



# 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



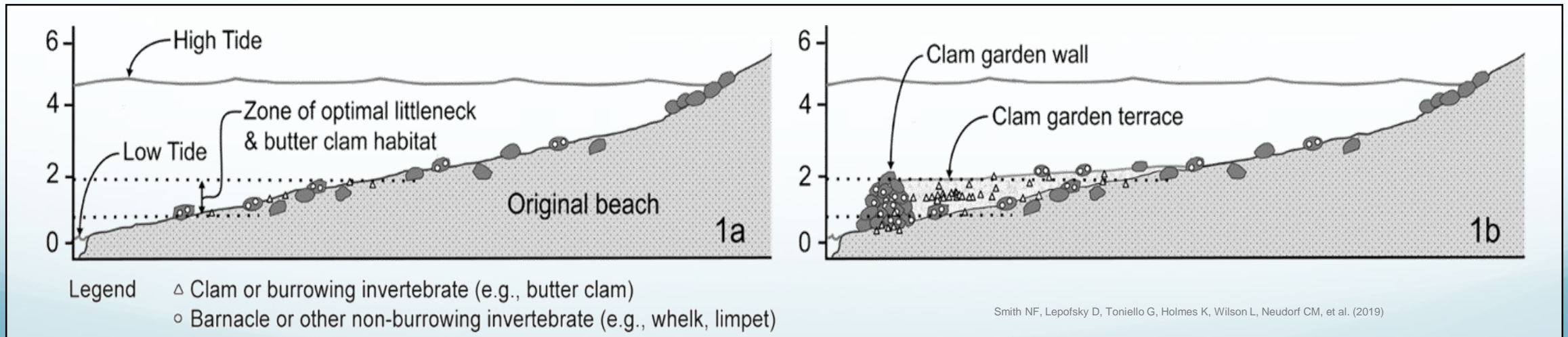
# Traditional Clam Gardens

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







0 62.5 125 250 Meters



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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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