Profile of the middle Rio Negro

The middle Rio Negro comprises the municipalities of Santa Isabel do Rio Negro and Barcelos, covering more than 185,000 km² with slightly above 40,000 inhabitants. The municipality of Santa Isabel do Rio Negro , formerly Tapuruquara, totals covers 62,846 km² and has 18,146 inhabitants according to the latest census. Barcelos, also known by its old name - Mariuá Village – was founded in 1728 as the first seat of the colonial Captaincy of Sao Jose do Rio Negro. It has an area of of 122,476 km² with 25,718 inhabitants (IBGE, 2010).

In the latest census, people in Santa Isabel do Rio Negro identified themselves as: 59.2% indigenous, 30.3% multi-racial, 4.5% white, 3.2% black and 2.8% Asian; and in Barcelos: 32.5% indigenous, 52.8% multi-racial, 9.8% white, 4% black and the remain.

The majority of the **indigenous population** in the middle Rio Negro identify themselves as Baré which is originally from the region. There are also several groups that have moved from the upper Rio Negro, especially Tukano, Tariana and Baniwa. In the middle Rio Negro the different indigenous groups often live in the same communities or neighborhoods, and marry among themselves and with non-indigenous, creating a multi-ethnic population profile.

The social dynamics of the indigenous peoples of the Rio Negro privileges marriages between certain ethnic groups and certain forms of social, trading or ritual exchanges. One of the most common types of exchange is the *dabucuri*, **a feast for offering and receiving gifts between clans and relatives**. This important ritual reaffirms the ethnic and family structures. These networks of exchanges have helped create – and still create today - important and characteristic migration flows between the indigenous peoples of the Rio Negro, leading to a great socio-cultural diversity.

Specifically in the middle Rio Negro, this diversity includes native indigenous peoples, peoples of other regions and a non-indigenous population living traditional riverbank livelihoods. This reflects the history of colonial occupation, migration dynamics and social mobility, intensified by national colonization projects and large scale movement of people for the rubber trade. During the eighteenth century, when Barcelos was the colonial seat of the Captaincy of Sao Jose do Rio Negro, the region saw a large influx of Portuguese people, slaves (black and indigenous) and then workers from northeastern Brazil. As a result, the meaning and practice of the local networks of trade and marriage took on new meanings from the indigenous way of life, heavily influencing the traditional riverbank communities of today.

© Dylan Gross, 2008

Each community operates as an independent socio-political unit. Each has its own manager – a type of captain or *tuxaua* (chief) – and a patron saint if the majority of the population is Catholic. There is a common pattern in terms of how each family and community agrees to use areas, typically: forest clearings for annual crops (*roças*), stretches of rivers and *igarapés* (creeks) where they fish, and areas used to collect forest resources (for instance, *piaçabais* – clusters of piassaba palm trees and *castanhais* – clusters of Brazil nut trees). Normally the use of these collection areas is shared.

The communities formally recognized by local government have the right to health and education services. However, the current scenario ranges from precarious to nonexistent services. Many indigenous and riverbank peoples alternate between living in rural communities and municipal seats, occasionally also making a temporary home with relatives in other communities or the municipal seat. This **shifting residence** responds to the seasonal nature of economic activities, especially as forest resources become available for harvest in different places. It also reflects changes in the availability of health and education services, school holidays and the feasts of saints, where the exchanges and celebrations are similar to *dabucuris*.

There are few possibilities for income generation. These mainly consist of salaried work in public services and receipt of government benefits, especially retirement pensions, the *Bolsa Família* and other federal programs. The **relationships of patronage** (between a powerful 'patron' and his workers) including *aviamento* took hold during the rubber boom and are still all too common. *Aviamento* is a system in which the patron provides food, manufactured goods and tools to the workers on credit, before sending them out to collect the product (typically rubber, fish or vegetable fibers). This basket of goods is locally called the rancho. The high price put on the rancho and the low price paid for the product generally leaves the extractive workers in debt to the patron, so they are continually obliged to keep working, while never escaping their debt. This system is mainly run by patrons based at the municipal seats along the Rio Negro and in Manaus, or by boat owners and middlemen who control the trade networks for edible fish, ornamental fish, Brazil nuts and vegetable fibers (*piaçaba* and lianas).

The interethnic alliances established during the colonization process, especially the patronage system and strategies of marriage between indigenous and non-indigenous, transformed the traditional social structures. This makes it difficult, at first glance, to differentiate and classify indigenous society and non-indigenous society. In such **complex and multi-ethnic reality**, the indigenous identity is in focus: both for their marginalization, which reflects the impact of Nation-building projects, imposing other ways of living on the indigenous way of life, as well as for the struggle of the indigenous peoples of the Rio Negro to see their rights recognized and recover their own ways of life.

Fish and traditional fishing

Fishing and making *roça* (clearings for annual crops) are the most important daily activities of the families living in the communities of Rio Negro. Fishing may be carried out during day or night, by a group, an individual, women and even children. But it does not mean that fishing does not require specific knowledge and technical skills. This knowledge is passed down **from generation to generation**. Children, especially boys, are encouraged by their parents to participate in the daily fishing and thus learn about many fish species, the environments they inhabit, the baits, the techniques and the fishing gear. Boys tend to like fishing as learning is also entertaining, a children's game.

Some forms of fishing are conducted at certain times of the year; others are restricted to specific environments (such as narrow channels, lakes, waterfalls and others). Some fish such as *cascudo*/catfish (small *bodó*, Family *Loricariidae*), can be caught with the hands, without using any tools, while other types of fishing require complex traps that can take days to build.

