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FISHERIES

Puget Sound Shellfish: Northwest Estuary Model

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NMFS Recreational Fisheries Data & Model Needs Workshop
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Project overview

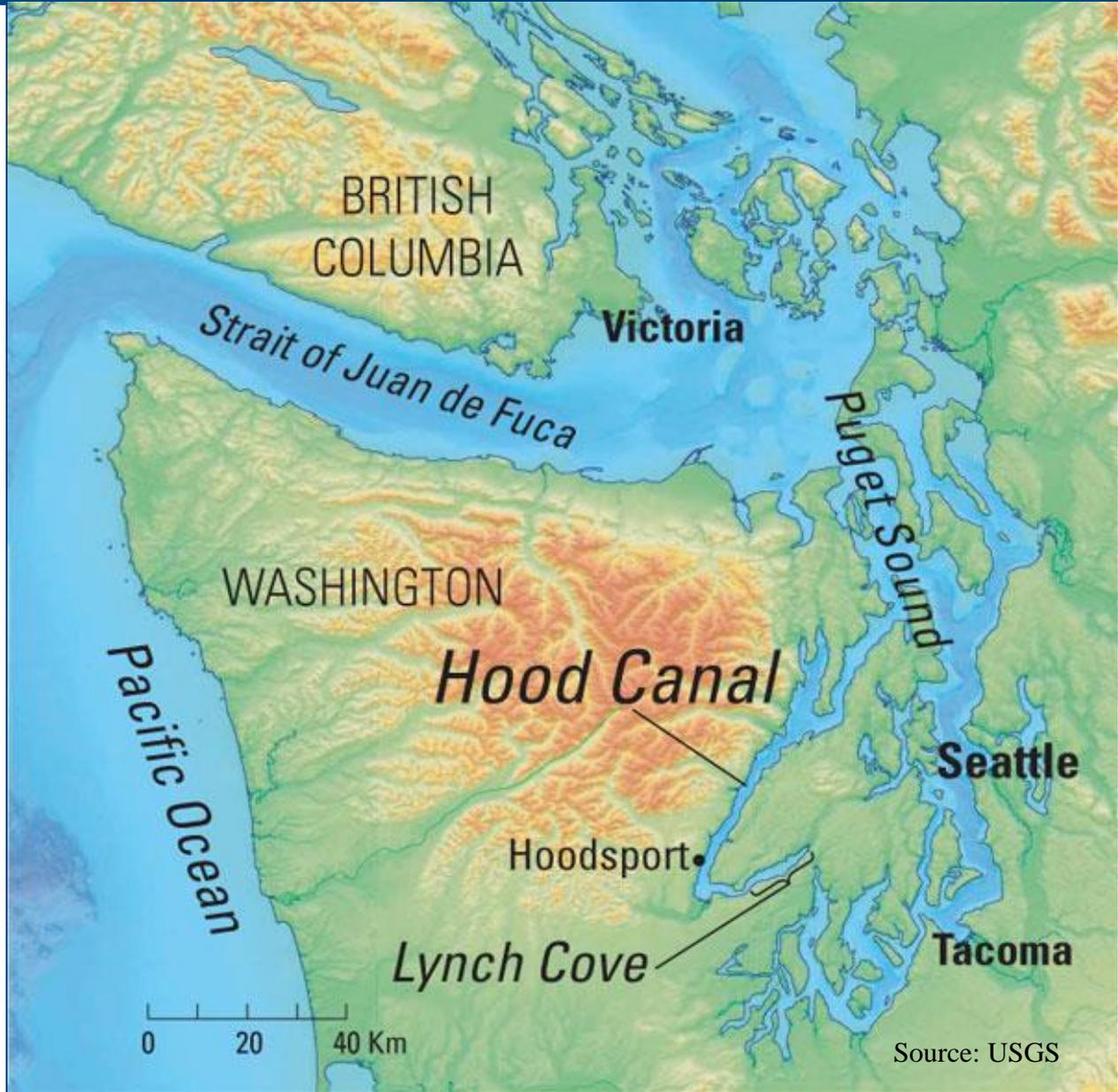
- Objective:
 - assess the effects of land-based management practices on the flow of a marine-based ecosystem service: recreational shellfish harvesting.
- Washington State manages shellfish areas by assessing water quality on an ongoing basis and instituting management options (advisories and closures) based on particular water quality outcomes.
- The project will gather data to support the estimation of the potential economic losses of changing the status of shellfish harvest sites. This allows us to impute the value (with respect to this specific ecosystem service) of changes in water quality that trigger a status change, and in turn the value of land-based management practices that affect water quality.

