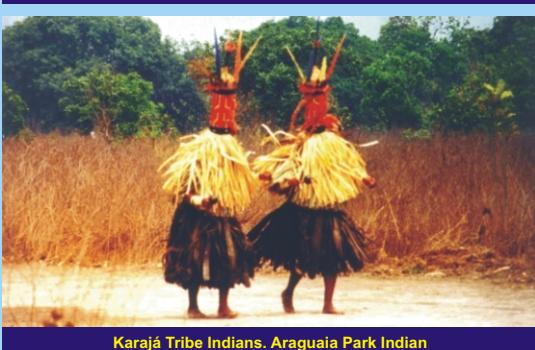
Joaquim Theotônio Segurado Avenue. Palmas.



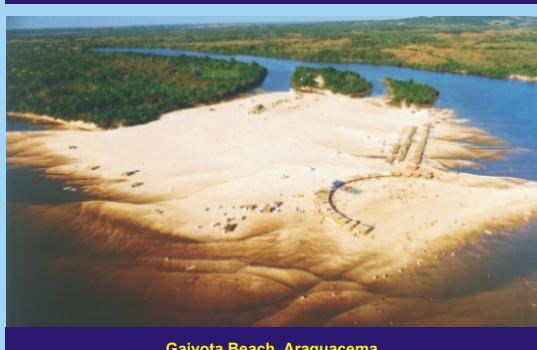
Dunes. Mateiros. Jalapão.



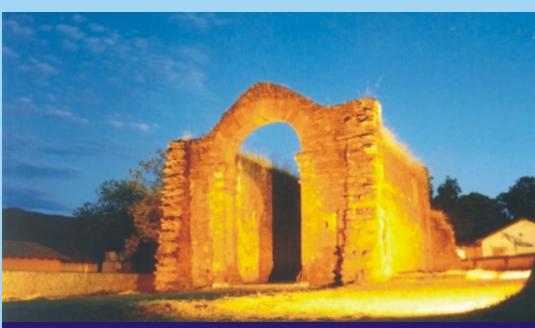
Rafting in the Novo River rapids. Mateiros. Jalapão.



Karajá Tribe Indians. Araguaia Park Indian Reservation. Bananal Island.



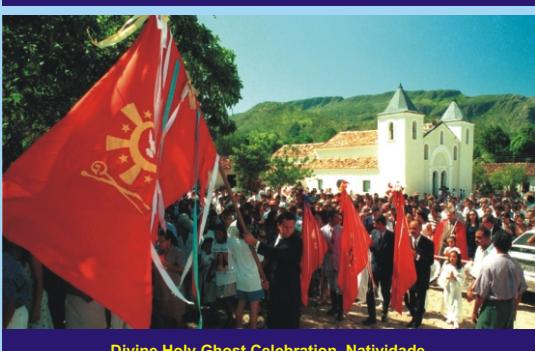
Gaivota Beach. Araguacema.



Ruins of the Our Lady of the Blacks Church. Natividade.



Roncador (Snorer) Waterfall. Taquaruçu.



Divine Holy Ghost Celebration. Natividade.



