Uncovering 5000 years of fishing in the southwestern Atlantic Ocean

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Scientific and policy frameworks

• Understand how much has been altered
• Restore ecosystems
• Traditional-Indigenous Knowledge
**TRADITION**: Long-term coastal adaptation, food security and poverty alleviation in Latin America

A) Investigate 6000 years of fisheries' historical ecology

B) Enhance policy, scientific and citizen awareness of lost coastal systems
Mega-diverse regions in the world

- Amazon
- Brazil
- Atlantic Forest
- Pampa

Small-scale fisheries
Food security

>50% of internal fish product

Local-Indigenous knowledge
Facing marginalization, env. degradation
Socio-ecological contexts

Brazil

Subsistence Community
Local stressors

Local-Regional markets
Subsistence
Top-down management
Local-regional stressors

Prehistoric fisheries (PF)
Socio-ecological contexts

Brazil

- Subsistence
- Community
- Local stressors

Local-Global markets
Top-down management
Co-management
Local-global stressor

Local-Regional market
Subsistence
Top-down management
Local-regional stressors

Prehistoric fisheries (PF)

Years

10000  9000  8000  7000  6000  5000  4000  3000  2000  1000  0
Multidisciplinary approach
Archaeological record
Islands of past cultural and biological diversity - In progress

ORIGINAL ARTICLE

Pre-Columbian fisheries catch reconstruction for a subtropical estuary in South America

Thiago Fossile, Jessica Ferreira, Dione da Rocha Bandeira, Levy Figuti, Sérgio Dias-da-Silva
... See all authors

3000 year old shellmound in South Brazil under increasing pressure (Photo MASJ)
Archaeological record
Islands of past cultural and biological diversity - In progress

scientific reports

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Fishing intensification as response to Late Holocene socio-ecological instability in southeastern South America

Alice Toso\textsuperscript{1,4}, Ellen Hallingstad\textsuperscript{1}, Krista McGrath\textsuperscript{1,2}, Thiago Fossile\textsuperscript{1}, Christine Conlan\textsuperscript{1,3}, Jessica Ferreira\textsuperscript{4}, Dione da Rocha Bandeira\textsuperscript{4}, Paulo César Fonseca Giannini\textsuperscript{8}, Simon-Pierre Gilson\textsuperscript{3,4}, Lucas de Melo Reis Bueno\textsuperscript{5}, Murilo Quintans Ribeiro Bastos\textsuperscript{6}, Fernanda Mara Borba\textsuperscript{5}, Adriana M. P. do Santos\textsuperscript{7} & André Carlo Colonese\textsuperscript{1,2,9}

3000 year old shellmound in South Brazil under increasing pressure (Photo MASJ)
Historical documents
Past stakeholders and users’ perception of environment and societal changes - In progress

150 years of anthropogenic impact on coastal and ocean ecosystems in Brazil revealed by historical newspapers

Santiago Sandoval Gallardo¹, Thiago Fossile², Dannieli Firme Herbst², Alpina Begossi²,³,⁴, Luiz Geraldo Silva¹, André Carlo Colones⁹

Late XVIII document attesting conflicts in colonial fisheries in north Brazil
Local knowledge
Using the past to alleviate poverty and secure livelihood

To be launched in 2022 - 2024

XVII century fish weir used by present day coastal communities in north Brazil
We must enhance our capacity of rethinking lost environments

Guanabara Bay, Rio de Janeiro today

What may have been a few centuries ago

Golden rays in Galapago's mangrove. Photo by: Pelayo Salinas
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