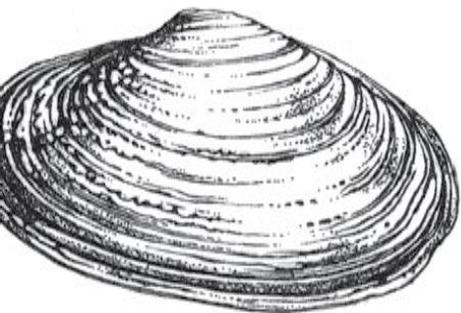


Project overview

- Methods:
 - mail survey of licensed recreational shellfish harvesters with a short telephone pre-survey
- Locations:
 - Puget Sound, Washington
- Dates:
 - 2012/2013
- Data:
 - general preferences, last season trips, detailed last trip (e.g., expenditures), choice experiment, demographics







Butter



Cockle

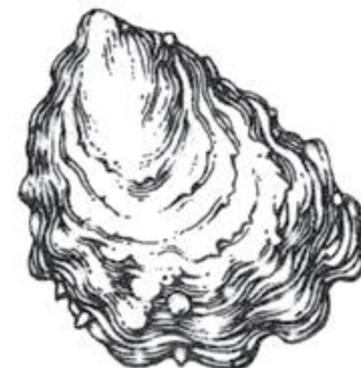


Geoduck

Photo: Taylor Shellfish Farms
Illustrations: Washington Sea Grant



Littleneck



Oysters

Project overview

- What type of modeling is being used?
 - No data have been collected
 - Likely a combination of choice and count models, but this depends on the nature of the contingent behavior questions
 - Will need to get a better feel for the habits and decision making processes of shellfish harvesters through focus groups and one-on-one interviews first



Why is this project needed?

- Understand the impacts of advisories and closures
 - Awareness
 - Behavior / Substitution
 - I/O Economic Impacts
 - WTP measures

DOH growing areas: Kitsap County

Commercial Shellfish Growing Area

Classification (Extends to -70')*

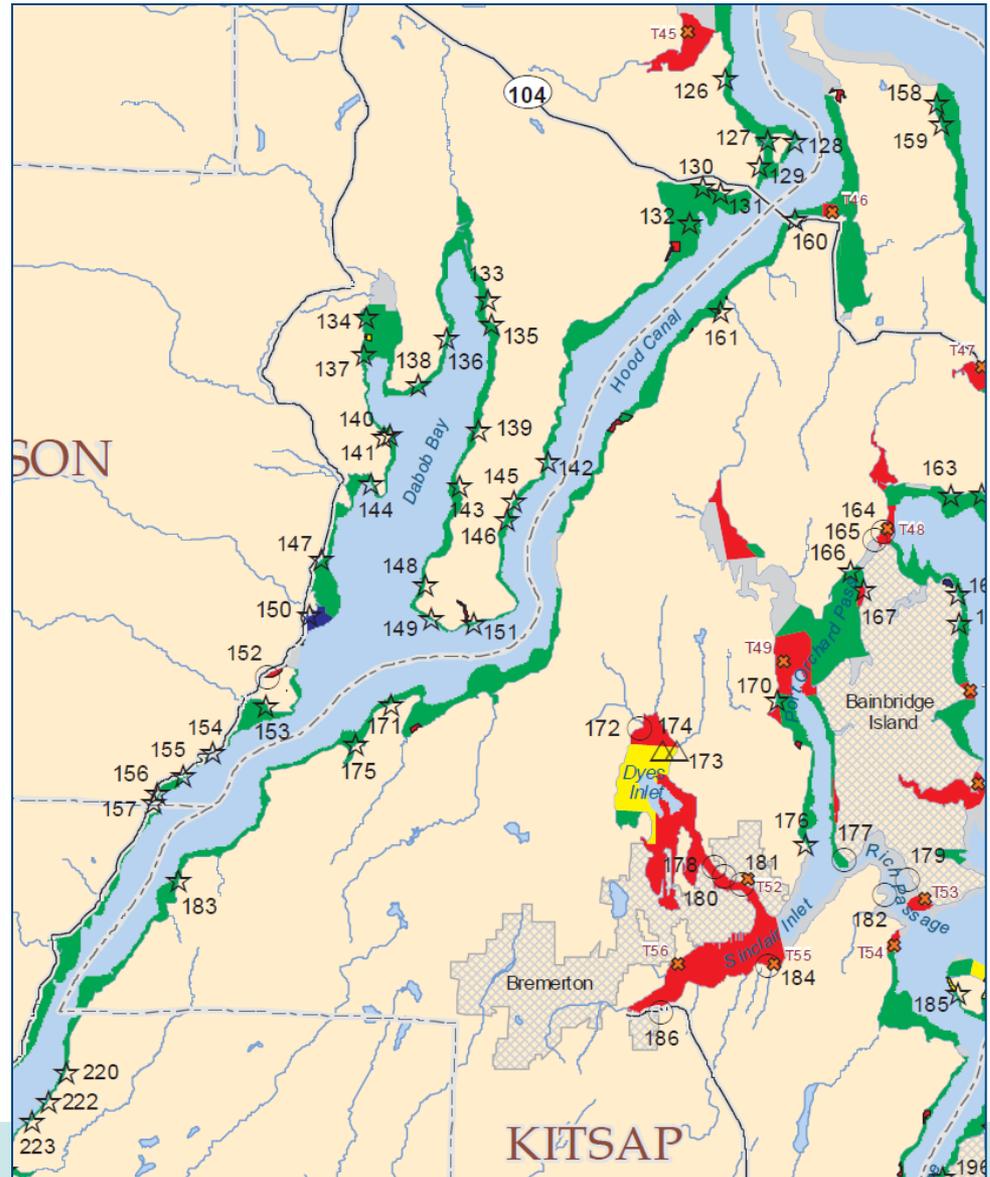
-  Approved
-  Conditional
-  Prohibited
-  Restricted
-  Unclassified