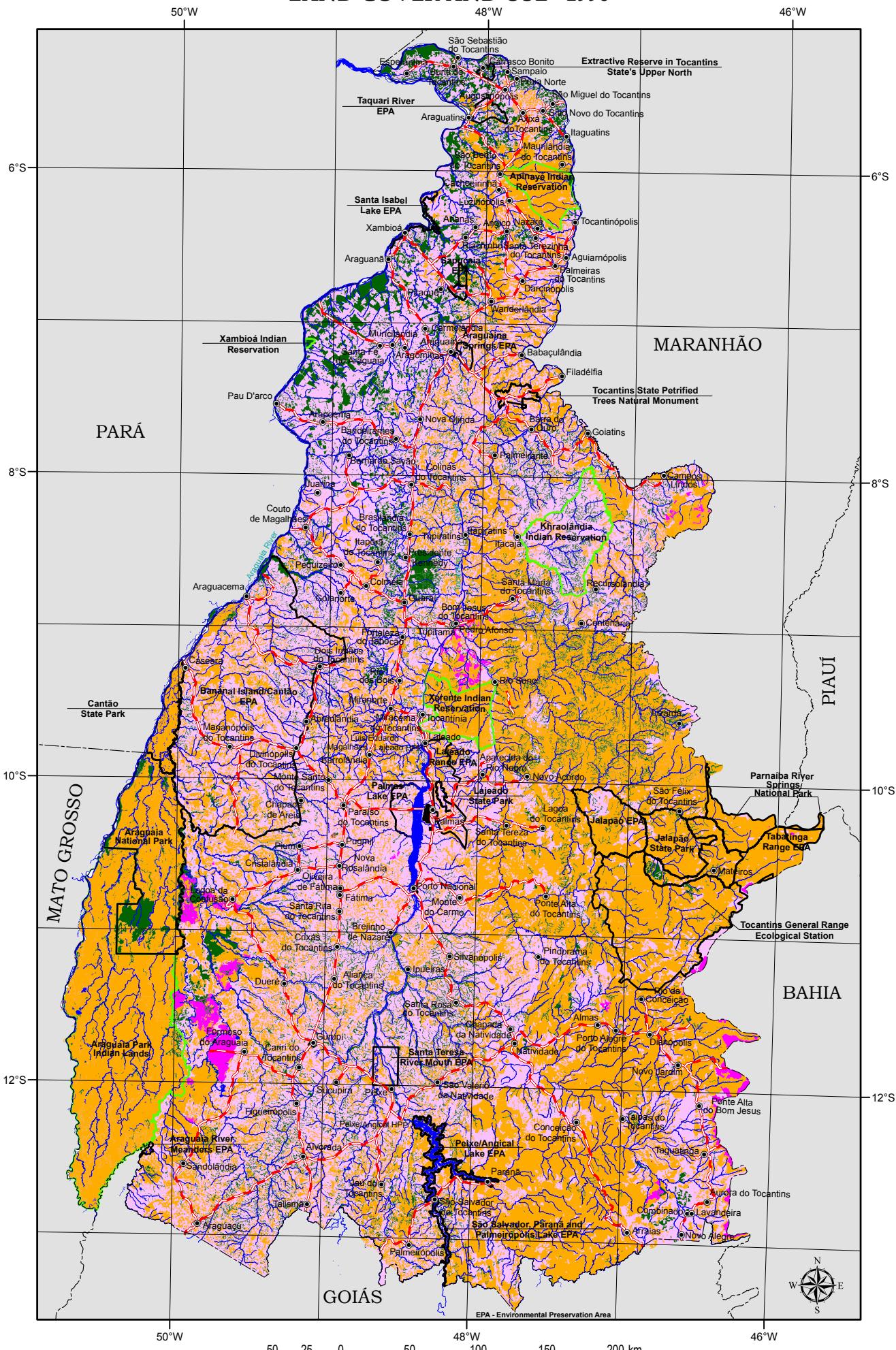
- Forest formations - riverside woods, dense and open ombrophylla (rain forest) forest, decidual and semi-decidual seasonal forests and secondary forest. (36,502.1 sq. km - 13.1%)
- Grazing lands - planted or natural grazing land areas. (74,982.5 sq. km - 26.9%)
- Agricultural lands - dry season agriculture, central pivot and flooding irrigation, silviculture areas (2,784.2 sq. km - 1.0%)
- Cerrado (Savanna) vegetation: field, Cerrado (Savanna) field, cerradão (dense cerrado) and shrubland (157,373.4 sq. km - 56.6%)
- Rivers, lakes, dams and reservoirs (6,474.0 sq. km - 2.3%)
- Other - mining areas and urban use areas (304.5 sq. km - 0.1%)

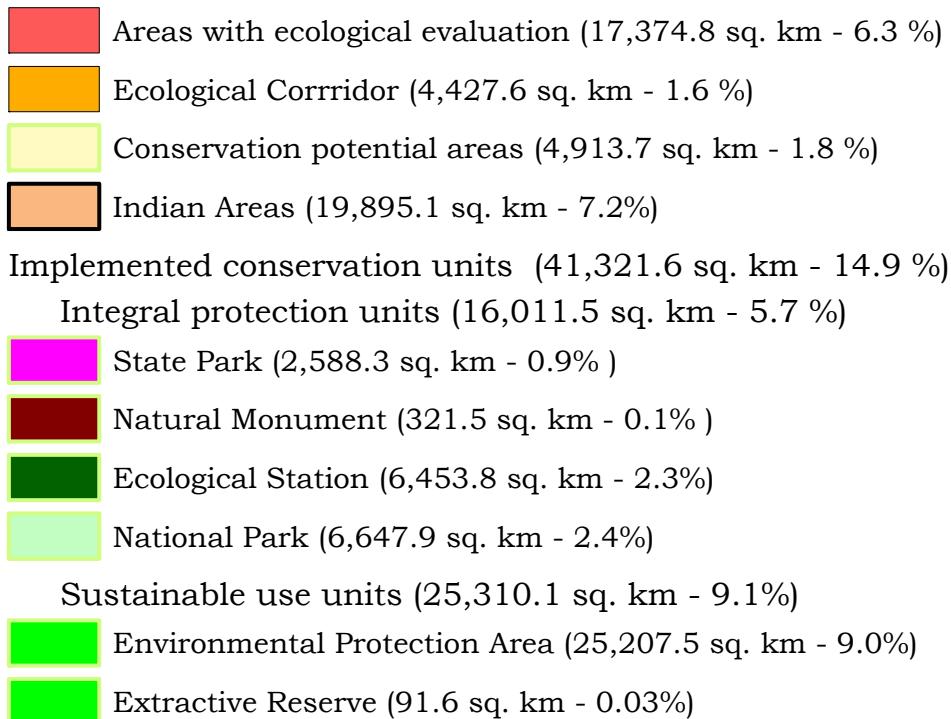
#### CARTOGRAPHIC CONVERSIONS

- Perennial and intermittent rivers
- Paved highway
- Conservation unit boundaries

