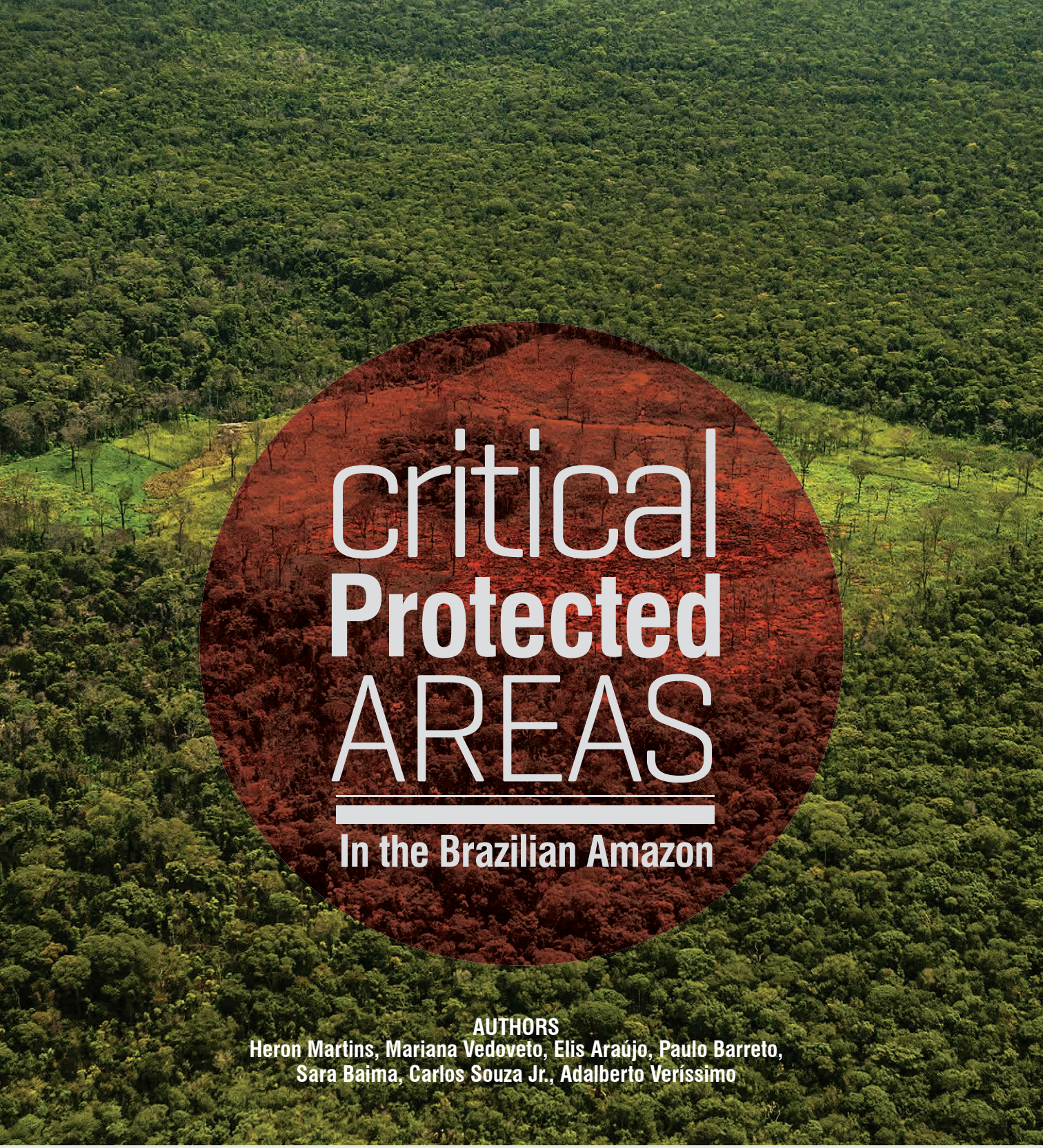

critical Protected AREAS

In the Brazilian Amazon

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Imazon


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Acronyms

ADIN	Direct Action of Unconstitutionality, *Ação Direta de Inconstitucionalidade*
AFS	Agroforestry System
APA	Environmental Protection Area, *Área de Proteção Ambiental*
ARIE	Area of Relevant Ecological Interest, *Área de Relevante Interesse Ecológico*
CEPLAC	Executive Commission of the Cocoa Farming Plan, *Comissão Executiva do Plano da Lavoura Cacaueira*
CNI	National Confederation of Industry, *Confederação Nacional da Indústria*
ESEC	Ecological Station, *Estação Ecológica*
FERS	Sustainable State Forest, *Floresta Estadual de Rendimento Sustentado*
FLONA	National Forest, *Floresta Nacional*
FLOREX	Extractive Forest, *Floresta Extrativista*
FLOTA	State Forest, *Floresta Estadual*
FUNAI	National Indian Foundation, *Fundação Nacional do Índio*
IBAMA	Brazilian Institute for the Environment and Renewable Natural Resources, *Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis*
ICMBIO	Chico Mendes Institute for Biodiversity Conservation, *Instituto Chico Mendes de Conservação da Biodiversidade*
JF	Federal Court, *Justiça Federal*
MMA	Ministry of the Environment, *Ministério do Meio Ambiente*
MME	Ministry of Mines and Energy, *Ministério de Minas e Energia*
PAC	Growth Acceleration Program, *Programa de Aceleração do Crescimento*
PADDD	Protected Area Downgrading, Downsizing and Degazettement
PARNA	National Park, *Parque Nacional*
PNGATI	National Policy for Territorial and Environmental Management of Indigenous Lands, *Política Nacional de Gestão Territorial e Ambiental de Terras Indígenas*
REBIO	Biological Reserve, *Reserva Biológica*
RESEX	Extractive Reserve, *Reserva extrativista*
SEA	Strategic Environmental Assessment
SEPROR	Amazonas State Secretariat for Rural Production, *Secretaria de Produção Rural do Amazonas*

SIMEX	Logging Monitoring System, *Sistema de Monitoramento da Exploração Madeireira*
SISNAMA	National Environmental System, *Sistema Nacional do Meio Ambiente*
SNUC	National System of Conservation Units, *Sistema Nacional de Unidades de Conservação*
TI	Indigenous Land, *Terra Indígena*
UC	Conservation Unit, *Unidade de Conservação*
UCE	State Conservation Unit, *Unidade de Conservação Estadual*
UCF	Federal Conservation Unit, *Unidade de Conservação Federal*
UHE	Hydroelectric Dam, *Usina Hidroelétrica*

VICTORIA AMAZONICA. PHOTO: PAULO BARRETO

Introduction

Protected Areas (PAs)[1] have proven to be effective against the advance of deforestation in the Brazilian Amazon (Arima et al. 2007; Soares-Filho et al. 2010). From 2004 to 2006, for example, deforestation in the region fell by 37% as the result of the creation of approximately 485 thousand square kilometers of Conservation Units (UC) from 2003 to 2006 (Soares-Filho et al. 2010). This amount represents 40% of the UCs existing in the Legal Amazon in 2010 (Imazon & ISA, 2011).

However, deforestation and forest degradation have threatened the integrity of some of those areas. Until July, 2011, deforestation in PAs already corresponded to 7% of the total deforestation occurring in the Legal Amazon. Furthermore, there has been increasing pressure to downgrade, downsize and degazette protected areas from both agribusiness segments and local residents and the government itself. For example, Araújo and Barreto (2010) have identified 48 PAs under this kind of threat in the Brazilian Amazon. Among actual and potential Protected Area Downgrading, Downsizing and Degazettement (PADDD) cases, the authors found that 29 PAs had lost 49 thousand square kilometers and another 18 were still at risk of losing 86 thousand square kilometers.

Additionally, in June 2012, the National Congress approved Federal Law no. 12,678 which increased the boundaries of the Campos Amazônicos National Park (PARNA), but excluded areas of this park and downsized another 7 UCs by a total of 1,644.8 square kilometers without any public consultation and socioenvironmental impact studies (Piovesan & Siqueira, 2012). The objective of the changes was to regularize occupied areas and allow implementation of the Jirau, Santo Antônio and Tabajara hydroelectric dams in Rondônia, and the Tapajós hydroelectric complex in Pará. Initiatives such as these create precedents and expectations that other UCs may also be downsized in the same way (Araújo et al. 2012). The situation may become even more serious, considering that the government intends to invest 96 billion reais in order to generate 42,000 MW of hydroelectricity by 2020 in the Amazon, as indicated by the Growth Acceleration Program (Programa de Aceleração do Crescimento – PAC) (MME, 2011).

In this report we present the PAs in the Legal Amazon that have the most critical situation with regard to deforestation and PADDD threats. For deforestation we analyzed: the absolute loss of original forest from 2009 to 2011; the percentage loss of original forest from 2009 to 2011; and the percentage of remaining forest in 2011. With regard to PADDD threats, we analyzed the PAs that could undergo changes due to proposed legislation, legislative decrees, lawsuits or planned hydroelectric dams. The objective of this report is to reveal the priority areas for interventions that will ensure the objectives of conservation and protection of the rights of indigenous and traditional populations.

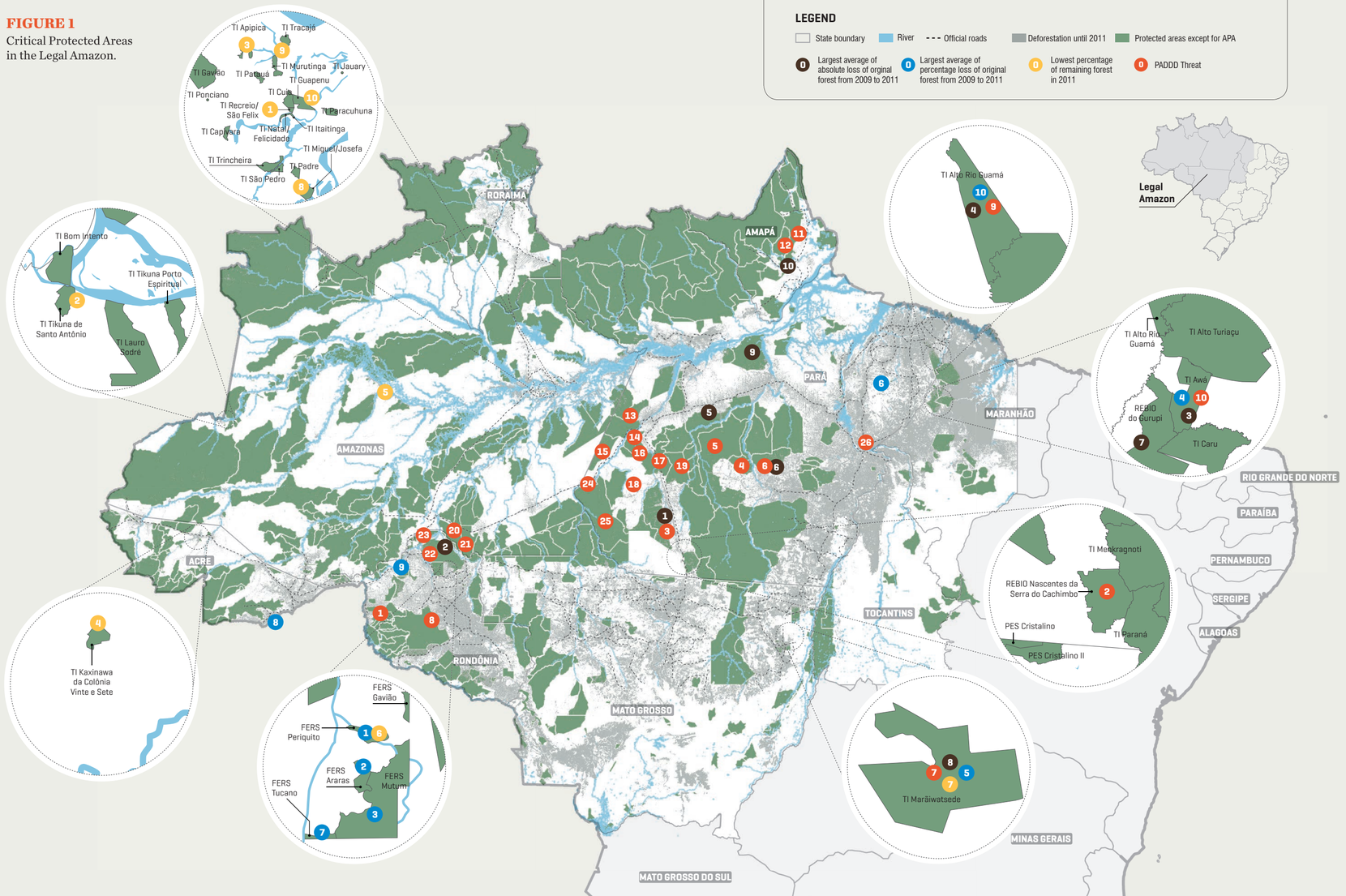
[1] In Brazil the concept of Protected areas Areas includes the Conservation Units (Unidades de Conservação – UCs) and the Traditionally Occupied Lands: these being Indigenous Lands (Terras Indígenas – TIs) and Remnant Quilombos (Territórios Remanescentes de Quilombo, these being lands occupied by descendants of escaped slaves). These are the two main groups of PAs included in the National Strategic Plan for Protected Areas (Plano Estratégico Nacional de Áreas Protegidas - PNAP). In this bulletin we use Protected Areas to refer to Conservation Units and Indigenous Lands.

RDS DO UATUMÃ (AMAZONAS). PHOTO: FERNANDA PRETO

Critical **Protected** AREAS

Figure 1 presents the ten most critical PAs for each of the three analyses of deforestation and a list of all of the PAs threatened by PADDD due to proposed legislation, lawsuits or planned hydroelectric dams. The critical PAs are mainly concentrated in three regions: central-western Pará, southeastern Amazonas and northern Rondônia. The other areas are distributed throughout the remaining states of the Legal Amazon. In the following subsections we present the details of each ranking.

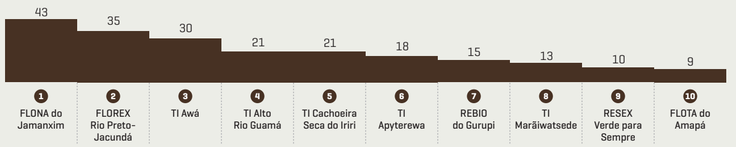
FIGURE 1
Critical Protected Areas in the Legal Amazon.



DEFORESTATION

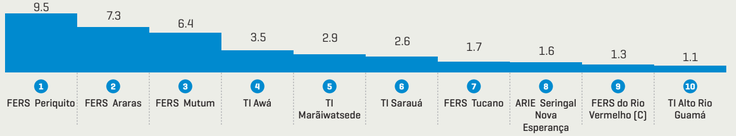
Largest absolute loss of original forest from 2009 to 2011

AVERAGE DEFORESTATION (KM²/YEAR)



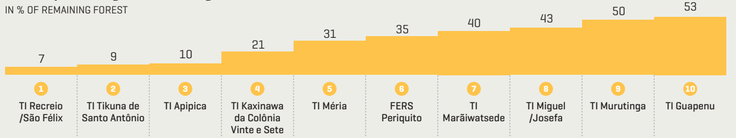
Largest percentage loss of original forest from 2009 to 2011

AVERAGE DEFORESTATION (%)



Lowest percentage of remaining forest in 2011

IN % OF REMAINING FOREST



PADDD THREAT

CATEGORY	NAME	
1 UCF	RESEX Rio Ouro Preto	PLS 206/2007
2 UCF	REBIO Nascentes da Serra do Cachimbo	PLS 258/2009
3 UCF	FLONA do Jamanxim	PDC 1148/2008 and UHE Jardim do Ouro
4 UCF	PARNA da Serra do Pardo	PLC 6479/2006
5 UCF	ESEC da Terra do Meio	PLC 6479/2006
6 TI	TI Apyterewa	PDC 393/2007
7 TI	TI Maráiwatsede	PDC 510/2008 and Court case no. 2007.01.00.051031-1 (TRF1)
8 TI	TI Uru-Eu-Wau-Wau	Court case no. 2004.41.00.000078-9 (Federal Court/RO)
9 TI	TI Alto Rio Guamá	Court case no. 2006.39.04.003310-7 (Federal Court/PA Castanhal)
10 TI	TI Awá	Court case no. 95.00.00353-8

CATEGORY	NAME	PADDD THREAT
11 UCE	FLOTA do Amapá	UHE Cachoeira Caldeirão
12 UCF	FLONA do Amapá	UHE Cachoeira Caldeirão
13 UCF	PARNA da Amazônia	UHE São Luiz do Tapajós and UHE Jatobá
14 UCF	FLONA de Itaituba II	UHE Cachoeira do Caí and UHE Jatobá
15 UCF	FLONA do Amaná	UHE Jatobá
16 UCF	FLONA de Itaituba I	UHE Jatobá, UHE Cachoeira do Caí and UHE Jamanxim
17 UCF	PARNA do Jamanxim	UHE Jamanxim, UHE Cachoeira dos Patos and UHE Jrd. do Ouro
18 UCF	APA do Tapajós	UHE Jatobá and UHE Jardim do Ouro
19 UCF	FLONA de Altamira	UHE Jardim do Ouro

CATEGORY	NAME	PADDD THREAT
20 UCF	FLONA de Humaitá	UHE Tabajara
21 UCE	FERS do Rio Machado	UHE Tabajara
22 UCE	FLOREX Rio Preto-Jacundá	UHE Tabajara
23 UCF	ESEC de Cuniã	UHE Tabajara
24 TI	TI Sai Cinza	UHE Chacorão
25 TI	TI Mundurucu	UHE Chacorão
26 TI	TI Mãe Maria	UHE Marabá

Critical **Protected** AREAS

due to deforestation

Absolute loss of original forest from 2009 to 2011

The ten PAs with the largest absolute loss of forest cover from 2009 to 2011 include five UCs and five Indigenous Lands (TIs). Only one of the UCs, the Gurupi Biological Reserve (REBIO) in the State of Maranhão, belongs to the Full Protection category. Among the Amazon states, Pará presents the largest number of cases: 5 (Table 1).

TABLE 1

Ranking of the ten PAs with the largest average of absolute loss of original forest from 2009 to 2011.

	PROTECTED AREA	STATE	MANAGEMENT	AREA (KM²)	DEFORESTATION RATE (KM²/YEAR)
1	FLONA do Jamanxim	Pará	Federal	13,044.8	43
2	FLOREX Rio Preto-Jacundá	Rondônia	State	6,830.5	35
3	TI Awá	Maranhão	Federal	1,153.5	30
4	TI Alto Rio Guamá	Pará	Federal	2,857.7	21
5	TI Cachoeira Seca do Iriri	Pará	Federal	7,353.8	21
6	TI Apyterewa	Pará	Federal	7,741.9	18
7	REBIO do Gurupi	Maranhão	Federal	2,706.9	15
8	TI Marãiwatsede	Mato Grosso	Federal	1,667.5	13
9	RESEX Verde para Sempre	Pará	Federal	12,940.9	10
10	FLOTA do Amapá	Amapá	State	23,432.2	9

The Jamanxim National Forest (FLONA) in southern Pará near the BR-163 highway leads the ranking with an absolute loss of 43 square kilometers per year for the period studied. The federal government has indicated that it will downsize this UC in order to legalize settlers, which encourages more deforestation. In second place is the Rio Preto-Jacundá Extractive Forest (FLOREX), in Rondônia. Beginning in 2000 deforestation in that UC began to increase, with a notable rise in 2004 and 2005. FLOREX Rio Preto-Jacundá was created by Decree no. 4,245/1989 with 10,550 square kilometers, but was not demarcated. A representative of the State Secretariat for Environmental Development in Rondônia (Secretaria de Estado do Desenvolvimento Ambiental de Rondônia - SEDAM/RO) affirms that it no longer exists and in its area two new UCs have been created: FLONA Jacundá, under the jurisdiction of the Chico Mendes Institute for Biodiversity Conservation (Instituto Chico Mendes de Conservação da Biodiversidade – ICMBIO); and the Extractive Reserve (RESEX) with the same name, Rio Preto-Jacundá, managed by SEDAM. However, there is no decree degazetting the FLOREX. Thus, when one discounts the overlaps, 6,830.5 square kilometers of protected area continue being ignored by SEDAM.

In the case of the Indigenous Lands in critical situations, the majority are in the State of Pará. However, over the last three years, the TI Awá located in Maranhão has presented the highest absolute loss of forest. This Indigenous Land is inhabited by isolated Indians whose survival is threatened by growing deforestation.

The case of the TI Marãiwatsede in Mato Grosso, eighth in rank of forest loss, illustrates how the slow pace of the government leads to environmental loss, violation of the rights of indigenous peoples and to countless conflicts. In July, 2012, 24 years after the President of Brazil confirmed recognition of this Indigenous Land (Gonçalves, 1999), the federal courts ordered the removal of the non-indigenous population from the area (Leiva, 2012). However, until September 2012, the federal government had not yet carried out the removal of the illegal occupants (Dióz, 2012).

Method

The ten PAs with the highest average of absolute loss of original forest were defined based on the average absolute deforestation rate for 2009, 2010 and 2011.

Percentage loss of original forest from 2009 to 2011

The ranking of the ten PAs with the largest percentage loss of original forest during the last three years[2] contains six UCs and four TIs (Table 2).

TABLE 2
Ranking of the ten PAs with the largest average of percentage loss of original forest from 2009 to 2011.

	PROTECTED AREA	STATE	MANAGEMENT	AREA (KM²)	DEFORESTATION RATE (KM²//YEAR)
1	FERS Periquito	Rondônia	State	11.5	9.5
2	FERS Araras	Rondônia	State	10.6	7.3
3	FERS Mutum	Rondônia	State	107.6	6.4
4	TI Awá	Maranhão	Federal	1,153.5	3.5
5	TI Marãiwatsede	Mato grosso	Federal	1,667.5	2.9
6	TI Sarauá	Pará	Federal	190.4	2.6
7	FERS Tucano	Rondônia	State	4.8	1.7
8	ARIE Seringal Nova Esperança	Acre	Federal	25.7	1.6
9	FERS do Rio Vermelho (C)	Rondônia	State	198.7	1.3
10	TI Alto Rio Guamá	Pará	Federal	2,857.7	1.1

Five of the UCs with the largest percentage loss are in Rondônia and belong to the Sustainable State Forest category (Floresta Estadual de Rendimento Sustentável - FERS). The FERS were created during the second half of the 1990s, but the Rondônia State government has not clearly defined the guidelines for implementing those areas, including the institutional responsibilities for managing them. Additionally, many governmental policies have ignored the existence of those UCs and allowed granting of titles to areas occupied by squatters and the approval of forest management plans for timber production. Moreover, those UCs also present chronic management problems related to the poor allocation of human and financial resources and appropriate physical infrastructure (GTA, 2008). In fact, the FERS are areas that lack management plans, which results in the loss of their function.

Among the TIs, we highlight Awá, Marãiwatsede and Alto Rio Guamá, because they already appear in the ranking of highest average of absolute loss of original forest and also have suffered the largest percentage losses of forest cover.

Method

The ranking of the ten PAs with the highest average of percentage loss of original forest was defined based on the weighted average of proportions deforested in 2009, 2010 and 2011 of each area in relation to its total of forest.

(2) The percentage loss involves the proportion of deforested area in relation to the total area of forest from the previous period. The proportion does not always represent the largest absolute area, because it depends upon the total original forested area of the PA. Although it does not represent the largest absolute areas, the percentage loss shows the PAs that are most compromised in terms of forested area that is annually deforested.

Percentage of remaining forest in 2011

The ranking of the ten PAs with the lowest percentage of remaining forest in 2011 contains nine TIs and only one UC (Table 3), seven of which are in the State of Amazonas. The only UC, FERS Periquito, is located in Rondônia.

TABLE 3

Ranking of the ten PAs with the lowest remaining forest in 2011.

	PROTECTED AREA	STATE	MANAGEMENT	AREA (KM²) / REMAINING FOREST COVER (%)
1	TI Recreio/São Félix	Amazonas	Federal	7% 2.4 km²
2	TI Tikuna de Santo Antônio	Amazonas	Federal	9% 10.6 km²
3	TI Apipica	Amazonas	Federal	10% 6.9 km²
4	TI Kaxinawa da Colônia Vinte e Sete	Acre	Federal	21% 1.1 km²
5	TI Méria	Amazonas	Federal	31% 5.8 km²
6	FERS Periquito	Rondônia	State	35% 11.5 km²
7	TI Marãiwatsede	Mato grosso	Federal	40% 1,667.5 km²
8	TI Miguel/Josefa	Amazonas	Federal	43% 16.7 km²
9	TI Murutinga	Amazonas	Federal	50% 11.5 km²
10	TI Guapenu	Amazonas	Federal	53% 21.8 km²

The first eight places in this ranking are of PAs that have less than half of their original forest cover remaining, notably the TIs of Recreio/São Felix and Tikuna de Santo Antônio. These two PAs are located in the State of Amazonas and have already lost 90% of their original forest cover.