Recreational Shellfish Beach

09Status

-  Advisory
-  Closed
-  Open



Marine biotoxin closure areas: Kitsap

Only the **HEALTH STATUS** of beaches are shown on these maps.
For **SEASONS & LIMITS** visit Washington State Department of Fish and Wildlife.



Closed for Butter Clams only

Marine Biotoxin status updated, 6/30/2011 3:53:49 PM

Public Beaches

 Open

 Closed

 Advisory

 Area closed due to pollution.

Kitsap County

30 Public Beaches

6 CLOSED BY MARINE BIOTOXIN ONLY

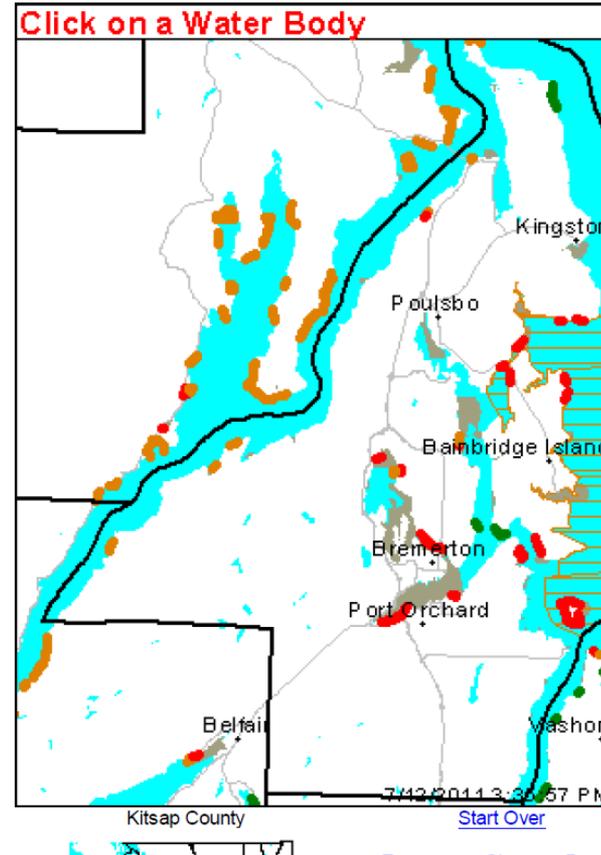
10 CLOSED DUE TO POLLUTION ONLY

3 CLOSED DUE TO POLLUTION AND MARINE BIOTOXIN

7 HAVE A HARVEST ADVISORY

4 HAVE NO HEALTH CLOSURES

Click on a Water Body



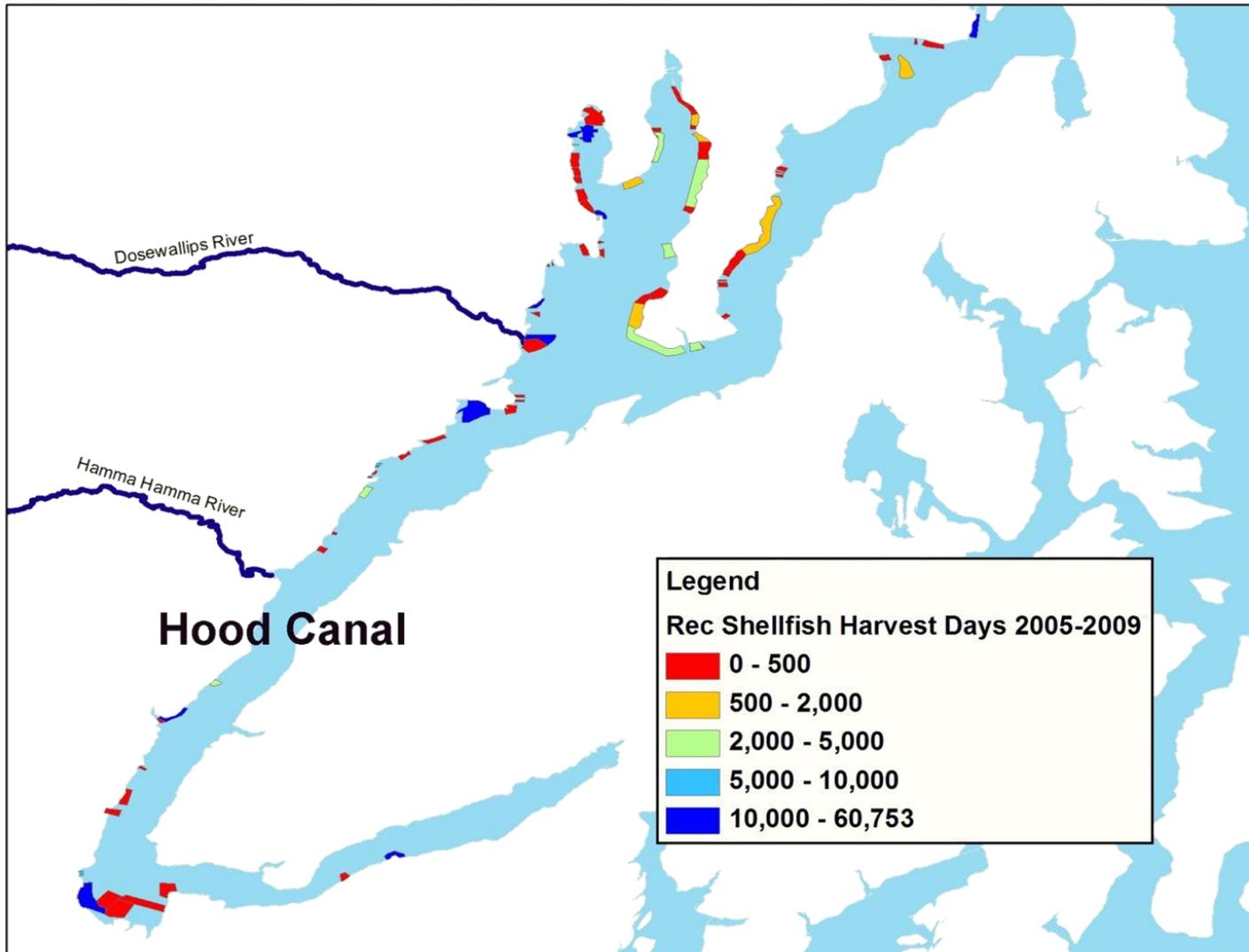
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Reason for a special study

- There is no economic component to the data currently collected
 - WDFW collects aggregate site use using aerial surveys and catch using beach-based creel surveys