- Built-up area - CAPITAL
- P County Town
- Indian Reservation boundaries

# LAND COVER AND USE - 1996





#### TECHNICAL NOTE

##### STATE AND NATIONAL PARKS

The state and national parks have as basic objective the preservation of natural ecosystems of outstanding ecological relevance and scenic beauty, allowing the realization of scientific research and the development of environmental education and interpretation activities, of nature based leisure and of ecological tourism.<sup>1</sup>

##### INDIAN AREAS

Are areas traditionally occupied by the Indians, or with permanent Indian dwellings, or used for their production activities, or essential to the preservation of the environmental resources needed to their well-being and necessary to their physical and cultural reproduction, according to their uses, customs and traditions.<sup>2</sup>

##### ENVIRONMENTAL PROTECTION AREAS

Are generally extensive areas, with a certain degree of human occupation, endowed with abiotic, biotic, aesthetic or cultural attributes especially important for the quality of life of human populations, and that have as basic objectives the protection of biological diversity, the regulation of the occupation process and ensuring the sustainable use of natural resources.<sup>1</sup>

##### ECOLOGICAL STATION

Integral protection areas whose objectives are nature preservation and scientific research.<sup>1</sup>

##### NATURAL MONUMENT

The natural monuments have as basic objective the preservation of rare, singular or of outstanding scenic beauty sites.<sup>1</sup>

##### ECOLOGICAL CORRIDOR

Parts of natural or semi-natural ecosystems that link conservation units, allowing the flow of genes and the biota's movement, facilitating the species dispersion and the repopulation of degraded areas, as well as the upkeep of the populations that, for their survival, require areas larger than the individual units.<sup>1</sup>

<sup>1</sup>Federal Law No. 9,985 of July 18 2000 - SNUC; - State Law nº 1,560, of April 5 2005 - SEUC.

<sup>2</sup>Art. 231, § 1 of the Federal Constitution (1988).

