

PROYECTO PUELCHÉ

A roadmap for restoring *Ostrea puelchana* in Patagonia, Argentina.

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ICSR 2026 · Lessons learned from species-wide collaboratives



Washington Department of
FISH & WILDLIFE

One genus, four continents



Ostrea lurida

Pacific North
America

NOOC

Coast-wide data
some shared
methods



Ostrea edulis

Europe

NORA

47 projects in 14
countries



Ostrea angasi

Southern Australia

TNC & partners

60+ ha restored



Ostrea puelchana

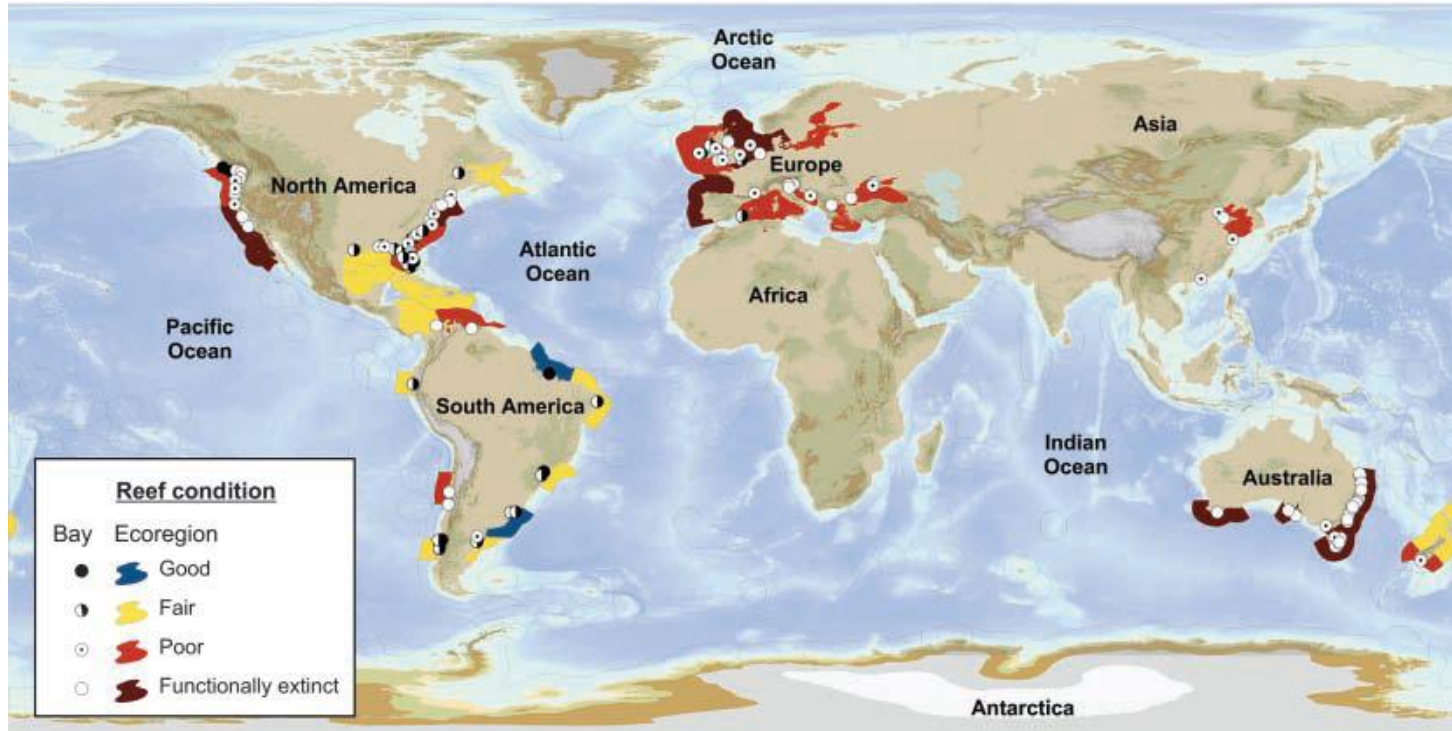
Patagonia, Argentina

**No local network (yet)
Yes, to a global one!**

Proyecto Puelche

Ostrea puelchana carries the name of the Puelche, or Gününa küna, the Indigenous people of northern Patagonia.

