



Estimated Regional Economic Impacts of Razor Clam Beach Closures on the Washington Coast

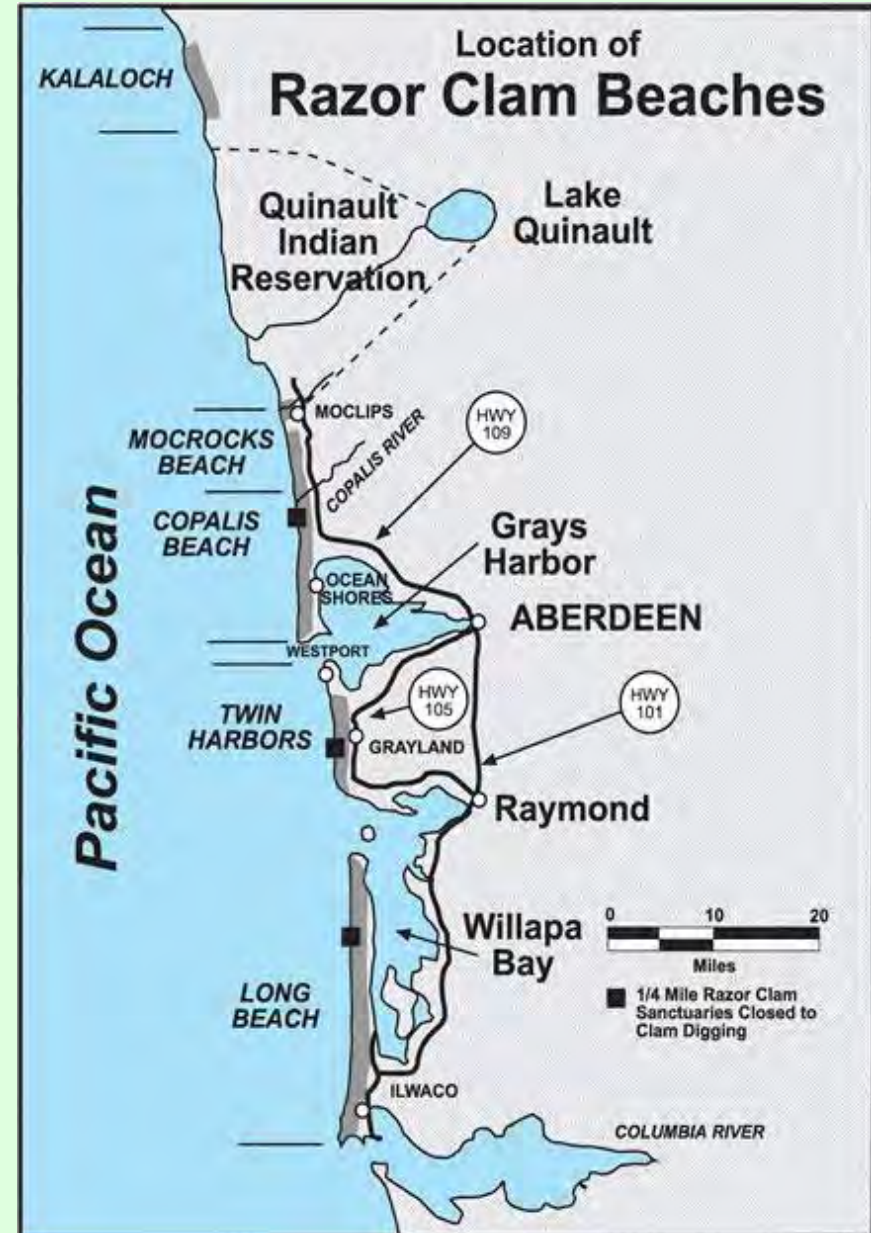
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- Joe Schumacker, Quinault Tribe

Current Razor Clam Recreation Management

- 4 beaches open for several 2-7 day periods in Fall, Winter and Spring
- No. of days open depends upon estimated stock size
- Closures due to HABs when PSP or ASP risk exceeds "safe" level

