

# CORRIDORS FOR LIFE

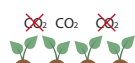
## Improving Livelihoods and Connecting Forests in Brazil

### THE CHALLENGE

In Brazil, the largest forest remnants in the interior Atlantic Forest lie in the Pontal do Paranapanema area in western São Paulo state. Originally a 246,080 ha public forest reserve was designated, but progressively encroached upon during 1960–1990 by large scale ranching and sugarcane establishments. In the mid-1990s, with pressure for land redistribution from the Landless Rural Movement (MST) and other groups, land was occupied by 6,000 families and later expropriated for public land reform settlements, dramatically increasing human occupation. After settlement of many landless households, the pace of land redistribution slowed, and policies adopted at a national level now seek to consolidate existing settlements. Over time, these settlers were prepared to “green” their properties with sustainable uses such as planting trees and agroforestry practices. There still remains an urgent need to promote income generation for settlers. Also urgent is the protection of the remaining fragmented forests within this productive landscape before further pressures ensue. Although agrarian reform settlements and large landowners pose a series of barriers to biodiversity conservation, they also offer important and widely replicable opportunities for large scale Forest Landscape Restoration (FLR).



### IMPACT TARGETS FOR 2025



**1,000,000** Tones CO<sub>2</sub>Eq  
neutralized  
in new forest  
plantations

**60,000**  
hectares  
protected  
and **5,000**  
restored

**U\$ 10,000,000**  
of local  
income  
through  
restoration  
services



### CLIMATE AND ECOSYSTEMS



**5,000**  
ha restored  
in new forest  
corridors  
and  
agroforestry

**15,000,000**  
trees planted and in  
regeneration process

Inclusivity and  
gender with **30%**  
of jobs and services  
held by women



### COMMUNITY AND INCOME GENERATION



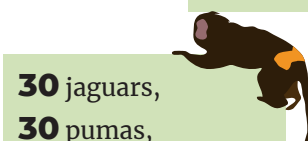
**U\$ 1,250,000**  
of local income  
through  
community  
nurseries

**U\$ 25,000**  
of local  
income  
through  
agroforestry  
products

**7** large companies and  
extension agencies involved  
in production and sustainable  
development policies



**200** bird and  
**10** amphibian  
species  
monitored  
through  
soundscape  
ecology



**30** jaguars,  
**30** pumas,  
**300** ocelots,  
**1,000** tapirs and  
**1,000** tamarins  
in forest connectivity



## THE APPROACH

The Corridors for Life project simultaneously addresses **CLIMATE** change, support local **COMMUNITIES** and conserve **BIODIVERSITY**. Carefully designed, the project aims at:

- 1) restoring large areas in private lands to promote connectivity between forest fragments and protected areas;
- 2) promoting the occupation of the restored and connected areas by the local fauna;
- 3) promoting the change in land use practices of small and large-scale farmers in rural fragmented areas;
- 4) improving small farmers' livelihoods and;
- 5) providing investors a return in the form of high-quality carbon offsets.

Strategically selected areas for agroforestry and forest restoration increase habitat viability by the formation of forest corridors to increase connectivity among "core" forest fragments ensuring gene flow. Where corridors are not feasible, this



Shade grown coffee



Black Lion Tamarin (*Leontopithecus chrysopygus*)

flow is achieved through developing agroforestry stepping-stones.

Agroforestry and restoration also minimize degradation around biologically important landmarks, including the Morro do Diabo State Park, as the main reservoir of populations of key endangered and endemic species. Enlarging and eventually connecting forest fragments are the two main goals of reforestation projects. From an ecological perspective, this is essential to maintaining viable populations of flora and fauna and mitigating harmful edge effects, such as exposure to light and wind, diseases, and invasive species.

IPÊ - Instituto de Pesquisas Ecológicas (Institute for Ecological Research) developed a "Dream Map" for Pontal

de Paranapanema, the westernmost region of São Paulo where the NGO was founded.