A conservation priority since 2008



Global condition of oyster reefs. Beck et al. 2011

~85%

of oyster reefs lost worldwide

1 of 3

South American *Ostrea* species
at highest conservation priority
(Carranza et al. 2008)

Meet the puelche oyster, *Ostrea puelchana*



Subtidal, bed-forming

Native flat oyster of the SW Atlantic

Wide range, few beds

Beds only in the Gulf of San Matías, Argentina

On the move

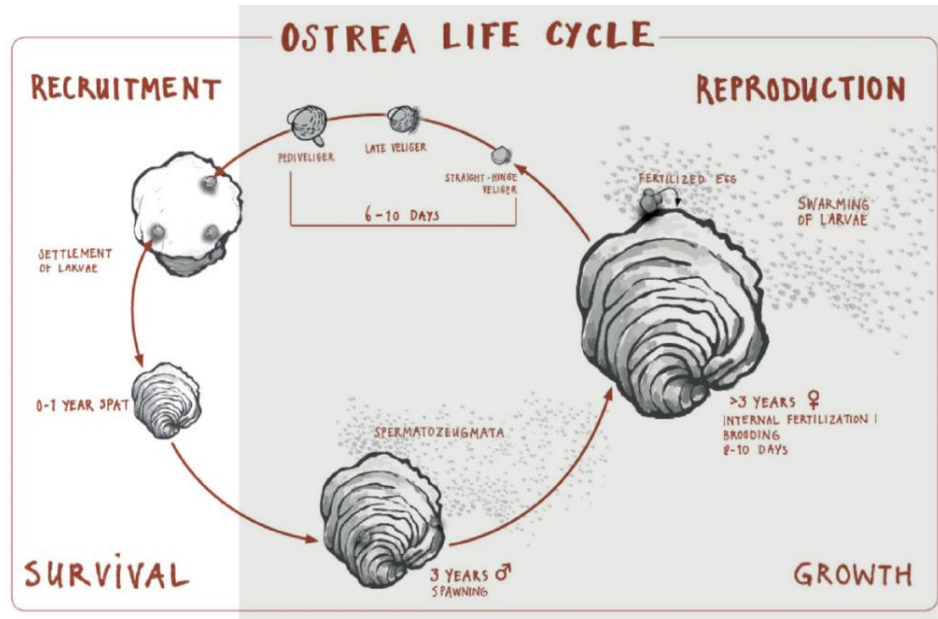
Range slowly expanding south

A lost fishery

Once valuable in northern Patagonia



A reproductive strategy unique among oysters



Adapted from Hein Sas 2019

Carrier oysters hold tiny males on the shell edge
Males release sperm straight into the carrier's inhalant current