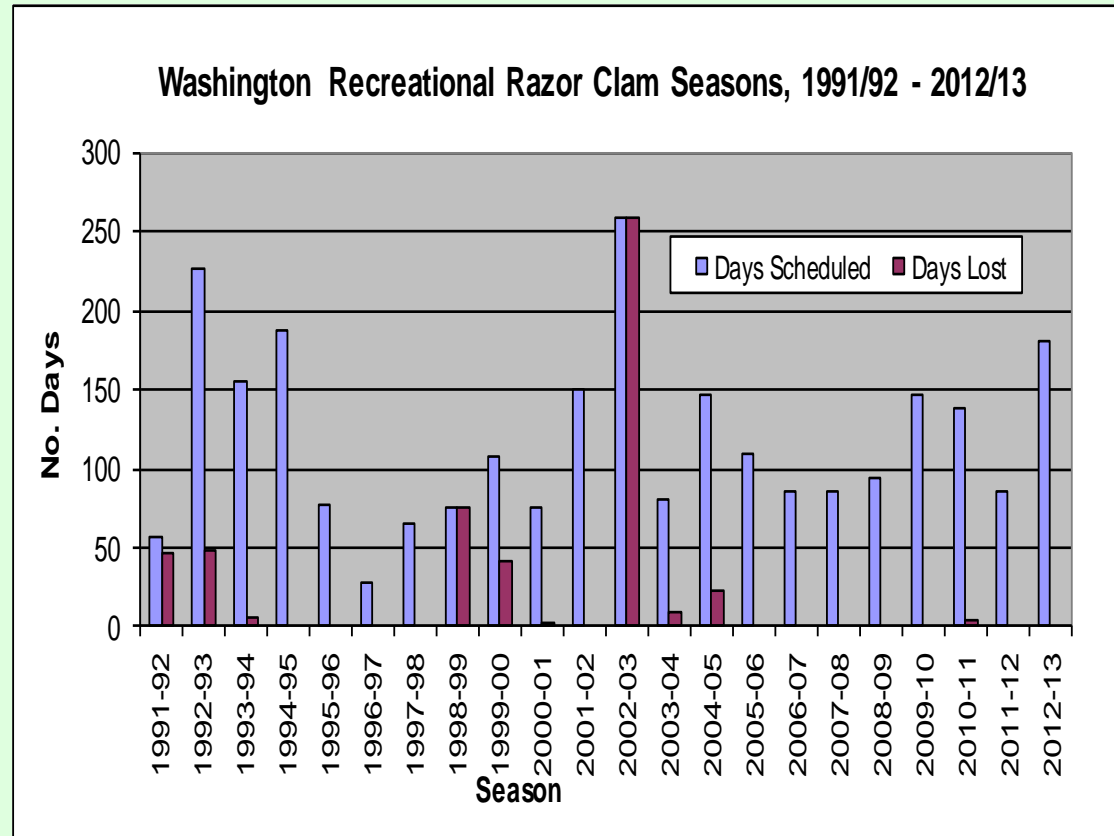


PSP and ASP

- PSP - paralytic shellfish poisoning
- ASP - amnesiac shellfish poisoning

HAB Closures

- First in 1991
- Full year closures in 98-99 & 2002-03
- 508 days lost; 48 due to PSP 460 due to ASP



Research Questions:

- How much do clammers spend in the coastal region?
- How does spending change when razor clam beaches are closed?
- How does changed spending impact local income/employment?

Clam Digger Survey

- Survey distributed in April 2008 by WDFW field workers (D. Ayers)
- ~ 450 distributed
- ~ 240 returned by mail

WASHINGTON RAZOR CLAMMERS SURVEY



Knowing what makes a good clamming experience is important to us. We are interested in learning about your experiences. Please take a few moments to complete this brief survey.