The **traditional fishing** gear are complex pieces of engineering that take into account the types of fish, the variation of water depth and the different landscapes and environments. The specific knowledge for fishing links the fishing techniques to of relationship rules between people and fish. These rules should comply with **ethics for social and cultural management**, which determine where the activity is safe, the ecological cycles of life, the sacred and therefore dangerous places, as well as the homes of the fishes[1], which traditionally belong to certain clans and families who are responsible for their care and use. A good fisherman and the elders of the Rio Negro know these and other precautions - especially the necessary *benzimentos* (blessings) so that the fish do not change their dwelling, do not run away and do not cause disease in humans. Similarly, some scientific articles on ichthyology of the Rio Negro state that most of the fish in the region are resident types, i.e., they do not migrate out of the basin, making them more susceptible to the impacts of the fishing pressure.

[1] To understand the fish homes, see the Narrative entitled "The ways of the fishes".

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The most commonly caught and consumed fish

Fish with scales

White fish: *pescada*/hake (*Plagioscion squamosissimus*), *aracu* (Family *Anostomidae*), *pacu* (Family *Characidae*), *matrinchã* (*Brycon* sp), *jaraqui* (*Semaprochilodus* sp)

Dark fish: *traíra*/wolf fish (*Hoplias* sp), *acará*/discus or *cará* (Family *Cichlidae*), *tucunaré*/peacock bass (*Cichla* sp), *jacundá* (*Crenicichla* sp) and *piranha* (Family *Characidae*)

Flat fish (or *Feras*/"Beasts")

piraíba (*Brachyplatystoma filamentosum*), *pirarara* (*Phractocephalus hemioliopterus*), *surubim* (*Pseudoplatystoma fasciatum*), *jandiá* (Family *Heptapteridae*), *mandi* (Family *Pimelodidae*), *mandubé* (Family *Auchenipteridae*), *anujá* (*Trachycorystes galeatus*), *carauataí* (*Auchenipterichthys longimanus*)

During the dry season, fishing is abundant and faster, as the fish are concentrated in a smaller area. However, the fish are thinner as they have a lower supply of food. Under these conditions, one family consumes an average of 3 kilos of fish per day; a community of 25 families, for example, cooks about 2 tons of fish per month.

Despite the **high diversity of species** the Rio Negro basin has a **low density of fish population** and therefore has a specific law restricting commercial fishing, which is only allowed within the geographic boundaries of the basin. However, commercial fishing is locally important and has grown in recent years. The largest consumer market place is the municipal seat of São Gabriel da Cachoeira.

Commercial fishing for edible fish is also carried out with several types of fishing gear, intended to capture a wide range of species, depending on seasonal conditions and fishery location. In this supply chain, the owners of *geleiros* – medium and large vessels carrying frozen fish – usually reside in the municipal seats and provide fishery equipment (ice, gear and food for the fishing days) to the local fishermen. At the end of fishing, the *geleiro* owner will discount the value of the gear from the value of fish caught. This is the same system – *aviamento* – that operates in the vegetable fibers and rubber production chains.

Fishing gear and fishing diversity

Fishing Gear*

The techniques and the locally used fishing gear reflect the historical processes of occupation in the region, with indigenous and immigrant origins.

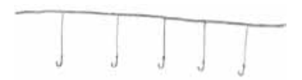
Hooks	caniço e linha de mão (rod and line with a hook)
	espinhel (multihook longline)
	espinhelinho (variation of longline)
	anzol de espera (dropline)
	camurim (small wooden float)
	pinauaca (lure)
Traps	cacuri (fixed)
	cacuri for ornamental fish (portable)
	matapi (portable)
Spearfishing equipment	zagaia (spear with a trident head)
	harpoon
	jaticá (harpoon with long pole)
	bow and arrow
Nets	malhadeira (gillnet)
	rapichê (dip net)
	puçá (hand net)
Poison**	timbó (liana)
	fruits
	cunami or cunambi (leaf)

* classification based in Cabalzar, 2005
** usage in the middle Rio Negro is rare and will not be addressed in this publication

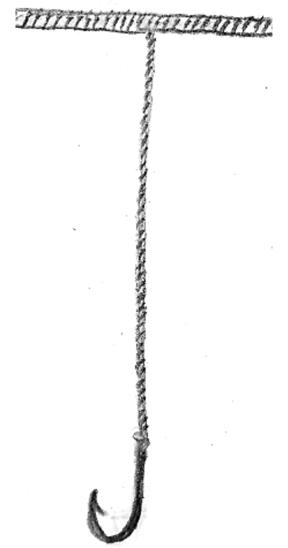
Carla Fredda, 2005

Hooks

The **CANIÇO AND THE HANDLINE** – *caniço* is the well known fishing rod, preferably made with flexible and resilient wood. The use of *caniço* - or the line alone in the fisherman's hand - is very effective for those who know well the location and its potential. This is typically used when the fisherman is in the canoe or in front of the community.



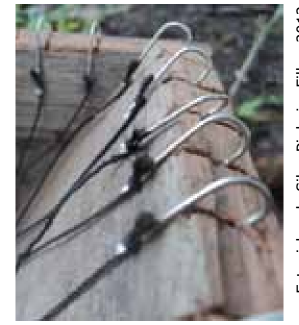
The **LONGLINE (*ESPINHEL*)**, also known as *espinhelão*, is used to catch all kinds of fish as well as chelonians (shelled animals, such as turtles, terrapins and tortoises). The size of the hook varies according to the type of fishing: each size of hook is identified by a number, with larger numbers referring to smaller hooks. The longline is best used to catch flat fish in the *igapós* (flooded areas) and in rivers, in deeper places where there are currents, to catch larger fish, the *feras* ("beasts"). It is prepared by the fisherman in two stages: the main support is a line, usually number 5, called "*estiradeira*" (mainline), with weights that today are made of concrete and pieces of iron, tied at both ends, known as "*poitas*" to keep the mainline submerged in the bottom of the river. From the weights rise two lines with large buoys, usually made of lightweight wood called *molongó*, plastic bottles or styrofoam and tied at the end so that the location of the longline is clear on the water surface. In the mainline other strings are tied, ranging from 40cm to 1 meter, called "*estrovo*" (snod), where the hooks are tied.



The fisherman prepares the longline before mounting it in the river by putting baits on each hook. He first throws the weight, taking one end of the mainline to the river bottom and quickly starts throwing the snods, ensuring that the mainline remains stretched. Then he launches the second weight, concluding the process. In general, the *espinhel* is set in the morning and checked by lunchtime. Firstly a weight is pulled and then the mainline is slowly pulled up to check each snod. After removing the hooked fish, a new bait is placed and snods are returned to the river bottom for more fishing. The fisherman can repeat the process so there is bait during the night.

When the goal is to catch shelled animals, the longline is used in the middle lakes and in beaches backwater. This fishing uses more, smaller hooks and longer snods with thinner lines. Baits for shelled animals are generally fruits: palm, *ingá*, banana and others, and sometimes pieces of fish. The buoys are smaller to avoid attracting the attention of caiman. The longline is thrown so that it is not stretched, with the weights closer to allow the hooked shelled animal to rise to the surface to breathe.

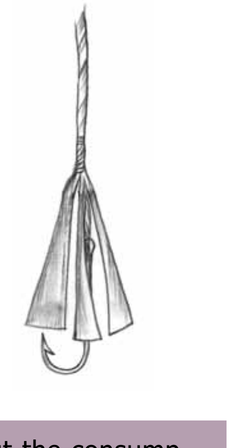
When fishing for chelonians the longline is checked more frequently, as when two animals are caught, they can move the longline towards the surface when breathing, preventing others from finding the remaining baits.


Estanislau da Silva Pinheiro Filho, 2012

The ***ESPINHELINHO*** is a variation of the longline, used to catch scaled fish. The hooks are small (typically number 16, the same size used for shelled animals), since these fish – *pacu*, *aracu* and *piranhas* - are smaller and therefore have less strength. When used in the rainy season, in the *igapós*, the *espinhelinho* is tied directly to thin and flexible trees that move when the fish is hooked, without breaking the line. The mainline does not have weights, being next to the water surface. The most common baits to catch *pacu* and *aracu* are worms, spiders and *careca*, a small fruit.

The ***ANZOL DE ESPERA* (DROPLINE)** is similar to the snod used in the longline, being longer and having a thicker cord (2-3 mm). It is tied up alone to a flexible branch on the edge of the river. It does not have weight or buoy. It is used at night to hook flat fishes: *pirarara*, *piraíba* and *surubim*. The baits most commonly used are pieces of fish: *mandi, aracu* and others.

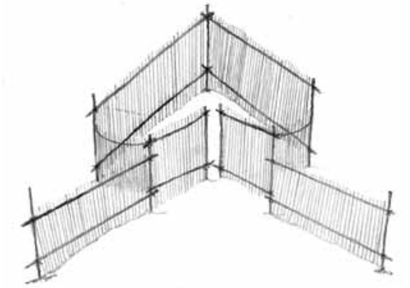
The ***CAMURIM*** is used in lakes for fishing shelled animals and in the riverbed for flat fish. It is a buoy made of *molongó* (lightwood) to which a line of approximately 3m is attached with a small hook (number 15) at the tip. It is generally used loose in lakes but can also be used in rivers and, in these cases, the rope is longer with a lead weight to hold the hook on the river bottom.



The ***PINAUACA*** is a special bait mounted in a rod and line. The line is strong, similar to the longline. Two hooks are tightly tied to it, numbered 7-10. A kind of fishing lure is tied above the hook, that moves in the water. This draws the attention of the fish. Formerly, macaw feathers were used; today, the few fishermen who still know this technique use colorful fabrics. This is preferably used in *igapó* fishing and in areas dense with tree trunks and branches at the edge of some communities. The main target fish is the *tucunaré*. The *pinauaca* inspired another type of gear known as *puxa-puxa*: a fishing lure made of strips of plastic bags, mostly used in lakes during the dry season and thrown with constant movements to attract the fish.

Chelonian hunting or fishing for commercial purposes is banned in Brazil, but the consumption by indigenous and traditional peoples is recognized and allowed by law.

Traps



The ***CACURI*** is built with stalks of *paxiúba*, a palm that is easy to make into long rods of equal width. These rods are used to create a kind of large wall: two v-shaped walls are placed to capture the fish or shelled animals as they go upstream, forcing them into the trap. The *cacuri* is usually built at the beginning of the high water season, set in the entrance of *igarapés*, near ravines and between rocks: places where fish pass and the water strength cannot dislodge the trap. There are *cacuris* measuring up to 4 meters in height or depth. The most commonly caught fish are *mandi, aracu, surubim, mandubé*, among others. This trap may also be used to catch shelled animals, usually *cabeçudos* (toadhead turtles). In this case, it is typically prepared in shallow flooded areas near sandbanks, of approximately 1.5 m depth. In this trap the fisherman can use the *zagaia* or enter the trap to select the fish he will consume.


Estanislau da Silva Pinheiro Filho, 2012

The ***CACURI* TO CATCH ORNAMENTAL FISH** is a trap used in places that the fisherman cannot reach with his canoe, where there are submerged branches and thorns. It is made with a heavier board below a wooden arch with upper support as a gear holder for the fisherman. Screens are sewn on the sides forming a kind of box where the bait is placed to attract small fishes, known as *piabas* (minnows), especially the cardinal (*Paracheiroidon axelrodi*).

The captured *piabas* are stored in tanks in areas of running water or put straight into plastic trays for transportation by river to the capital for export.

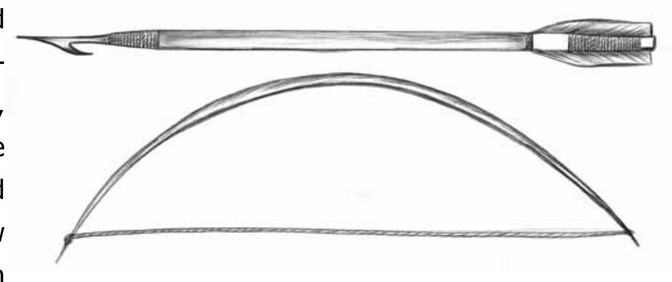
The ***MATAPI*** was a kind of trap widely used by ancient fishermen, especially to catch *pacu, aracu, traíra, acará*, among others. The fishing is carried out when the river is beginning to dry, when small pieces of land appear, forming in water passages, in *paranãs* (channels connecting two larger bodies of water), lakes and *igarapés*. The *matapi* is placed in the mouth of these passages, upstream, so that the fish go into it and cannot leave. It is made with splints of *paxiúba* measuring approximately 1.5 m long and with *ambé* liana fiber, woven into a rope that intertwines the splints at an average distance of 4 cm, creating a cone shape. Few people know how to make and use this trap, and it is more common in the upper Rio Negro, as it is particularly used near rocks and waterfalls.

Spearfishing equipment

The ***ZAGAIA*** is a rod about 2 meters long, weighing up to 3 kilos, with a steel spear with 3 tips full of small hooks to hold the fish. It is used in spearfishing and *faxear*, a type of fishing also known as "*focagem*", done nowadays with the aid of a flashlight or spotlight connected to a battery, in order to find and harpoon the fish at night.

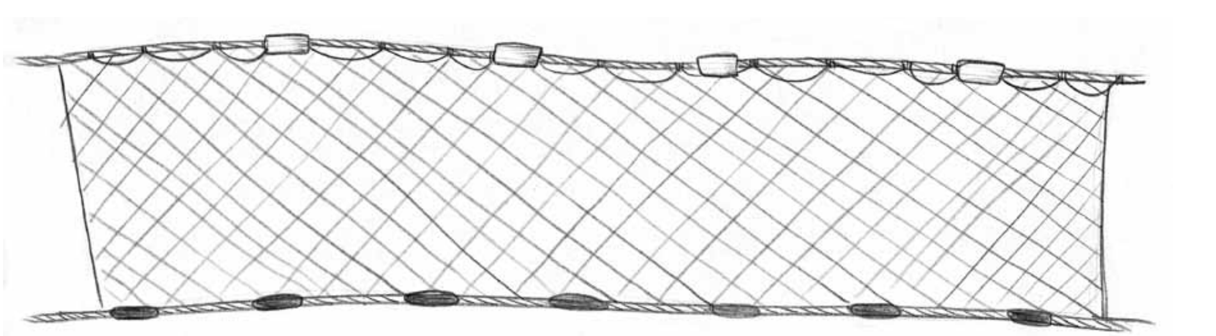
The **HARPOON** works in the same way as the *zagaia,* but has a single point, with a sort of lateral strap that hooks the fish. The other end of the rod is tied to a rope about 35 meters long, with a kind of float attached to the end to avoid losing the gear when it is thrown. It is widely used for flat fish, *feras* and *pirarucu.*

The ***JATICÁ*** is similar to a spear, and resembles a harpoon. It is made with a long wooden stick and a strong steel tip, without hooks, in order to pierce and stick in a chelonian's shell. Once the shelled animal is harpooned, the tip gets stuck in it and the rope holding the steel tip to the wooden rod is released, allowing the animal to be pulled along.

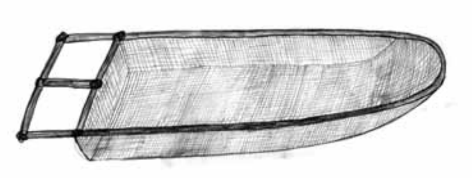


The **BOW AND ARROW** is rarely used today. The bow is made of a flexible timber, which forms a strong curve when the rope is tied, generally woven from cotton or *tucum* fiber. The arrow is made from a tree with thin stem and branches. Its tip is prepared so that the arrow head can be inserted, tied with a cord and then finished with pitch or beeswax. It is most commonly used in lakes during summer, where *traíras* and *acarás* are fished, and in the *igapós* at the beginning of the rainy season, when the fish are doing *piracema* (spawning). The most popular are *tucunaré, pacu* and *aracu.*

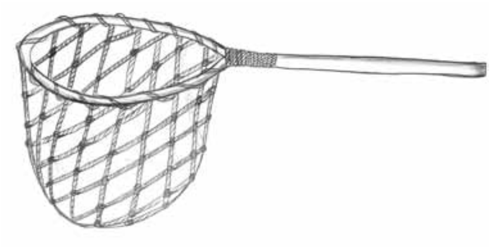
Nets



***MALHADEIRAS* (GILLNETS)** have different sizes. Each mesh is specific for the type and size of fish that it is designed to catch, for example: *aracu* - 30mm mesh, *piranha*, *acará* and *tucunaré* – 50mm mesh; *pacu* – 60mm mesh; *pacu-tiuí* – >70mm mesh; hake – 80mm mesh; *pacu bola*, much bigger – 90mm. It can be used at any time of day and is usually checked every 2 hours, depending on its location. There are no traditional rules for the use of gillnets, which are often used to close the mouths of lakes and rivers in order to catch a great deal of fish in a short time. It is considered a predatory fishing gear, because it generates a lot of by-catch, especially when gillnets with mesh as small as 20 and 25mm are used, and when they are used primarily for commercial purposes, in dry lakes and backwaters where fish tend to breed.



The ***RAPICHÉ* (DIP NET)** is a kind of big basket, used only in ornamental fishing, on the borders of *igarapés* and places without submerged trees and branches, accessible to the *piabeiro* (ornamental fisherman) in his canoe. It requires a laborious preparation, made from a flexible rod of approximately 4 meters, called "*ripeira*", where two sticks are tied - one at the tip and other ahead - and at noon, another tighter pole is placed to hold the gillnet. A net or nylon screen is sewn onto this structure. It is widely used for fishing of cardinal, *rosacéu* (*Hyphessobrycon* spp), *bodó* and others.



The ***PUÇÁ*** is similar to a sieve, made of the same material as the *rapiché*. It is smaller, used to count the ornamental fish or catch them in lower amounts.

Continues on reverse

The third volume of the Fishing in the Rio Negro series seeks to value the way of life of indigenous and riverbank peoples of the middle Rio Negro. This is a remote region of huge geographical extent, with a rich socio-environmental heritage but with low national economic and political visibility.

With a social dynamic of its own, an ancient history of occupation, and colonization projects dating from the XVII century, the Rio Negro has a huge social and cultural diversity. Traditional knowledge associated with fishing techniques, gear and socio-environmental relations are part of this heritage, which constitutes the Rio Negro's way of life and are therefore key for the preservation and reproduction of the region's socio-biodiversity.

Fishing in the Rio Negro is a series of publications on fishing activities in the Rio Negro basin. It includes the different types of fishing used by the indigenous peoples, by other traditional river populations, as well as fishery and tourism business. Designed for the region's public, in several formats, there is not a fixed timetable for publications – which are open to partnerships. The series intends to publish useful information that contributes to the management and the sustainability of fisheries in the largest black water river basin in the world.

Instituto Socioambiental (ISA) is a public interest civil society organization (Organização da Sociedade Civil de Interesse Público - OSCIP), established in April 22, 1994 by people with outstanding background and experience in the struggle for social and environmental rights. Its objective is to defend collective and diffuse goods and rights relating to the environment, cultural heritage, human rights and rights of peoples. ISA produces studies and researches, implements projects and programs that promote socio-environmental sustainability, valuing the cultural and biological diversity of Brazil.

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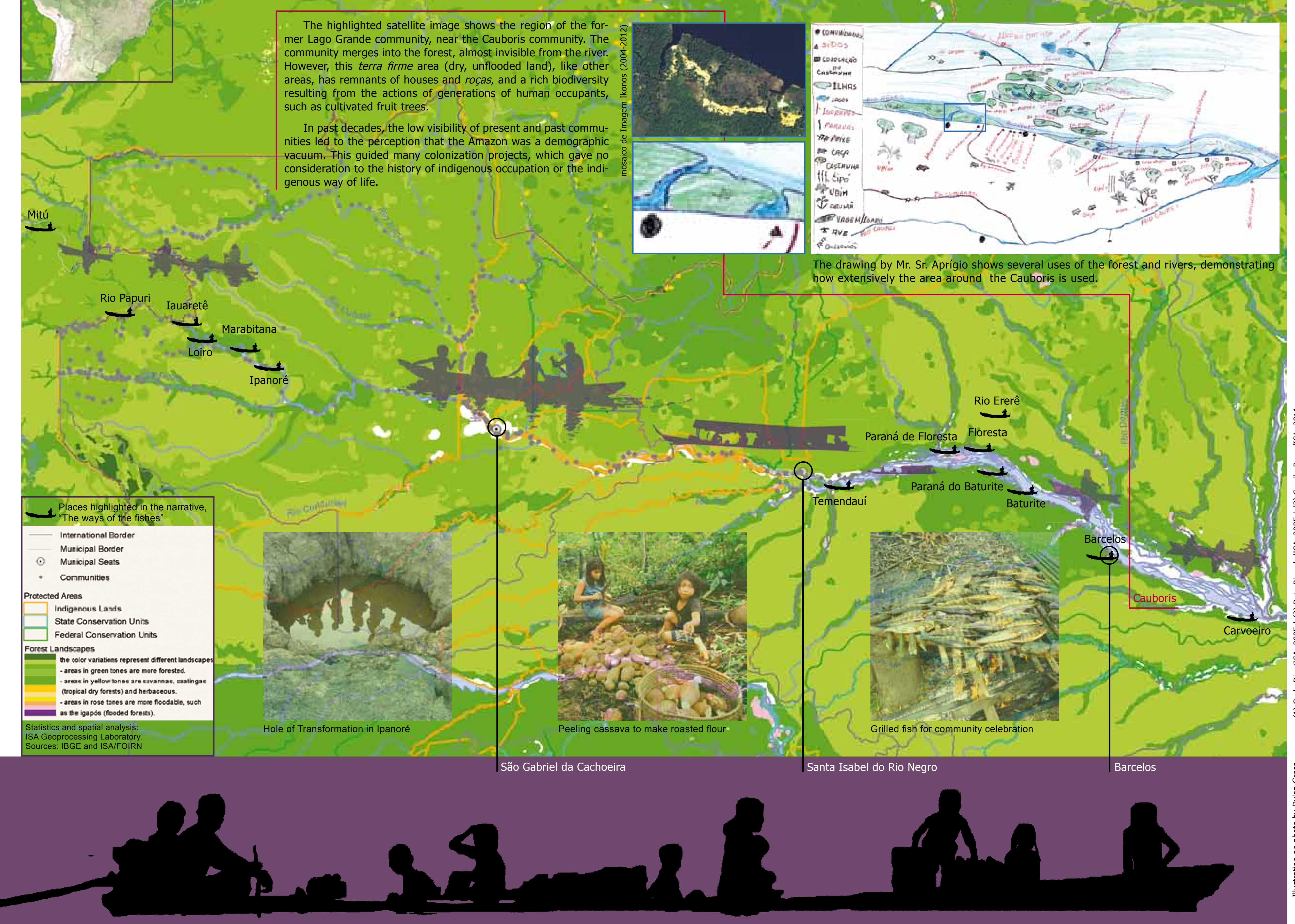
UPPER AND MIDDLE RIO NEGRO – AMAZON | diversity of landscapes and traditional occupation



The highlighted satellite image shows the region of the former Lago Grande community, near the Cauboris community. The community merges into the forest, almost invisible from the river. However, this *terra firme* area (dry, unflooded land), like other areas, has remnants of houses and *roças*, and a rich biodiversity resulting from the actions of generations of human occupants, such as cultivated fruit trees.

In past decades, the low visibility of present and past communities led to the perception that the Amazon was a demographic vacuum. This guided many colonization projects, which gave no consideration to the history of indigenous occupation or the indigenous way of life.

The drawing by Mr. Sr. Aprígio shows several uses of the forest and rivers, demonstrating how extensively the area around the Cauboris is used.

Hole of Transformation in Ipanoré

Peeling cassava to make roasted flour

Grilled fish for community celebration

(1) Carla Dias/ISA, 2005 | (2) Beto Ricardo/ISA, 2005 | (3) Camila Barra/ISA, 2011

Illustration on photo by Dylan Gross

Beto Ricardo/ISA, 2005

Environmental diversity of the middle rio Negro

- More than 500 tributaries and sub-tributaries
- More than 12,000 springs
- 24 forest formations
- One of the largest river archipelagos in the world: Mariuá
- 20 ethnic groups
- Traditional Agricultural System of Rio Negro recognized as Brazilian cultural heritage by IPHAN.
- More than 300 cultivated species for food and medicinal use, including 110 varieties of cassava
- 450 fish species identified, of which 40 are endemic.
- In the State Park of Serra do Aracá in Barcelos there are: the waterfall of El Dorado, one of the largest waterfalls in Brazil at 365m, and the Guy Collet abyss, with 670m depth, considered the deepest cave in Brazil.

The reports of travelers and knowledgeable elders of the Rio Negro record an abundance of fish that has been lost in the upper Rio Negro due to human action. There are different explanations, both scientific and traditional. The indigenous narratives stress that fish are not just passive victims of the actions of humans, they are active players, agents of this relationship, they take their own decisions and may decide to flee elsewhere. In order to understand the relationship with the fish and other creatures, as well as the care and action needed to maintain the balance of the social ecology between humans and nature, one should understand something about the way forest peoples, especially those of the Rio Negro, conceive the origin of life and how they think and organize the world.

The ways of the fishes

(text based on testimony by Clarindo Campos [1])

In the origin of the world, the Creator decided to populate the world with all kinds of beings and, for this, used the ornaments that were stored in his trunk. With a thunder, he transformed a big snake into a vessel for his ornaments (the future creatures). They crossed the ocean through an underground passage towards the *Lago de Leite* (Milk Lake), in a place nowadays known as Guanabara Bay in Rio de Janeiro. The enchanted ***Cobra Canoa*** (Snake Canoe) had the difficult task of carrying in her womb the beings that, along the way, in the houses of transformation, would transmute into persons, animals and other beings. Each house of transformation acquired different qualities and powers through the accumulation of knowledge, sacred ornaments and artifacts. The *Cobra Canoa*, as well as all other enchanted beings, did not travel along the course of common rivers, but she made use of paths and tunnels that we human beings cannot see: she came through the underground way.

According to several Rio Negro's narratives about the origin of peoples, **we were all fish-people, *waî-masã* in *tukano*** and, when reaching the waterfall of Ipanoré[2] (upper Rio Negro, Iauaretê district), the peoples of the Rio Negro stepped down from the *Cobra Canoa* onto the surface of the earth, emerging from a big hole in the stone, then becoming wholly human. Marks similar to hands and feet can now be seen on the rocks of the waterfall, the place where the first humans emerged.

The hole was closed and those who had not been transformed during this passage have remained waî-masã, full of anger, jealousy and always ready for revenge.

The underground aquatic world is populated by several beings and this is why one should always respect and take a series of **precautions while fishing** and in all forms of interaction with nature. In fishing, the precautions start by choosing the place to fish, avoiding the so-called houses of transformation and the houses of the fishes - *panelões*, as they call it, deep places where fish take refuge in the dry season, along with their mother, a big snake. Many human diseases are consequences of actions and consumption without due care or protection *benzimentos* (blessings). The manipulation of hooked fish and its culinary preparation also require rules of conduct.

The elders say that there was always plenty of fish. Those who needed fish used the *zagaia*, the *caniço* or threw the longline to catch one flat fish or two, enough to feed their family. With the arrival of the white man and gillnets, of irresponsible fishing that does not respect the established rules, the fish has become angry and rebellious. The gillnets were placed anywhere, the longlines had all sizes and sometimes removed fish from the *panelões* in large quantities for sale.

[1] Clarindo Campos is a Tariano, born in Marabitanas on Uaupés river, in the municipality of São Gabriel da Cachoeira. He has been living in Barcelos since 1998 with his family, who have always been involved with the indigenous movement and the struggle for rights recognition. Throughout his life he has studied, traveled and been engaged in learning the narratives and training rezas (prayers) and benzimentos (blessings).

[2] See on the map the places mentioned in the narrative by Mr. Clarindo.

Clarindo tells that religious missionaries also had an important role in the fish reduction in the upper Rio Negro. They banned the use of indigenous languages, banned the *pajés* (shamans) to pray and bless the fishing, and without protection for the fish to remain in their homes, the fish decided to move away, to escape.

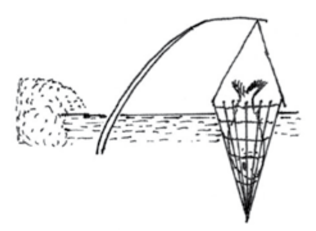
When the snake-mother of the fishes leaves her house, the fishes go with her and that deep hole which previously had no end is quickly closed up, sealing the home. **Fishes set out on their own paths**, go far, leave for other places, travel the world and do not come back. Often they do not return because they need to transform into other beings to be able to keep living in the new places they go to. Clarindo remembers that some fish tend to become other animals, such as the *aracu* that turns into a swallow when there are no longer lakes and *igapós* for swimming, and the *tucunaré-paca*, called this way because it has stains similar to the *paca* (agouti) and becomes one when it needs to walk on the ground.

Clarindo knows some of the **houses of transformation** of Rio Negro, spanning from the Gavião stone - in Carvoeiro, below Barcelos – to the upper Papuri river and in Mitu, Colombia. He has known them while traveling with his grandfather to several regions and also listening and studying the narratives and stories that the elders tell.

The first time Clarindo arrived at Barcelos he travelled there for his own pleasure during the 80's. He was impressed by the wealth of the place. The *igarapé do Salgado*, where he now lives with his family, had so many fish that they jumped out of the water. He tells that in this spot there is a large house of transformation that was closed up because the fish-mother went away due to the abuses committed by people. He says he did not know that there were tunnels in this region, but during his many travels representing the Indigenous Association of Barcelos (Asiba), he became acquainted with the stories and important places in this region.

In Temendauí, a key ancient site of Santa Isabel, rises a large tunnel that goes to Loiro at Uaupés river. People from Floresta and Baturité communities say that in the Piranhas Lake, on upper Ereré river, there is a tunnel that ends in the *paranás* of Floresta and Baturité. Once, a fisherman harpooned a manatee in this lake, who started to flee. He tied the harpoon to the canoe and before realizing it, he was pulled under the water with everything he had. The manatee pulled him through a tunnel all the way to the Poço do Dragão, above the mouth of the *paraná* of Baturité, where he emerged all dirty, covered with *tabatinga* (clay). Residents of the communities of Floresta and Baturité also say that in that same place a canoe full of *piaçaba* fibers was pulled through the hole and emerged under the mouth of the *paraná* of the Floresta community.

Mr. Clarindo's concern at the moment is that he sees that what is happening in this region, is the same thing that has been occurring in Iauaretê for many years: the fish are leaving, following other paths, searching for new homes. Lakes that had been full before now have nothing. His struggle in the indigenous movement has always focused on the importance of recognizing indigenous territory; otherwise, he says that: "Our history will remain in books, and that's it. But our children and grandchildren will not eat the fish in drawings and words".



Piracema, celebration of fishes

Aracu, pacu are *acará* fish are amongst the best liked and most consumed fish in the Rio Negro. They are species that perform *piracema*, migrating to the rivers' headwaters to spawn. In indigenous theory, *piracema* is a celebration, it is the *dabucuri* of the fishes. This is a feast for offering gifts between in-laws and allies. The relationships between the *peixes-gente* (fish people) influences and is influenced by the relations of humans with each other and with other beings. Observing the changes of *piracema* sites, the decreasing supply of fish and the changing time of fruiting trees, local fishermen believe that when the fish are unable to finish their parties, due to interference from actions of human beings, they take revenge and escape or cause diseases. Some say that fish are changing the period of their festivals to avoid excessive predation of men, so local concern is increasing for greater control of fishing and respect for traditional rules.