#### CARTOGRAPHIC CONVENTIONS



Perennial and intermittent rivers



Paved highway

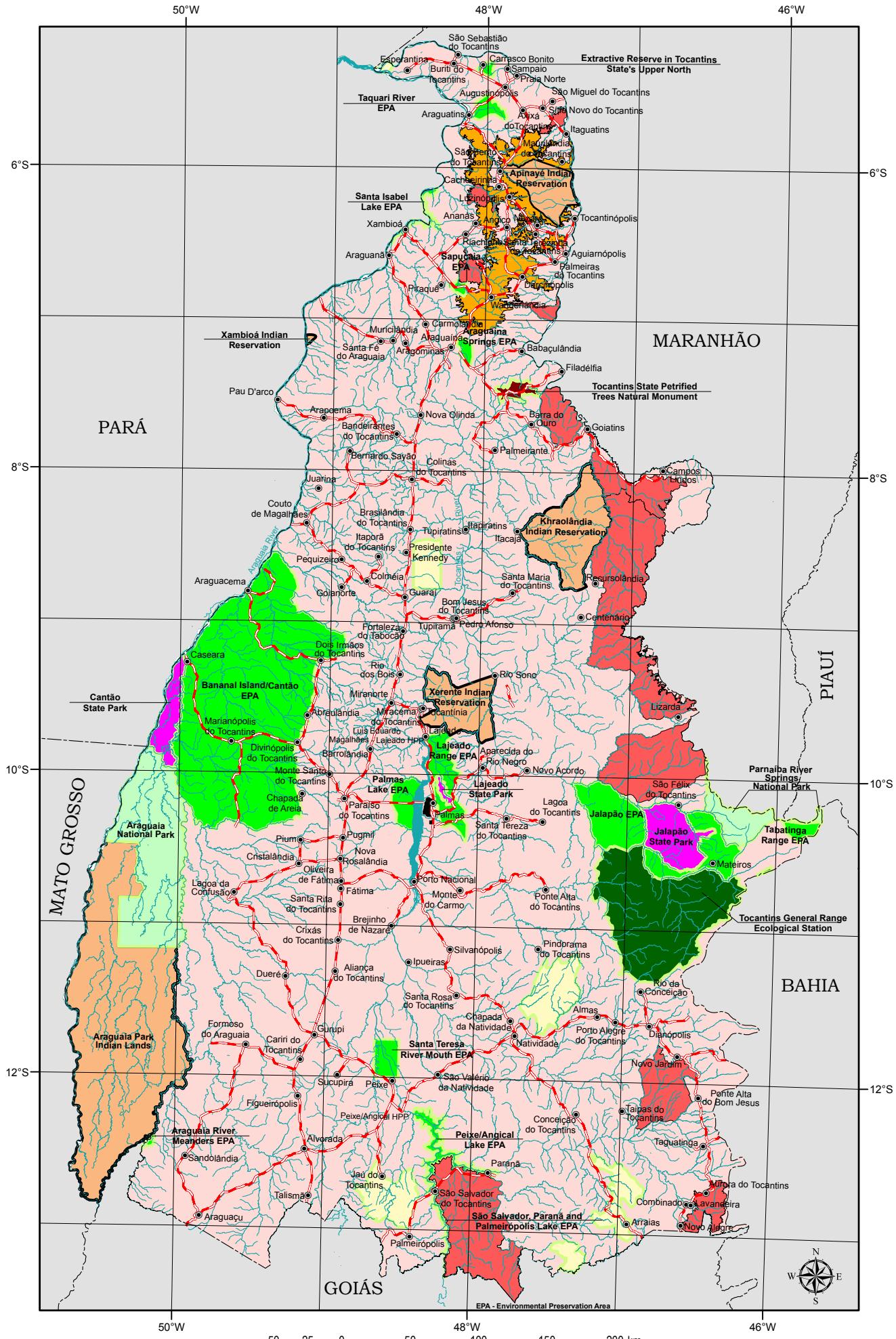


Built-up area - CAPITAL



County Town

## AREAS OF LEGALLY RESTRICTED USE AND AREAS OF ENVIRONMENTAL CONSERVATION POTENTIAL





## NATURAL AND ECOLOGICAL ATTRACTIONS

Forest Park

Forest Reservation/Preservation

Beach

Cave

Sport Fishing

Waterfall

Mountaineering