The PAs listed present from 85 to 100% of their forest loss concentrated up to the year 2000, except for the FERS Periquito, which presents higher losses beginning in 2005. The largest part (62%) of the deforestation in the TI Marãiwetsede also occurred before 2000, although there are significant records of forest loss for the last three years, as shown by the first analyses.
Because they have already lost a major portion of their original forest, those PAs no longer fulfill or have difficulty in fulfilling the objectives established when they were created. In the case of the TIs and sustainable use UCs, deforestation compromises the full use of natural resources by indigenous peoples and traditional populations, because forest loss directly impacts hunting, fishing and extraction of forest products that are necessary for their survival and wellbeing. In those cases, it is recommended that the forest be restored in order to recompose the lost vegetation and recover the objective for which these territories exist.
In the municipality of Autazes (AM) there is an example of restoration of forest cover in TIs. The lands of the Mura people were deforested and occupied by non-indigenous peoples in a historical process going back to the XVIII century and which led to their dispersal. During the second half of the XX century the Mura laid claim to their lands and these were demarcated in small areas of remnant forests (ISA,

2011). However, the forests in the TIs succumbed to pressures from cattle ranches in the surrounding areas during the long demarcation period. Beginning in 2010, some indigenous producers adopted Agroforestry Systems (AFS) to restore degraded areas and began receiving help from federal, state and municipal agencies[3], technical assistance from the Executive Commission of the Cocoa Farming Plan (Comissão Executiva do Plano de Lavoura Cacaueira – CEPLAC) and financing from the Bank of the Amazon. In 2012 the large banana production aroused the interest of indigenous farmers in cooperativism and sales techniques[4]. The case of the TIs in Autazes shows how forest restoration through the use of AFS is an alternative for rehabilitating highly deforested areas and the environmental services necessary for sociocultural reproduction of indigenous peoples. Furthermore, this initiative is in harmony with the National Policy for Territorial and Environmental Management of Indigenous Lands (Política Nacional de Gestão Territorial e Ambiental de Terras Indígenas - PNGATI[5]), whose objectives include: i) identifying native species of sociocultural importance in TIs and prioritizing their use in AFS and in landscape recovery of degraded areas; and ii) promoting the recovery and conservation of agrobiodiversity and other natural resources that are essential for food and nutritional security among indigenous peoples, with a view to valuing and recovering the traditional seeds and crops of each indigenous people.

Method

The ranking of the ten PAs with the lowest percentage of remaining forest cover was defined using the sum of deforestation accumulated until 2011 for each area in relation to its total original forest.

CHIEF DAMIÃO PARIDZANÉ, LEADER OF THE XAVANTE COMMUNITY OF TI MARÃIWATSEDE. PHOTO: ADRIANO GAMBARINI/OPAN

[3] National Indian Foundation (Fundação Nacional do Índio – FUNAI), Amazonas State Secretariat for Indigenous Peoples (Secretaria de Estado do Amazonas para os Povos Indígenas – SEIND), State Secretariat for Rural Production (Secretaria de Estado de Produção Rural – SEPROR), Amazonas State Secretariat for Sustainable Development (Secretaria de Estado do Meio Ambiente e Desenvolvimento Sustentável – SDS), and Municipal Secretariat for the Environment of Autazes (Secretaria Municipal de Meio Ambiente de Autazes).
[4] Information obtained from Edivaldo Oliveira Munduruku, Indian technician from the Funai Regional Center in Manaus, by telephone conversation with Elis Araújo on Aug. 09, 2012.
[5] Decree no. 7,747 of the Office of the President of Brazil of June 5, 2012.

RESEX TAPAJÓS-ARAPIUNS, NEAR SANTARÉM (PARÁ). MENTAE VILLAGE. PHOTO: ADRIANO GAMBARINI

Critical **Protected** AREAS

According to PADDD threats

PADDD Threat due to legal initiatives

The increase in illegal occupation and forest degradation in PAs in the Amazon has driven legal initiatives (lawsuits and proposed legislation) to reduce (downgrade) or remove legal protection (downsize or degazette) from these areas (Araújo & Barreto, 2010). Around 20,600 square kilometers of PAs (n=29) have already lost legal protection in the Legal Amazon. Most of this loss (83%) has occurred in recent years (2009 to 2012) in order to regularize occupations and allow the construction of infrastructure projects, mainly hydroelectric dams.

Until July, 2012, we have identified ten PAs that have been the object of lawsuits and/or proposed legislation (Table 4 and Figure 2). The lawsuits have sought to remove occupants[6] or invalidate the creation of those areas; and the proposed legislation have sought Protected Area downgrading, downsizing or degazettement (PADDD) or exchanging[7] areas. Altogether, 32,866 square kilometers are under PADDD threat.

PADDD cases also tend to encourage new occupation and greater degradation of the PAs in order to force future changes. One example occurs in the State of Rondônia, which has adopted the downsizing or the degazettement of occupied areas as a rule, which can be seen in both the amount of area that lost legal protection (85% of the total or 17,600 square kilometers) and in the number of downsized or degazetted PAs (n=21). Even after being downsized, the PAs continue to suffer invasion and degradation. FLONA Bom Futuro, for example, was downsized by 35% from its original size in 2010, and even so continues to present increasing deforestation in the remaining portion.

[6] We consider the existence of lawsuits for removing occupants from PAs to be a PADDD threat because the occupants can obtain a decision allowing them to remain in the area and also excluding their properties from the limits of the PAs.
[7] A form of trading of areas within the PA for others around it.

TABLE 4

Protected Areas in the Amazon that are under PADDD threat.

CATEGORY	PROTECTED AREA	STATE	LEGAL INITIATIVE	OBJECTIVE OF THE LEGAL INITIATIVE	AREA OF THE PA (KM²)	AREA UNDER PADDD THREAT (KM²)
UCF	FLONA Jamanxim	Pará	PDC* 1148/2008	Degazette	13,044.8	13,011.0
TI	Apyterewa	Pará	PDC 393/2007	Degazette	7,741.9	7,735.0
UCF	ESEC da Terra do Meio	Pará	PLC** 6479/2006	Downsize and exchange areas	33,714.4	5,868.0
UCF	PARNA da Serra do Pardo	Pará	PLC 6479/2006	Exchange areas	4,461.9	1,817.0
TI	Marãiwatsede	Mato Grosso	PDC 510/2008/ Court case no. 2007.01.00.051031-1 (TRF1)	Degazette and Remove occupants	1,667.5	1,652.0
TI	Awá	Amazonas	Court case no. 95.00.00353-8	Degazette	1,153.5	1,166.0
TI	Alto Rio Guamá	Pará	Court case no. 2006.39.04.003310-7 (JF/PA Castanhal)	Downsize	2,857.7	690.0
TI	Uru-Eu-Wau-Wau	Rondônia	Court case no. 2004.41.00.000078-9 (JF/RO)	Remove occupants	18,609.6	550.0
UCF	RESEX Rio Ouro Preto	Rondônia	PLS*** 206/2007	Downsize	1,992.3	315.0
UCF	REBIO Nascentes da Serra do Cachimbo	Pará	PLS 258/2009	Downgrade and Downsize	3,432.2	18.0
TOTAL AREA (KM²)					**88,756.8**	**32,865.7**

* PLC is a bill proposed by the House of Representatives.
** PDC is a bill proposed by the House of Representatives in order to nullify an executive decree because a President abused his legislative power.
*** PLS is a bill proposed by the Senate.

PADDD threat due to planned hydroelectric dams

We identified another 17 PAs located in the areas of influence of planned hydroelectric dams in the PAC for the Amazon[9] (see Figure 2 and Table 5). Those planned dams have not yet begun or are in the initial phase of environmental licensing, but they represent a risk because of the procedures that the government has used in recent cases.

One example of that threat that has actually occurred in January, 2012, when the federal government downsized UCs in the States of Pará and Amazonas through a provisional measure (Medida Provisória – MP) to allow the construction of dams. In the Tapajós Basin 1,050 square kilometers from five UCs lost legal protection for the building of two dams (Araújo et al., 2012). This downsizing did not occur through a law coming from the legislature (although it converted MP 558 into law), nor were they based on technical studies as determined by law. Additionally, they are being challenged by the Federal Attorney General's office in the Brazilian Supreme Court[10]. In this case, the areas were downsized even before environmental licensing. On the other hand, PADDD events can also occur while the dam is being built, as is the case with the PARNA Mapinguari, which lost 85 square kilometers to the formation of lakes by the Jirau and Santo Antônio dams.

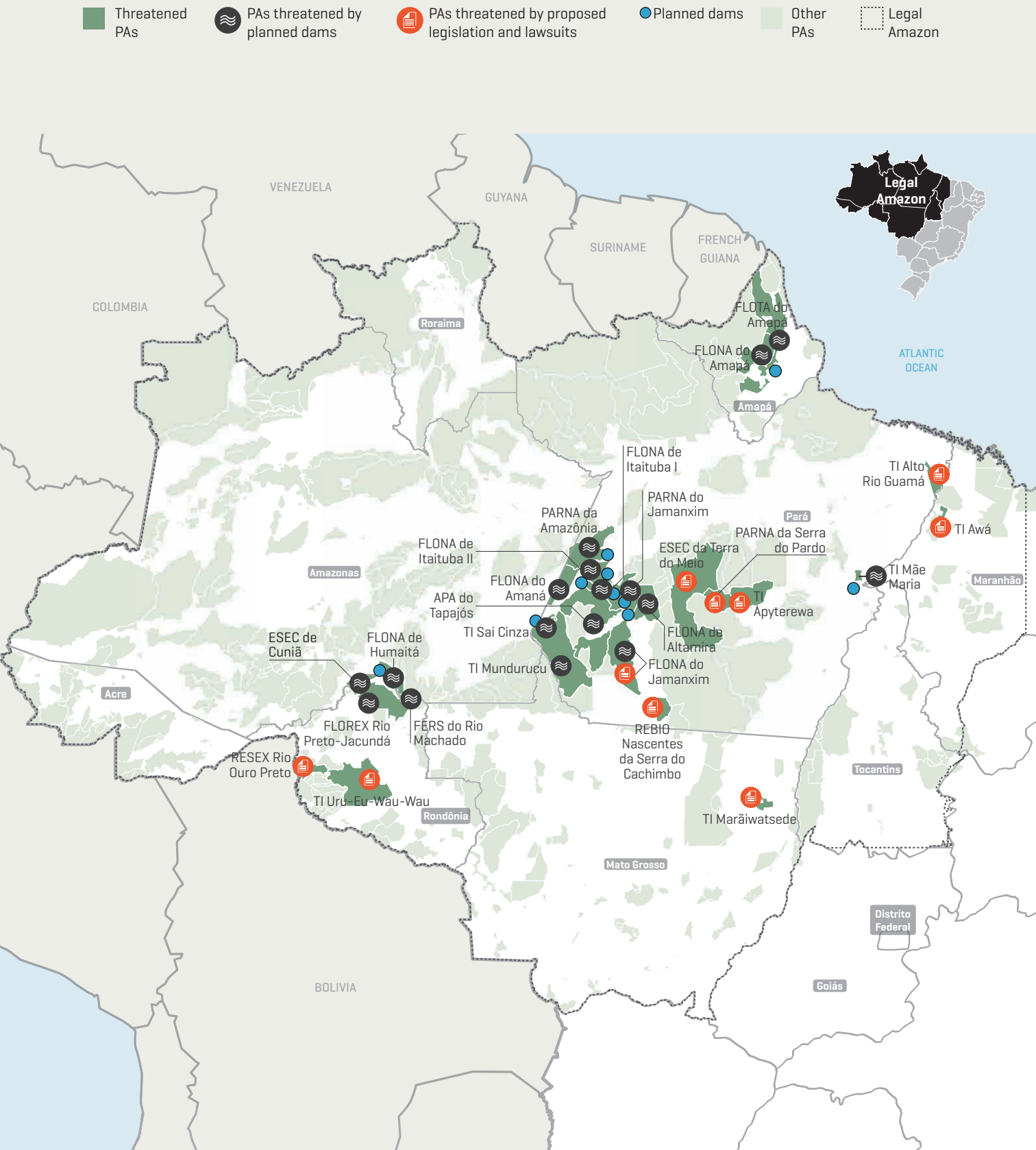
TABLE 5

Protected Areas of the Amazon under PADDD threat due to planned hydroelectric dams.

CATEGORY	PROTECTED AREA	STATE	PLANNED DAM
UCE	FLOTA do Amapá	Amapá	Cachoeira Caldeirão
UCF	FLONA do Amapá	Amapá	Cachoeira Caldeirão
TI	TI Mãe Maria	Pará	Marabá
UCF	PARNA da Amazônia	Amazonas/Pará	São Luiz do Tapajós and Jatobá
UCF	FLONA de Itaituba II	Pará	Cachoeira do Caí and Jatobá
UCF	FLONA do Amaná	Pará	Jatobá
UCF	FLONA de Itaituba I	Pará	Jatobá, Cachoeira do Caí and Jamanxim
UCF	APA do Tapajós	Pará	Jatobá and Jardim do Ouro
UCF	PARNA do Jamanxim	Pará	Jamanxim, Cachoeira dos Patos and Jardim do Ouro
UCF	FLONA do Jamanxim	Pará	Jardim do Ouro
UCF	FLONA de Altamira	Pará	Jardim do Ouro
TI	TI Sai Cinza	Pará	Chacorão
TI	TI Mundurucu	Pará	Chacorão
UCF	FLONA de Humaitá	Amazonas	Tabajara
UCE	FERS do Rio Machado	Rondônia	Tabajara
UCE	FLOREX Rio Preto-Jacundá	Rondônia	Tabajara
UCF	ESEC de Cuniã	Rondônia	Tabajara

[9] We used the distance of 40 kilometers established by the Interministerial Administrative Rule (Portaria Interministerial) no. 419/2011 for the area of direct influence of hydroelectric use in the Legal Amazon. That admnistrative rule regulates the participation of public administration agencies and entities in the environmental licensing in article 14 of Law no. 11,516/2007.
[10] Direct Action of Unconstitutionality (Ação Direta de Inconstitucionalidade) no. 4,717.

FIGURE 2
Protected Areas under PADDD threat due to legal initiatives and to planned hydroelectric dams.



Besides PADDD events, the PAs near planned dams may suffer deforestation in the areas of direct and/or indirect influence of the undertakings. Analyses of the risk of deforestation for the area of influence of the Belo Monte dam depict a strong threat coming from immigration (Barreto et al., 2011). Although the federal government has promised to adopt a new model for building hydroelectric dams (the platform model) that would avoid immigration, in the case of the Tapajós River region, the government itself estimates that the investments would result in the generation of 75 thousand jobs[11].

Method

In this list we considered the PAs under PADDD threat due to proposed legislation, lawsuits and planned dams.

We selected the PAs under PADDD threat due to proposed legislation and lawsuits in progress based on the study O fim da floresta? (The end of the forest? – GTA/RO, 2008), which reveals the downsizing and the degazettement of various PAs in the State of Rondônia. We also consulted sites specializing in socioenvironmental information on the Internet: www.amazonia.org.br, www.ambientebrasil.com.br, www.socioambiental.org.br and www.globoamazonia.com.br; and institutional sites: www.ibama.gov.br, www.icmbio.gov.br, www.camara.gov.br, www.senado.gov.br, www.presidencia.gov.br, www.ale.ro.gov.br, http://www.al.mt.gov.br, www.trf1.jus.br, www.stj.jus.br and www.stf.jus.br.

To select the PAs under PADDD threat due to planned dams, we considered the planned hydroelectric dams whose construction works have not yet begun or are in the initial phase of environmental licensing. For that analysis we consulted the study on the downsizing of PAs in the Tapajós Basin performed by Araújo et al. (2012); and the FUNAI site: www.funai.gov.br. We identified the PAs within a radius of 40 km from the probable location of a planned dam based on data from the ANEEL (National Electric Energy Agency - Agência Nacional de Energia Elétrica) site: http://sigel.aneel.gov.br/.

(11) Information available on the video posted by the Office of the President (Palácio do Planalto) on 02/18/2010 at this address - http://youtu.be/IMYYlBb8LTQ.

SYSTEMIC VULNERABILITIES

Our analysis has revealed that the critical PAs have succumbed to threats coming from agribusiness and infrastructure projects, especially hydroelectric dams. Those areas are vulnerable because of systemic failures by the public sector, which has the duty of protecting such areas. In this section we will summarize these failures in order to help in designing solutions.

The government has increased environmental surveillance in some regions through field operations that result in fines, confiscation of assets (including cattle) and economic embargoes. However, such actions are insufficient, since they are initiated after the damage has occurred and the final application of penalties is low. For example, less than 0.5% of the amount of fines has been collected and many offenders continue using embargoed areas.

There is a lack of basic governance structures in order to prevent damages and promote the sustainable use of the UCs. For example, of the 11 UCs listed in the rankings, eight do not have a management plan, nine do not have management councils set up and eight do not have employees dedicated for managing them, not to mention those that did not provide these data.

Vulnerability also results from the scarcity of funds and the government's inability to implement the available budget. In a report published in 2008, the Ministry of the Environment (Ministério do Meio Ambiente – MMA) affirmed that the federal budget provided only R$ 132 million for the UCs, while annual recurring costs for the federal UCs were supposed to be approximately R$ 543 million. According to the MMA, in order to have the minimal structure for the National System of Conservation Units (Sistema Nacional de Unidades de Conservação – SNUC) it would be necessary to have R$ 611 million in investments from the federal system and around R$ 1.18 billion from the state systems. However, the amounts available in the Federal and state budgets have been far below what is needed (Inesc, 2011). Furthermore, the efforts for revenue collection through alternative instruments such as visitation, Ecological ICMS[12] and others have been insufficient (Muanis et al., 2009).

What is even more worrisome is the fact that the federal government has been incapable of implementing the funds available for the PAs. In 2008, only R$ 49.5 million of the R$ 500 million collected through federal environmental compensation programs were invested. These amounts are collected from companies to offset the damages resulting from large projects that receive an environmental license. The low application of these funds is due to: i) the lack of political priority in regulating the technical, administrative and operational processes needed for channeling those funds; ii) insufficient capacity-building for human resources; and iii) the environment of legal uncertainty created by ADIN (Direct Action of Unconstitutionality – Ação Direta de Inconstitucionalidade) no. 3,378/2008[13] brought by the CNI (National Confederation of Industry – Confederação Nacional da Indústria) (Muanis et al., 2009).

Additionally, ICMBIO[14] had spent only 50% of its budget until October, 2011, when 80% of the year had already passed (this means that R$ 290 million out of

(12) Ecological ICMS is a fiscal instrument, designed to reward local governments that promote conservation of biodiversity and other environmental initiatives. The ICMS is an acronym for Tax on Operations Relating to Sales of Goods and Provision of Services. It is a kind of value-added tax, levied in the State of origin on movable property, imported goods, electric power, ownership of vehicles, provision of communication services and transport of goods between cities and states. The ecological criterion is used for redistributing ICMS to municipal governments as a way to compensate them for the loss of revenues due to environmental restrictions.

(13) In April, 2008, the Federal Supreme Court (Supremo Tribunal Federal - STF) judged the merits of ADIN no. 3,378 brought by the CNI, affirming that charging for environmental compensation was constitutional and should be proportional do the damage caused by the projects, and overthrew the minimum amount of 0.5%. In May, 2009, Federal Decree no. 6,848 established a new methodology for calculating compensation, which determined that the maximum amount to be charged would be 0.5% of the cost of the enterprise. In other words, what had been the minimum level had now become the maximum. The following month, the Instituto Socioambiental (ISA) and the NGO Friends of the Earth-Brazilian Amazon started a new lawsuit at the STF (Complaint no. 8,465) claiming that the new rule was unconstitutional for the same reason that led the STF to judge ADIN nº 3,378. STF has not yet ruled on this case.

(14) Created by Law no. 11,516/2007, ICMBIO is a government agency that is part of the National Environmental System (Sistema Nacional do Meio Ambiente - Sisnama), subordinated to the MMA. Its duties include the creation, implementation and management of federal UCs.

R$ 567 million had been spent). During this same period, ICMBIO spent only 13.36% of the budget for the Program for Conservation and Recovery of Brazilian Biomes (Programa Conservação e Recuperação dos Biomas Brasileiros). That is R$ 24 million out of R$ 184 million (Inesc, 2011).

In the case of the TIs, the Ministry of Health and the Ministry of Justice spent approximately R$ 2.84 billion in actions focused on indigenous peoples from 2006 to 2010. This amount was 92.37% of what had been authorized by the National Congress, meaning that R$ 234.8 million were returned to the National Treasury (Inesc, 2011).

At the same time that funds are returned, there is still a need for dealing with the occupants, whether to remove them or indemnify them when it is the case. Because the occupancy rules for public lands are confused and the court system is slow, occupants remain in the areas for many years and continue to degrade them and make use of assets that are public or belong to indigenous and traditional populations (Barreto et al., 2008). As time passes, occupants gain economic and political power to pressure for PADDD. Pressured or conniving governments have authorized PADDD (Araújo & Barreto, 2010). In some cases, governments have delayed complying with court decisions for removal of illegal occupants, which increases pressures, as it is the case of the TIs Marãiwatsede and Alto Rio Guamá.

The vulnerability of these areas is aggravated when the government itself resorts to legally questionable means for downsizing PAs in order to accelerate its infrastructure projects. One example is the use of provisional measures without public consultations. That type of measure reinforces the pressure of illegal occupants in favor of PADDD.

CATTLE RANCH IN NORTHERN MATO GROSSO. PHOTO: FERNANDA PRETO

Recommendations

In order to ensure the integrity of the PAs it will be necessary to employ several specifically focused priority measures for dealing with the critical areas identified in this paper, while at the same time advancing with measures for correcting systemic vulnerabilities.

For the areas with small forest remnants, without additional pressure for deforestation, it will be necessary to invest in restoration in order for them to fulfill their objectives. In some TIs in Amazonas, deforested areas have been restored with AFS, which helps ensure food security for indigenous peoples. This approach can be considered for other areas in consultation with the indigenous peoples.

In order to deal with areas that have high deforestation rates several approaches will be needed. In the very short term, the government needs to reinforce more effective measures against illegal deforestation such as confiscation and auctioning of cattle (Maia et al., 2011). Furthermore, companies should be held liable for supplying themselves with illegal products coming from such areas, as is the case with some meat-packing plants.

To reinforce prevention and promote the sustainable use of the areas, the government needs to install permanent surveillance bases and use task forces for preparing management plans and setting up management councils in the case of the UCs. Additionally, the public powers (judiciary and executive) should rapidly judge and apply decisions related to land-title regularization for PAs. It is essential to avoid judicial proceedings that drag on for decades and end up being fatal for conservation and for many of those involved in the conflicts.

For the government to be able to act rapidly it will be necessary to expand partnerships with universities, research institutions and service providers. Those partnerships will be useful both for making use of highly capable professionals from outside government ranks and for using more agile structures for applying budget funds that are already available. The government has recently decided to use concessions to streamline investments in infrastructure, which shows openness towards the use of such an approach to PAs.

The solution of some of the systemic problems will depend upon the highest governmental authorities and leaders from the private sector (such as construction companies and financial institutions) prioritizing the success of the PAs in the Amazon. In that regard, one of the most important changes will be for them to coordinate their infrastructure projects with measures for compensating and strengthening PAs. Given that megaprojects have led to conflicts and degradation, the reputations of the government and the companies involved are brought into question and the costs associated with court battles (such as those to paralyze projects) increase. Besides conservation, government and companies would stand to gain by avoiding these strains.

In order to facilitate a systemic vision of the environmental risks of various infrastructure projects, the government should carry out a SEA (Strategic Environmental Assessment), according to a recommendation from the Federal Audit Court (Tribunal de Contas da União) (Court Decision no. 464/2004). It would thus be possible to determine on a regional scale the measures necessary for mitigating and offsetting environmental impacts. Our map showing the PAs threatened by planned hydroelectric dams reveals places where that strategy needs to be strengthened as a priority.