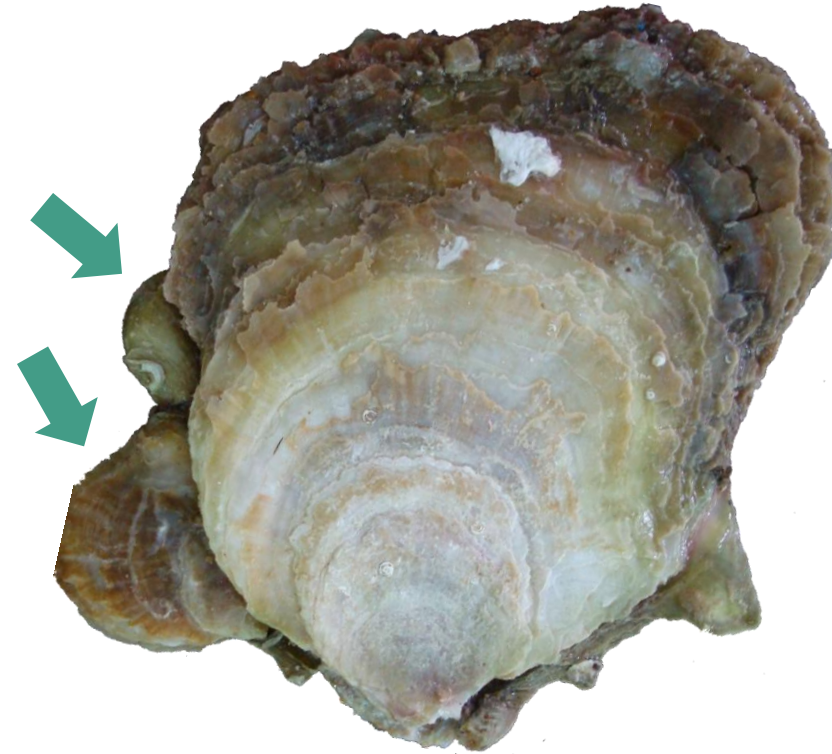
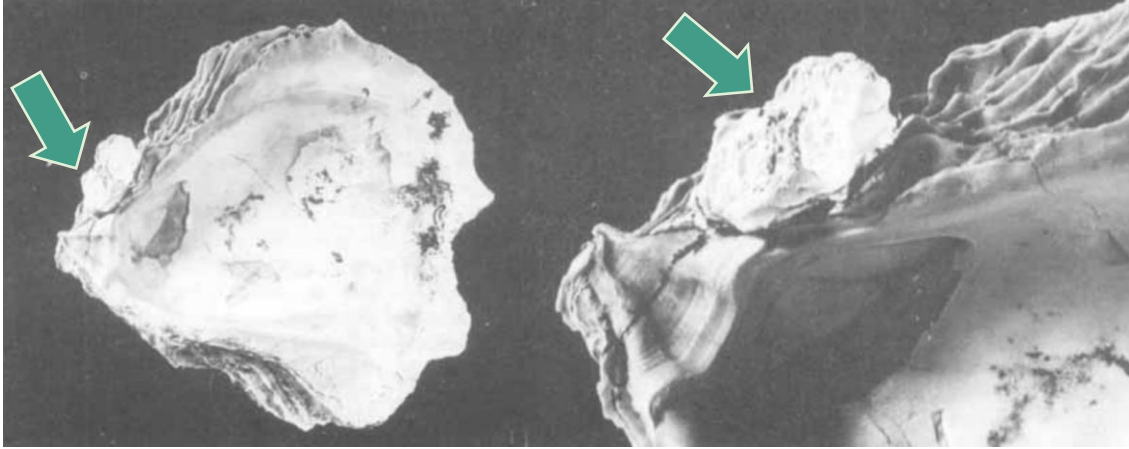


Photo: M.S. Doldan

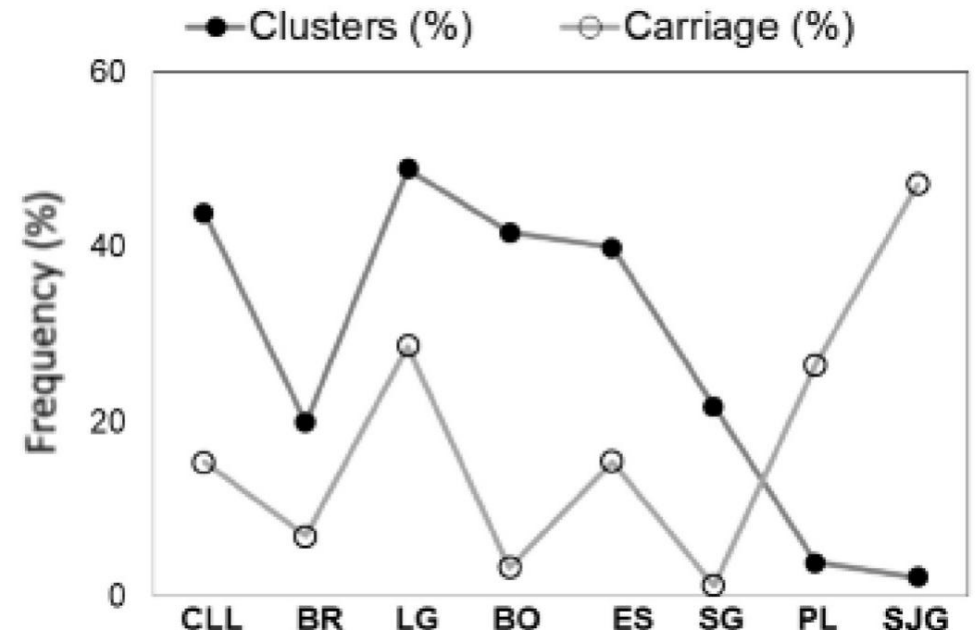
An ancient strategy, still at work today