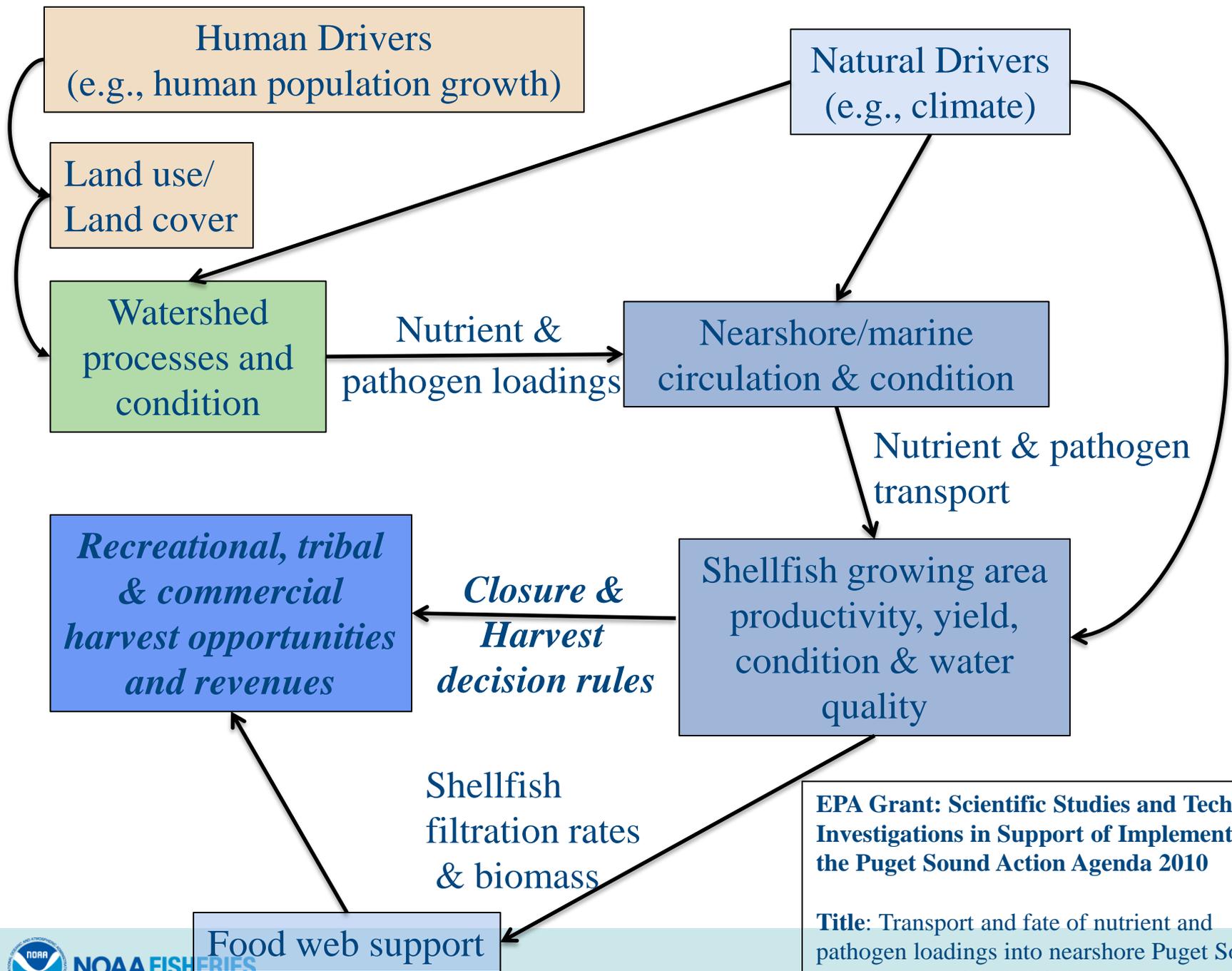
Hood Canal harvest days

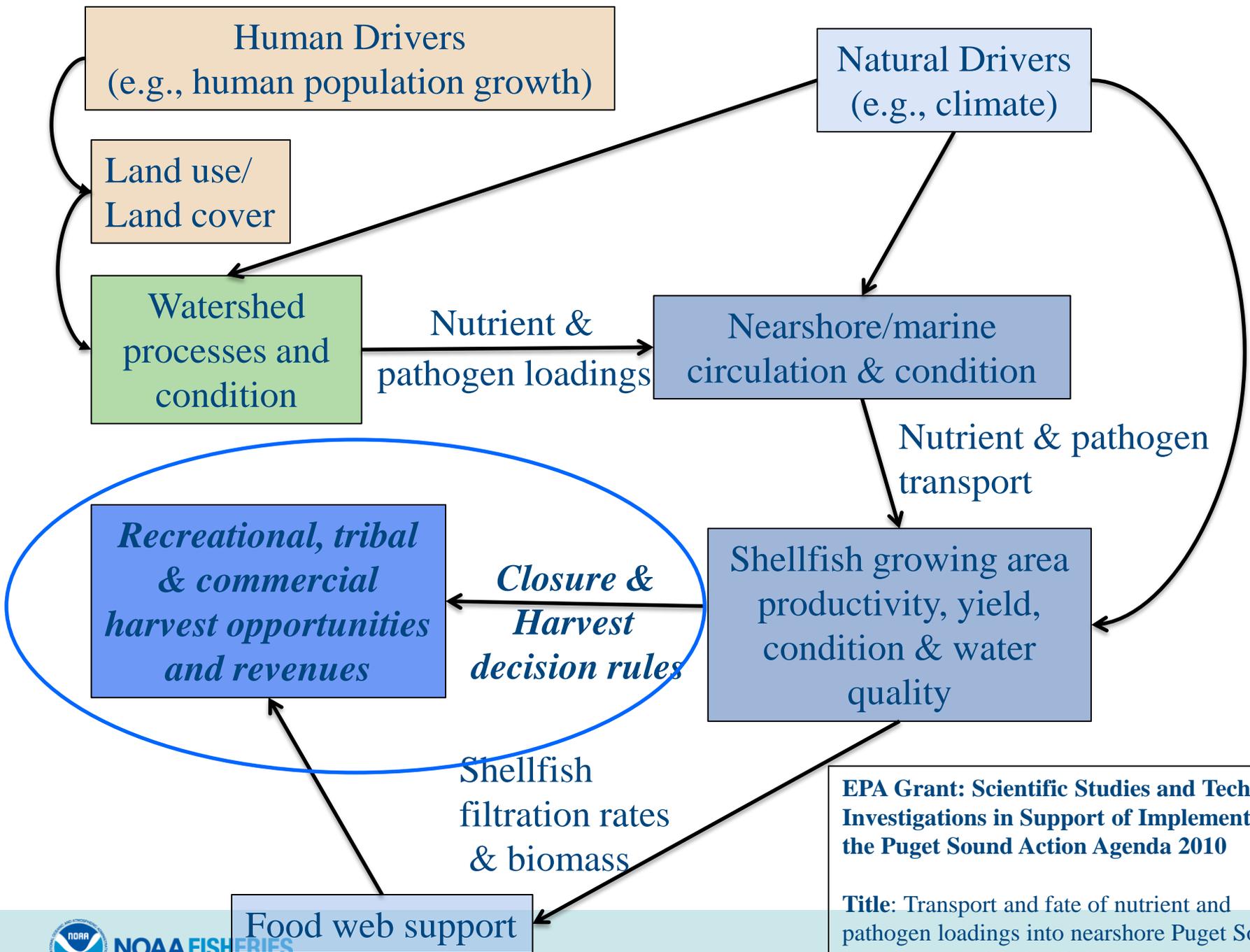


Description of the data

- Are the data being collected or analyzed special, and if so, how?
 - We like to think so. . .
 - Popular recreational activity
 - 35% of all WA saltwater fishing trips were devoted to shellfish in 2006 - only surpassed by salmon
 - Very few studies to help inform management decisions
 - Ability to link land use practices, water quality, shellfish management decisions, and recreational values







EPA Grant: Scientific Studies and Technical Investigations in Support of Implementing the Puget Sound Action Agenda 2010

Title: Transport and fate of nutrient and pathogen loadings into nearshore Puget Sound: consequences for shellfish growing areas

Results

- Project has not been completed
- We have received bids from contractors

Future studies of this type

- Will this study be repeated?
 - Unknown
- When and where?
 - It would be useful to update every 5 years or so if management interest and funding is available.
 - It would also be useful to do a similar study for the ocean beaches (razor clams)
- If not, why not?