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PHOTO: ADRIANO GAMBARINI

NORTHERN MATO GROSSO
PHOTO: FERNANDA PRETO

Appendices

In order to contextualize the situation of accessibility, pressure, threat and vulnerability in which the PAs are placed, we have made available maps and descriptive tables on the following pages for the most critical PAs in the Legal Amazon, according to analyses of deforestation. The objective is to support recommendations for protecting each one of the PAs and for removing them from the critical conditions in which they are found. In the tables we present each one of those four aspects mentioned above, for which we have considered some indicators.

BOX 1
Aspects and indicators of critical Protected Areas in the Legal Amazon.

ASPECTS	INDICATORS
Accessibility *Means and conditions of access to the PAs and to their natural resources that facilitate the advance of threats*	■ Official and non-official roads: inside the PA and at a 5 km distance ■ Rivers: navigable rivers inside the PA and at a 5 km distance
Pressure *Activities in the past and/ or underway with negative impacts on the PAs*	■ Deforestation accumulated inside the PA: deforested area up to 2011 according to data from PRODES (Amazon Deforestation Monitoring Project – Projeto de Monitoramento do Desflorestamento na Amazônia Legal) ■ Recent deforestation in the PA: Data from SAD (Deforestation Alert System – Sistema de Alerta de Desmatamento) from September, 2011 to May, 2012 ■ Forest degradation (2011) inside the PA: SAD data from August, 2011 to April, 2012 ■ Illegal logging inside the PA: data from SIMEX (System for Monitoring Timber Harvesting – Sistema de Monitoramento da Exploração Madeireira) from 2007 to 2010 ■ Presence of CAR (Rural Environmental Registry – Cadastro Ambiental Rural) inside the PA for the states of Pará and Mato Grosso ■ Mining activity: presence of mineral interest or area beginning to undergo mining within the PA according to data from the DNMP (National Department for Mineral Production – Departamento Nacional de Produção Mineral) up to June, 2012
Threat *Potential or planned activities that will bring about or intensify the negative impacts on the PAs and that occur in the surrounding area*	■ Same indicators of pressure, but that occur in the area immediately surrounding the PA (5 km). Exception: presence of CAR and mineral extraction
Vulnerability *Indicators of management, enforcement and regularization of the PAs in order to assess their current conditions for fighting pressures and resisting advances*	■ Management plan: Does the UC have a management plan? [1] ■ Management council: Does the UC have a management council established?[2] ■ Staff: total number of staff and sufficiency of staff for the management of the UC according to data from the RAPPAM 2010 (Rapid Assessment and Prioritization of Protected Area Management) made available by ICMBIO. ■ Land regularization: yes for cases in which there was removal of illegal occupants or compensation for occupants ■ Financial resources allocated for management of the UC: have the resources invested in the UC over the last 5 years been sufficient for meeting its objectives? According to RAPPAM 2010 data provided by ICMBIO ■ Legal protection: fines inside the PA and embargoed areas in its surroundings and inside the PA (IBAMA) ■ PADDD threat due to proposed legislation, lawsuits in progress or planned hydroelectric dam

[1] Consultation with the UC coordinator at SEDAM/RO, Mr. Paulo Bonavigo, on July 18, and the state agencies for the environment in the Amazon states via official requests in 2010.
[2] Consultation with the UC coordinator at SEDAM/RO, Mr. Paulo Bonavigo, on July 18, and the state agencies for the environment in the Amazon states via official requests in 2010.

Appendix 1

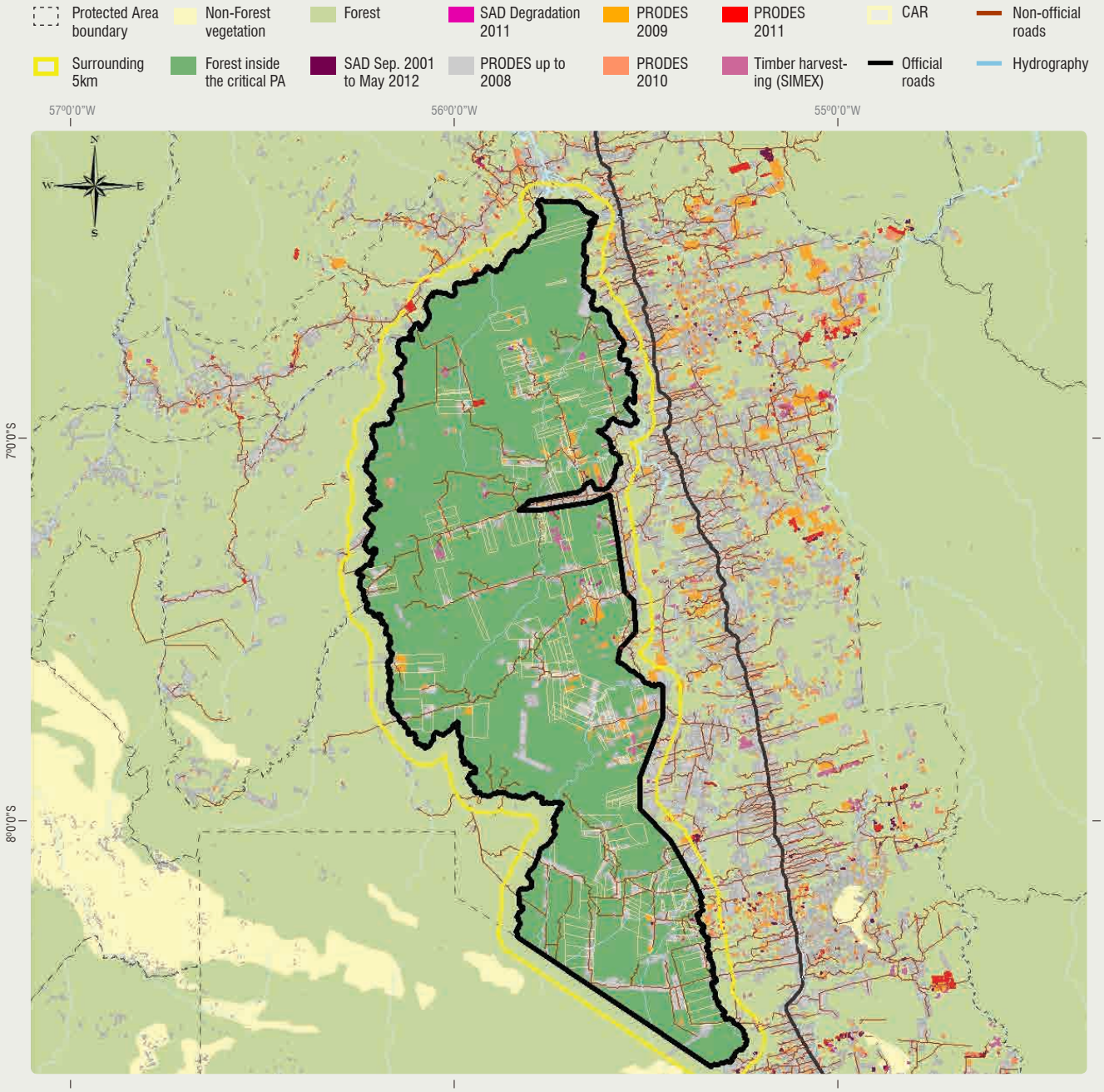
Protected Areas from the ranking of largest average of absolute loss of original forest from 2009 to 2011

1 Jamanxim National Forest

AREA
13,044.8 km²

MUNICIPALITY
Novo Progresso and Itaituba (Pará)

43 km²/year
AVERAGE OF ABSOLUTE LOSSS OF ORIGINAL FOREST FROM 2009 TO 2011



ACCESSIBILITY

Access route		Surrounding area (5km)	Interior
Roads	Official	No	No
	Non-official	460.1 km	1,385.6 km
Navigable rivers		Yes	

THREATS AND PRESSURE

Category		Surrounding area (5km)	Interior
Deforestation	Accumulated up to 2011	698.3 km²	1,152.1 km²
	Recent rate (September, 2011 to May, 2012)	No	1.5 km²
Forest degradation (2011)		0.4 km²	2.5 km²
Illegal logging (2007 to 2010)		1.9 km²	24.7 km²
Properties in CAR		No	265 (2,948.1 km²)
Mining activity		No	

VULNERABILITY

Management

Management instruments	Management Plan	Yes
	Management Council	Yes
Staff	Number of staff	We have no information
	Is the number of staff sufficient for meeting the UC objectives?	No
Financial resources	Have the resources invested in the UC over the last 5 years been sufficient for meeting its objectives?	No
	Are expected financial resources sufficient for the next 5 years for meeting the objectives of the UC?	Yes
Land regularization		No

Legal protection

Command and control	Surrounding area (5km)	Interior
Embargoes (2001 to May, 2012)	120.7 km²	342.3 km²
Fines (2009 to 2011)	41 issued - R$ 50,274.775	
PADDD Threat	PDC 2224/2006, PDC 1148/2008 and planned dam (Jardim do Ouro)	

RELEVANT INFORMATION

The UC is found in the zone of influence of the BR-163 highway and suffers from illegal logging and conversion of forests into pastures. Although operation Pirate Cattle II (Boi Pirata II) occurred in the region, there are still numerous ranches inside the FLONA. There are also several placer gold mines around the UC and inside of it. The construction of dams in the Tapajós basin directly affects the FLONA. It is estimated that the FLONA will lose around one thousand square kilometers of forest due to flooding.

RECOMMENDATIONS

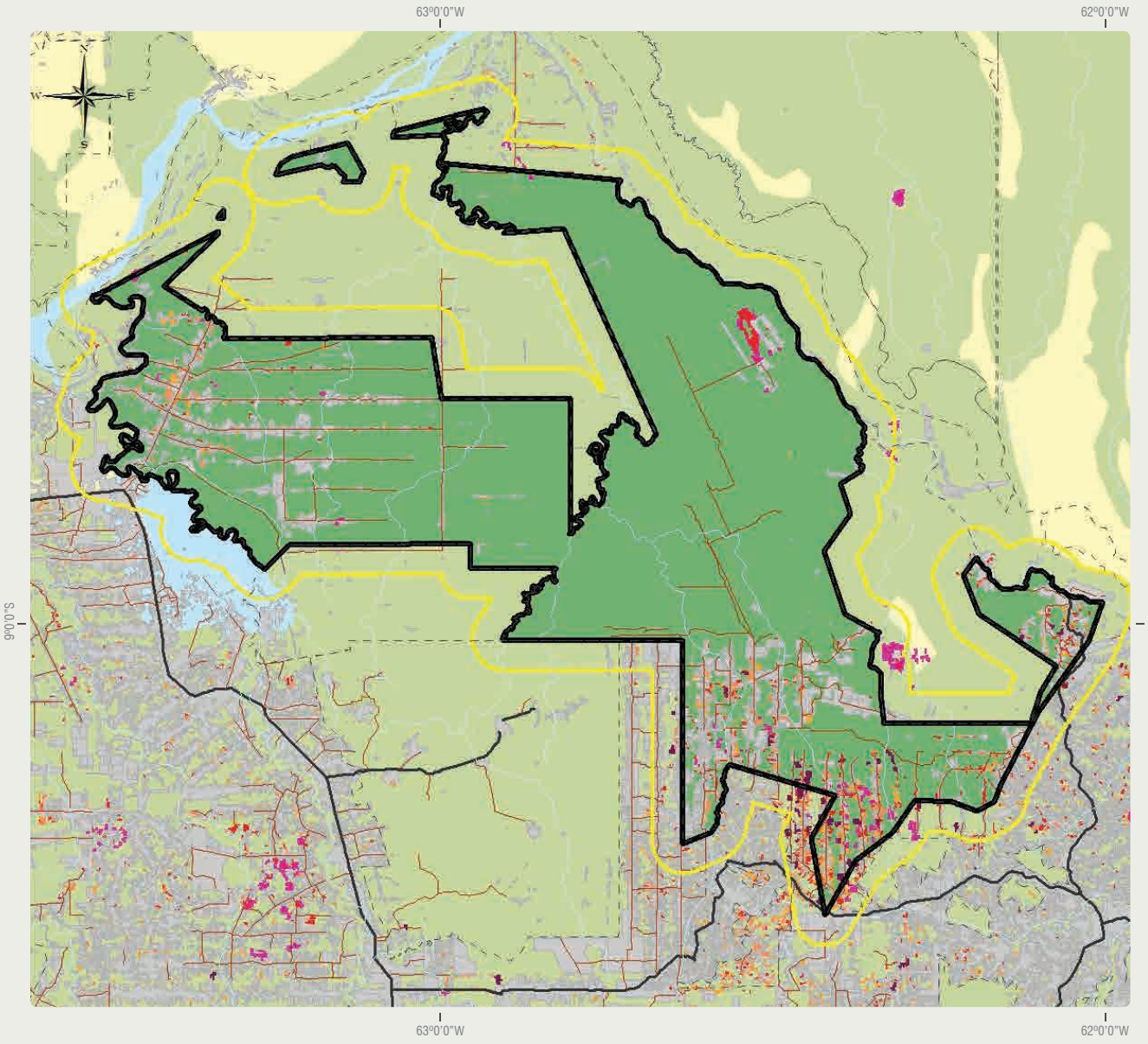
i Remove illegal occupants and compensate those who occupied the area before its creation; and
ii monitor and patrol the area in order to fight illegal logging and occupation of lands by ranchers.

2 Rio Preto-Jacundá Extractive Forest

AREA
6,830.5 km²

MUNICIPALITY
Porto Velho, Machadinho d'Oeste, Candeias do Jamari, Cujubim and Itapuã d'Oeste (Rondônia)

35 km²/year
AVERAGE OF ABSOLUTE LOSSS OF ORIGINAL FOREST FROM 2009 TO 2011



ACCESSIBILITY

Access route		Surrounding area (5km)	Interior
Roads	Official	39.5 km	12.3 km
	Non-official	386.9 km	1,010.8 km
Navigable rivers		Yes	

THREATS AND PRESSURE

Category		Surrounding area (5km)	Interior
Deforestation	Accumulated up to 2011	602.8	868.1 km²
	Recent rate (September, 2011 to May, 2012)	No	10.9 km²
Forest degradation (2011)		17.3 km²	23.5 km²
Mining activity		No	

VULNERABILITY

Management

Management instruments	Management Plan	No
	Management Council	No
Staff	Number of staff	5 (not on-site)
	Is the number of staff sufficient for meeting the UC objectives?	We have no information
Financial resources	Have the resources invested in the UC over the last 5 years been sufficient for meeting its objectives?	We have no information
	Are expected financial resources sufficient for the next 5 years for meeting the objectives of the UC?	We have no information
Land regularization		No

Legal protection

Command and control	Surrounding area (5km)	Interior
Embargoes (2001 to May, 2012)	8.9 km²	36.8 km²
Fines (2009 to 2011)	No	

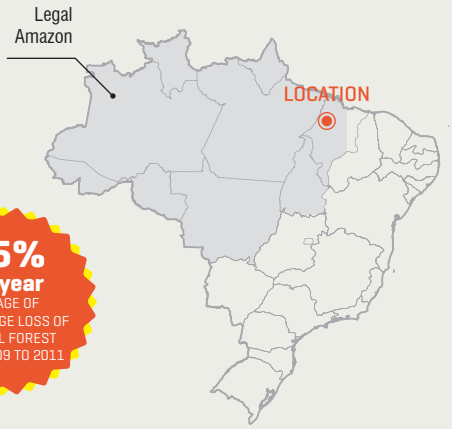
RELEVANT INFORMATION

This UC does not suffer pressure from invaders. At present, illegal hunting, fishing and logging by its inhabitants threaten the integrity of the UC. Representative of SEDAM/RO have affirmed that the FLOREX no longer exists, that it was never demarcated and that the creation of the Rio Preto-Jacundá Extractive Reserve (RESEX) with only 953 km² would have degazetted the FLOREX. However, there is no decree or law degazetting the area. Two UCs currently overlap the FLOREX, the RESEX Rio Preto-Jacundá and the Jacundá National Forest. These overlaps represent 28% of the area of this FLOREX.

RECOMMENDATIONS

ⓘ Remove illegal occupants ; ⓘⓘ monitor and patrol the area to combat illegal logging; ⓘⓘⓘ prepare the management plan and set up the management council; and ; ⓘⓥ regulate the use of the reserve by inhabitants and traditional users.

3 Awá Indigenous Land



AREA
1,153.5 km²

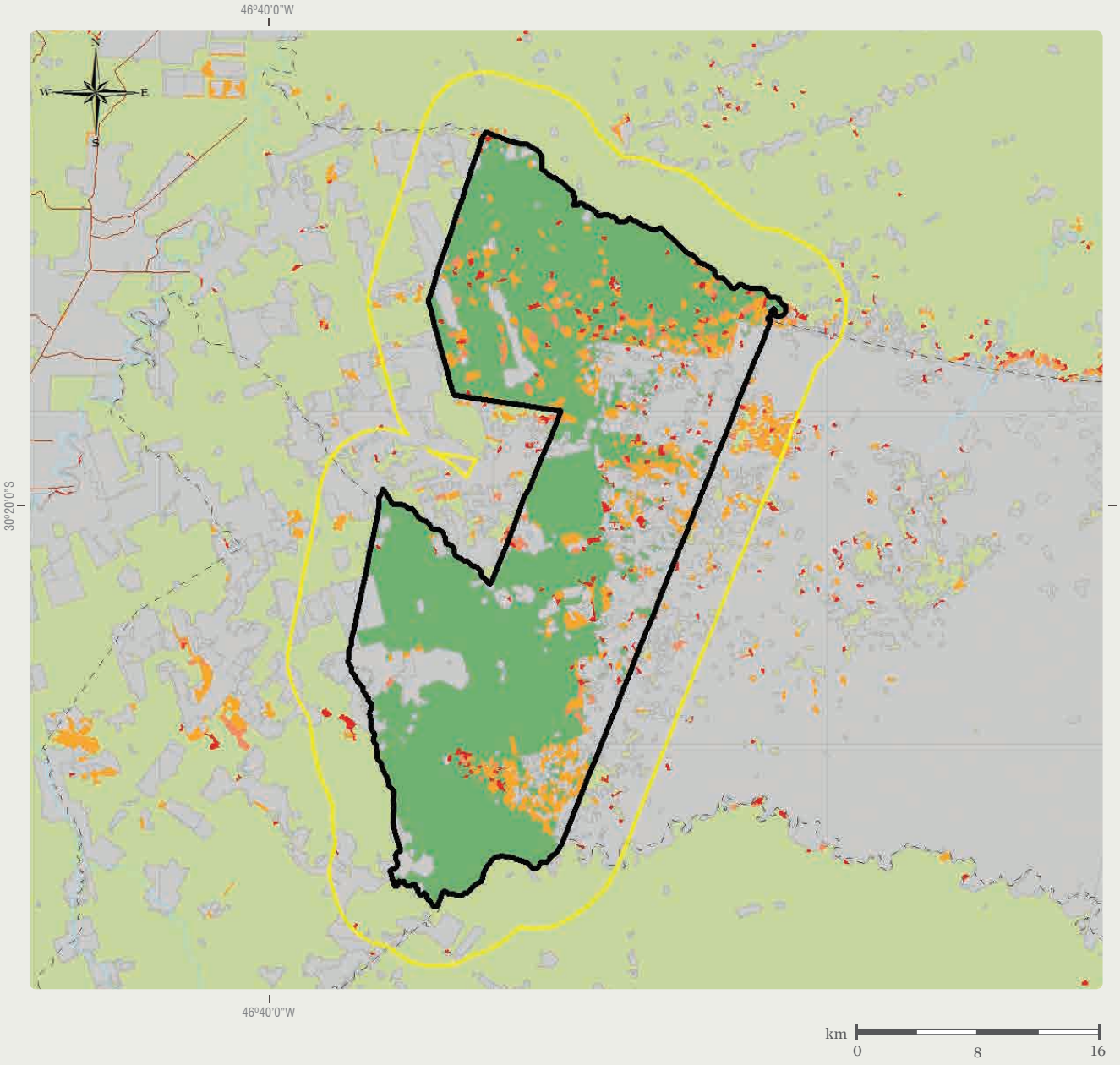
MUNICIPALITY
Centro Novo do Maranhão, Governador Newton Bello, São João do Carú and Zé Doca (Maranhão)

PEOPLE: Guajá **RATIFICATION:** 2005

30 km²/year
AVERAGE OF ABSOLUTE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011

3.5% per year
AVERAGE OF PERCENTAGE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011

Protected Area boundary
Surrounding 5km
Non-Forest vegetation
Forest inside the critical PA
Forest
SAD Sep. 2001 to May 2012
SAD Degradation 2011
PRODES up to 2008
PRODES 2009
PRODES 2010
PRODES 2011
Timber harvesting (SIMEX)
CAR
Official roads
Non-official roads
Hydrography



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	We have no information	We have no information
	Non-official	We have no information	We have no information
Navigable rivers		No	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	478.2 km²	385.2 km²
Mining activity		No	

VULNERABILITY		
Management		
Land regularization		No
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	0.03 km²	No
Fines (2009 to 2011)	1 issued – R$ 600.000	
PADDD threat	Court case no. 95.000.00353-8	

RELEVANT INFORMATION

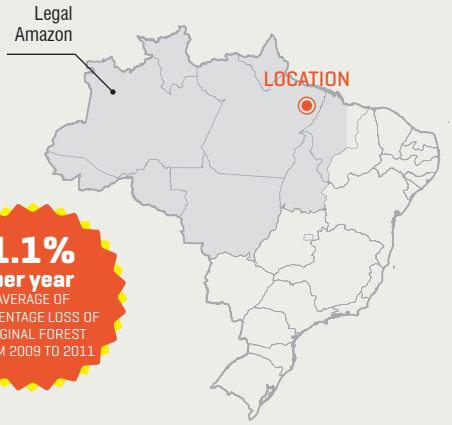
Ranchers and squatters practice illegal logging and ranching in the TI. The advance of environmental degradation in the TI threatens the survival of groups of isolated Indians. There is a lawsuit to annul the demarcation of the TI (95.000.00353-8) which is delaying removal of invaders. However, there is also a lawsuit (2002.37.00.003918-2/MA) to remove the non-indigenous people from the area with a favorable decision in 2009. In March 2012, the TRF1 (Regional Federal Court of the 1st Region - Tribunal Regional Federal da 1ª Região) judged an appeal against the decision of 2009 and confirmed it by establishing a deadline of one year for removal of the non-indigenous people. [3]

RECOMMENDATIONS

(i) Remove the non-indigenous occupants; (ii) monitor and patrol the area to fight illegal logging and the advance of agriculture and ranching; and (iii) control access to the lands of isolated Indians.

[3] Court decision on court case no. 2002.37.00.003918-2/MA. Available at: <http://www.ma.trf1.gov.br/aviso/sentenca-awa.pdf>. Access on Aug. 8, 2012.