This plan for wide-scale reforestation of the Atlantic Forest takes into consideration information on existing gallery forests, species home range, local properties as well as proximity to public protected areas and existing forest fragments to calculate where reforestation efforts would be most efficient and effective. Among main project partners are state and federal rural extension agencies, international NGOs, private companies interested in voluntary carbon offsets, companies that produce and commercialize ethanol, sugar and other national and international electric power holding companies.

## SUSTAINABLE DEVELOPMENT GOALS

This Forest Landscape Restoration (FLR) project also incorporates the call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030.

These goals will only be met if we work together.





## DREAM MAP

Our Dream Map is guiding the creation of Brazil's largest reforestation corridor.

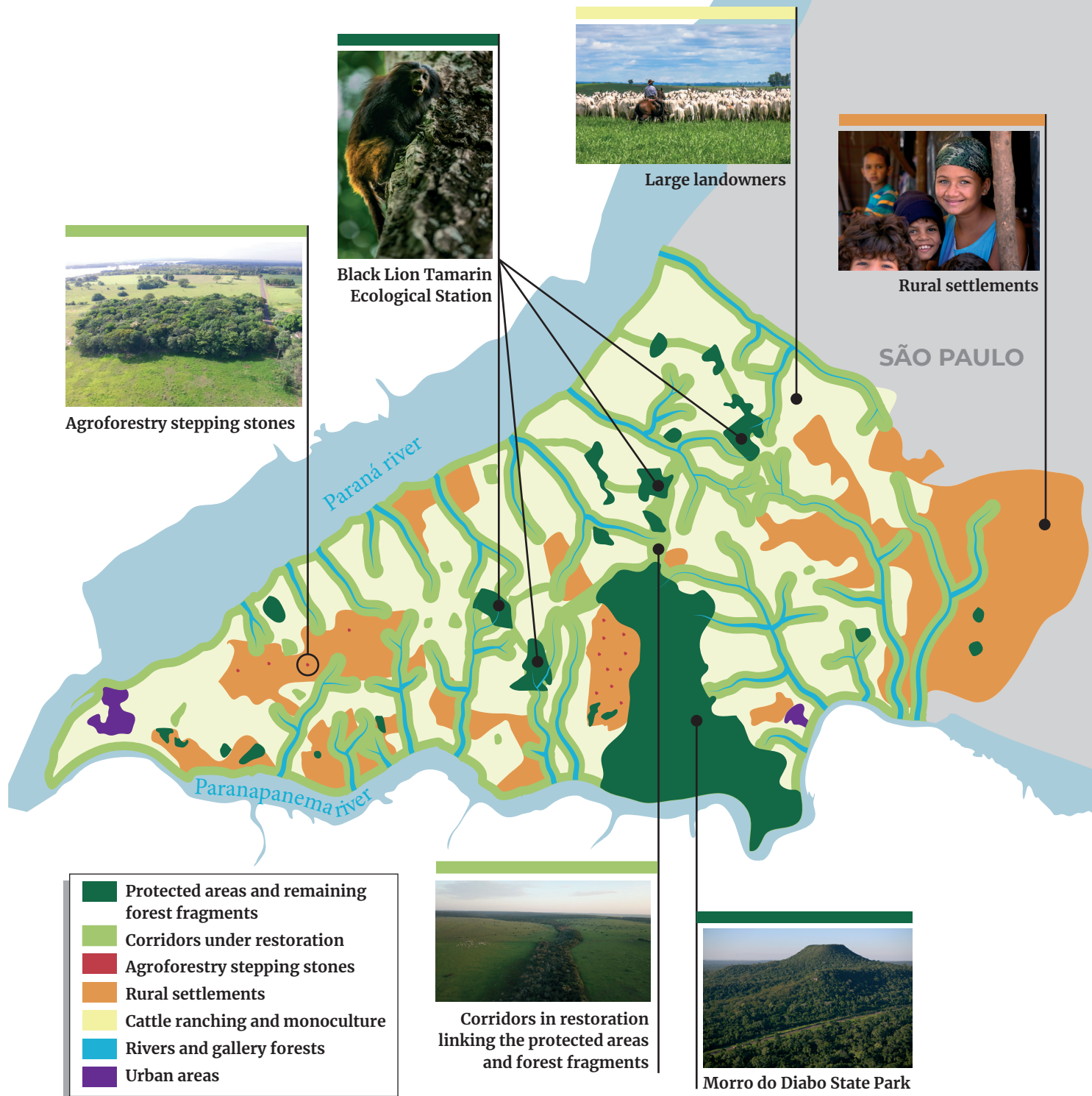
The Dream Map of large-scale Atlantic Forest restoration is serving as a guide to IPÊ's restoration activities in western São Paulo State, highlighting priority areas for

reforestation and conservation.

