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INSTITUTO NACIONAL DE PESQUISAS ESPACIAIS



TREES
Tropical Ecosystems and
Environmental Sciences lab

Supporting decision makers through rapid assessments of remote sensing data: the case of Tefé National Forest, Brazil

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Tefé National Forest localization and zoning

What is a National Forest in Brazil?

National Forests are inserted in the National System of Conservation Units as units of Sustainable Use, and have as objectives the sustainable use of forest resources, allowing traditional population to remain living within them, and scientific research, with emphasis on methods for the sustainable exploitation of native forests (Law 9,985/2000).

What is the zoning of National Forests?

The Management Plan of the unit consists of a technical document used as a management tool. This plan establishes the zoning of the unit, which is the definition of sectors or zones with specific management objectives, providing the means for all the unit's objectives to be achieved effectively.

What are the zones established for the Tefé National Forest?

Buffer zone – It is the unit's surroundings, and it houses the beneficiary communities, i.e., those that can make use of its natural resources;

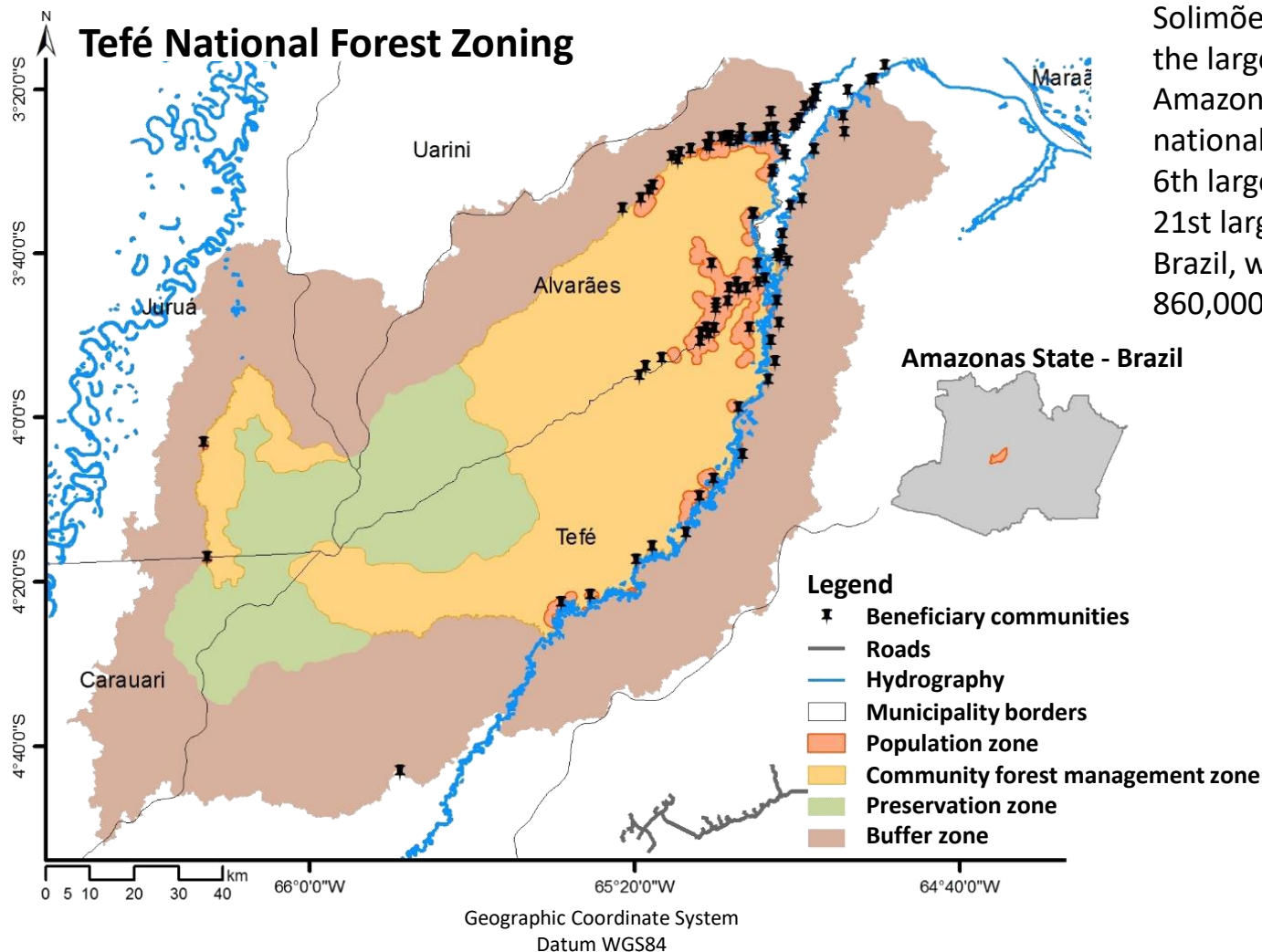
Population zone – It houses the beneficiary communities, i.e., those that can make use of its natural resources;

Community forest management zone – It provide for sustainable use of natural resources, however it does not provide for the permanence of permanent population;

Preservation zone – It Encompasses regions such as the high rivers Tefé, Bauana and Curumitá de Baixo, which remain practically untouched, as they do not constitute crossing points to any other location with an intense flow of people. These regions contribute to the maintenance of the unit's biodiversity.