4 Alto Rio Guamá Indigenous Land



AREA
2,857.7 km²

MUNICIPALITY
Nova Esperança do Piriá, Paragominas and Santa Luzia do Pará (Pará)

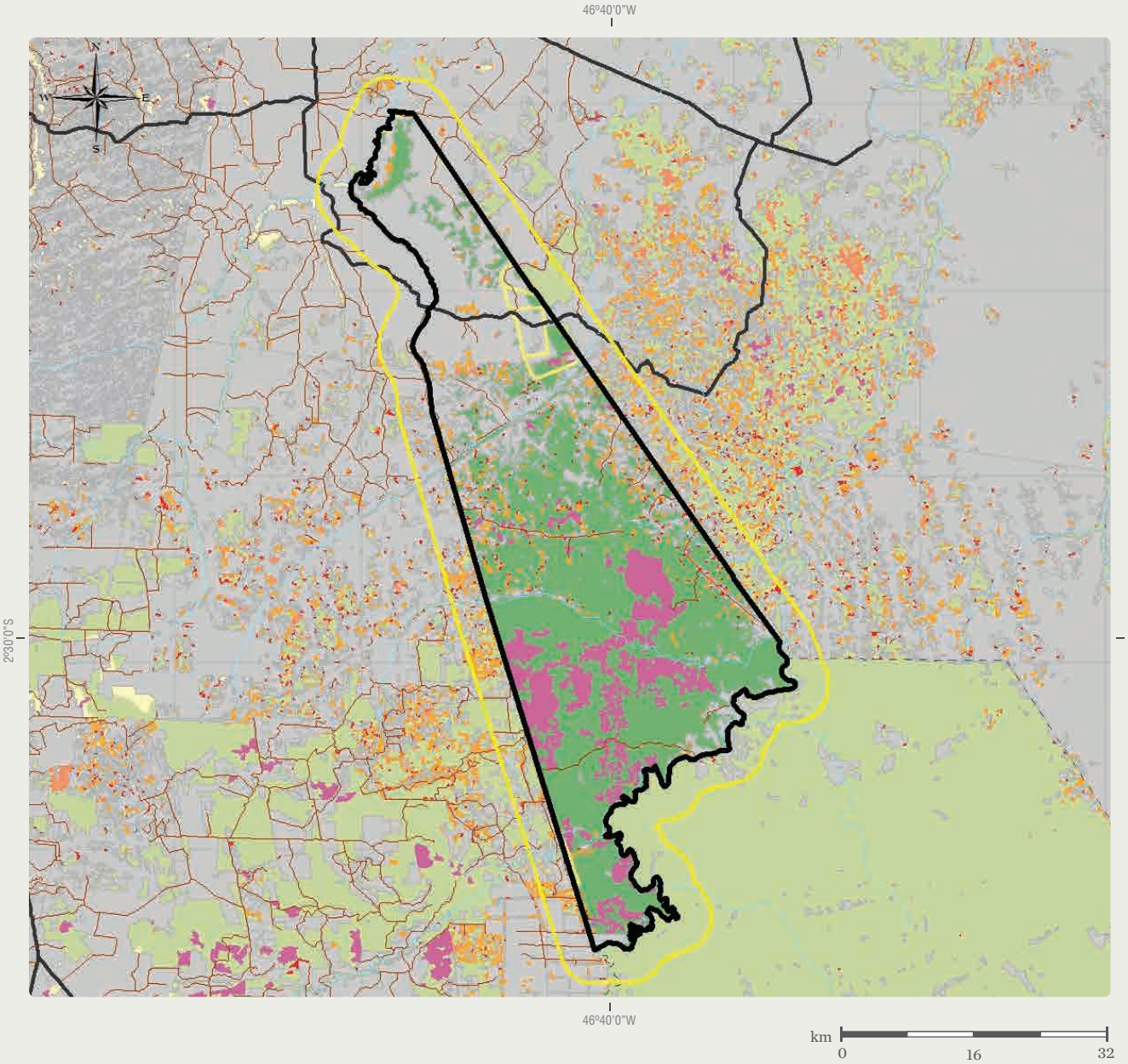
PEOPLE: Guajá, Ka'apor e Tembé

RATIFICATION: 1993

21 km²/year
AVERAGE OF ABSOLUTE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011

1.1% per year
AVERAGE OF PERCENTAGE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011

Protected Area boundary
Non-Forest vegetation
Forest
SAD Degradation 2011
PRODES 2009
PRODES 2011
CAR
Non-official roads
Surrounding 5km
Forest inside the critical PA
SAD Sep. 2001 to May 2012
PRODES up to 2008
PRODES 2010
Timber harvesting (SIMEX)
Official roads
Hydrography



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	31.6 km	20.4 km
	Non-official	199.6 km	194.2 km
Navigable rivers		No	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	967.8 km²/ano	914.4 km²/ano
Illegal logging (2007 to 2010)		0.5 km²	135.2 km²
Properties in CAR		No	4 (98.1 km²)
Mining activity		No	

VULNERABILITY		
Land regularization		No
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	No	0.03 km²
Fines (2009 to 2011)	No	
PADDD threat	Court case no. 2006.39.04.003310-7/Castanhal	

RELEVANT INFORMATION

About 33% of the area of this TI has been deforested. This deforestation is the result of illegal logging and marijuana plantations, as well as the practice of extensive ranching and agriculture inside and surrounding the TI . There is one lawsuit against the TI demarcation brought by the municipality of Nova Esperança.

RECOMMENDATIONS

(i) Remove non-indigenous occupants; (ii) and patrol the area to fight deforestation and drug trafficking; and (iii) ensure indigenous participation in the management of and in the planning of actions for the TI.

[4] Dias, C. L. 2010. O Povo Tembé da Terra Indígena Alto Rio Guamá: construindo vias de desenvolvimento local? Master's thesis in Management of Natural Resources and Local Development in the Amazon, Núcleo de Meio Ambiente, Universidade Federal do Pará. Available at: <http://www.ppgedam.pro.br/ppgedam/attachments/article/79/disserta%C3%A7%C3%A3o--CLAUDIONOR.pdf>. Access on Aug.7, 2012.

5 Cachoeira Seca do Iriri Indigenous Land

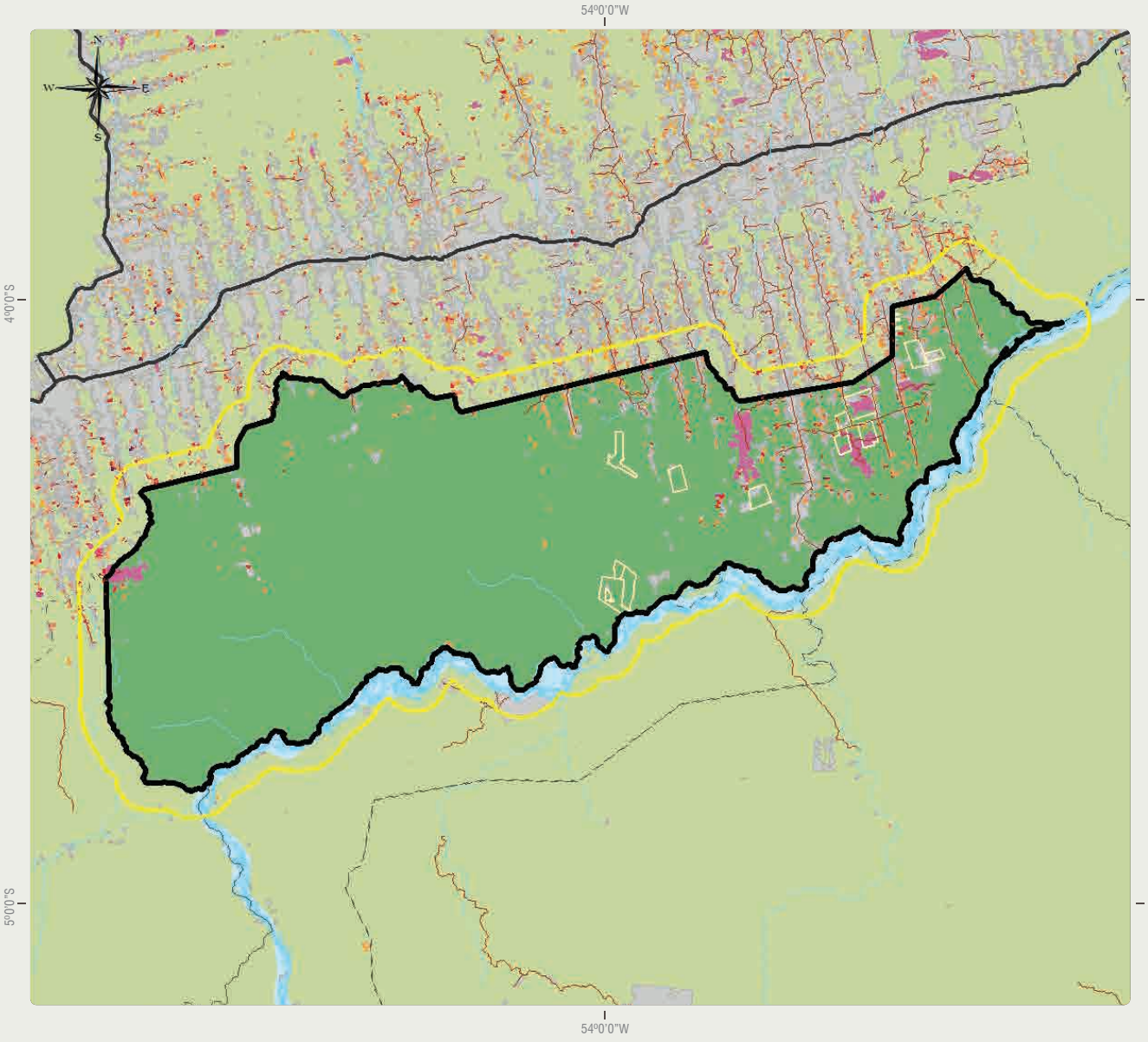
AREA
7,353.8 km²

MUNICIPALITY
Altamira, Placas and Uruará (Pará)

PEOPLE: Arara **RATIFICATION:** Pending

21 km²/year
AVERAGE OF ABSOLUTE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011

Protected Area boundary
Non-Forest vegetation
Forest
SAD Degradation 2011
PRODES 2009
PRODES 2011
CAR
Non-official roads
Surrounding 5km
Forest inside the critical PA
SAD Sep. 2001 to May 2012
PRODES up to 2008
PRODES 2010
Timber harvesting (SIMEX)
Official roads
Hydrography



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	No	No
	Non-official	141.2 km	291.9 km
Navigable rivers		Yes	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	336 km²	368.9 km²
	Recent rate (September, 2011 to May, 2012)	No	0.2 km²
Forest degradation (2011)		Não	0.4 km²
Illegal logging (2007 to 2010)		1.4 km²	42.5 km²
Properties in CAR		No	25 (154.6 km²)
Mining activity		No	

VULNERABILITY		
Land regularization		No
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	1.6 km²	0.3 km²
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

Access to this TI is by roads, by feeder roads of the Transamazon highway and by the Transiriri highway. Deforestation is caused by illegal logging, by ranchers inside and around the area and by the action of more than one thousand squatters inside the TI, some of them settled by INCRA . The delay in the process of recognizing the TI contributes to that situation, since it creates the expectation that it is possible to contest demarcation in order to exclude the occupied lands.

RECOMMENDATIONS

(i) Finish the TI demarcation process; (ii) remove non-indigenous occupants; (iii) increase surveillance of the area; and; (iv) ensure indigenous participation in the management of and in the planning of actions for the TI.

[5] FUNAI, Order of the President on February 27, 2007, published in the Official Gazette (Diário Oficial da União -DOU) on 02/28/2007. Available at: http://www.in.gov.br/visualiza/index.jsp?data=28/02/2007&jornal=1&pagina=114&totalArquivos=160. Access on: Aug. 9, 2012.

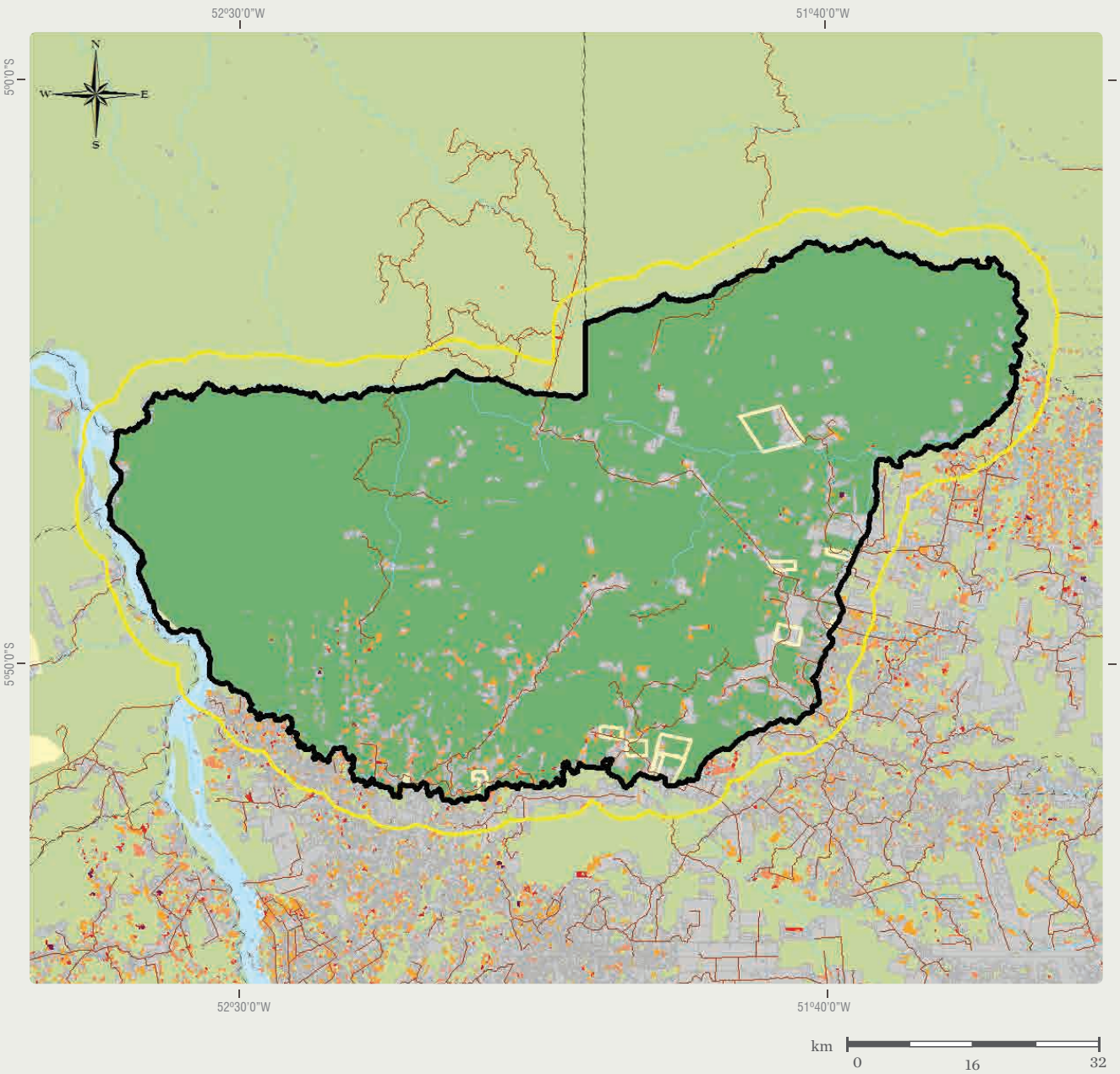
6 Apyterewa Indigenous Land

AREA
7,741.9 km²

MUNICIPALITY
Altamira and São Félix do Xingu (Pará)

PEOPLE: Parakanã **RATIFICATION:** 2007

18 km²/year
AVERAGE OF ABSOLUTE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	No	No
	Non-official	209.8 km	477.7 km
Navigable rivers		No	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	580.7 km²	624.2 km²
	Recent rate (September, 2011 to May, 2012)	No	0.48 km²
Properties in CAR		No	11 (122.7 km²)
Mining activity		Não	

VULNERABILITY		
Land regularization		No
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Fines (2009 to 2011)	1 issued - R$ 90,000	
PADDD Threat	PDC 393/2007	

RELEVANT INFORMATION

Around 10% of its area have been deforested. The deforestation is caused by ranchers inside and around the TI. Removal of non-indigenous occupants is one of the conditions imposed for construction of the Belo Monte dam and is not being complied with.[6]

RECOMMENDATIONS

(i) Remove non-indigenous occupants; (ii) increase surveillance of the area; (iii) ensure indigenous participation in the management of and in the planning of actions for the TI.

[6] Unspecified injunction order of July 18, 2012. Available at: http://www.prpa.mpf.gov.br/news/2012/arquivos/Belo_Monte_cautelar_Condicionantes.pdf/view?searchterm=condicionantes%20belo%20monte. Access on Aug. 8, 2012.

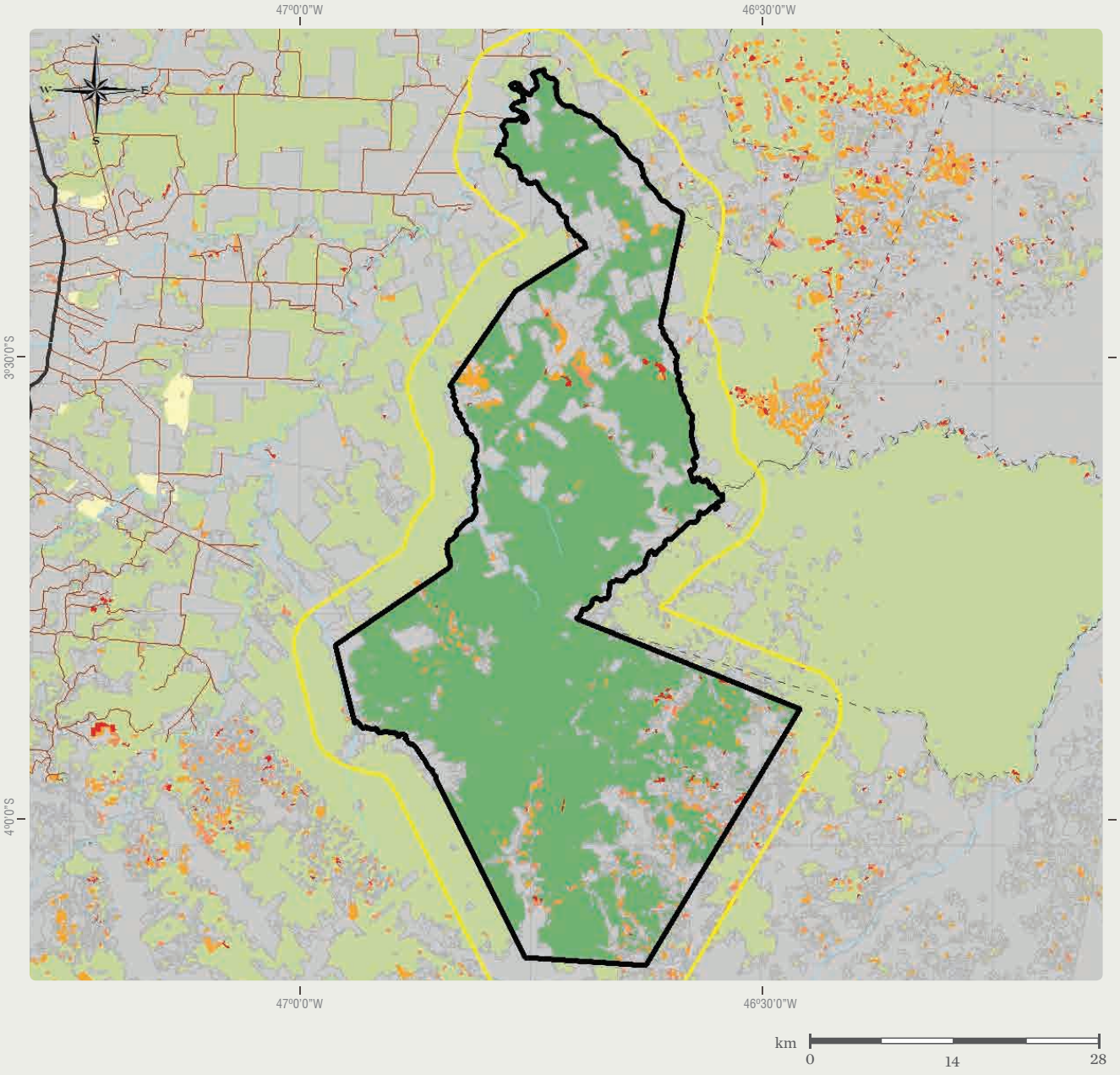
7 Gurupi Biological Reserve

AREA
2,706.9 km²

MUNICIPALITY
Centro Novo do Maranhão,
Bom Jardim and São João do Carú (Maranhão)

15 km²/year
AVERAGE OF ABSOLUTE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011

Protected Area boundary
Surrounding 5km
Non-Forest vegetation
Forest inside the critical PA
Forest
SAD Sep. 2001 to May 2012
SAD Degradation 2011
PRODES up to 2008
PRODES 2009
PRODES 2010
PRODES 2011
Timber harvesting (SIMEX)
CAR
Official roads
Non-official roads
Hydrography



ACCESSIBILITY

Access route		Surrounding area (5km)	Interior
Roads	Official	We have no information	We have no information
	Non-official	19.9 km	We have no information
Navigable rivers		No	

THREATS AND PRESSURE

Category		Surrounding area (5km)	Interior
Deforestation	Accumulated up to 2011	582.9 km²	752.7 km²
Mining activity		No	

VULNERABILITY

Management

Management instruments	Management Plan	Yes
	Management Council	No
Staff	Number of staff	We have no information
	Is the number of staff sufficient for meeting the UC objectives?	No
Financial resources	Have the resources invested in the UC over the last 5 years been sufficient for meeting its objectives?	No
	Are expected financial resources sufficient for the next 5 years for meeting the objectives of the UC?	Yes
Land regularization		No

Legal protection

Command and control	Surrounding area (5km)	Interior
Embargoes (2001 to May, 2012)	No	0.2 km²
Fines (2009 to 2011)	10 issued – R$ 115.160	

RELEVANT INFORMATION

The REBIO has lost 26% of its original forest cover due to illegal logging and agriculture and ranching activities. Additionally, there are major land problems. There are cases of land fraud and the creation of two settlements (Aeroporto and Bom Jesus) by ITERMA (Maranhão Land Institute – Instituto de Terras do Maranhão), ratified by INCRA. In 2010, many enforcement actions occurred in the REBIO and achieved satisfactory results, such as the application of fines and inhibition of pressure; however they were not kept up because of the lack of financial resources.

RECOMMENDATIONS

(i) remove illegal occupants; (ii) monitor and patrol the area to prevent illegal logging and invasion and occupation by ranchers; and (iii) set up the UC management council.

8 Marãiwatsede Indigenous Land

AREA
1,667.5 km²

MUNICIPALITY
Alto Boa Vista, Bom Jesus do Araguaia and São Félix do Araguaia (Mato Grosso)

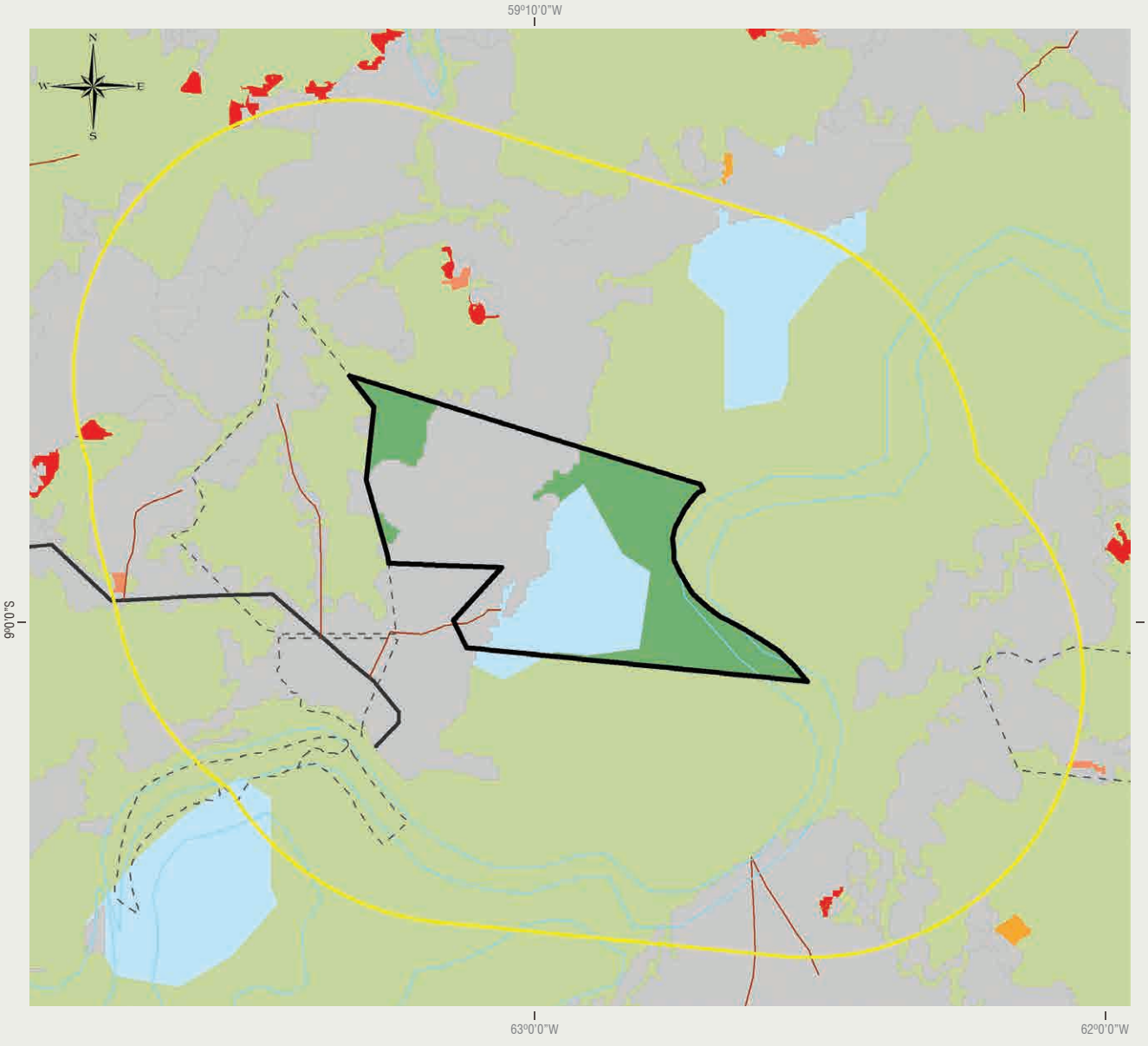
PEOPLE: Xavante **RATIFICATION:** 1998

13 km²/year
AVERAGE OF ABSOLUTE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011

2.9 % per year
AVERAGE OF PERCENTAGE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011

40 % km²/year
PERCENTAGE OF REMAINING FOREST IN 2011

Protected Area boundary
Surrounding 5km
Non-Forest vegetation
Forest inside the critical PA
Forest
SAD Sep. 2001 to May 2012
SAD Degradation 2011
PRODES up to 2008
PRODES 2009
PRODES 2010
PRODES 2011
Timber harvesting (SIMEX)
CAR
Official roads
Non-official roads
Hydrography



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	69.7 km	118.2 km
	Non-official	300.3 km	756.3 km
Navigable Rivers		No	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	778.2 km²	1006.5 km²
Forest degradation (2011)		No	57.8 km²
Mining activity		No	

VULNERABILITY		
Land regularization		No
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	No	12.3 km²
Fines (2009 to 2011)	76 issued – R$ 117,830.980	
PADDD threat	PDC 510/2008 and court case no. 95.00.00679-0/MT	

RELEVANT INFORMATION

This TI appears in the four analyses of deforestation in this publication: it presents only 40% of its original forest cover and continues to lose, on average, 13km² or 3% of its forest cover each year (from 2009 to 2011). Deforestation occurs due to the existence of countless farms and ranches inside and surrounding the TI. On 08/31/2012 the Federal Justice ratified the plan for the removal of non-indigenous occupants drawn up by FUNAI and established a deadline of 30 days for voluntary eviction.[7]

RECOMMENDATIONS

(i) remove non-indigenous occupants; (ii) restore its forest cover; and ;
(iii) ensure indigenous participation in the management of and in the planning of actions for the TI.