Fossil *Ostrea alvarezi* carrying a dwarf male (arrow)
Iribarne et al. 1990, Lethaia

3–10 Myr

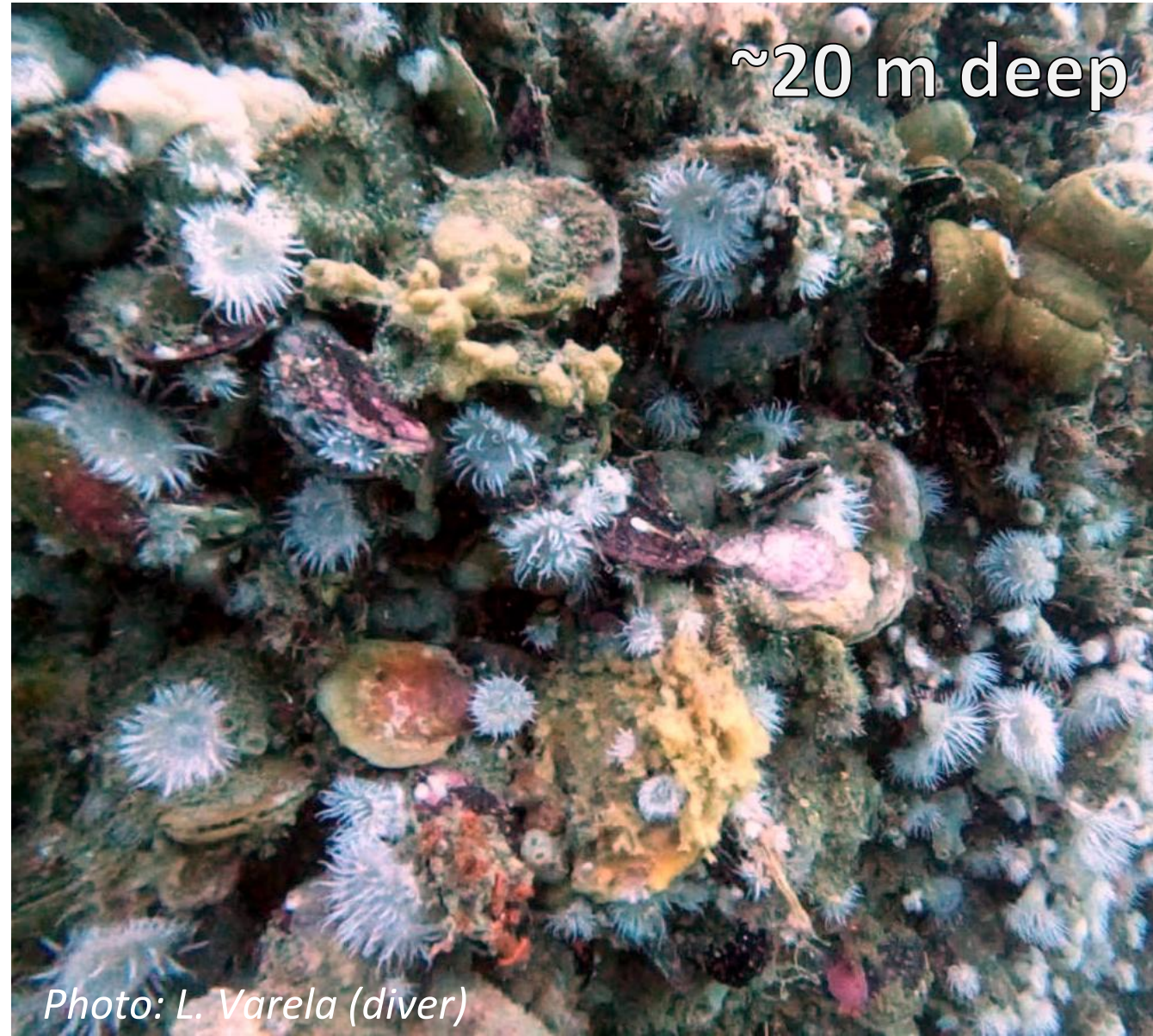