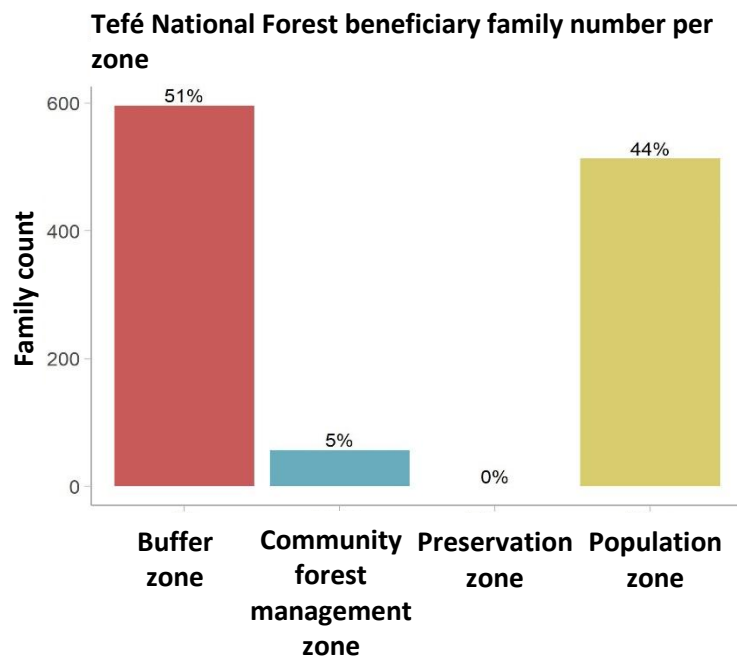
Tefé National Forest localization and zoning

Tefé National Forest was created in 1989, it is located in the State of Amazonas, in the region of the Middle Rio Solimões. It is considered one of the largest regions of *várzea* in Amazon. It is the 5th largest national forest in Amazonas, the 6th largest in Brazil, and the 21st largest conservation unit in Brazil, with approximately 860,000 ha.



Amazonas State - Brazil

Tefé National Forest beneficiary family number, deforestation rate and active fires count per zone

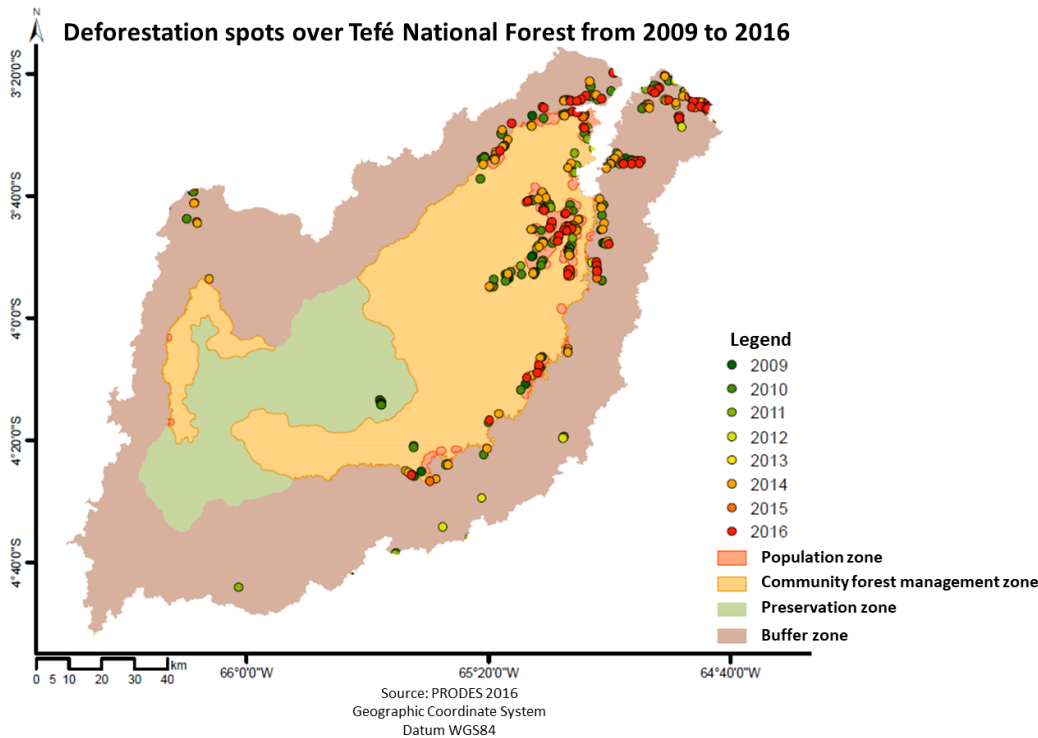


Average deforestation and fire occurrence registered in Tefé National Forest between 2005 and 2015