Hang Gliding

Thermal Waters

## HISTORIC AND CULTURAL ATTRACTIONS

Historical Ruins

Belvedere

Historical Architecture

Heritage/Preservation

Religious Temple

Tourist Site

Scientific Interest Site

## CARTOGRAPHIC CONVENTIONS

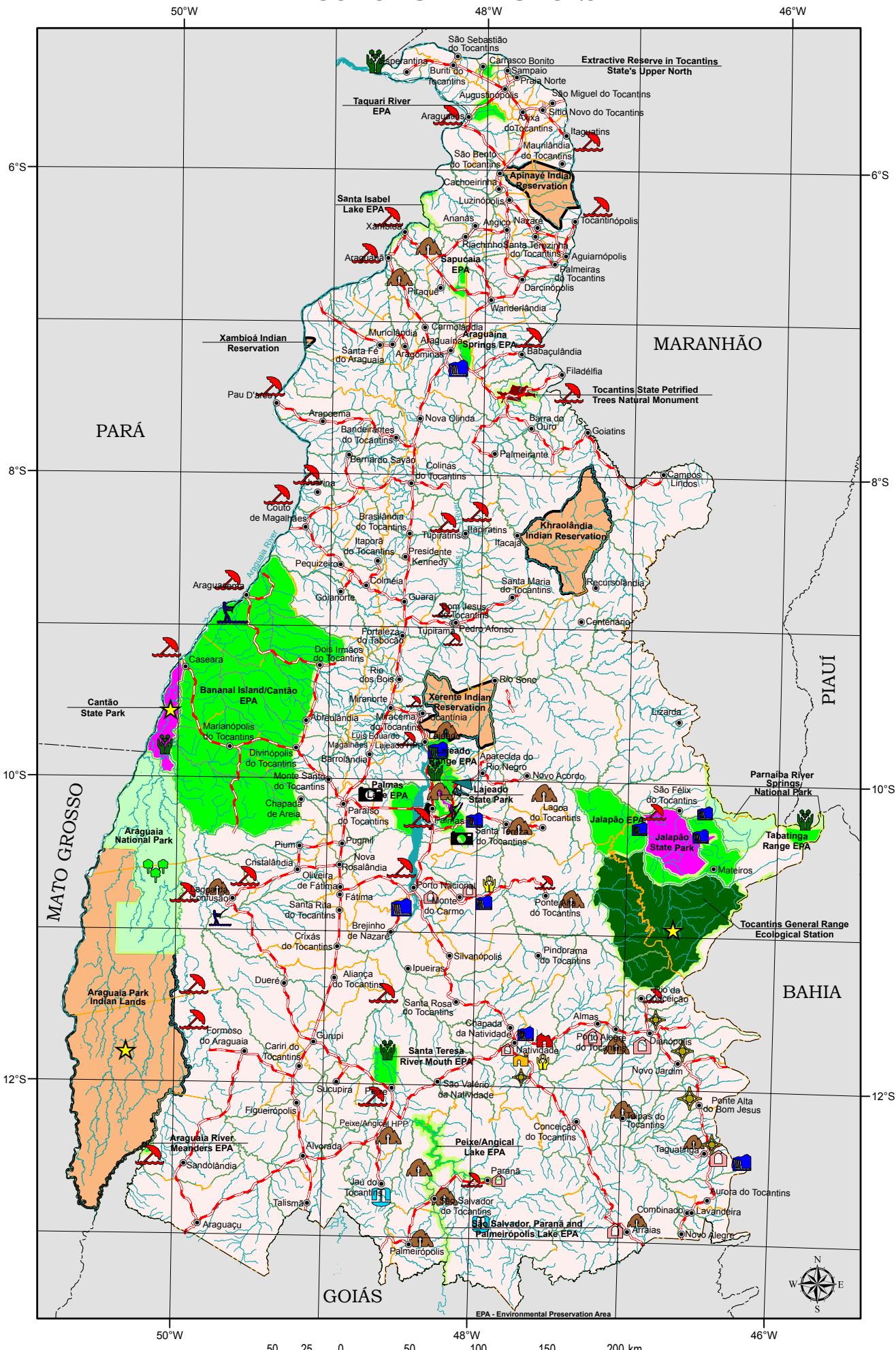
Perennial and intermittent rivers

Paved highway

Built-up area - CAPITAL

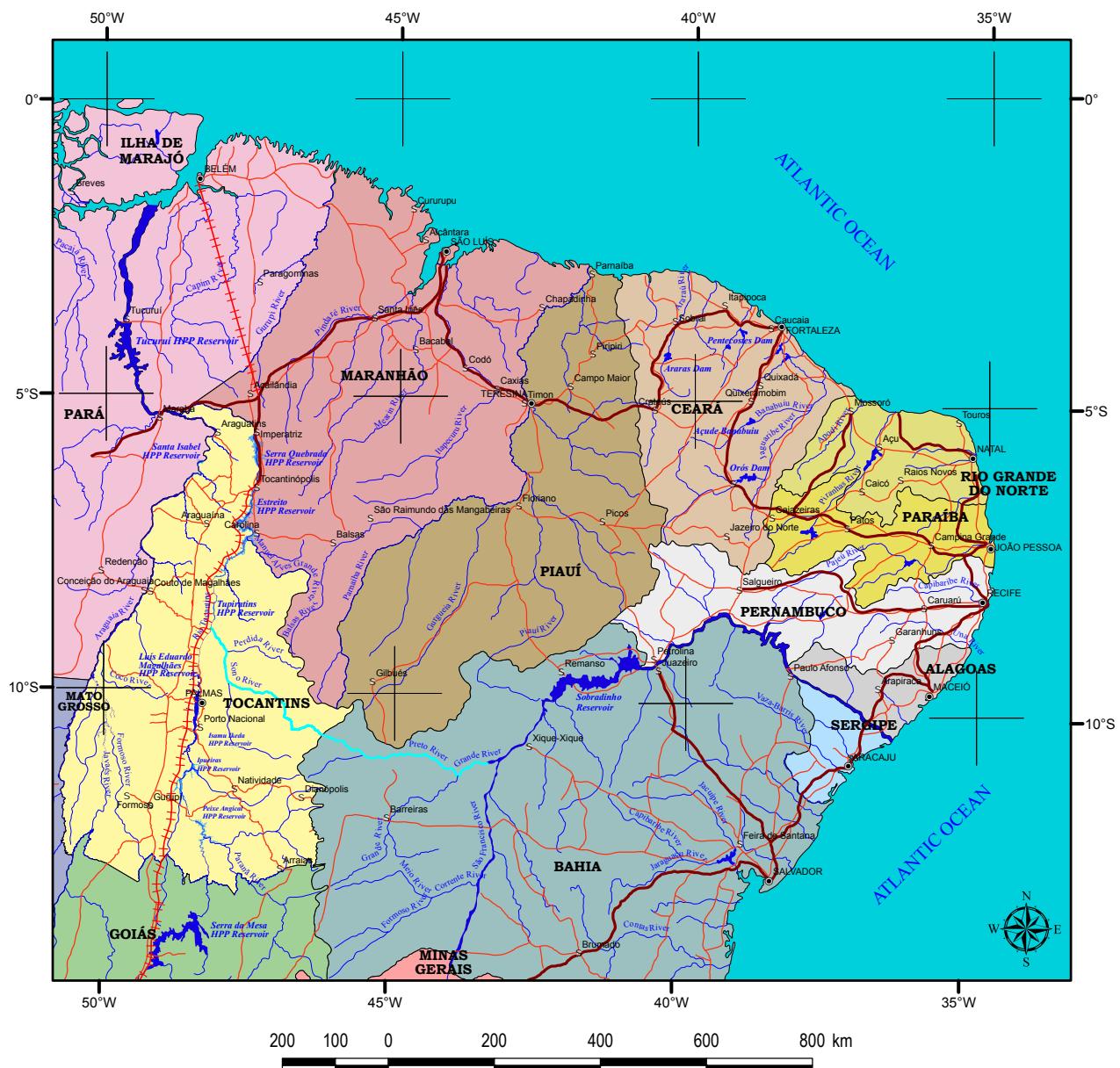