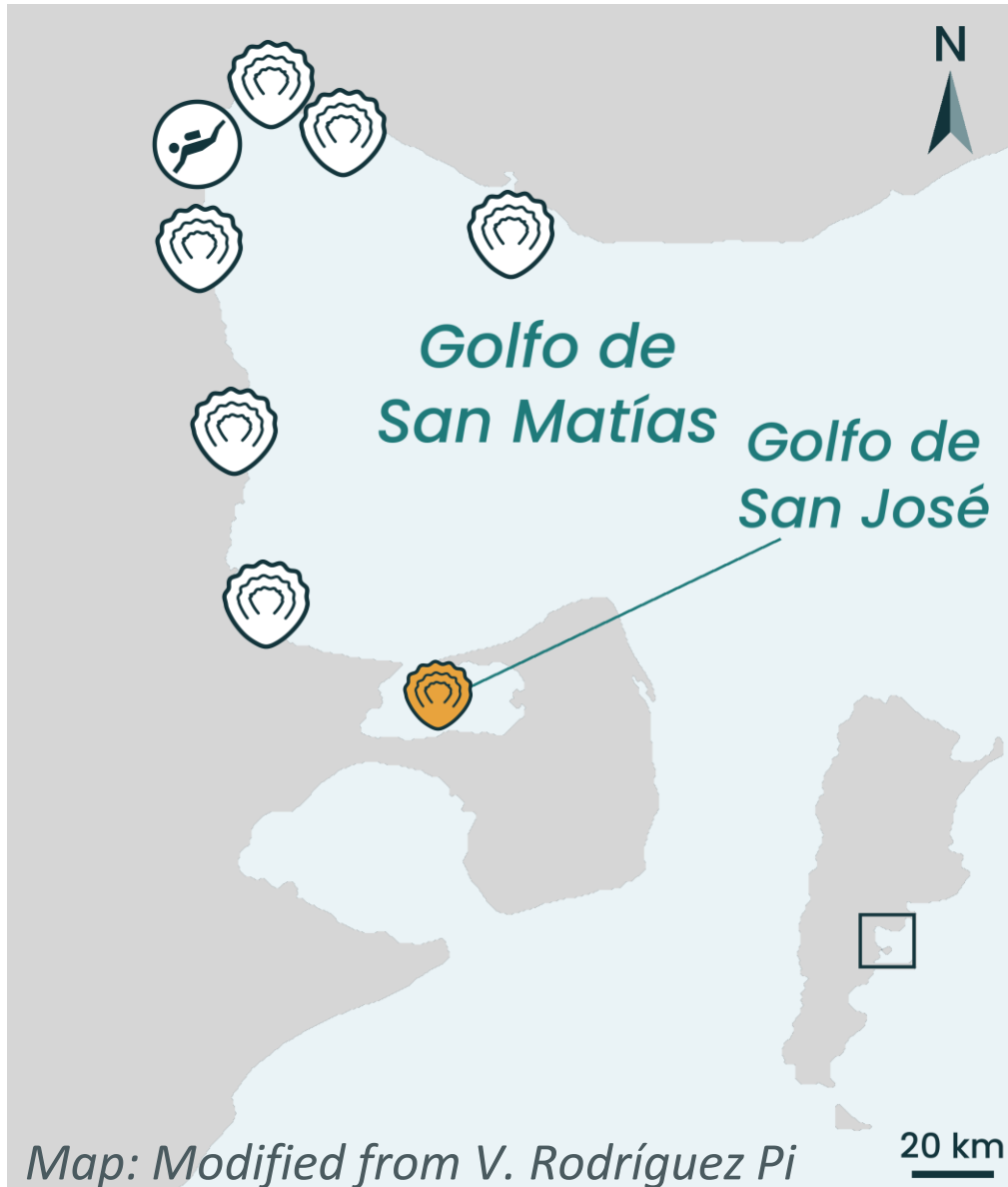
Same carrier–male
strategy in fossils
from Río Negro, Arg.