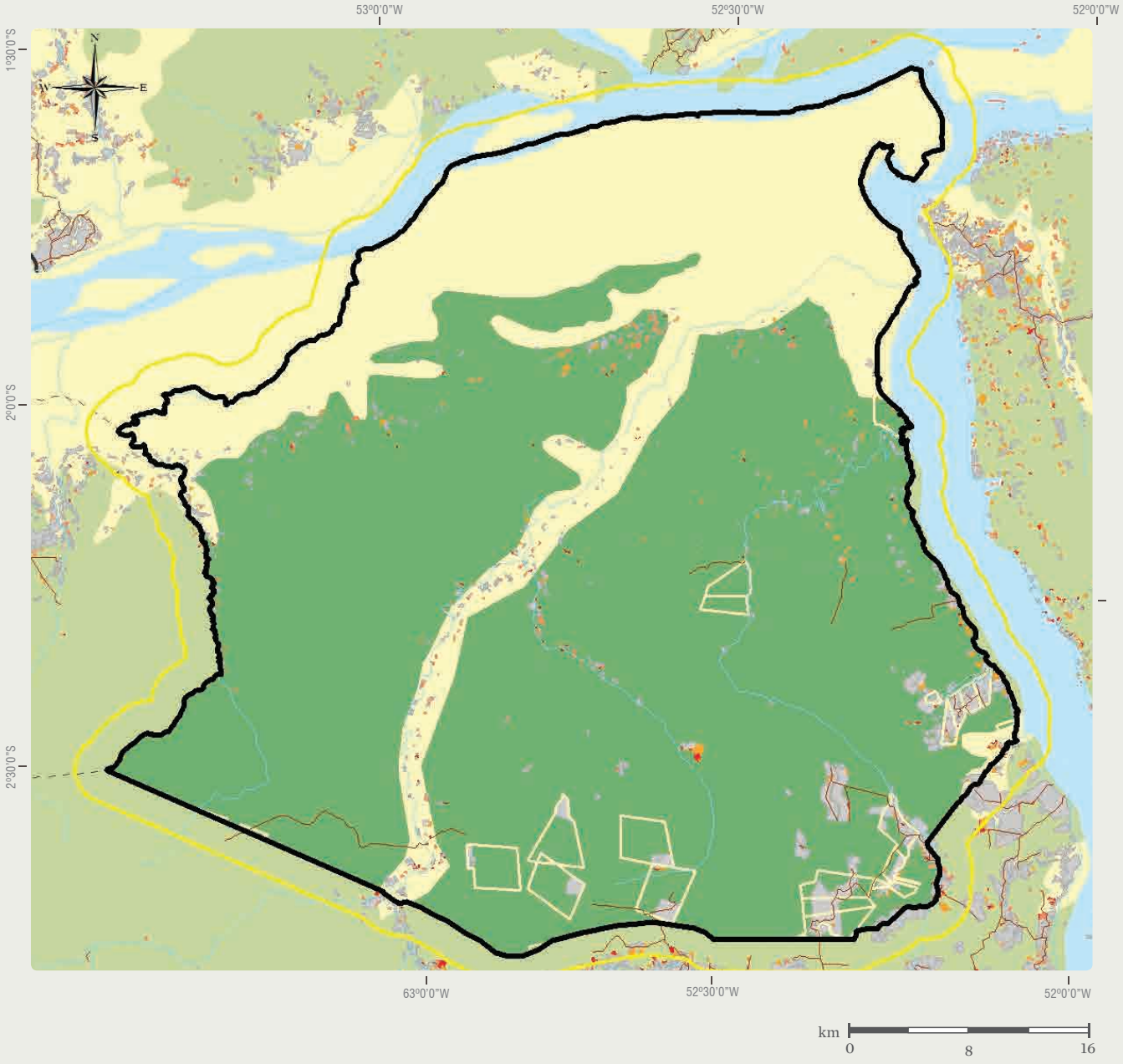
[7] Federal Justice decision on 07/31/2012 on the court case no. 2007.36.00.012519-0/MT.
Available at: http://maraiwatsede.files.wordpress.com/2012/08/decisc3a3o.pdf. Access on: Aug. 8, 2012.

9 Verde para Sempre Extractive Reserve

AREA
12,941 km²

MUNICIPALITY
Porto de Moz (Pará)

10 km²/year
AVERAGE OF ABSOLUTE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011



ACCESSIBILITY

Access route		Surrounding area (5km)	Interior
Roads	Official	No	No
	Non-official	61.9 km	192.5 km
Navigable Rivers		Yes	

THREATS AND PRESSURE

Category		Surrounding area (5km)	Interior
Deforestation	Accumulated up to 2011	111.1 km²	346.8 km²
Properties in CAR		No	37 (512.8 km²)
Mining activity		No	

VULNERABILITY

Management		
Management instruments	Management Plan	No
	Management Council	Yes
Staff	Number of staff	0
	Is the number of staff sufficient for meeting the UC objectives?	No
Financial resources	Have the resources invested in the UC over the last 5 years been sufficient for meeting its objectives?	No
	Are expected financial resources sufficient for the next 5 years for meeting the objectives of the UC?	Yes
Land regularization		No

Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	22.4 km²	No
Fines (2009 to 2011)	1 issued – R$ 505.800	

RELEVANT INFORMATION

The logging business has generated significant forest degradation in the RESEX. The UC has an altered zone situated in the southern part that measures approximately 682 square kilometers. That region also has pastures for raising cattle and water buffalo in high concentrations and with high environmental impact. There is also illegal logging on a small scale for local commerce, practiced by many families living in the RESEX in dozens of communities. Agriculture is one of the main sources of income for the 650 families living in the forest zone of the RESEX, which encompasses an area of 1.43 square kilometers.

RECOMMENDATIONS

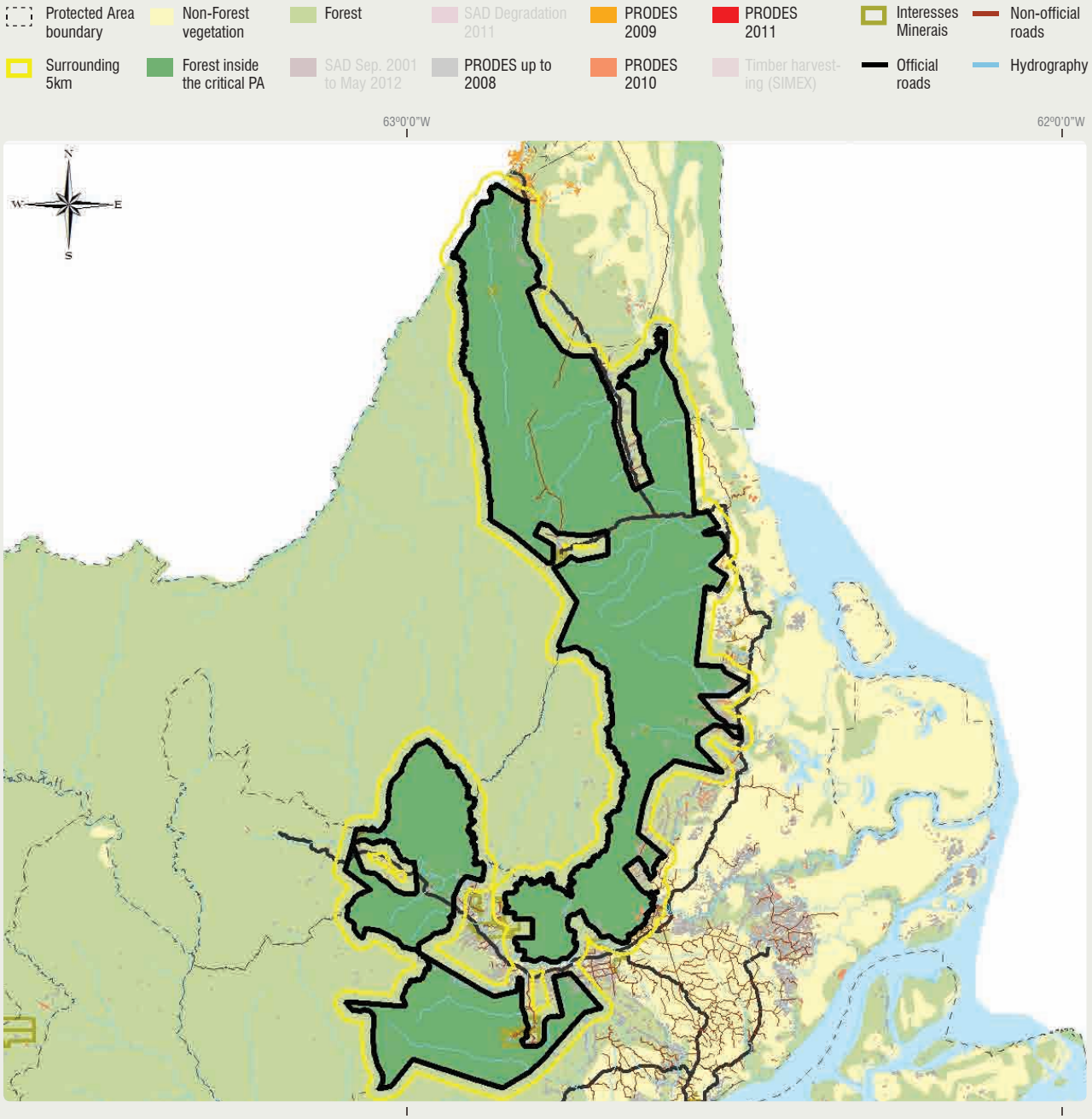
(i) Remove and compensate non-traditional occupants; (ii) monitor and patrol the area to fight invasions, illegal logging and the land clearing for pastures; (iii) prepare a management plan; (iv) provide staff and ensure a minimum budget for management of the UC; and (v) provide technical assistance for adoption of sustainable economic practices, such as reduced impact logging, by the traditional population living in the UC.

10 Amapá State Forest

AREA
23,432.2 km²

MUNICIPALITY
Serra do Navio, Calçoene and Mazagão (Amapá)

9 km²/year
AVERAGE OF ABSOLUTE LOSS OF ORIGINAL FOREST BETWEEN 2009 AND 2011



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	278.3 km	120.6 km
	Non-official	303.5 km	137.9 km
Navigable rivers		Yes	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	535.1 km²	212.7 km²
Mining activity		Yes. 71.3 km²	

VULNERABILITY		
Management		
Management instruments	Management Plan	No
	Management Council	No
Staff	Number of staff	0
	Is the number of staff sufficient for meeting the UC objectives?	No
Financial resources	Have the resources invested in the UC over the last 5 years been sufficient for meeting its objectives?	No
	Are expected financial resources sufficient for the next 5 years for meeting the objectives of the UC?	Mostly yes
Land regularization		No
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	No	
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

The Rappam assessment states that the FLOTA is of easy access for illegal activities and is under strong pressure and demand for extraction of its natural resources.

RECOMMENDATIONS

(i) Prepare the management plan and set up the management council; (ii) provide staff and ensure a minimum budget for management of the UC; and (iii) provide technical assistance for adoption of sustainable economic practices, such as reduced impact logging.

Appendix 2

Protected Areas from the ranking of largest average of percentage loss of original forest from 2009 to 2011

1 Periquito Sustainable State Forest

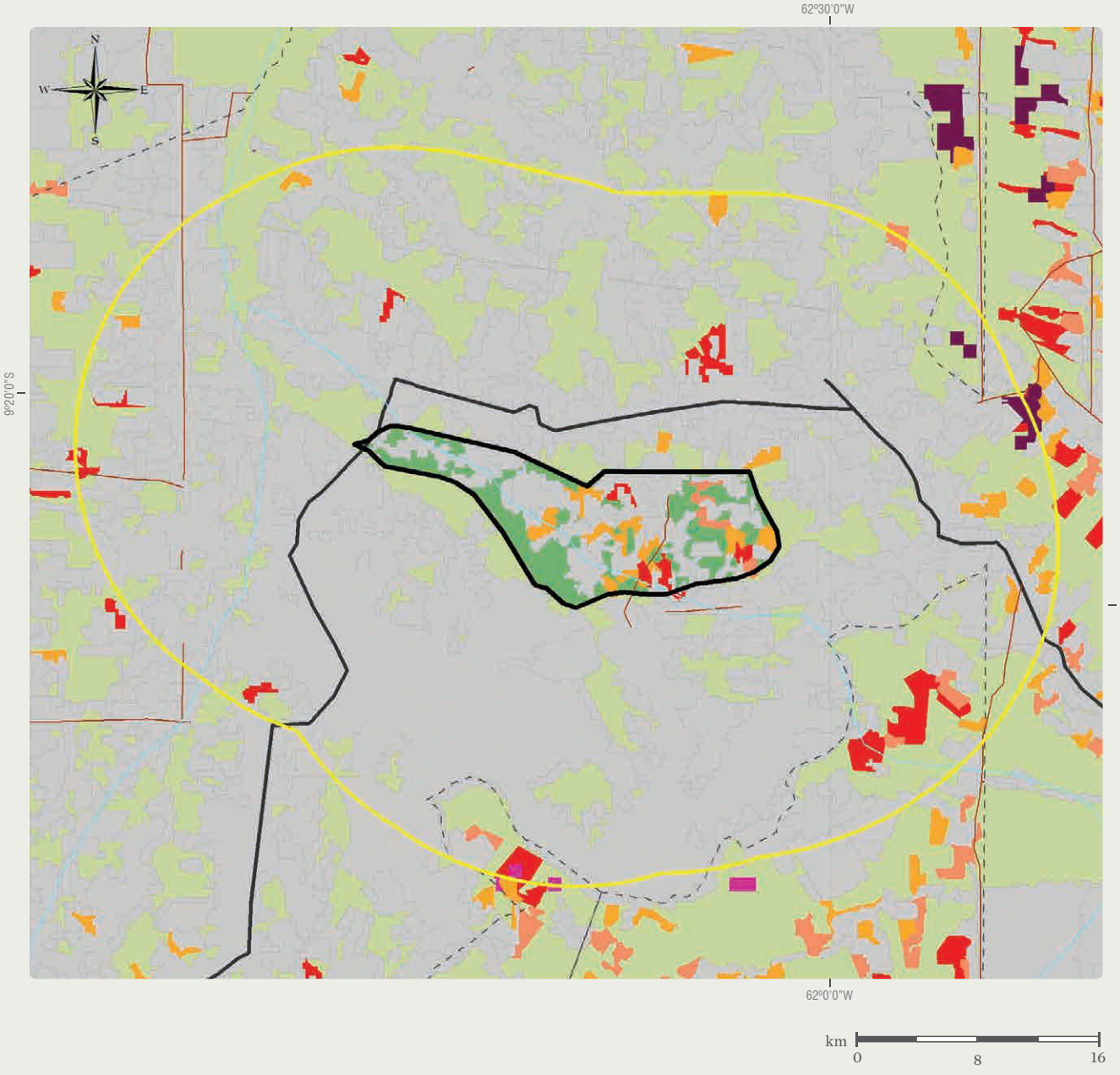
AREA
11.5 km²

MUNICIPALITY
Cujubim (Rondônia)

9.5% per year
AVERAGE OF PERCENTAGE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011

35%
PERCENTAGE OF REMAINING FOREST 2011

Protected Area boundary
Non-Forest vegetation
Forest
SAD Degradation 2011
PRODES 2009
PRODES 2011
CAR
Non-official roads
Surrounding 5km
Forest inside the critical PA
SAD Sep. 2001 to May 2012
PRODES up to 2008
PRODES 2010
Timber harvesting (SIMEX)
Official roads
Hydrography



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	22.9 km	0.3 km
	Non-official	14.5 km	1.8 km
Navigable rivers		No	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	123.4 km²	7.5 km²
Forest degradation (2011)		0.1 km²	No
Mining activity		No	

VULNERABILITY		
Management		
Management instruments	Management Plan	No
	Management Council	No
Staff	Number of staff	0
	Is the number of staff sufficient for meeting the UC objectives?	We have no information
Financial resources	Have the resources invested in the UC over the last 5 years been sufficient for meeting its objectives?	We have no information
	Are expected financial resources sufficient for the next 5 years for meeting the objectives of the UC?	We have no information
Land regularization		No
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	0.16 km²	0.03 km²
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

The UC is under strong pressure from invaders who use the area for farming and logging. SEDAM/RO affirms that the area of the UC has become disfigured because of the invasions and lack of management.

RECOMMENDATIONS

(i) Remove illegal occupants; (ii) monitor and patrol the area in order to fight invasions and illegal logging; (iii) prepare the management plan and set up the management council; (iv) grant right of use to traditional residents; and; (v) restore forest cover to the cleared areas.

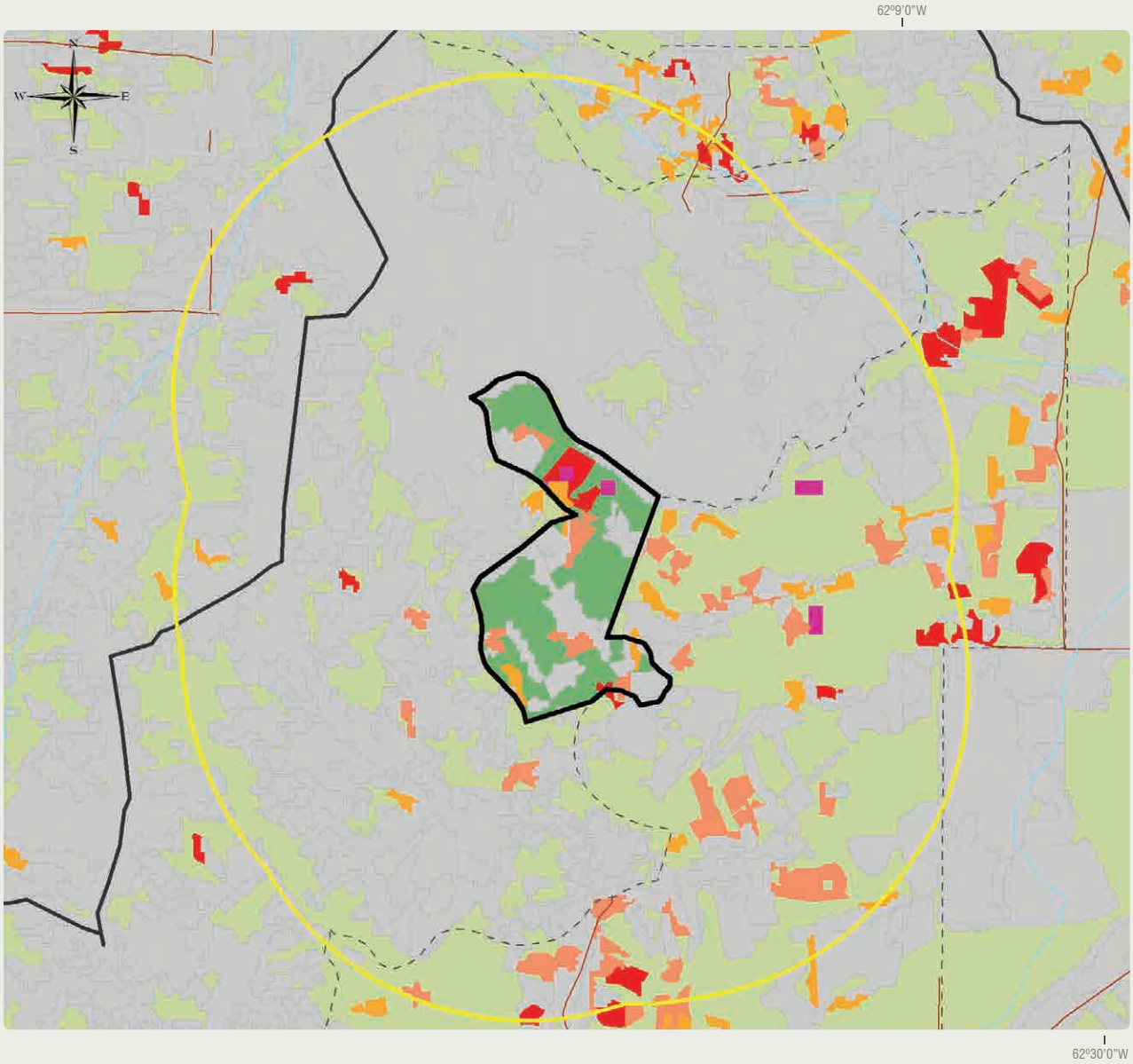
2 Araras Sustainable State Forest

AREA
10.6 km²

MUNICIPALITY
Cujubim (Rondônia)

7.3%
per year
AVERAGE OF PERCENTAGE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011

Protected Area boundary
Surrounding 5km
Non-Forest vegetation
Forest inside the critical PA
Forest
SAD Sep. 2001 to May 2012
SAD Degradation 2011
PRODES up to 2008
PRODES 2009
PRODES 2010
PRODES 2011
Timber harvesting (SIMEX)
CAR
Official roads
Non-official roads
Hydrography



ACCESSIBILITY

Access route		Surrounding area (5km)	Interior
Roads	Official	10.1 km	No
	Non-official	5.8 km	No
Navigable rivers		No	

THREATS AND PRESSURE

Category		Surrounding area (5km)	Interior
Deforestation	Accumulated up to 2011	110.3 km²	5.1 km²
Forest degradation (2011)		0.2 km²	0.2 km²
Mining activity		No	

VULNERABILITY

Management		
Management instruments	Management Plan	No
	Management Council	No
Staff	Number of staff	0
	Is the number of staff sufficient for meeting the UC objectives?	We have no information
Financial resources	Have the resources invested in the UC over the last 5 years been sufficient for meeting its objectives?	No
	Are expected financial resources sufficient for the next 5 years for meeting the objectives of the UC?	No
Land regularization		No

Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	0.13 km²	No
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

The UC is under strong pressure from invaders who use the area for farming and illegal logging. SEDAM/RO affirms that the area of the UC has become disfigured because of the invasions and lack of management.

RECOMMENDATIONS

❶ Remove illegal occupants; ❷ monitor and patrol the area in order to fight invasions and illegal logging; and ❸ prepare the management plan and set up the management council.