County Town

## **TOURISTIC ATTRACTIONS**



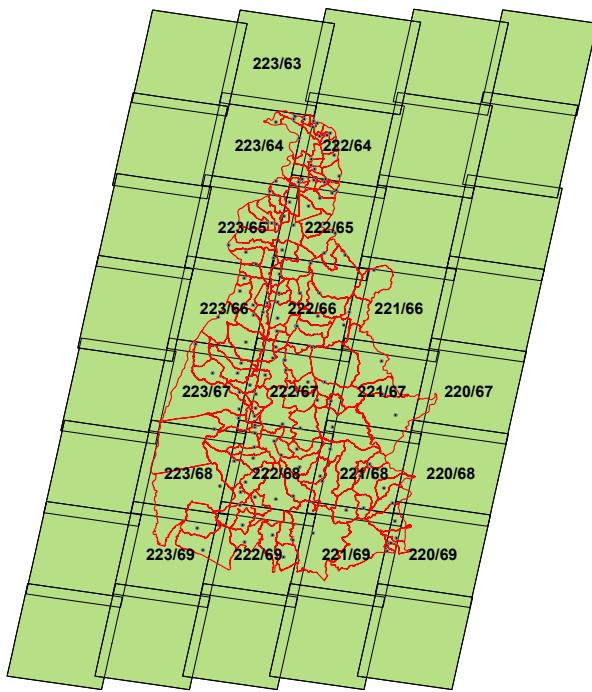


## TOCANTINS WATERS TRANSPOSITION TO THE NORTHEAST

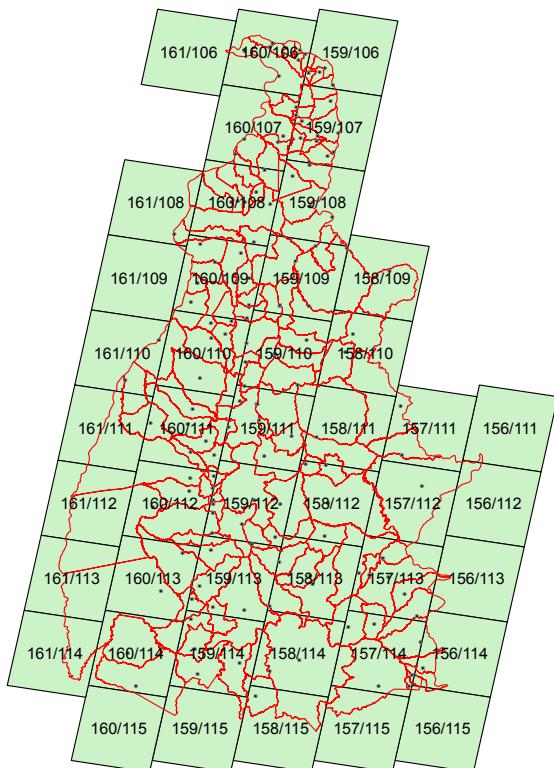


### CARTOGRAPHIC CONVENTIONS

- Paved highway
- Railway
- ===== Planned Railway
- Perennial and intermittent rivers
- Lakes and Reservoirs
- Planned Reservoirs
- Waters transposition to the Northeast (planned)



