



Building a Clam Garden *in Seldovia*

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Traditional Clam Management

Construction of Clam Gardens Enhanced Bivalve Habitat

- Rock walls built to increase optimal habitat area
- Large rocks removed
- Sediment tilled
- Adding broken shell to sediment



Traditional Practices that Promoted Bivalve Population Growth

- Thinning clams
- Removing Predators
- Harvesting larger clams to allow younger clams to grow
- Digging for clams creates healthy habitat



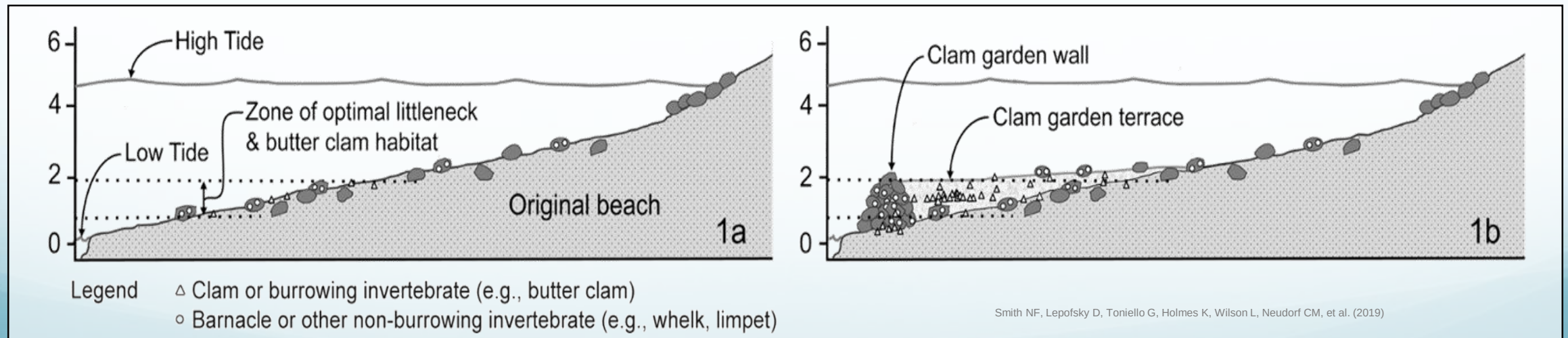
Traditional Clam Gardens

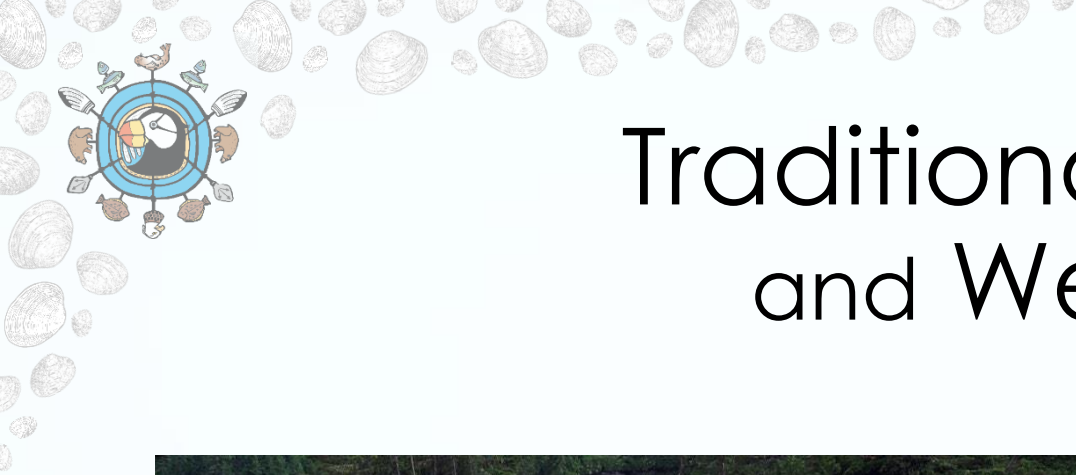
Clam garden construction goes back over **4,000 years**

150-300% more productive than beaches without clam gardens!

Shows indigenous knowledge of **larval clams** being more likely to settle in clam gardens

Shell midden suggests that **butter clams and littleneck** clams were the most harvested species from clam gardens





Traditional Clam Gardens and Western Science



Enhanced Bivalve Habitat

- Dense accumulations of shell hash in clam gardens elevated sediment carbonate, which statistically has **increased clam biomass**
- Clam gardens maintain lower ambient temperatures in the summer and higher minimum ambient temperatures in the winter, which **increase clam survivability**.





Speaking with the Experts

We spoke with Shellfish Aquaculture Specialists working on clam garden restoration in British Columbia and experts from the Clam Garden Network

Rock Walls

- Indigenous communities have used rock walls to entrap, protect, or distract
- Rock walls are built with different size rocks in a specific way for a specific reason
- Not all beaches need rock walls!

Keeping out the Predators

- When seeding clams, layer with floats
- Work with traditional hunters to create a landscape of fear

Point of View of a Clam

- Tilling substrate
- Adding shell or barnacle hash to areas with dry and sticky mud

Clam gardens are about teaching and building community as much as they are about shellfish themselves

Determine what clam garden values are most important to the community and build the garden with those values in mind



A Clam Garden in Seldovia *for the community*



*"People
used to
come to
Jakolof just
for the
clams"*

*"You can only get
clams at minus
tides and they are
smaller than they
used to be"*



Many Seldovians
have memories of
collecting shellfish
with their families

The population has
significantly declined and
the clams are smaller



Seldovia Village Tribe

2022 Natural Resource Survey Results

81% of respondents
ranked

*‘Continuation of clam
research, monitoring,
and restoration efforts’*

As a high priority or
highest priority

Percent of
Respondents
interested in research
and monitoring of
clam species

68% Littleneck clams
54% Butter clams
59% Cockles

Percent of
Respondents
interested in
subsistence use of
clam species

58% Littleneck clams
73% Butter clams
65% Cockles



Clam Research in Seldovia

2004-2008

Clam tagging to track growth



2012

Marine Science Workshop



2022

Transplanting Clams





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Next Steps



- Visit other clam gardens!
- Survey the area during Spring low tides
- Access or collect bathymetry data
- Continue conversations with the experts
- Grow community involvement

Thank you!

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