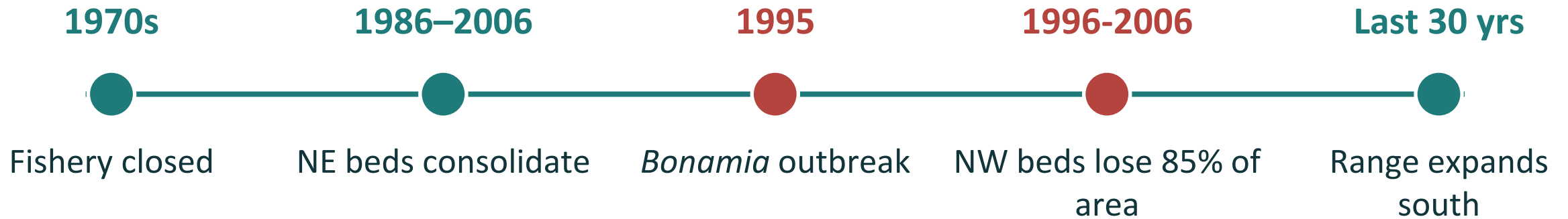
Carriage (open circles) by bed · Doldan et al. 2021

**Carriage drops as density rises:
common in sparse beds**

Home: Golfo de San Matías, Patagonia Argentina



Decades of decline, and some signs of resilience



10x drop in mean density
after bonamiosis

**Overharvest,
then disease**

Doldan et al. 2014, 2021



Photo: L. Varela

Why now? Opportunities on the ground



Hatchery capacity

Up to 3 million seed



Fishery interest

Strong market appeal



Beds recover

When left unfished



Restocking initiatives

Government-led programs to support commercial species



Las Grutas dive park

Dive operator on board



Scientific interest

Status and *Bonamia* adaptation

A working hatchery, ready to help



Microalgae cultures



Algae scale-up

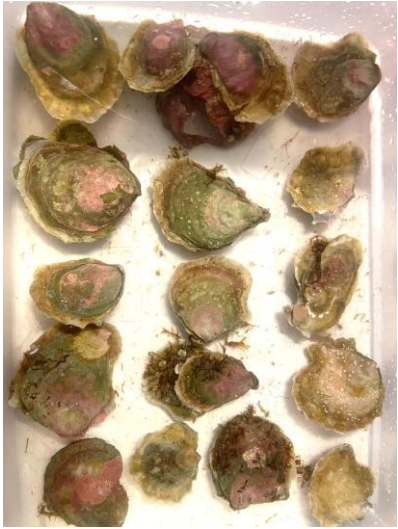


Oyster holding tanks

Qualified staff and capacity for up to 3 million seed

Photos: M.S. Doldan

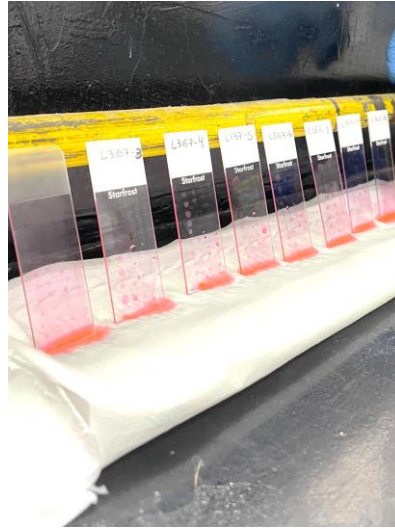
A first check for *Bonamia*: heart imprints (2025 & 2026)