**CBERS  
REFERENCE SYSTEM**

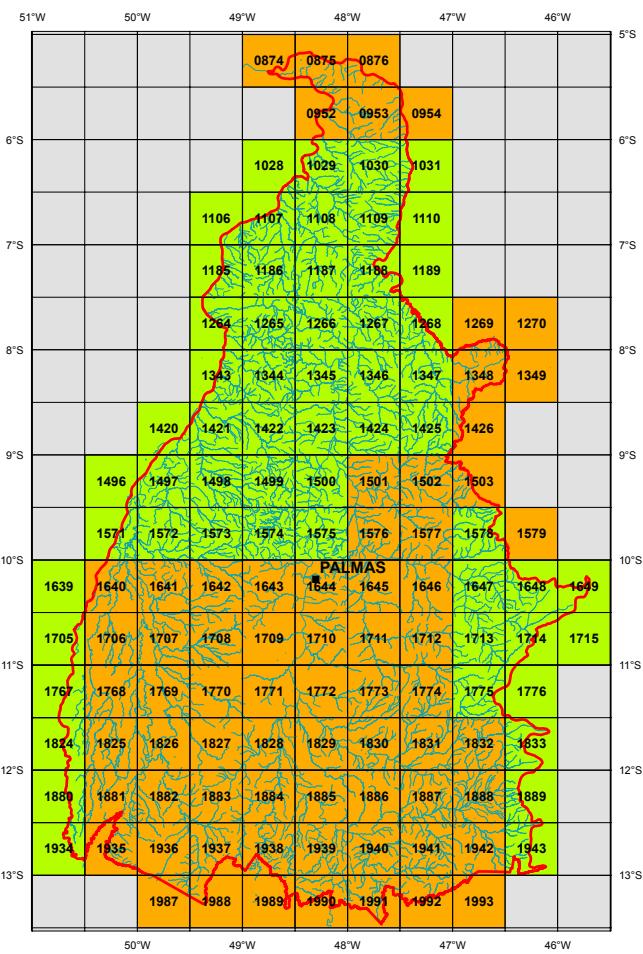


## LANDSAT UNIVERSAL REFERENCE SYSTEM

### INDEX MAP

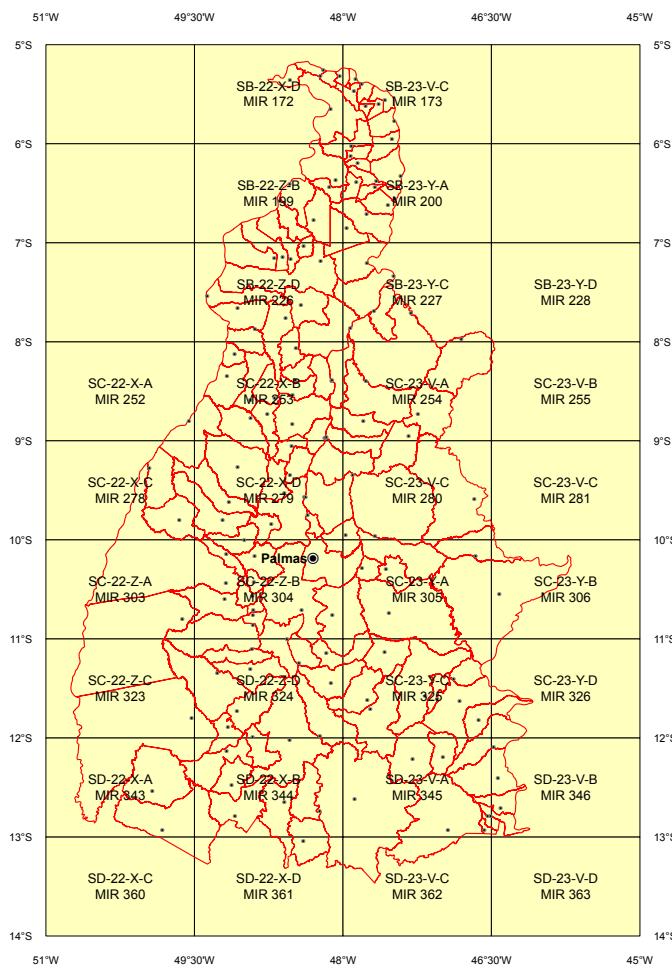
Scale 1:100,000

- Executed by DSG
- Executed by IBGE

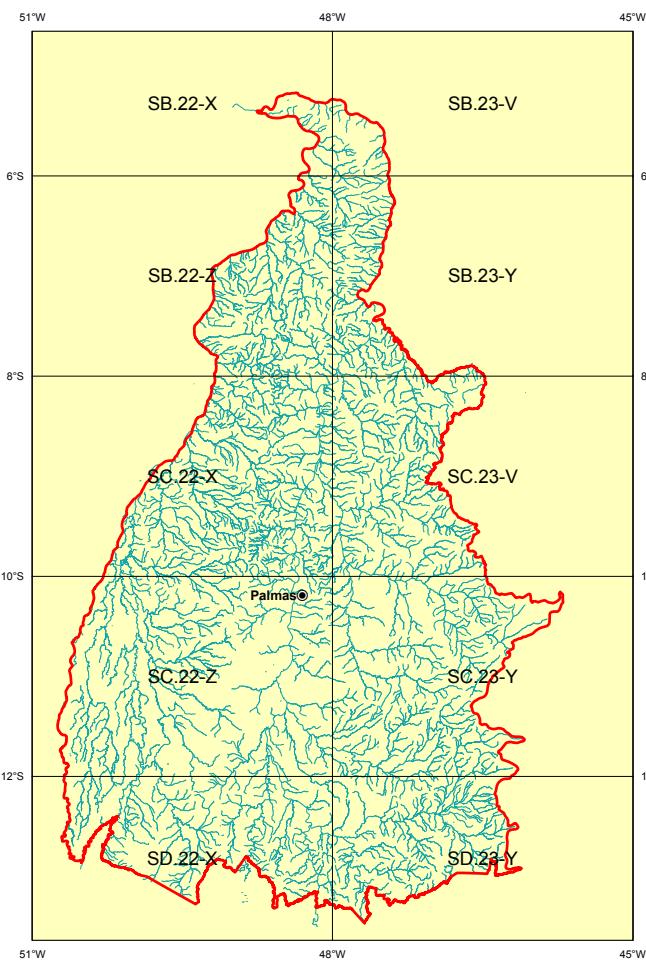




## INDEX MAP Scale 1:250,000



## INDEX MAP Scale 1:500,000





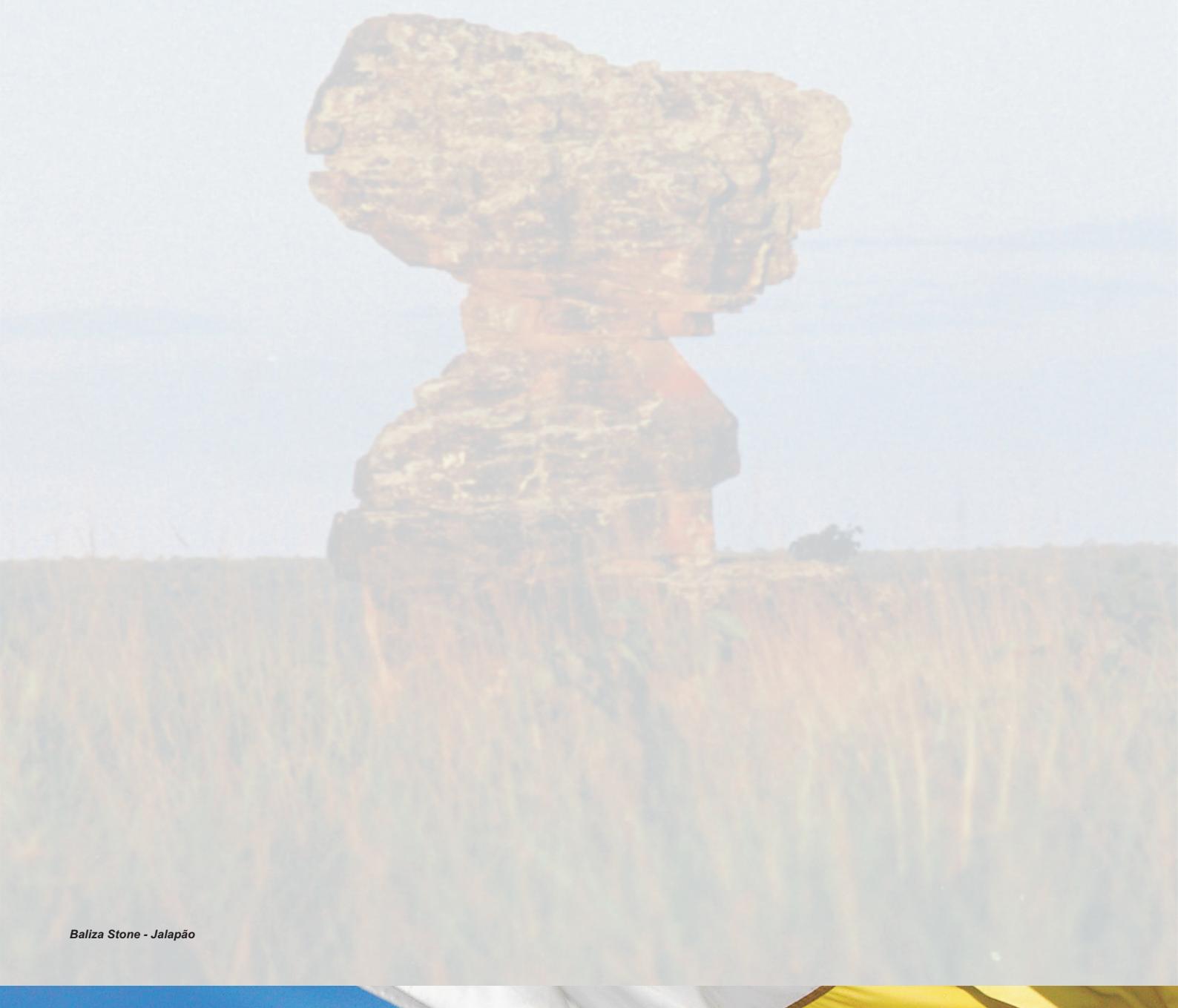
## MEDIUM TERM FORECASTS

Description	2007	2020
Total population (inhab.)	1,243,627	1,703,926
Urban	921,790	1,499,455
Rural	321,837	204,471
Demographic Density (inhab./sq. Km)	4.50	6.14
Illiteracy Rate of 15 years old and over (%)	17.5	5
Infant Mortality Rate (%o)	2.25	10
Electric Power Generation (MW)	1,030.50	8,361.00
HPP flooded area (sq. Km)	661.0	8,526.0
HPP reservoirs water volume (billions of cu m)	7.3	106.5
Paved Roads (km)	5,991.74	12,500
Sanitation / Treated Water - Urban Population Served (%)	96.8	100
Sanitation / Sewage Lines Urban Population Served (%)	7	90
Agricultural Area Total (ha) <sup>1</sup>	115.83	1,361,073.00
Agricultural Area Irrigated	72,140	390,000