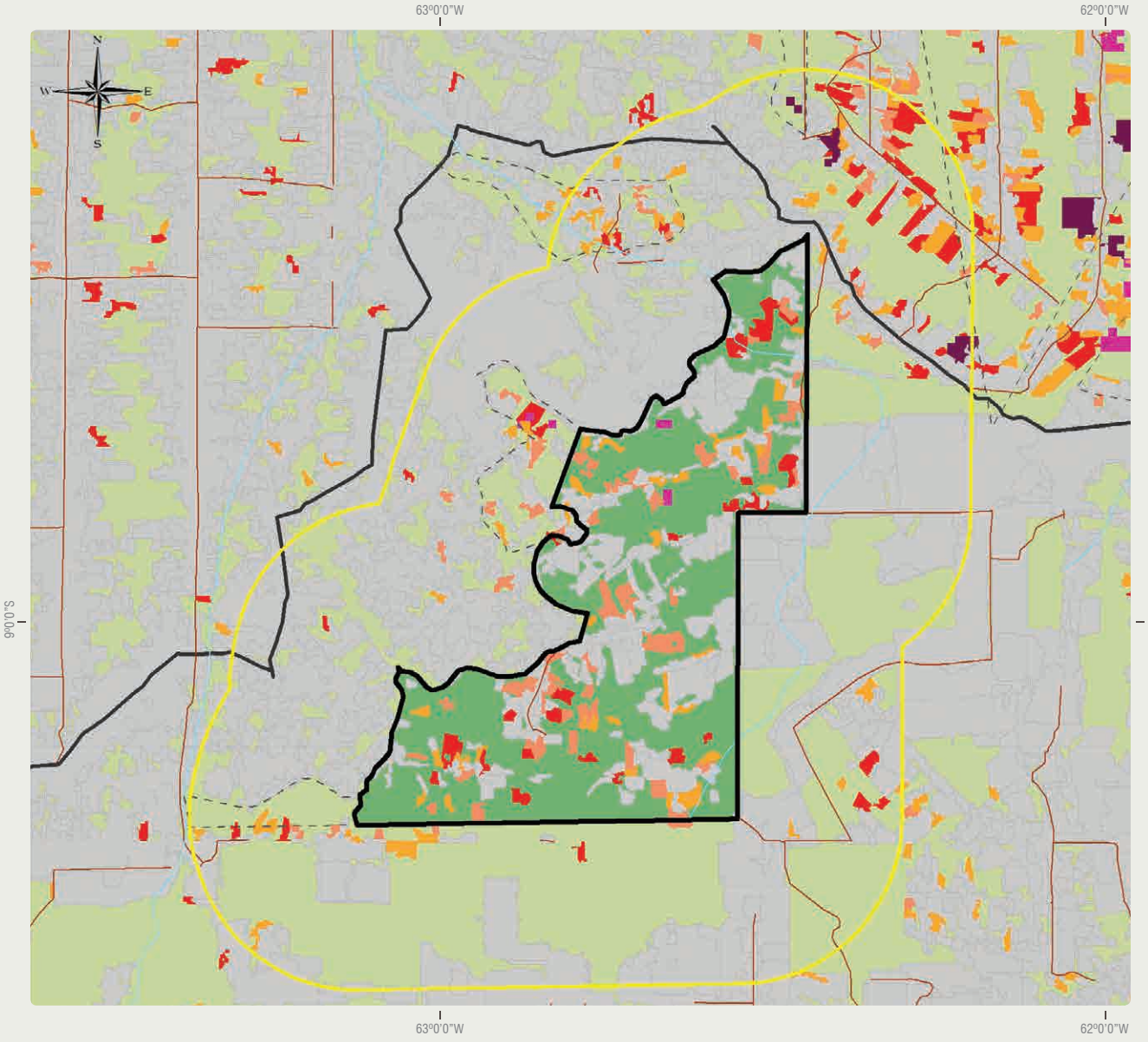
3 Mutum Sustainable State Forest

AREA
107.6 km²

MUNICIPALITY
Cujubim (Rondônia)

6.4% PER YEAR
AVERAGE OF PERCENTAGE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011

Protected Area boundary
Non-Forest vegetation
Forest
SAD Degradation 2011
PRODES 2009
PRODES 2011
CAR
Non-official roads
Surrounding 5km
Forest inside the critical PA
SAD Sep. 2001 to May 2012
PRODES up to 2008
PRODES 2010
Timber harvesting (SIMEX)
Official roads
Hydrography



ACCESSIBILITY

Access route		Surrounding area (5km)	Interior
Roads	Official	21.3 km	No
	Non-official	50.3 km	11.9 km
Navigable rivers		No	

THREATS AND PRESSURE

Category		Surrounding area (5km)	Interior
Deforestation	Accumulated up to 2011	209.7 km²	45.3 km²
Forest degradation (2011)		0.1 km²	0.2 km²
Mining activity		No	

VULNERABILITY

Management

Management instruments	Management Plan	No
	Management Council	No
Staff	Number of staff	0
	Is the number of staff sufficient for meeting the UC objectives?	No
Financial resources	Have the resources invested in the UC over the last 5 years been sufficient for meeting its objectives?	No
	Are expected financial resources sufficient for the next 5 years for meeting the objectives of the UC?	No
Land regularization		No

Legal protection

Command and control	Surrounding area (5km)	Interior
Embargoes (2001 to May, 2012)	0.11 km²	No
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

The UC is under strong pressure from invaders who use the area for farming and logging.

RECOMMENDATIONS

(i) Remove irregular occupants; (ii) monitor and patrol the area in order to fight invasions and illegal logging; (iii) prepare the management plan and set up the management council; and (iv) provide staff and ensure a minimum budget for management of the UC.

4 Awá Indigenous Land

SEE NUMBER 3 OF THE RANKING OF LARGEST AVERAGE OF ABSOLUTE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011 (PAGES 42 AND 43)

5 Marãiwatsede Indigenous Land

SEE NUMBER 8 OF THE RANKING OF LARGEST AVERAGE OF ABSOLUTE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011 (PAGES 52 AND 53)

6 Sarauá Indigenous Land

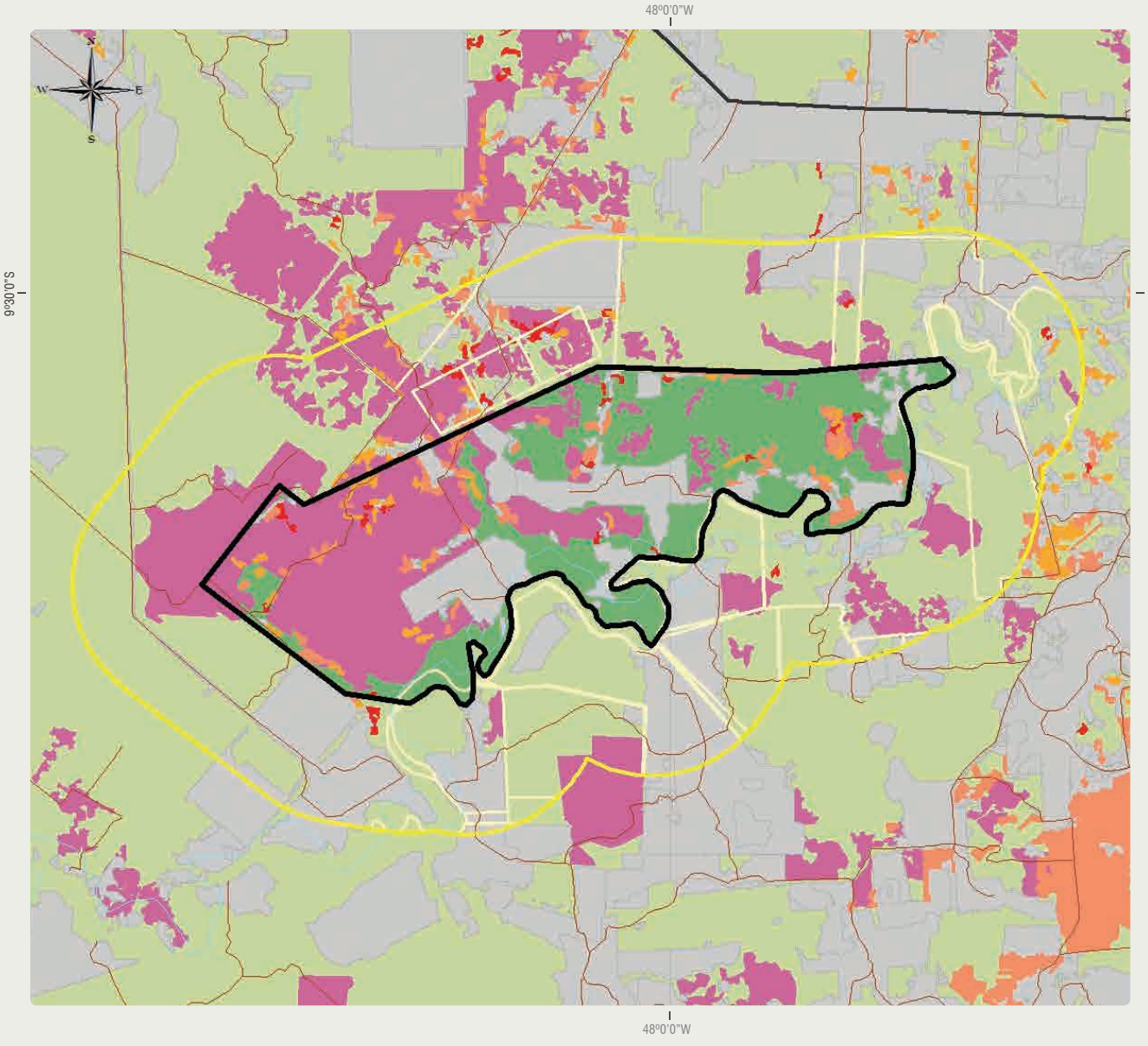
AREA
190.4 km²

MUNICIPALITY
Ipixuna do Pará (Pará)

PEOPLE: Amanayé **RATIFICATION:** 2011

2.6% per year
AVERAGE OF PERCENTAGE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011

Protected Area boundary
Surrounding 5km
Non-Forest vegetation
Forest inside the critical PA
Forest
SAD Sep. 2001 to May 2012
SAD Degradation 2011
PRODES up to 2008
PRODES 2009
PRODES 2010
PRODES 2011
Timber harvesting (SIMEX)
CAR
Official roads
Non-official roads
Hydrography



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	No	No
	Non-official	124.2 km	36.4 km
Navigable rivers		Yes	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	478.2 km²	385.2 km²
Illegal logging (2007 to 2010)		53.9 km²	8.6 km²
Properties in CAR		No	1 (3.4 km²)
Mining activity		No	

VULNERABILITY		
Land regularization		No
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	No	
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

Deforestation in the TI is caused by illegal logging and by ranchers who practice extensive ranching and farming in the surrounding area.[9] In fact, there is a ranch inside the TI that is registered in the CAR.

RECOMMENDATIONS

i Remove non-indigenous occupants; ii increase surveillance of the area; and iii ensure indigenous participation in the management of and in the planning of actions for the TI.

[9] FUNAI Order no. 76/2002, published in the Official Gazette (DOU) on 06/07/2002. Available at: http://www.in.gov.br/imprensa/visualiza/index.jsp?jornal=1&pagina=64&data=07/06/2002.

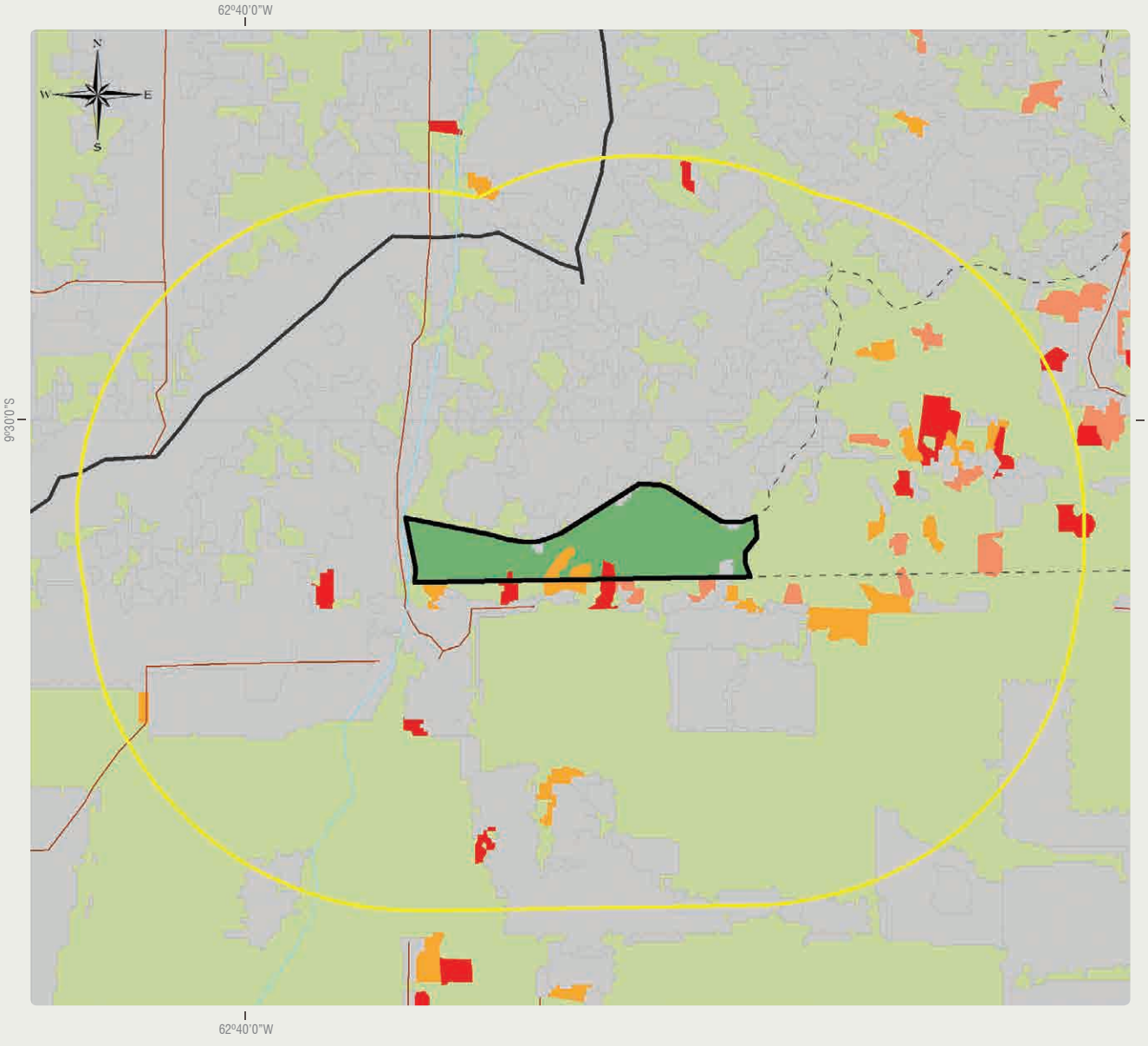
7 Tucano Sustainable State Forest

AREA
4.8 km²

MUNICIPALITY
Cujubim (Rondônia)

1.7 % PER YEAR
AVERAGE OF PERCENTAGE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011

Protected Area boundary
Surrounding 5km
Non-Forest vegetation
Forest inside the critical PA
Forest
SAD Sep. 2001 to May 2012
SAD Degradation 2011
PRODES up to 2008
PRODES 2009
PRODES 2010
PRODES 2011
Timber harvesting (SIMEX)
CAR
Official roads
Non-official roads
Hydrography



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	10.6 km	No
	Non-official	16.6 km	No
Navigable rivers		No	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	76.6 km²	1.4 km²
Mining activity		No	

VULNERABILITY		
Management		
Management instruments	Management Plan	No
	Management Council	No
Staff	Number of staff	0
	Is the number of staff sufficient for meeting the UC objectives?	No
Financial resources	Have the resources invested in the UC over the last 5 years been sufficient for meeting its objectives?	No
	Are expected financial resources sufficient for the next 5 years for meeting the objectives of the UC?	No
Land regularization		No
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	No	
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

The UC is under strong pressure from invaders who use the area for farming and logging.

RECOMENDAÇÕES

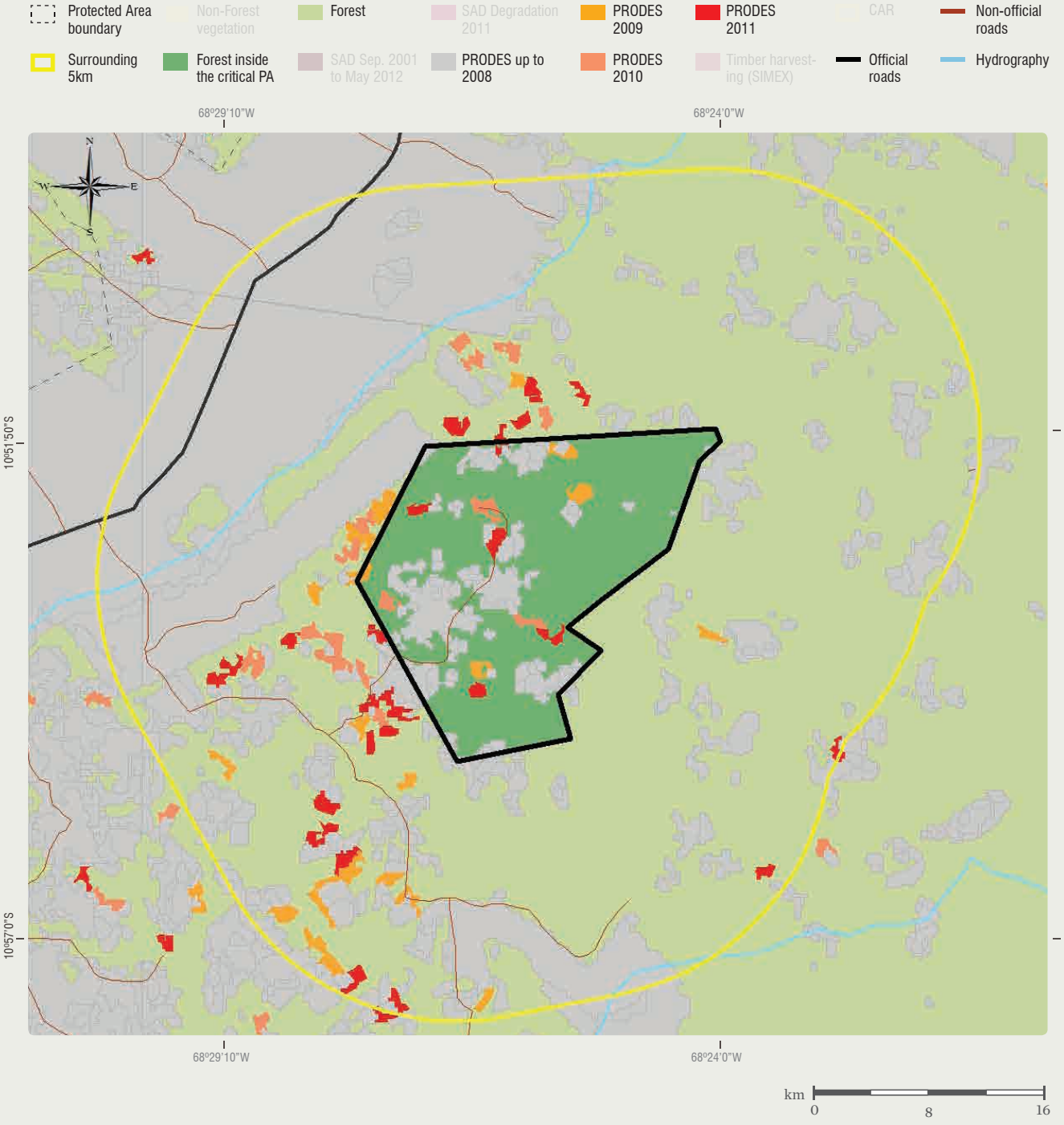
(i) Remove illegal occupants; (ii) monitor and patrol the area to fight invasions and illegal logging; (iii) prepare the management plan and set up the management council; and (iv) lprovide staff and ensure a minimum budget for management of the UC

8 Seringal Nova Esperança Area of Relevant Ecological Interest

AREA
25.7 km²

MUNICIPALITY
Epitaciolândia (Acre)

1.6%
per year
AVERAGE OF PERCENTAGE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011



ACCESSIBILITY

Access route		Surrounding area (5km)	Interior
Roads	Official	7.5 km	No
	Non-official	8.4 km	4.8 km
Navigable rivers		No	

THREATS AND PRESSURE

Category		Surrounding area (5km)	Interior
Deforestation	Accumulated up to 2011	73.1 km²	6.2 km²
Mining activity		No	

VULNERABILITY

Management		
Management instruments	Management Plan	No
	Management Council	No
Staff	Number of staff	0
	Is the number of staff sufficient for meeting the UC objectives?	No
Financial resources	Have the resources invested in the UC over the last 5 years been sufficient for meeting its objectives?	No
	Are expected financial resources sufficient for the next 5 years for meeting the objectives of the UC?	No
Land regularization		No

Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	0.06 km²	No
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

The UC is close to the BR 317 highway and the urban centers of Xapuri, Brasiléia and Epitaciolândia, which increases pressure on the area and the resulting commitment of environmental violations. Around 80 families live in the area and practice hunting without restrictions, use fire to prepare the soil for agriculture and practice ranching encouraged by the increase in the economic potential of cattle ranching in the region. Residents of the UC also harvest timber for subsistence and sale purposes.

RECOMMENDATIONS

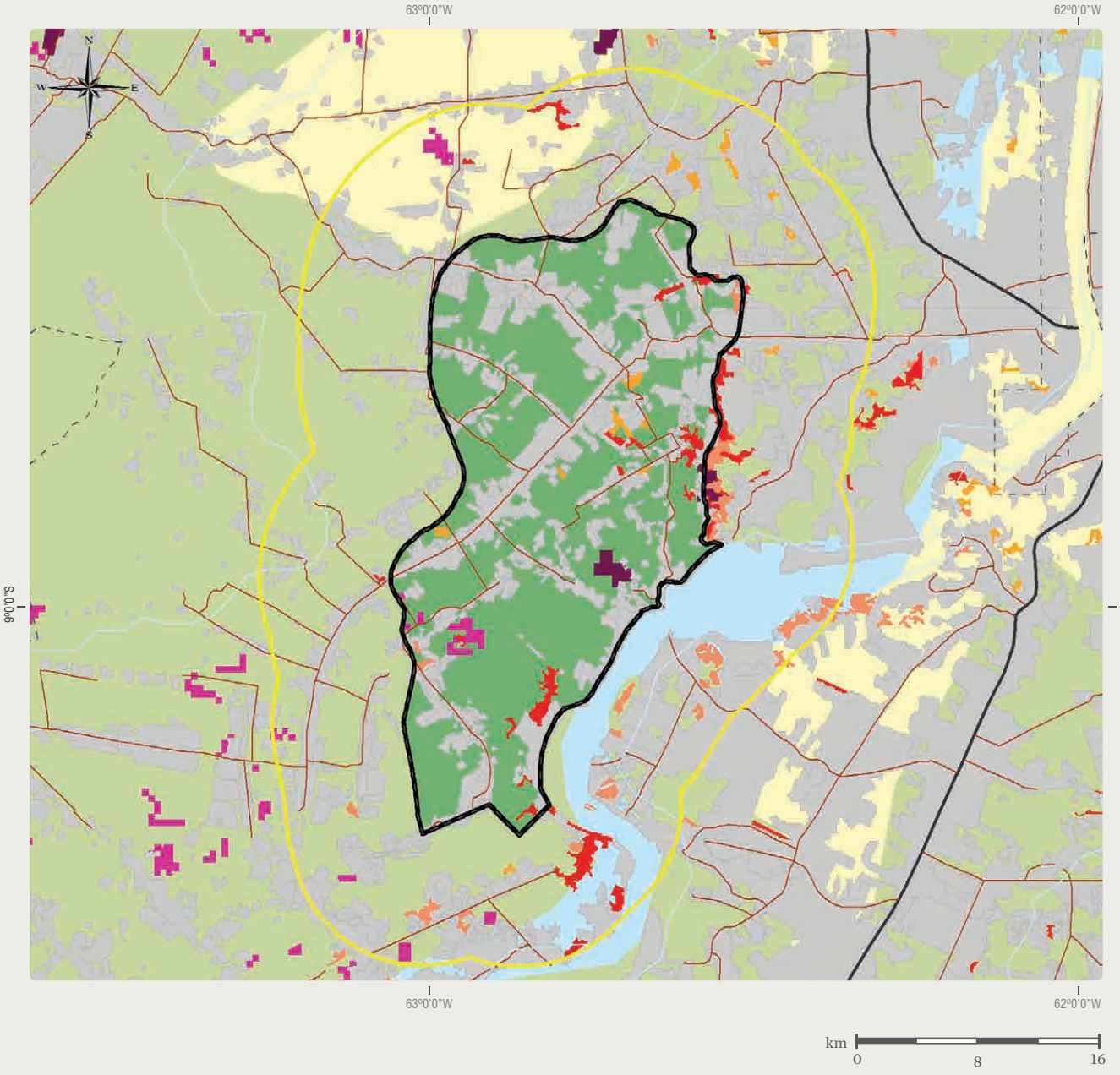
(i) Remove illegal occupants; (ii) monitor and patrol the area to combat invasions and occupation of lands by non-traditional residents; (iii) prepare the management plan and set up the management council; (iv) provide staff and ensure a minimum budget for management of the UC; and (v) grant the right of use to inhabitants and traditional users of the reserve.

9 Rio Vermelho C Sustainable State Forest

AREA
198.7 km²

MUNICIPALITY
Porto Velho (Rondônia)

1.2% per year
AVERAGE OF PERCENTAGE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011



ACCESSIBILITY

Access route		Surrounding area (5km)	Interior
Roads	Official	No	No
	Non-official	145 km	89 km
Navigable rivers		No	

THREATS AND PRESSURE

Category		Surrounding area (5km)	Interior
Deforestation	Accumulated up to 2011	161.4 km²	77.6 km²
	Recent rate (September, 2011 to May, 2012)	No	1 km²
Forest degradation (2011)		1.7 km²	1.3 km²
Mining activity		No	

VULNERABILITY

Management

Management instruments	Management Plan	No
	Management Council	No
Staff	Number of staff	5 shared with other UCs
	Is the number of staff sufficient for meeting the UC objectives?	We have no information
Financial resources	Have the resources invested in the UC over the last 5 years been sufficient for meeting its objectives?	We have no information
	Are expected financial resources sufficient for the next 5 years for meeting the objectives of the UC?	We have no information
Land regularization		No

Legal protection

Command and control	Surrounding area (5km)	Interior
Embargoes (2001 to May, 2012)	0.03 km²	0.03 km²
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

The UC is under strong pressure from illegal loggers and countless farmers who claim possession in the area. By August, 2012 SEDAM/RO would carry out a survey of residents and their documents in order to later remove and compensate or grant right of use to residents and traditional users of the area.

RECOMMENDATIONS

(i) Remove illegal occupants; (ii) monitor and patrol the area to combat invasions and occupations by non-traditional residents; (iii) prepare the management plan and set up the management council; (iv) provide staff and ensure a minimum budget for management of the UC; and (v) grant the right of use to residents and traditional users of the area.

10 Alto Rio Guamá Indigenous Land

SEE NUMBER 4 OF THE RANKING OF LARGEST AVERAGE OF ABSOLUTE LOSS OF ORIGINAL FOREST BETWEEN 2009 AND 2011 (PAGES 44 AND 45)

Appendix 3

Protected Areas from the ranking of lowest percentage of remaining forest

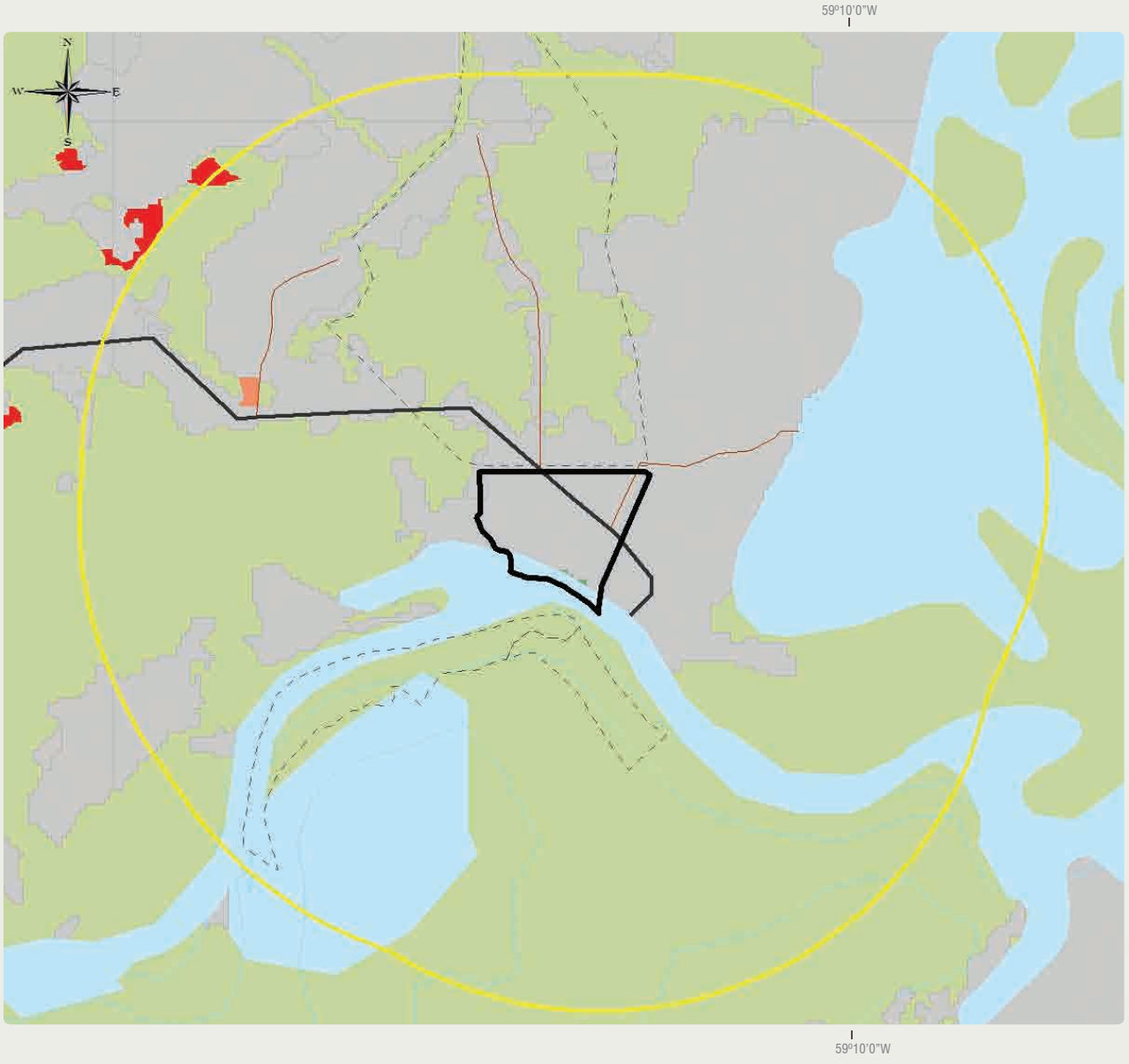
1 Recreio/São Félix Indigenous Land

AREA
2.4 km²

MUNICIPALITY
Autazes (Amazonas)

PEOPLE: Mura **RATIFICATION:** 1991

7%
PERCENTAGE OF REMAINING FOREST IN 2011



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	7.8 km	1.3 km
	Non-official	9.1 km	0.8 km
Navigable rivers		Yes	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	32.4 km²	2.2 km²
Mining activity		No	

VULNERABILITY		
Land regularization		We have no information
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	No	
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

The existence of ranches in the surrounding area has caused this scenario of deforestation, because they are said to have advanced into indigenous territory during the delay in recognition of the TI. There are no signs of deforestation in the TI after the year 2000. The predominant activity is agriculture, and in 2012 some producers began to use AFS (Agroforestry Systems). The implementation and management of AFS in the TI has financial support from the Bank of the Amazon (PRONAF), technical assistance from the Executive Commission of the Cocoa Farming Plan (Comissão Executiva do Plano de Lavoura Cacaueira – CEPLAC) and support from the National Indian Foundation (Fundação Nacional do Índio – FUNAI), State Secretariat for Indigenous Peoples (Secretaria de Estado para os Povos Indígenas – SEIND), State Secretariat for Rural Production (Secretaria de Estado de Produção Rural – SEPROR), Secretariat for Sustainable Development (Secretaria de Desenvolvimento Sustentável – SDS), and Municipal Secretariat for the Environment of Autazes (Secretaria Municipal de Meio Ambiente de Autazes). [10]

RECOMMENDATIONS

(i) Restore the TI forest cover through AFS; (ii) capacitate indigenous producers in cooperativism and sales techniques; and (iii) ensure indigenous participation in the management of and in the planning of actions for the TI.

[10] Information obtained from Edivaldo Oliveira Munduruku, Indian technician from the FUNAI - Regional Coordination in Manaus, by telephone conversation with Elis Araújo on Aug. 8, 2012.

2 Tikuna de Santo Antônio Indigenous Land

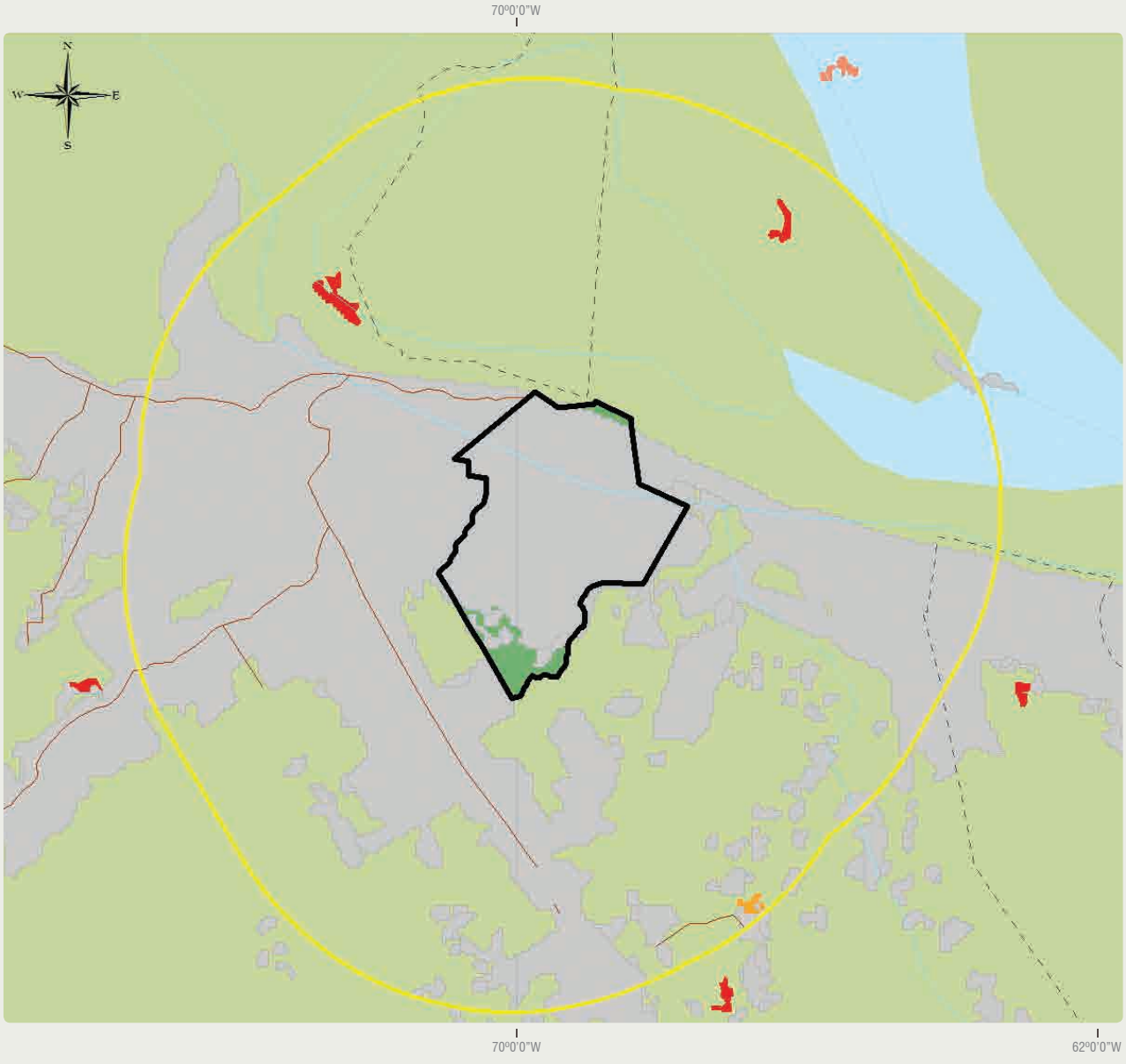
AREA
10.6 km²

MUNICIPALITY
Benjamin Constant (Amazonas)

PEOPLE: Ticuna **RATIFICATION:** 1991

9%
PERCENTAGE OF REMAINING FOREST IN 2011

Protected Area boundary
Surrounding 5km
Non-Forest vegetation
Forest inside the critical PA
Forest
SAD Sep. 2001 to May 2012
SAD Degradation 2011
PRODES up to 2008
PRODES 2009
PRODES 2010
PRODES 2011
Timber harvesting (SIMEX)
CAR
Official roads
Non-official roads
Hydrography



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	No	No
	Non-official	23.1 km	0.04 km
Navigable rivers		Yes	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	56 km²	9.6 km²
Mining activity		No	

VULNERABILITY		
Land regularization		We have no information
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	No	
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

Deforestation is said to have occurred in the TI due to illegal logging by non-indigenous people and cattle ranchers in the surrounding areas. The increase in the indigenous population may have contributed to the loss of forest cover. The predominant activity is agriculture. There is also a reforestation project for recovery of degraded areas and riparian forest along rivers, lakes and forest streams under analysis by FUNAI - Brasília. [11]

RECOMMENDATIONS

i Recover the TI forest cover through AFS, preferably using fruit trees in order to promote food security; and
ii ensure indigenous participation in the management of and in the planning of actions for the TI.

[11] Information provided by Leopoldo Dias, Head of the Technical Division of FUNAI – Alto Solimões Regional Coordination, to Elis Araújo, by e-mail on Sept. 4, 2012.

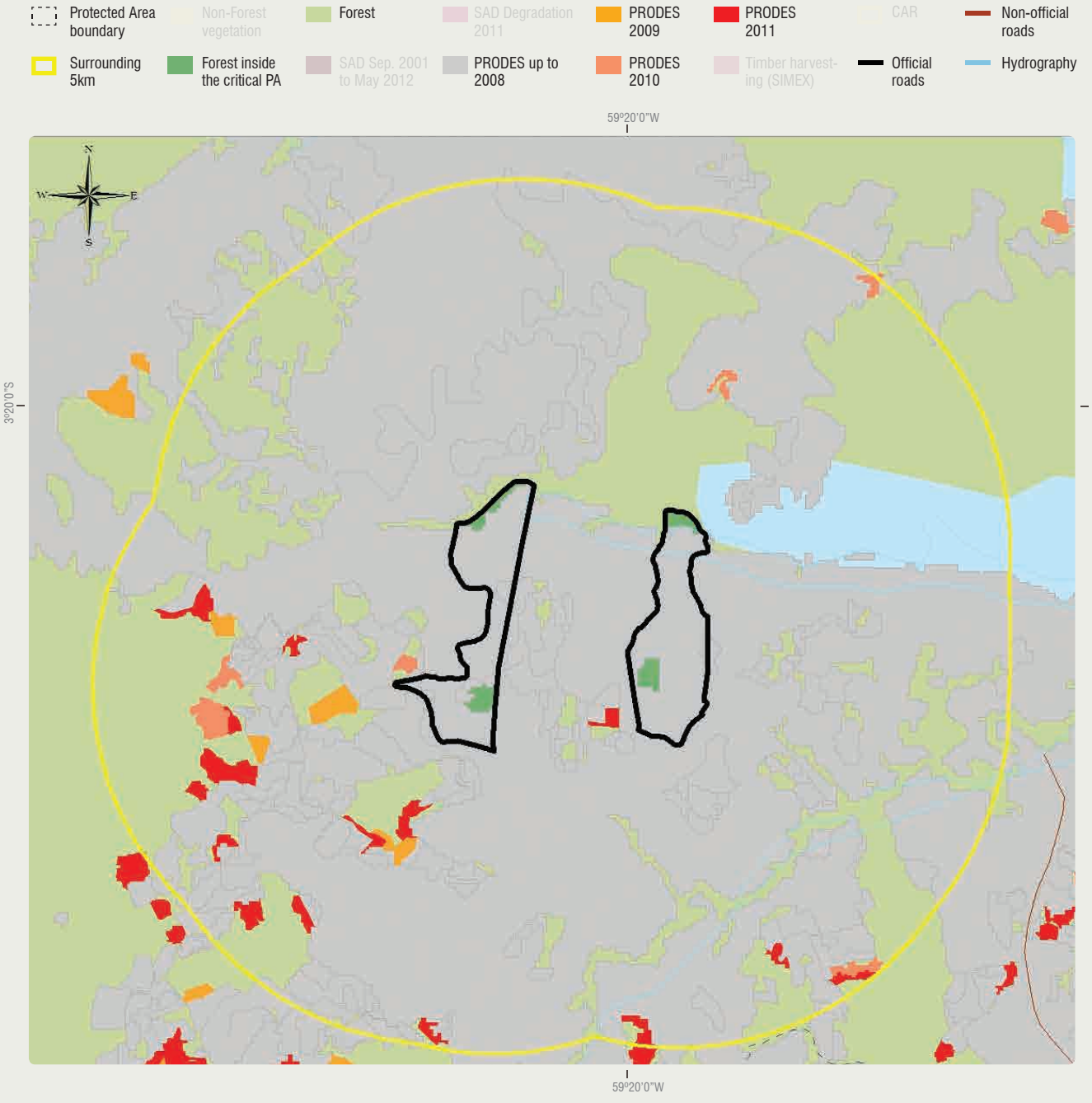
3 Apipica Indigenous Land

AREA
6.9 km²

MUNICIPALITY
Careiro da Várzea, Manaus metropolitan area (Amazonas)

PEOPLE: Mura **RATIFICATION:** 2003

10%
PERCENTAGE OF REMAINING FOREST IN 2011



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	No	No
	Non-official	No	No
Navigable rivers		Yes	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	120 km²	6.2 km²
Mining activity		No	

VULNERABILITY		
Land regularization		We have no information
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	No	
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

Around 100% of the deforestation in the TI occurred up to the year 2000. This deforestation is said to have been caused by surrounding ranchers, who advanced into indigenous territory during the delay in recognition of the TI. This TI is located in a floodplain (várzea) region, but during the dry season the indigenous population plant cereal crops. [12]

RECOMMENDATIONS

i Restore forest cover with native várzea species, preferably fruit trees to promote food security; and
ii ensure indigenous participation in the management of and in the planning of actions for the TI.

[12] Information obtained from Edivaldo Oliveira Munduruku, Indian technician from the FUNAI - Regional Coordination in Manaus, by telephone conversation with Elis Araújo on Aug. 6, 2012.

4 Terra Indígena Kaxinawa da Colônia Vinte e Sete

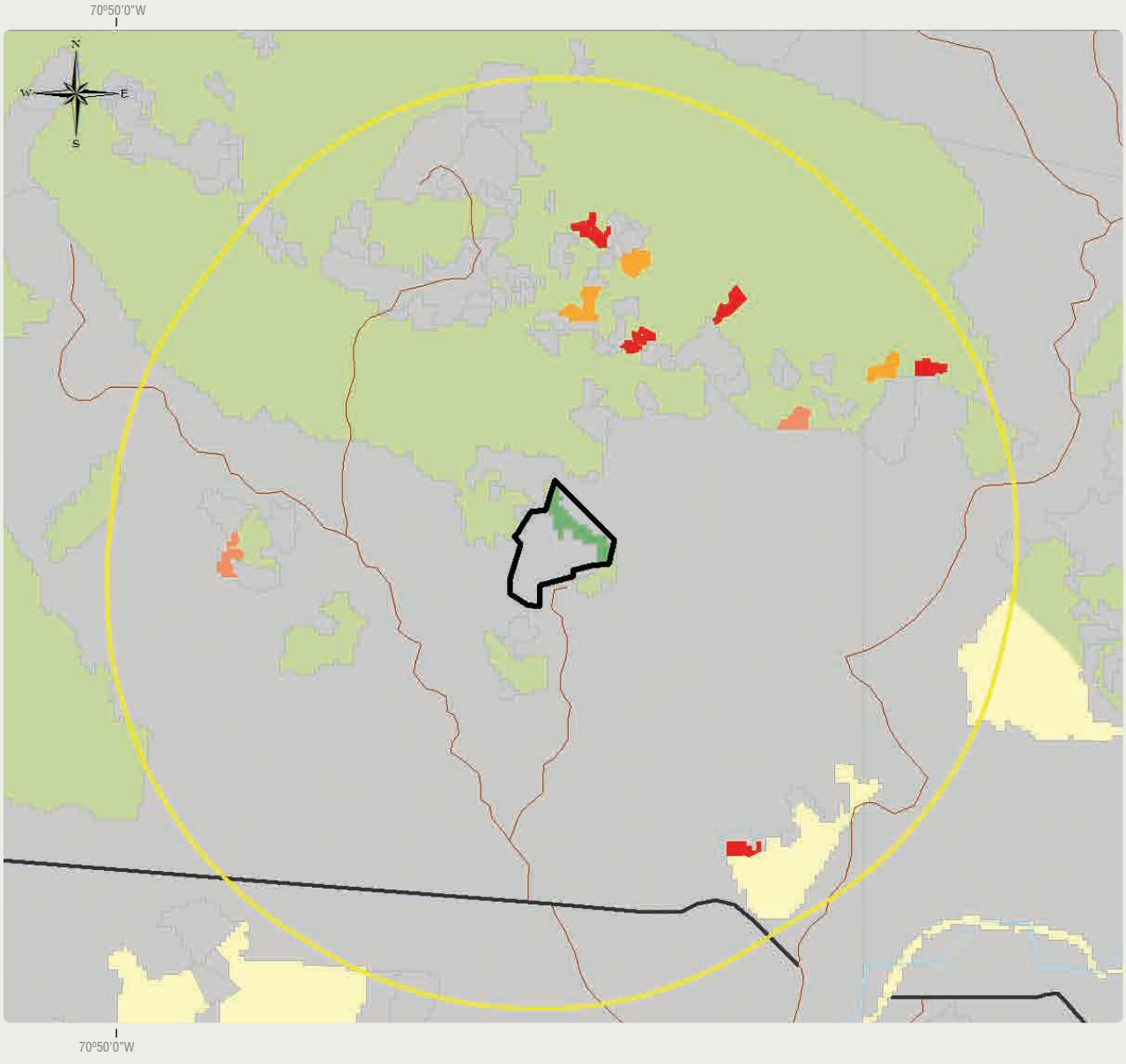
AREA
1.1 km²

MUNICIPALITY
Tarauacá (Acre)

PEOPLE: Kaxinawá **RATIFICATION:** 1984

21%
PERCENTAGE OF REMAINING FOREST IN 2011

Protected Area boundary
Surrounding 5km
Non-Forest vegetation
Forest inside the critical PA
Forest
SAD Sep. 2001 to May 2012
SAD Degradation 2011
PRODES up to 2008
PRODES 2009
PRODES 2010
PRODES 2011
Timber harvesting (SIMEX)
CAR
Official roads
Non-official roads
Hydrography



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	7.0 km	No
	Non-official	28.3 km	No
Navigable rivers		No	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	69.8 km²	0,01 km²
Mining activity		No	

VULNERABILITY		
Land regularization		We have no information
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	No	
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

The TI was created from an indigenous settlement created by INCRA and the Municipal Government of Tarauacá in the mid-1970s for Kaxinawá families coming from some rubber tapping areas of the upper Tarauacá River. Deforestation in the TI was for making pastures and occurred before the arrival of the Kaxinawá. The TI has a Land Management Plan, prepared by SEMA (State Environmental Secretariat – Secretaria de Estado de Meio Ambiente) from 2006 to 2010 and has several initiatives for recovering degraded areas through AFS (Agroforestry Systems). In 2002 two other areas were acquired by the state government for use and possession by the indigenous people. Those two continuous areas totaled 200 hectares and were annexed to the older previously demarcated area as compensatory measures for the environmental impacts resulting from the paving of the BR 364 highway. However, these areas are still in the process of land regularization and the TI boundary revision has not yet occurred. [13]

RECOMMENDATIONS

i Restore forest cover in the TI through AFS, as it has already been happening, preferably with fruit trees to promote indigenous food security; and ii redefine the TI boundaries to include the areas destined by the Acre State government to the Kaxinawá.

[13] Information supplied by Roberto Tavares, of the Ethnozoning Division at the State Environmental Secretariat of Acre, and Juan Scalia, Substitute Regional Coordinator in Rio Branco – FUNAI to Elis Araújo by e-mail on Aug. 10, 2012.

5 Méria Indigenous Land

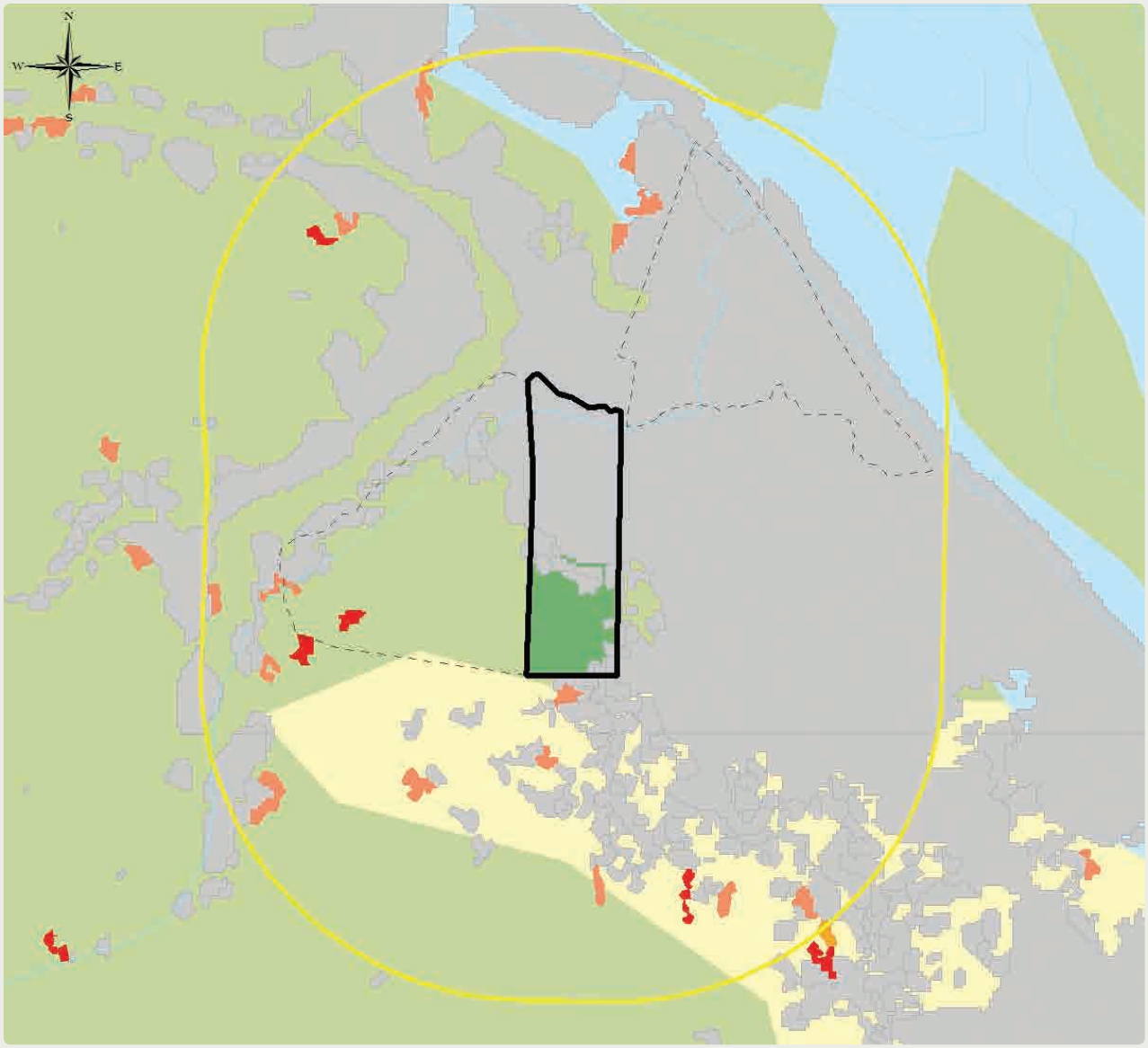
AREA
5.8 km²

MUNICIPALITY
Alvarães (Amazonas)

PEOPLE: Karapanã, Miranha, Mura and Witoto
RATIFICATION: 1993

31%
PERCENTAGE OF REMAINING FOREST IN 2011

Protected Area boundary
Surrounding 5km
Non-Forest vegetation
Forest inside the critical PA
Forest
SAD Sep. 2001 to May 2012
SAD Degradation 2011
PRODES up to 2008
PRODES 2009
PRODES 2010
PRODES 2011
Timber harvesting (SIMEX)
CAR
Official roads
Non-official roads
Hydrography



km
0
1,4
2,8

ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	Not identified	
	Non-official	Not identified	
Navigable rivers		No	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	71.7 km²	4 km²
Mining activity		No	

VULNERABILITY		
Land regularization		We have no information
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	No	
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

Deforestation in the TI is said to have been done by the indigenous people themselves for shifting cultivation. [14]

RECOMMENDATIONS

(i) Restore the TI forest cover through AFS (Agroforestry Systems), preferably with fruit trees to promote food security ; and (ii) ensure indigenous participation in the management of and in the planning of actions for the TI.

[14] Information provided by Leopoldo Dias, Head of the Technical Division of FUNAI – Alto Solimões Regional Coordination, to Elis Araújo, by e-mail on Sept. 4, 2012.

6 Periquito Sustainable State Forest

SEE NUMBER 1 OF THE RANKING OF LARGEST AVERAGE OF PERCENTAGE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011 (PAGES 60 AND 61)

7 Marãiwatsede Indigenous Land

SEE NUMBER 8 OF THE RANKING OF LARGEST AVERAGE OF ABSOLUTE LOSS OF ORIGINAL FOREST FROM 2009 TO 2011 (PAGES 52 AND 53)

8 Miguel/Josefa Indigenous Land

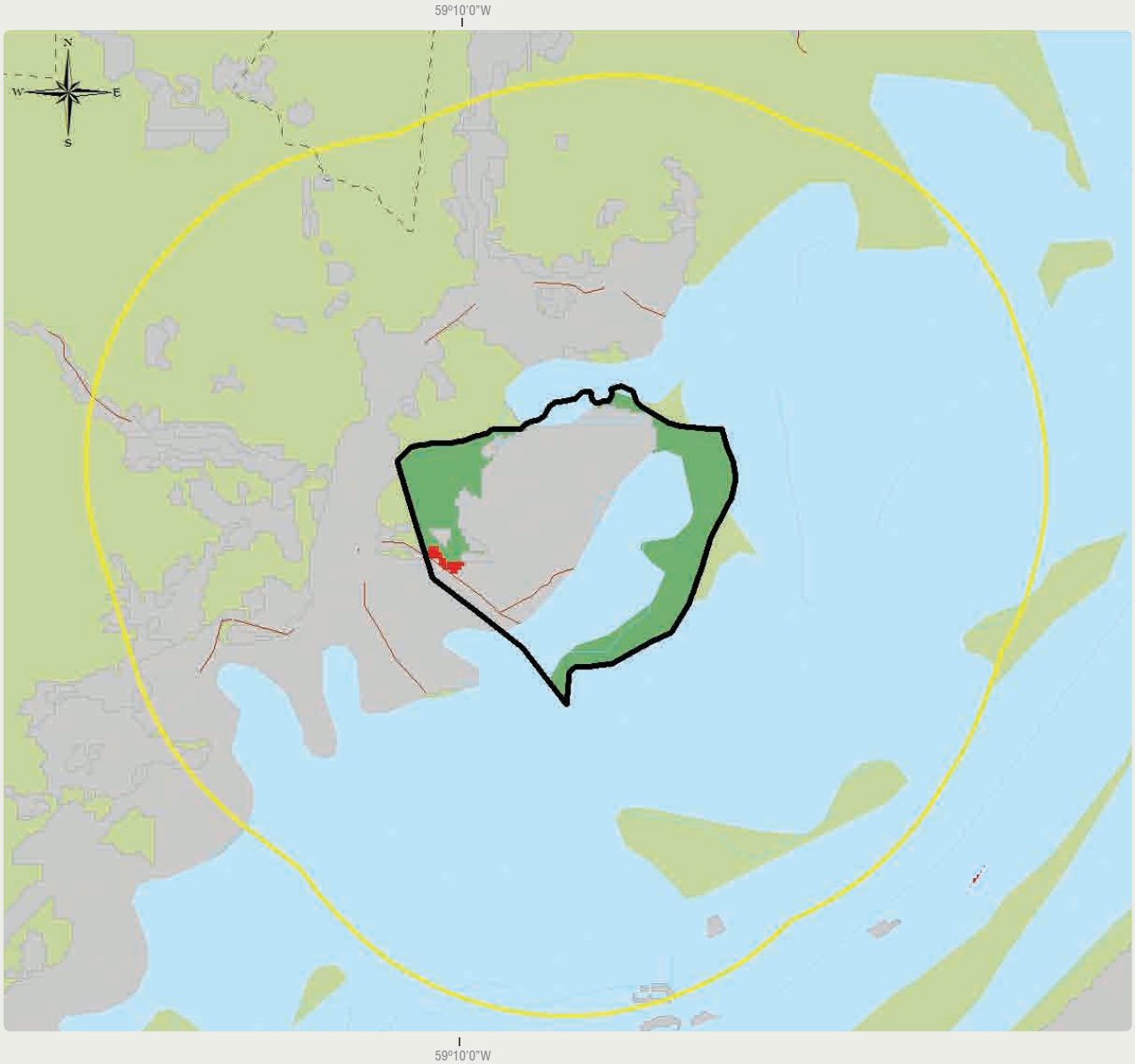
AREA 16.7 km²

MUNICIPALITY
Autazes (Amazonas)

PEOPLE: Mura RATIFICATION: 1984

43%
PERCENTUAL DE FLORESTA REMANESCENTE EM 2011

Protected Area boundary
Surrounding 5km
Non-Forest vegetation
Forest inside the critical PA
Forest
SAD Sep. 2001 to May 2012
SAD Degradation 2011
PRODES up to 2008
PRODES 2009
PRODES 2010
PRODES 2011
Timber harvesting (SIMEX)
CAR
Official roads
Non-official roads
Hydrography



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	No	No
	Non-official	9.0 km	4.2 km
Navigable rivers		Yes	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	32.9 km²	8.4 km²
Mining activity		No	

VULNERABILITY		
Land regularization		We have no information
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	No	
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

Deforestation in the TI was especially caused by the advance of ranches from the surrounding area and to the lengthy demarcation process. The predominant activity in the TI is agriculture, and in 2012 some producers began to use AFS (Agroforestry Systems). The implementation and management of AFS has had financial support from the Bank of the Amazon (PRONAF), technical assistance from the Executive Commission of the Cocoa Farming Plan (Comissão Executiva do Plano de Lavoura Cacaueira – CEPLAC) and support from the National Indian Foundation (Fundação Nacional do Índio – FUNAI), State Secretariat for Indigenous Peoples (Secretaria de Estado para os Povos Indígenas – SEIND), State Secretariat for Rural Production (Secretaria de Estado de Produção Rural – SEPROR), Secretariat for Sustainable Development (Secretaria de Desenvolvimento Sustentável – SDS), and Municipal Secretariat for the Environment of Autazes (Secretaria Municipal de Meio Ambiente de Autazes). [15]

RECOMMENDATIONS

(i) Restore the TI forest cover through AFS; (ii) capacitate indigenous producers in cooperativism and sales techniques; and (iii) ensure indigenous participation in the management of and in the planning of actions for the TI.

[15] Information obtained from Edivaldo Oliveira Munduruku, Indian technician from the FUNAI - Regional Coordination in Manaus, by telephone conversation with Elis Araújo on August 06, 2012.

9 Murutinga Indigenous Land(16)

AREA
11.5 km²

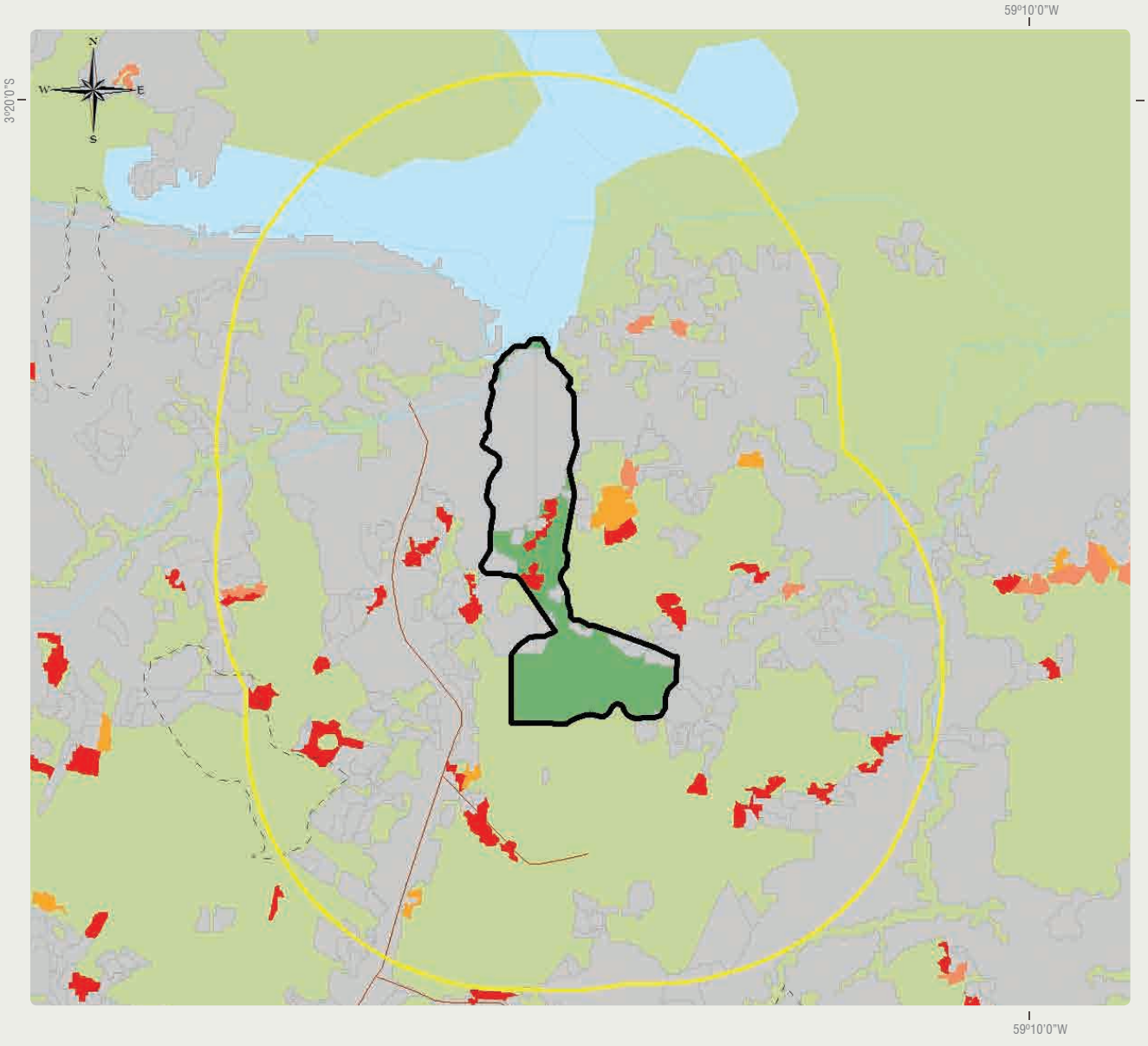
MUNICIPALITY
Autazes (Amazonas)

PEOPLE: Mura

RATIFICATION: 2012

50%
PERCENTAGE OF REMAINING FOREST IN 2011

Protected Area boundary
Surrounding 5km
Non-Forest vegetation
Forest inside the critical PA
Forest
SAD Sep. 2001 to May 2012
SAD Degradation 2011
PRODES up to 2008
PRODES 2009
PRODES 2010
PRODES 2011
Timber harvesting (SIMEX)
CAR
Official roads
Non-official roads
Hydrography



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	No	No
	Non-official	14.7 km	No
Navigable rivers		No	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	81.8 km²	5.8 km²
Mining activity		No	

VULNERABILITY		
Land regularization		We have no information
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	0.03 km²	No
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

Deforestation in the TI was especially caused by the advance of ranches from the surrounding area and by the lengthy demarcation process. The predominant activity in the TI is agriculture, and in 2012 some producers began to use AFS (Agroforestry Systems). The implementation and management of AFS has had financial support from the Bank of the Amazon (PRONAF), technical assistance from the Executive Commission of the Cocoa Farming Plan (Comissão Executiva do Plano de Lavoura Cacaueira – CEPLAC) and support from the National Indian Foundation (Fundação Nacional do Índio – Funai), State Secretariat for Indigenous Peoples (Secretaria de Estado para os Povos Indígenas – SEIND), State Secretariat for Rural Production (Secretaria de Estado de Produção Rural – SEPROR), Secretariat for Sustainable Development (Secretaria de Desenvolvimento Sustentável – SDS), and Municipal Secretariat for the Environment of Autazes (Secretaria Municipal de Meio Ambiente de Autazes). [17]

RECOMMENDATIONS

(i) Restore the TI forest cover through AFS; (ii) capacitate indigenous producers in cooperativism and sales techniques; and (iii) ensure indigenous participation in the management of and in the planning of actions for the TI.

[16] According to order 22/2012, published in the DOU on August 1, 2012, the TI Murutinga was demarcated together with TI Tracajá and had its area increased to 132.86 square kilometers. It is now recognized as the TI Murutinga/Tracajá; however, we still examined only the area of TI Murutinga, since the coordinates and shape of the new area were not yet available for consultation at the conclusion of this study.

[17] Information obtained from Edivaldo Oliveira Munduruku, Indian technician from the FUNAI - Regional Coordination in Manaus, by telephone conversation with Elis Araújo on August 06, 2012.

10 Guapenu Indigenous Land

AREA
21.8 km²

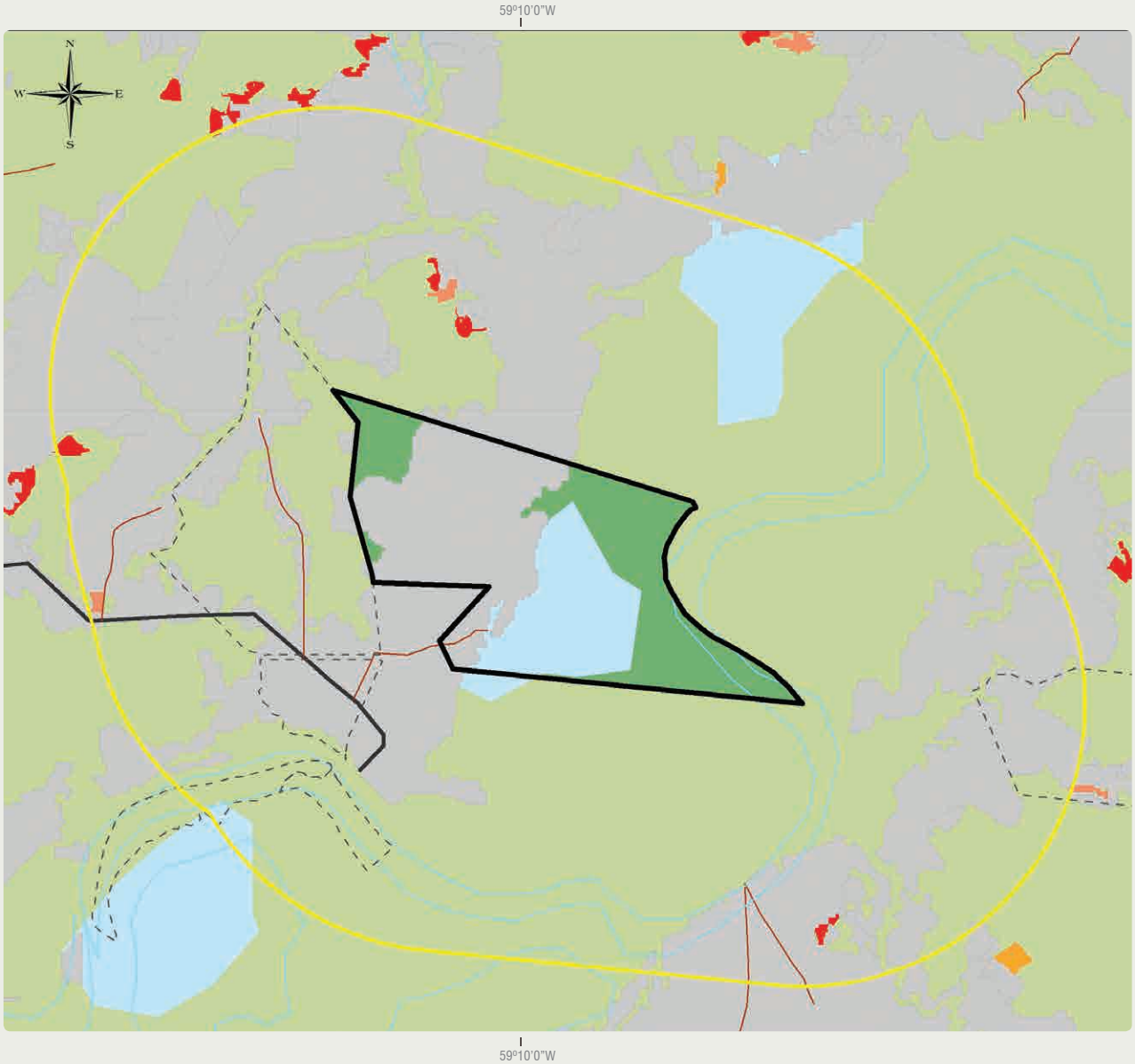
MUNICIPALITY
Autazes (Amazonas)

PEOPLE: Mura

RATIFICATION: NOT CONCLUDED

53%
PERCENTAGE OF REMAINING FOREST IN 2011

Protected Area boundary
Surrounding 5km
Non-Forest vegetation
Forest inside the critical PA
Forest
SAD Sep. 2001 to May 2012
SAD Degradation 2011
PRODES up to 2008
PRODES 2009
PRODES 2010
PRODES 2011
Timber harvesting (SIMEX)
CAR
Official roads
Non-official roads
Hydrography



ACCESSIBILITY			
Access route		**Surrounding area (5km)**	**Interior**
Roads	Official	6.9 km	No
	Non-official	13.8 km	No
Navigable rivers		Yes	

THREATS AND PRESSURE			
Category		**Surrounding area (5km)**	**Interior**
Deforestation	Accumulated up to 2011	73.6 km²	8.7 km²
Mining activity		No	

VULNERABILITY		
Land regularization		We have no information
Legal protection		
Command and control	**Surrounding area (5km)**	**Interior**
Embargoes (2001 to May, 2012)	0.03 km²	No
Fines (2009 to 2011)	No	

RELEVANT INFORMATION

Deforestation in the TI was especially caused by the advance of ranches from the surrounding area and by the lengthy demarcation process. The predominant activity in the TI is agriculture, and in 2012 some producers began to use AFS (Agroforestry Systems). The implementation and management of AFS has had financial support from the Bank of the Amazon (PRONAF), technical assistance from the Executive Commission on of the Cocoa Farming Plan (Comissão Executiva do Plano de Lavoura Cacaueira – CEPLAC) and support from the National Indian Foundation (Fundação Nacional do Índio – Funai), State Secretariat for Indigenous Peoples (Secretaria de Estado para os Povos Indígenas – SEIND), State Secretariat for Rural Production (Secretaria de Estado de Produção Rural – SEPROR), Secretariat for Sustainable Development (Secretaria de Desenvolvimento Sustentável – SDS), and Municipal Secretariat for the Environment of Autazes (Secretaria Municipal de Meio Ambiente de Autazes). [18]

RECOMMENDATIONS

ⓘ Restore the TI forest cover through AFS; ⓘⓘ capacitate indigenous producers in cooperativism and sales techniques; and ⓘⓘⓘ ensure indigenous participation in the management of and in the planning of actions for the TI.

[18] Information obtained from Edivaldo Oliveira Munduruku, Indian technician from the FUNAI - Regional Coordination in Manaus, by telephone conversation with Elis Araújo on Aug. 06, 2012.

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