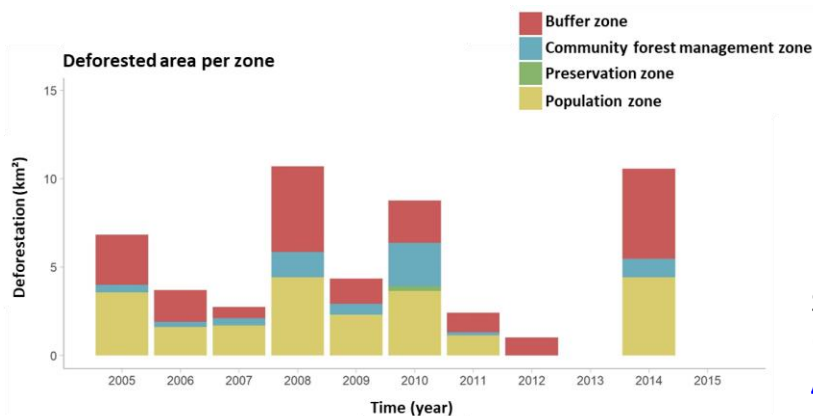
	Area (km ²)	Deforestation (km ²)	Active fires (count)
Buffer zone	10153	1.92	41
Community forest management zone	5392	0.62	7
Preservation zone	2791	0.02	0
Population zone	475	2.08	27
Total	18811	4.64	75

Source: Deforestation data acquired from PRODES (<http://www.obt.inpe.br/OBT/assuntos/programas/amazonia/prodes>) and active fires from MODIS-Aqua (<https://firms.modaps.eosdis.nasa.gov/map>).

Deforestation on Tefé National Forest

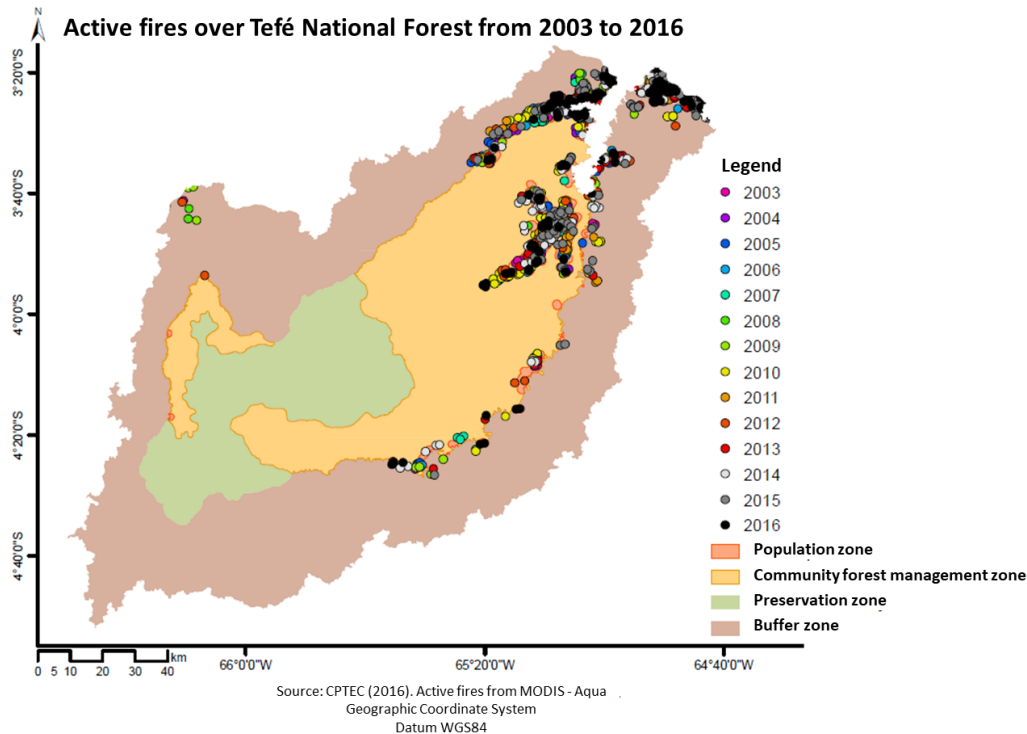


In 2015, 97% of Tefé National Forest was covered by forest. Most of deforestation occurred in the Buffer and Population zone during the entire period. 2008 and 2014 were the years with highest rates of deforestation, reaching rates greater than 10 km² per year. There was only one event of deforestation within the Preservation zone, in 2010. The community leaders participating in the meeting identified this event as particular and caused by someone from outside the unit. According to them, they reported it.