Agricultural Area Dry farm	468,169	971,073
Agricultural Production Total (ton) <sup>2</sup>	1,120,681	6,247,500
Irrigated Rice (ton.)	196,176	1,950,000
Dry farm Rice (ton.)	170,277	480,000
Corn (ton.)	156,487	780,000
Soybean (ton.)	731,672	2,962,500
Beans (ton.)	11,363	111,000
Total GDP (R\$ million)	9,084	17,116.00
Primary Sector Total (R\$ million)	1,803	3,749.00
Agricultural Vegetal Production (R\$ million)	117.28	3,062.07
Agricultural Animal Production (R\$ million)	466.21	1,312.32
Industry (R\$ million)	2,256	4,691.00
Services (R\$ million)	4,173	8,676.00
Average Per Capita Income (R\$)	6,957	14,463
Revenues Total (R\$ million)	3,635.53	11,000
Tax Revenues (R\$ million)	960.64	4,400
Transference Revenues (R\$ 1,000.00)	2,118.94	5,500
Other Revenues (R\$ million)	30.57	1,100

Estimates devised in conformity with various Government bodies, Universities and Organizations representing the Tocantins State productive sector.

<sup>1</sup>Period 2007-2008

<sup>2</sup>Preliminary data



*Baliza Stone - Jalapão*



**CD ROON**

