A SUMMARY OF THE BJF RESTORATION TECHNIQUES

***Disclaimer:** This document aims to summarize the ecological restoration techniques that are used in the field by the BJF team in order to realize the Araguaia Biodiversity Corridor in the heart of Brazil.*

1. Natural regeneration

We use this technique where the level of degradation is not advanced, and the site presents high recovery potential. Our technicians will work on removing the degradation factors and assisting the already established trees. If needed, we build fences, control competing plants, and fertilize the soil. All interventions aim at accelerating the recovery that would otherwise take much longer. Monitoring will indicate if other actions should be necessary.

Figure 1 Natural regeneration: sprouting in the grass

2. Densification

We use densification when natural regeneration is present, but it is not solely able to cover the site entirely. Additional actions are needed, then. Some of them are planting seedlings or seeds, in order to fill the spaces where natural regeneration doesn't express itself. Other interventions are similar to those performed in the natural regeneration methodology.

Figure 2 Site in need of densification

3. Enrichment

The enrichment technique is used when there is natural regeneration in the site, but it is present in low diversity of species by several factors. The role of BJF technicians is to plant seedlings of species that are absent in the system which, if not for the degradation, would be present. Work may involve control of competing species and other interventions whenever necessary.

Figure 3 Patch of forest to be enriched

4. Total seedling planting

Planting seedlings in the entire site is necessary whenever natural regeneration is not able to express itself. In this case, the process is more complex, going from the careful preparation of the soil, control of competing plants, to the planting of species with different functional attributes. Some will have the role of rebuilding the structure of the ecosystem, while others will compose their natural diversity. Maintenance and monitoring of these areas are vital to the success of the projects.

Figure 4 Seedling planted at site

5. Direct seeding (muvuca)

Idealized by Instituto Socioambiental (ISA) through the Xingu Seed Network, this technique is based on the planting of seeds directly in the site. Seeds of trees, shrubs, and legumes are spread in the soil previously prepared. This methodology produces dense vegetation, which will follow a development path more similar to that of a natural ecosystem.

Figure 5 Direct seeding: germinating