The idea of this map, which integrates the proximity of Gallery Forests (APPs) and Legal Reserves (RLs), property borders, existing forest fragments, and species ecology, largely mirrors the information already gathered by the

CAR (Environmental Rural Registry database).

Once fully implemented, this large-scale restoration effort will create 60,000 ha of forest connectivity for endemic and endangered species, improving livelihoods of approximately 1,000 families.



## RESTORATION APPROACHES

**Restoration with native species:** active, mixed and passive restoration, combining filling and diversity native species to restore ecological processes and accelerate recovery of forest structure, ecological functioning and biodiversity.



**Agroforestry:** shade grown coffee in home gardens as stepping stones to promote gene flow and wildlife dispersal in rural areas.



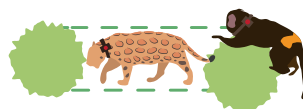
**Mixed species plantation:** intercropping exotic, commercially valuable tree species with native species to meet restoration requirements.



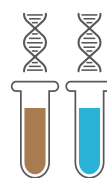
**Silvopastoral Systems:** integrating forestry, sustainable cattle-ranching and landscape restoration.

## INNOVATIVE TECHNOLOGY IN BIODIVERSITY MONITORING

Jaguars, Pumas, Ocelots, Tapirs and Black Lion Tamarins GPS-tracked as landscape detectives in landscape planning.



Sound recorders, soundscape ecology and acoustic niches used to monitor forest colonization of birds, amphibians and mammals.



Environmental DNA (eDNA) with new molecular approaches used to monitor aquatic and terrestrial environments in restored habitats.

Drones with Lidar (Light Detection And Ranging) and hyperspectral imaging used to monitor carbon stocks and floristics.



Camera trapping used to monitor mammalian community structure and diversity in restoration areas.



## RESULTS

### CORRIDORS UNDER RESTORATION ON THE DREAM MAP

The conceptual “Dream Map” guided the creation of Brazil’s largest reforestation corridor (Figure below), which after ten years of effort, links two main remnants of Atlantic Forest in the Pontal de Paranapanema region. This corridor is approximately 7 kilometers long with average width of 400 meters, restored entirely in private-owned lands. The Brazilian National Congress approved the new Law for Protection of Native Vegetation in 2012. Amendments and revisions of the “old forest code”, as the previous version of the law was known, reaffirms the obligation for private landowners to conserve or restore permanent preservation areas and legal reserves in their properties. To date, approximately 1,800 ha of forest have been restored in Pontal do Paranapanema. This area takes in consideration the 1,200 ha in the main forest corridor, plus another 600 ha scattered in 5 smaller corridors and 90 agroforestry stepping stones



*Jaguars as Landscape Detectives: The project developed the landscape detective approach to identify strategic transit refuges for dispersing jaguars that could improve the dispersal potential of corridors between suitable habitat patches.*

in rural properties. This project consolidates strategies that represent sustainable livelihood alternatives for communities of the land reform movement in Brazil, leading to replication of good practices and policies in income generation and biodiversity conservation. At the policy level, IPÊ, together with other civil organizations in the region, are influencing policies that affect land use and conservation. Soon,

the relevant laws on land use and settlement will be appropriate for supporting agroforestry and forest conservation. By using scientific evidence, cooperating with new settlers and large landowners, and collaborating with state and federal agencies, the program is implementing a land-use framework that promotes sustainable agriculture and forest landscape restoration (FLR) over the long term.

*2.4 million trees make up IPÊ's 1,200-hectare corridor, the largest in Brazil, connecting two main Atlantic Forest protected areas.*