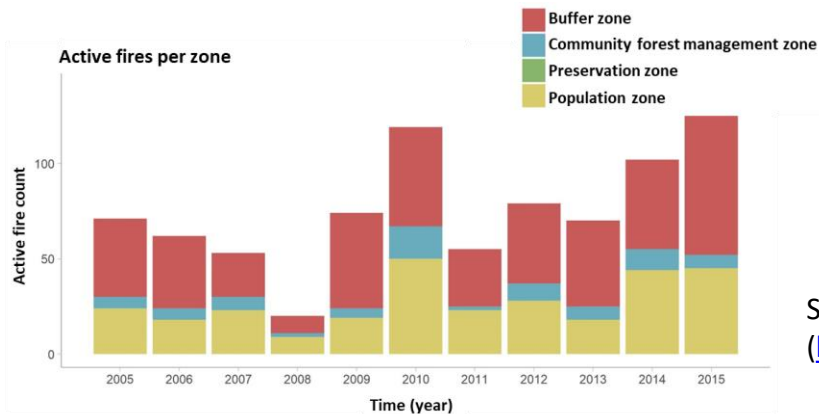


Source: Deforestation data acquired from PRODES (<http://www.obt.inpe.br/OBT/assuntos/programas/amazonia/prodes>)

Active fire events on Tefé National Forest



Although no deforestation was recorded in 2015, the number of active fires was 1.8 times higher than the average from 2005 to 2014. This suggests the vulnerability of this area to the extreme drought which affected the region that year.



Source: Active fires from MODIS-Aqua
(<https://firms.modaps.eosdis.nasa.gov/map>).

Take home message:

- Providing scientific subsidies for public policies is a compromise that is beyond the boundaries created by the academic universe, requiring scientists to respond to the challenges posed by increasingly complex societies, both socially and environmentally.
- Integrated socio-environmental diagnosis, such as this pilot project, can be an important tool, allowing a broader version of the monitoring strategies.

Some records from the field trip and the 20th Tefé National Forest Council Meeting on

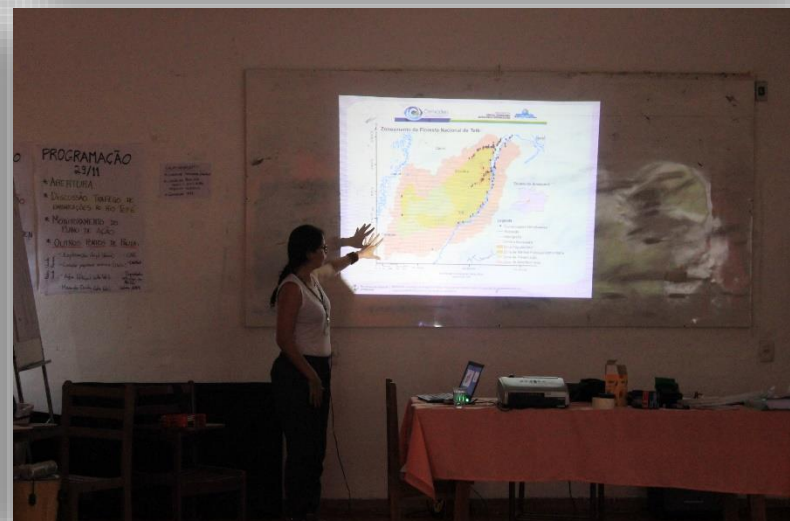
Community leaders playing their anthem before the meeting.

November 28-29th 2017:

Dr. Liana O. Anderson participating in a management activity during the meeting.



Rafael S. Rossato, environmental analyst at Tefé National Forest, evaluating community requests.



Dr. Liana O. Anderson presenting the project during the meeting.

Some records from the field trip and the 20th Tefé National Forest Council Meeting on November 28-29th 2017:

Ana C. M. Pessoa presenting this work during the meeting.

Dr. Liana O. Anderson, Ana C. M. Pessoa and Rafael S. Rossato.



Community leaders that participated in the meeting.



Visit to São Francisco do Arraia community on November 27th 2017.

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Relevant websites:

<https://www.nhh.no/en/research-centres/tropical-deforestation/>

<https://www.treeslab.org/>

Institutions involved:

