

ETHNOICHTHYOLOGY OF ARTISANAL FISHERS FROM NOSSA SENHORA ISLAND IN THE LOWER MIDDLE PART OF THE SAO FRANCISCO RIVER

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ABSTRACT

We present the first record of the perception and use of fishing resources by the artisanal fishermen of the Nossa Senhora Island in Juazeiro, Bahia, Brazil, analyzing the socioenvironmental aspects, especially the traditional ecological knowledge, ethnotaxonomy, diversity of species found, use and management of fish associated with artisanal fishing developed. In the data collection, the interview with a semi-structured questionnaire was used in the community of traditional fishers in Nossa Senhora Island, between February 2017 and February 2018. In this study, 79 citations in relation to 20 species of fish have been recorded. The data indicate that the fishers' perception related to the abundance of species is broad and homogeneous, not focused on a single species of fish. The artisanal fishers in the Island reveal deep knowledge about biology, ecology and reproductive life of the species caught, and the disappearance of species previously caught is attributed to external factors, including the construction of Sobradinho hydroelectric dam, which directly affects fish reproduction, climatic factors that impact the river, mainly scarce and badly-distributed rains and long period of drought, besides anthropogenic actions that directly affect the river and the fishing environment, significantly impacting the artisanal fishing along the riverside communities.

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INTRODUCTION

The history of artisanal fishing in Brazil is intertwined with the country's history along with its time scale, having as an initial reference the fishing practiced by the indigenous peoples who used to live here when the first Europeans landed. At the time, hunting and fishing were essential means of obtaining protein and the primary food source used by those populations. The art of fishing practiced by the natives was pure, with archery, single hook and line fishery. From native peoples, the Brazilian community has inherited most of the fishing techniques used in artisanal fishing to these days. Following in the temporal scale, artisanal fisheries in Brazil-Colony and Empire did not have socio-economic expressiveness, and the history of small-scale fishers have been deeply linked to the account of the oppressed groups of the current society – the Indian, the African slave, and the peasants (SILVA, 1998).

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The information on fishing activity in Brazil, before the 1960s, is not very precise, according to Pereira (2012). There is not much information about fishing activity in Brazil until the middle of the 20th century. Since 1960, the Brazilian Statistical Yearbook, published by the Brazilian Institute of Geography and Statistics (IBGE), records the Brazilian production of fish, the result of fisheries at sea and in continental waters. (PEREIRA, 2012). Still, in the discussion of Pereira (2012), the production of the fish was highlighted in production, from the 1970s when growth was observed, followed by a decline between 1975 and 1985. It has been growing again in the 1990s. From 2000, the fishing activity had an upward trend, with an increase in equipment, vessels and fishing techniques. In addition to the establishment of institutions for the promotion and regulation of fishing activity, and federative bodies such as Special Secretariats of Fisheries, and a specific Ministry, created exclusively for this purpose, the extinct Ministry of Fisheries and Aquaculture (MPA), which operated between 2010 and 2015. With the extinction of the Ministry of Fisheries, the federal agency

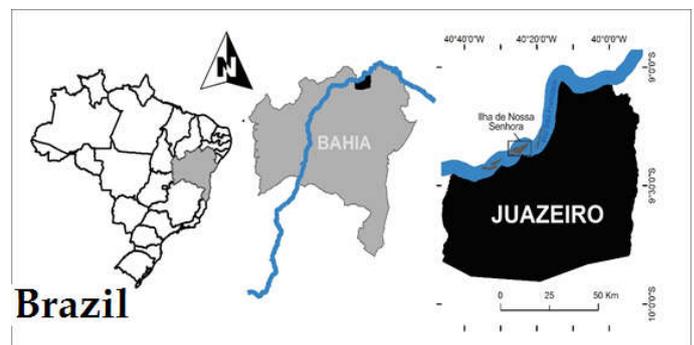
responsible for fisheries becomes the Special Secretariat for Aquaculture and Fisheries (SEAP), created by Decree No. 9330, of 5 April 2018, under the auspices of the General Secretariat of the Presidency of the Republic (BRASIL, 2018). Although the country has institutions and laws regulating fishing, measures of valorization, promotion, protection, and encouragement of artisanal, the fishers' activities are still timid. In the Northeastern part of Brazil, the conditions of fishing and artisanal fisher are more worrisome, considering the environmental problems of the São Francisco River, the largest existing watercourse, a vital source of fresh water for the riverside population, occupying about 8% of the national territory (GODINHO, GODINHO, 2003). It is the fifth largest river in South America and the third hydrographic basin of Brazil, emerging in the high Atlantic forest in the state of Minas Gerais and flowing for almost three thousand kilometers towards the Atlantic, bathing areas of *cerrado* and *caatinga*. Based on the longitudinal profile of the river and its main tributaries, the São Francisco Valley is divided into four sections, as follows: the high part, the upper middle part, the lower middle part, and the sub medium part, extending from Remanso to Paulo Afonso, both municipalities in the state of Bahia (OLIVEIRA and SOUZA, 2011). The São Francisco River stands out in energy production, irrigated agriculture, artisanal fishing, tourism and commerce; these uses exert considerable pressure on this critical ecosystem, translated into socio-environmental impacts that determine the present and future life of the river, as well as its riverside people and all the rest of the community.

In the sub medium part of the Sao Francisco Valley, an area that covers the region of Juazeiro/Bahia and Petrolina/Pernambuco, the river forms several islands, such as Maroto, Rodeadouro, Culpe-o-Vento, Amelia, Ilha do Fogo, and Ilha de Nossa Senhora. This latter is one of the closest to the urban area of the municipalities of Juazeiro and Petrolina, some two kilometers far from the center of Juazeiro. With a latitude of $9^{\circ}25'7.88''S$, longitude $40^{\circ}28'16.84''W$, its length is about 2 km long and 800 m wide, having a local population about 80 residents. It is represented by owners of small fields or sites on the island, with residence in Juazeiro or Petrolina, going to the same, in moments of leisure, or accompaniment of productive activities that develop in their existing properties in the island. Among the permanent occupants, there are nine artisanal fishers. In addition to these fishers, it is found small-scale producers, goat and sheep breeders, as well as owners of small fields and sites. The houses are very distant from each other, highlighting a small village formed by six homes of people with a familial connection to each other, characteristic verified in the majority of the local population. It has an area of cashew trees and mangoes, being the commercialization of fruit a significant local economic activity, followed by the manioc extraction and the marketing of fish. Although sparsely populated, there is no space or condition for new residents, whether fixed or floating, to settle on the island, once there is no land available unless it is donated by an already existing resident or with their permission. The older inhabitants have acquired their properties from the Diocese of Juazeiro, or through third parties along the time or passed on to their relatives. These landowners have license or concession over their lands since they belong to the Federal Union. Despite the socio-environmental, economic and cultural importance of the sub medium Sao Francisco, there are few ethnoecological or socio-environmental studies, with emphasis on fishing and artisanal fishers. This study aims to present the recording, the

perception, and the use of fishery resources by artisanal fishers residing in Nossa Senhora Island in Juazeiro/Bahia, analyzing the ethnic-cytological aspects, especially the traditional ecological knowledge, ethnotaxonomy, species diversity and use and management of fish associated with artisanal fisheries developed in the region.

MATERIALS AND METHODS

Study Area: The survey was carried out in the riverine community of traditional fishers from Nossa Senhora Island, in the region of sub medium Sao Francisco, in the State of Bahia (Figure 1), between February 2017 and February 2018. Nossa Senhora Island is one of the many river islands of the Sao Francisco River (Figure 2), sought for the leisure of the local population. It has varied and exuberant vegetation with a predominance of mango and cashew trees, and clean sandy beaches and crystalline waters.



Source: Authors collections (2018)

Figure 1. Location of the municipality of Sao Francisco in the Semi-Arid Region of the Brazilian northeast.



Source: Authors collections (2018)

Figure 2. Aerial View of NossaSenhora Island.

Data Collection: Methods of data collection involved sampling of fishing landings and interviews with traditional fishers from selected communities. For the selection of the interviewees, the sampling was of an intentional non-probabilistic type (Spata, 2005) in which the respondents were pre-defined (Albuquerque *et al.*, 2014) through the snowball technique (BAILEY, 1994). Fishers and artisanal fishers, community residents, aged 18 years or over, were interviewed.

Table 1. Social profile of respondents at the community of fishers in Nossa Senhora Island in the municipality of Juazeiro

Sex	Number of respondents
Male	05 (55.5%)
Female	04 (44.5%)
Age	
18 to 25 years	00 (0.0%)
26 to 40 years	02 (22.2%)
41 to 50 years	02 (22.2%)
more than 50 years	05 (55.5%)
Natural of the Island	
Yes	04 (55.5%)
No	05 (44.5%)
Dwelling time	
up to 5 years	00 (0.0%)
from 5 to 10 years	00 (0.0%)
from 10 to 20 years	02 (22.2%)
from 20 to 30 years	00 (0.0%)
30 years or more	07 (77.8%)
Marital status	
Single	00 (0.0%)
Married	02 (22.2%)
Consensual union	06 (66.7%)
Divorced/Judiciously separated	00 (0.0%)
Widowed	01 (11.1%)
Others	00 (0.0%)
Schooling level	
None	00 (0.0%)
Incomplete elementary school	05 (55.5%)
Complete elementary school	00 (0.0%)
Incomplete high school	01 (11.1%)
Complete high school	03 (33.4%)
Incomplete college education	00 (0.0%)
Complete college education	00 (0.0%)
Others	00 (0.0%)
Number of children	
None	00 (0.0%)
1 child	01 (11.1%)
2 to 3 children	02 (22.2%)
4 to 5 children	04 (44.5%)
More than 5 children	02 (22.2%)
Number of dependents	
1 to 2 person	04 (44.5%)
3 to 4 people	04 (44.5%)
5 to 6 people	00 (0.0%)
7 to 8 people	01 (11.0%)
More than 8 people	00 (0.0%)
How many people work at home	
None	00 (0.0%)
1 person	02 (22.2%)
2 people	07 (77.8%)
3 people	00 (0.0%)
More than 3 people	00 (0.0%)
Are you a fisher?	
Male	05 (55.5%)
Female	04 (44.5%)
How long have you worked as a fisher?	
Less than 1 year	00 (0.0%)
Between 1 and 5 years	02 (22.2%)
From 5 to 10 years	01 (11.1%)
More than 10 years	06 (66.7%)
Monthly income from fishing activity	
Up to 1 minimum wage	03 (33.3%)
Between 1 and 2 minimum wages	03 (33.3%)
More the 2 minimum wages	03 (33.3%)
Do you exercise other activities besides fishing?	
Yes	07 (77.8%)
No	02 (22.2%)
What other activities besides fishing?	
Fishing only	02 (22.2%)
Agriculturist	06 (66.7%)
Self-employed worker	00 (00.0%)
Sales and clerk employee	00 (0.0%)
Driver	01 (11.1%)
Salesperson	00 (0.0%)

..... Continue

Others	00 (0.0%)
Professional bond	
Professional registered	03 (33.3%)
Partnership	01 (11.1%)
Self-employed worker	03 (33.3%)
Cooperative workers	01 (11.1%)
Others / Contract	01 (11.1%)
Are you a business associate?	
Yes	07 (77.8%)
No	02 (22.2%)
Type of association	
Unbound	02 (22.2%)
Colony	04 (44.5%)
Association	03 (33.3%)
Union	00 (0.0%)
Others	00 (0.0%)
Why are you a fisher?	
Hobby	04 (44.5%)
Survivorship	04 (44.5%)
Natural family vocation	01 (11.0%)
Riparian	00 (0.0%)
To increase household income	00 (0.0%)
Nature contemplation	00 (0.0%)
Leisure	00 (0.0%)
Unable to respond	00 (0.0%)

Information on traditional ecological knowledge and local use of ichthyofauna were obtained through semi-structured questionnaires, using free interviews and informal conversations (Huntington, 2000). The zoological material was identified with the help of specialists, through the test on specimens acquired directly from fishers, and through photographs taken during interviews of animal species.

Ethical and legal aspects: Concerning intellectual property rights, the objectives of the research were presented at the beginning of each conversation when the interviewees were asked for permission to record the information through the signing of the informed consent form (TCLE) and the authorization term for the use of the image. Authorization for access to traditional knowledge was obtained from the Research Ethics Committee (REC) of the State University of Bahia (UNEB), under number 2,245,484, CAAE: 95761017.6.0000.0057.

Data analysis: The Sorensen coefficient verified the analysis of the similarity between fish species summoned by fishers of the female and male fish. The qualitative metric of Sorensen applied for analysis of similarity takes into account the data of presence and absence in the perception of the ichthyofauna by the fishers of the community of Nossa Senhora Island. The Shannon diversity index (H') was used, together with the equitability index (J') to describe the richness and uniformity of fish species reported by fishers in this study. Diversity indices were used to combine species richness and uniformity or fairness in the distribution of the respondents' summons for each species using the Shannon diversity index (H'), accompanied by the equitability index (J'). The diversity of the ichthyofauna cited by the community was given by the Shannon index (1948): $H' = -\sum [pk \times \ln(pk)]$, where pk is the proportion of species k in the sample and the uniformity of fish species summoned by (J'): $J' = H' / H'_{max}$ (LUDWING; REYNOLDS 1988), where H'max is the neuter logarithm of the total number of animal species reported by the respondents. The chi-square test (X^2) was used to verify if there was a difference in the perception of ichthyofauna and use of fishing artifacts by women and men that compose the fishing community of Nossa Senhora Island in Juazeiro, Bahia. All analyzes were performed by the PAST program version 1.85

(HAMMER *et al.* 2001), with analyzes being considered significant with values of $p < 0.05$. A collector curve was constructed, elaborated by accumulating the number of fish species cited by the respondents during the study period. The collector curve allows us to evaluate how much of the total number of species in the inventory is close to the total number of fish species present in the fishers' perception of the studied area. To estimate the overall richness of the ichthyofauna perception dimensioned for the area investigated, Colwell & Coddington (1994) was used. Besides, the non-parametric estimates of the Jackknife1, Bootstrap, Chao2, and ICE were estimated by the EstimateS 9.1.0 program (Colwell, 2013) to determine the sampling adequacy of the fish species. These estimators are recommended for ethnozoological studies, since they are estimators based on incidence matrix data (i.e., presence/absence data), it is possible to estimate the richness of the exploited species from data collected by interviews (Alves *et al.*, 2012; Souto *et al.*, 2013; Santos *et al.*, 2016). The number of species observed (Sobs), equivalent to the species accumulation curve, was also calculated by the program. This data was included in the analyzes as a baseline for the comparison of the performance against the estimators.

RESULTS

Nine fishers have been interviewed, and the socio-economic profiles of the interviewees are listed in Table 1. In regard with the diversity of species, the most cited and frequently caught by fishers are pacu (*Piaractus mesopotamicus*), piau (*Leporinus obtusidens*), curimatã (*Prochilodus lineatus*), and no significant gender difference in caught species have been observed. Most respondents are over 50 years of age and reside on the island (Table 1). Families are small with up to four members, and the parents are the home financial providers. For the characterization of the fishery, a survey of the fisher's knowledge about the fish, biology of the captured species, ethnotaxonomy, production, perception about the fishing environment, among other aspects was carried out. (Table 2).

DISCUSSION

In this study, it was observed two distinct groups of fishers (men and women), who develop the same economic activity. Of these 79 citations were recorded for 20 species of fish (Table 3). For the form of user control, it was not possible to calculate the indexes, because we had only one quote. The values of the uniformity index (J') showed values higher than 0.70 indicating that the fishers' perception of species richness is broad and homogeneous, not concentrated in a single species of fish. Both men and women obtained the diversity index value (H') of species close to those found for the whole study (Table 4). No significant differences were observed between the fish species mentioned by fishers of both sexes ($X^2 = 0.016$, $df = 1$, $p = 0.8988$). Similarity analysis using a qualitative metric (Sorensen index), showed that fishers, both men, and women, share 71% of the island's ichthyofauna knowledge. The similarity analysis, using a qualitative metric (Sorensen index), showed that the use of (Table 5). In this study, fishers and fishers were found to be very similar (100%), and that the grouping of fishery + net + hook was formed due to 94% similarities in the use of these three types of fishing artifacts among fishers. The other groupings involving the buoy and line artifacts were weakly formed using this metric, probably the mentioned game species are

related to private uses, resulting in the presentation of reduced similarity values (Figure 3). According to the chi-square test, there was no significant difference between the use of fishing artifacts ($n = 5$) between female and male fishers ($X^2 = 0.017$, $df = 1$, $p = 0.8954$) (Table 6). The number of fish species cited ($N = 20$) by the fishing community of Nossa Senhora Island was plotted on a curve of species accumulation (Figure 4) and showed a gradual progressive tendency towards stabilization. This remark means that probably an increase in the number of samples may increase the possibility of inventing a large part of the known fish species and used by the fishers of the community interviewed. Due to the non-stabilization of the accumulation curve of the species, we used wealth estimators from data from the community studied. The richness estimators varied between 26 species (ICE) and 22 (Bootstrap), with intermediate values of 25 (Jack 1) and 23 (Chao 2) (Figure 5), for the nine respondents interviewed in this study.

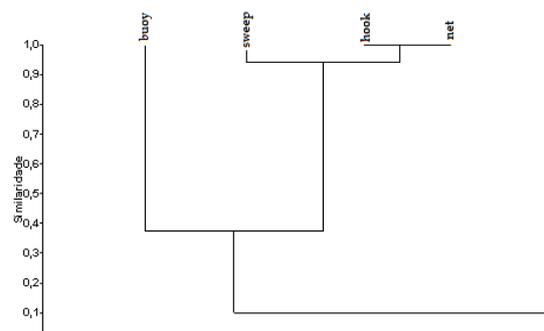


Figure 3. Grouping analysis using Sorensen's similarity index with the fishing artifacts cited by the fishers community at Nossa Senhora Island

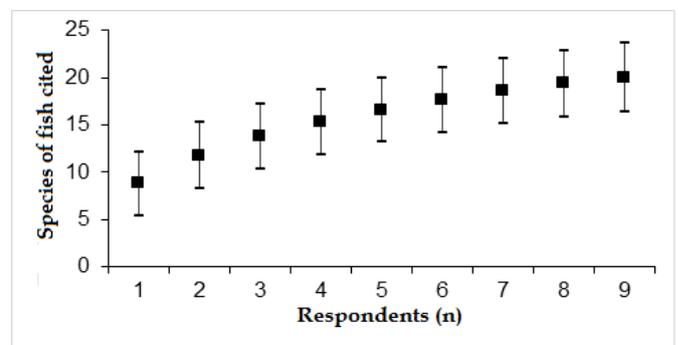


Figure 4. Accumulation curve of the fish species cited by Nossa Senhora Island respondents- data recorded in the period from November 2017 to July 2018

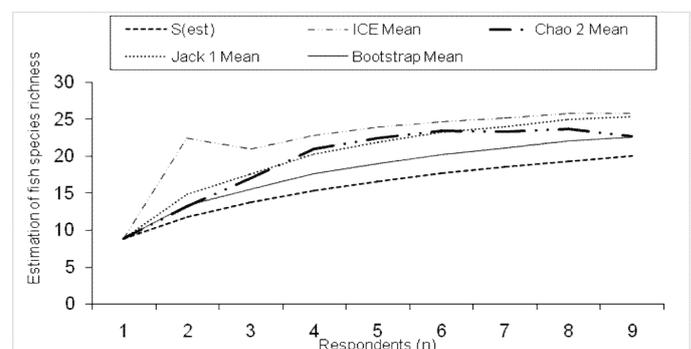


Figure 5. Curve of accumulation of fish species cited by the respondents of Nossa Senhora Island. Data recorded in the period from February 2017 to February 2018. Data relating to the performance of the estimated fish species richness (ICE, Chao2, Bootstrap; JACKKNIFE1)

Tabela 2. Caracterização da pesca artesanal desenvolvida na ilha de Nossa Senhora, área de abrangência do município de Juazeiro Bahia

Field of activity	Number of respondents
Fishing exclusively in the Island	00 (0.0%)
Fishing in other places of the River	00 (0.0%)
Fishing in the Island and other places of the River	09 (100.0%)
Work in a vessel	
Yes	09 (100.0%)
No	00 (0.0%)
Kind of propulsion	
Rowing	03 (33.3%)
Motor	06 (66.7%)
Type of vessel	
Dinghy	00 (0.0%)
Canoe	00 (0.0%)
Boat	09 (100.0%)
Own vessel	
Yes	09 (100.0%)
No	00 (0.0%)
Fishing frequency	
Daily	06 (66.7%)
Weekly	03 (33.3%)
Hours worked day/week	
4 – 6 hours	04 (44.5%)
6 – 8 hours	00 (0.0%)
More than 8 hours	05 (55.5%)
Fishing tackles	
Hook	09 (100.0%)
Fishnet	09 (100.0%)
Sweep nets	08 (88.9%)
Outros (lines, buoys, sweeps)	05 (55.5%)
All of the above cited tackles	
Quantity caught at a time (kg)	
Up to 20 kg	08 (88.9%)
From 20 to 40 kg	01 (11.1%)
From 40 to 50 kg	00 (0.0%)
More than 50 kg	00 (0.0%)
Have you always caught these species?	
Yes	01 (11.1%)
No	08 (88.9%)
Why did they disappear?	
Lack of rains	01 (11.1%)
Exotic fish introduced	02 (22.2%)
Pollution	02 (22.2%)
Because of the dams	05 (55.5%)
Because of the drought on the River	02 (22.2%)
Fisher (out of fishing period)	01 (11.1%)
Fisher (acting as a predator)	04 (45.5%)
Low flow	04 (45.5%)
Do you receive closed-season insurance?	
Yes	06 (66.7%)
No	03 (33.3%)

Source: Authors' file.

These indexes suggest that between 78% and 89% of the ichthyofauna present in the studied area were effectively sampled. With regard to traditional ecological knowledge, the environmental perception of fishing and the fishing environment, most respondents attribute the disappearance of species previously fished frequently, such as Matrinxã (*Brycon cephalus*), pirá (*Malacanthus plumieri*), surubim (*Pseudoplatystoma coruscans*), mandim/mandi (*Pimelodus maculatus*), cananã (*Hypostomus margaritifer*), among others, to some factors such as the construction of the Sobradinho hydroelectric dam, which directly affects the reproduction of the fish, some species being prevented from following the river. The fishers interviewed show that they know the dynamics of the river and the behavior of the captured species, for example, the speech of some when referring to:

“The fish can't spawn because of the dams”

Artisan Fisher A

“In a low river it is impossible to catch Cananã”

Artisan Fisher B

“Because of the construction of the dams, the fish does not pass from the springs to Três Marias Dam, and from there to Sobradinho Dam”

Artisan Fisher C

Table 3. Species used by artisanal fishers at Nossa Senhora Island, in the municipality of Juazeiro N = Native species / E = Endemic species / Ex = Exotic species

Family Local Name	Scientific nomenclature	Origin	Nº de Citations
Anastomidae			
Piaú	<i>Leporinus cf. piaú</i> (Fowler, 1941)	N	09
Auchenipteridae			
Caboge	<i>Parauchenipterus galeatus</i> (Linnaeus, 1766)	E	02
Caracidae			
Dourado	<i>Salminus franciscanus</i> (Lima & Britski, 2007)	N	07
Matrinxã	<i>Brycon hilarii</i> (Valenciennes, 1850)	N	06
Pacu	<i>Metynnis maculatus</i> (Kner, 1860)	N	09
Pirambema	<i>Serrasalmus brandtii</i> (Reinhardt, 1874)	N	01
Piranha	(<i>Pygocentrus piraya</i> (Cuvier, 1819)	N	03
Piranha azul	<i>Serrasalmus aluwei</i> (Ramirez, 1965)	?	01
Doradidae			
Cará	<i>Oxidoras niger</i> (Valenciennes, 1821)	N	07
Erythrinidae			
Traira	<i>Hoplias malabaricus</i> Bloch, 1794	N	01
Heptapteridae			
Mandim	<i>Pimelodella cf. vittata</i> (Lütken, 1874)	N	02
Locaridiidae			
Cananã	<i>Hypostomus margaritifer</i> Regan, 1808	N	03
Pimelodidae			
Dourada	<i>Brachyplatystoma flavicans</i> (Castelnau 1855)	?	01
Pirá	<i>Conorhynchus conirostris</i> (Valenciennes, 1840)	E	04
Surubim	<i>Pseudoplatystoma coruscans</i> (Spix & Agassiz, 1829)	N	09
Prochilodontidae			
Curimatã	<i>Prochilodus argenteus</i> (Spix & Agassiz, 1829)	E	08
Pseudopimelodidae			
Pacamã/pocomô	<i>Lophiosilurus alexandri</i> (Steindachner, 1877)	E	02
Serrasalminidae			
Piranha amarela	<i>Pygocentrus piraya</i> (Cuvier, 1819)	N	01
Piranha preta	<i>Serrasalmus rhombus</i> (Linnaeus, 1766)	N	01
Sciaenidae			
Curvina	<i>Pachyurus francisci</i> (Cuvier, 1830)	E	02

Source: Author's file

Table 4. Diversity index (H') of species

	F	M	Total
Number of species	17	14	20
Number of citations	38	41	79
H'	2.67	2.48	2.7
J'	0.94	0.94	0.9

Table 5. Grouping analysis using Sorensen's similarity index with the fishing artifacts cited by the fisher community at Nossa Senhora Island

	net	hook	sweep	line
Hook	1			
Sweep	0.94	0.94		
Line	0.20	0.20	0	
Buoy	0.36	0.36	0.40	0

Table 6. Quotations of types of fishing artifacts used by male and female fishers at Nossa Senhora Island in the period of February 2017 and February 2018

SEX	M	F
Net	5	4
Hook	5	4
Sweep	4	4
Line	1	0
Buoy	1	1
Total	16	13

Other species are impacted in their reproductive cycle due to end of the meadow lakes where they used to spawn; another factor to ponder is the low flow of the river, as a consequence of the lack of rain in the headwaters of its tributaries, together with the pollution of the Sao Francisco River. Some fishers attribute the lack of fish to the angler himself because they catch the fish out of the allotted period. In the speech of some, the recorded accounts of those mentioned narratives:

“Lack of water in the Sao Francisco River, and the man as a predator! The dams...”
Artisan Fisher D

“Low River!”
Artisanal fisher and

“The pollution and the low flow of the River...”
Handmade fisher F

“Predatory fish, tucunaré, after the dams have changed the spawning, the river is grounded!”
Artisanal fisher G

“Because of the dams, pollution that is destroying!”
Artisan Fisher H

“I believe it is the drought and the fisher himself who fishes out of the period!”
Artisan Fisher I

Considering the traditional taxonomic knowledge – *ethnotaxonomy* of the captured species, the following species were mentioned: *pacu*, *piau*, *curimatãcari*, *dourado*, *cananã*, *piranha*, *surubim*, *caboje*, *matrinchã*, *pirá*, *curvina*, *traíra*, *pocomô*, *mandim*, *black piranha*, and *yellow piranha*. From these species, the surveyed do not, or rarely fish: *surubim*, *dourado*, and *matrinchã*. Compared to the age/species captured; *cananã*, *piau*, *pacu*, *cari*, and *curimatã*, are species commonly captured by all age groups of the interviewees. However, the goldfish, the *surubim* and the *piranha* were mentioned only by two respondents and these aged over 50.

Final Considerations: According to the research carried out, the low population density in Nossa Senhora Island is observed, especially of artisanal fishers. However, the island's fishing activity is productive although small, and has become more and more prominent in the local fishing activity scenario. The specie *dourado*, although naturally scarce on the São Francisco River, has been sometimes caught due to the stocking activity promoted by the Development Company of the Valley of Sao Francisco (CODEVASF), which has launched to the river fingerlings of several species for the repopulation of the hack stock. The artisanal fishers of the island reveal in-depth knowledge about the biology, ecology and reproductive life of the captured species. The species most caught by the artisanal fishers in Nossa Senhora Island are *piau*, *pacu*, *cari*, *cananã*, and *curimatã*. No significant differences were observed between fish species cited by fishers of both sexes. Likewise, there was no significant difference in the use of fishing artifacts between female and male fishers. Among the factors that impact the river, concerning fishing and fishers in Nossa Senhora Island, we have the climatic factors, viz. scarcely and badly-distributed rains and long periods of drought. Furthermore, we see anthropogenic actions that directly affect the river and the fishing environment, such

as the deforestation of the sources and riparian forests, burning, installation of dams along the river, besides the introduction of exotic species. These factors interfere with the biodynamic balance of ecosystems, associated with overfishing, have a significant impact on artisanal fishing in the riverside communities.

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