Sampled oysters



Tissue sampling



Stained imprints

How it works

Stained heart smears show tiny parasites in blood cells

Fast and cheap

About \$5 per oyster vs ~ \$20 for histology

But less sensitive

Can miss light infections; genus level only

Confirm with PCR

PCR and sequencing confirm the species

25–30% of sampled oysters showed *Bonamia* in heart imprints
(less rigorous than PCR)

Source: EURL for Molluscs Diseases (IFREMER)

Community interest



Fishers



Divers



Chefs



Researchers



NGOs



Government



Residents



**Strong support for
oyster restoration**

Initial exploratory survey

The roadmap: what we need to learn first



**Abundance &
distribution**



Recruitment



**Habitat
suitability**



**Substrate
needs**



Hatchery needs



Genetics



**Biosecurity
(*Bonamia*)**



Permitting

Background from TNC guidelines and lessons from NOOC, Puget Sound and Australia



How the community of practice helps, both ways

What we can borrow

NOOC: C of P structure, standardized protocols

Puget Sound: partnerships, conservation hatchery

Australia: monitoring benchmarks, seed genetics

NORA: working groups, biosecurity know-how

What Proyecto Puelche can offer

- A unique reproductive strategy
- A population exposed to *Bonamia* since the 1990s
- A South American node for *Ostrea*



A strong regional science and education base

Univ. Nacional del Comahue (FACIMAR) · CENPAT–CONICET · CIMAS

Lessons for any shellfish networks, from a newcomer

1

Networks shorten the learning curve

Start from shared protocols, tools and mistakes, not from zero

2

Shared methods make local data comparable

Single sites add up to range-wide insight

3

A range-wide view reveals common threats

Disease, substrate and recruitment limits guide where to invest

4

Belonging builds credibility

Networks help win over funders, managers and communities

5

Local context still decides

Adapt what others learned to your local circumstances



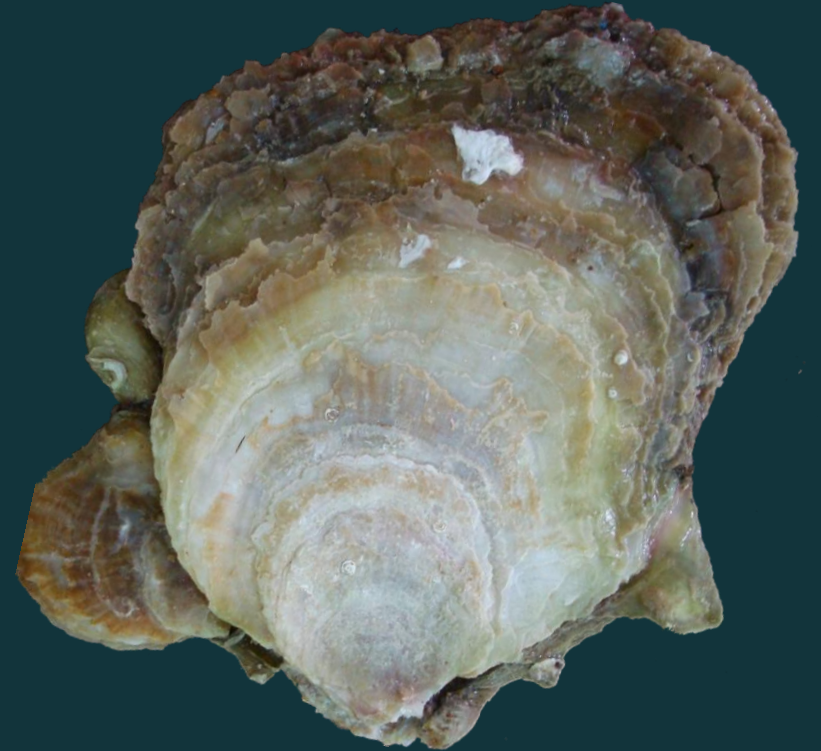
¡Gracias! Thank you

*Interested in South American native oysters?
Let's connect.*

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Proyecto Puelche is currently unfunded.
We're seeking partners and support to kick off Year 1.



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