The above drawing shows a regional vessel with trays for storage and transportation of ornamental fish (*piabas*) on its roof.

80% of the population in the municipality of Barcelos was involved in the ornamental fish trade during the 70's, but this has been in decline since 2000. This was due to several factors: among these are the low price paid for one thousand *piabas* that has remained the same for over 20 years, and the structure of the market overseas, the biggest consumer of *piabas*, which has begun producing some species in captivity, with better sanitary conditions, lower costs and easier access. The most heavily fished species in the region are the cardinal and the *acará-disco* (*Symphysodon* spp.). This production chain, like most local economic and commercial activities, is based on *aviamento* relationships of exploitation. This makes the scenario complex, and difficult to reorganize in a way that adds value to local production.

Ways of living, diversity and knowledge

The Indigenous peoples of Rio Negro have lived in this region for almost 3,000 years, according to archaeological studies. The exchanges, wars, marriages, way of organizing life, knowledge about the origin of the world and the relationships between humans and other creatures (fauna, flora and the supernatural or metaphysical layers), have been key factors for the production and maintenance of the rich socio-biodiversity of the Rio Negro.

Ecologists state that the vegetation of the Rio Negro basin consists of anthropized forest: **landscapes managed** by people for centuries, whether ancient *roças* (clearings for annual crops), now grown into *capoeiras* (secondary forest), or areas altered by other human interventions, such as hunting or extraction of fiber, timber, fruits, resins and others.

Partly due to its potential to transform the forest and stimulate biodiversity, the way of making *roça* in the Rio Negro was recently recognized by the national Institute of Historical and Artistic National Heritage (IPHAN / MinC) as part of Brazilian cultural heritage.

The **Traditional Agricultural System of the Rio Negro** is recognized as Brazilian cultural heritage because there are so many dimensions of knowledge and practices associated with it. These include the high diversity of cultivated plants, mainly the *manivas*, wild cassava (*Manihot esculenta*); the practices and knowledge associated with planting methods and the continuous process of innovation and experimentation of plant varieties; the value of the tools that process the products of the *roças* and their unique features shared among them and with their users; the diversity of recipes and flavors derived from products of the *roças* and experiments of cooks.

Roça in the Rio Negro is made up of a set of many practices: techniques for burning, planting and managing *capoeiras*, the experimental work of farmers, and the networks through which plants are disseminated – from Mitú to Manaus – between neighboring farmers and relatives. These diverse practices help to **maintain the diversity of varieties and conserve the forest** due to the low intensity of land use with long rest periods.

The *roça* and the *casa de farinha* (house where *farinha* flour is prepared from cassava roots) have been recognized as key for the production and sharing of knowledge, for learning language, legends and history. They are places where social relations are reaffirmed, where roles, tasks and duties and divided and shared, thus valuing and strengthening culture. Structures for family and community life: similarly, the knowledge, practices and wisdom associated with fishing are also transmitted and improved every generation, shared between relatives, though often restricted within a group because they are also a matter of dispute between families and ethnic groups.

The knowledge related to the practice of *roça* (including making tools), as well as the knowledge associated with fishery management and fishing gear, require specialized expertise and a great deal of time to learn. This is also true for the knowledge of dances, blessings, prayers and rituals. To do well, people need to know each tool, its history, the reasons of every step in a process, the use of every material, the potential and meaning of every detail. This knowledge consistutes cultural assets that leverage diversity and together build **a model for sustainability of the peoples of the region** and for the Amazon forest.

Ways of living, diversity and knowledge

To ensure that future generations may learn, reproduce, improve and update these practices and wisdom, families must have good living conditions in indigenous and riverbank communities.

The indigenous and riverbank communities provide a unique socio-environmental service for the preservation of forests and aquatic resources. To a large extent, thanks to the traditional peoples, their knowledge and their practice, the Rio Negro today is one of the best preserved regions in the Amazon – and in the world – and therefore an amazing place to live or visit.

The preservation of the Rio Negro wealth is inseparable from the wellbeing of its communities. Therefore, it is necessary to **recognize the areas of traditional use and occupation**, and respect the lands necessary for physical and cultural reproduction, and for environmental conservation. Public policies on these peoples' rights must also be implemented, for health, education, access to communication and transport.

Land rights must be recognized, while in parallel the best way to structure or organize resources must be considered. Many practices are no longer carried out every day, or are not taught to the next generation. This is due to the ban on the indigenous language by settlers and the religious missions, the introduction of new working relationships (slave or underpaid), the detention of families due to debt, and many ways in which the reproduction and maintenance of customs have been blocked. So, today many families depend on several commercial activities, including small scale, ornamental and touristic fishing. These often overlap each other and occur without planning or management rules, whether for access to food or income generation. A **Management Plan for natural resources** is urgently needed, developed with the full participation of local people and recognizing the rights of traditional populations. This is critical not only for the conservation of biodiversity, but also to acknowledge the value of positive and dynamic processes within local culture.

The challenge to build participatory fishing management is huge. This is about mobilizing and coordinating several actors with divergent interests, in order to develop shared use agreements, rules of conduct and fishing calendars. The middle Rio Negro has the potential to become an ideal setting for the development of an economic model for the coexistence of different types of fishing, with fair distribution of benefits and ensuring the collective land rights of traditional populations.

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Camila Barra/ISA, 2009

TO LEARN MORE

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