Survey Results - #1

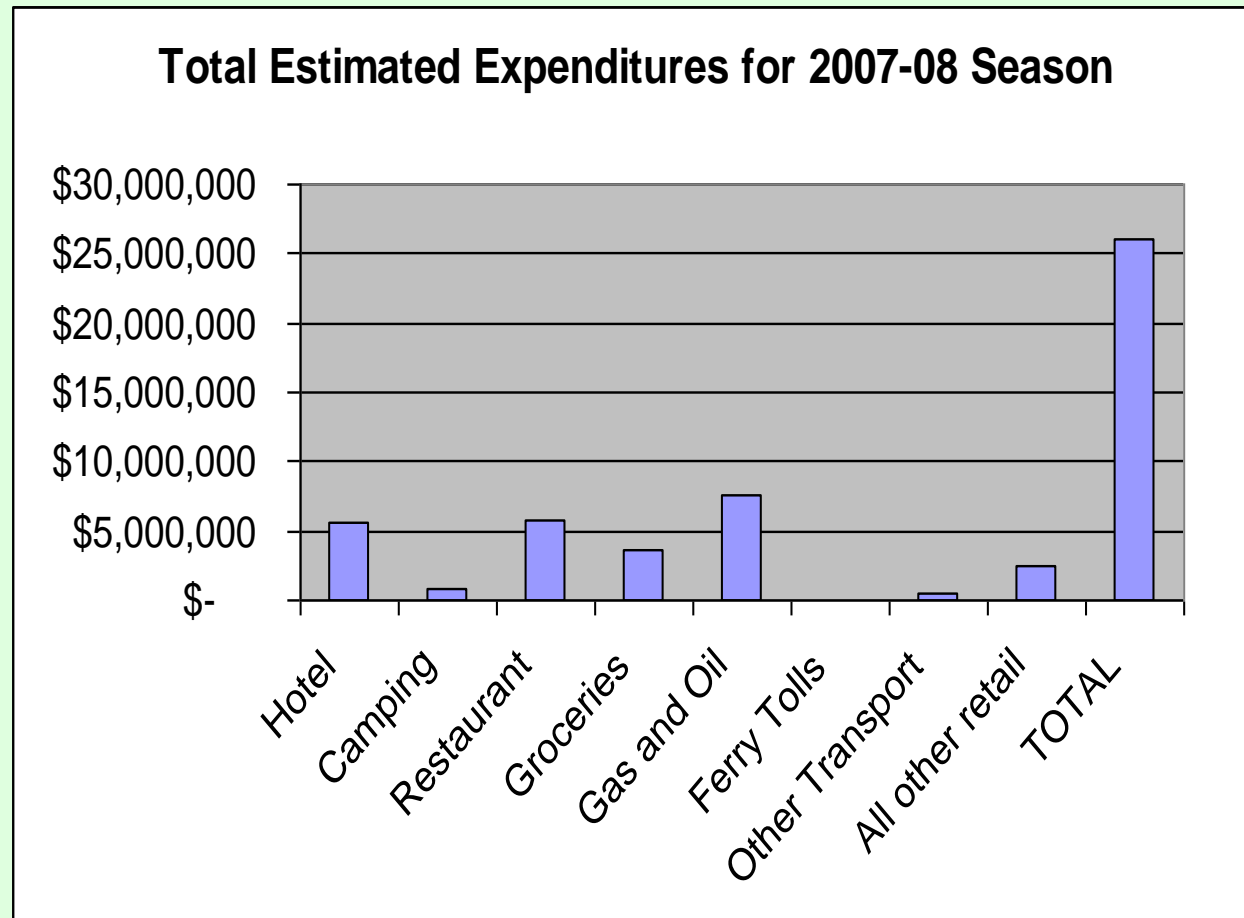
	Mocrocks	Copalis	Twin Harbors	Long Beach
	<i>General Overview</i>			
No. Respondents	66	53	51	70
No. People/Party	4.09	4.42	3.46	3.81
No. Clammers/Party	3.71	3.98	3.1	3.29
No. Staying Overnight	34 (36%)	34 (65%)	32 (64%)	47 (67%)
Miles Traveled, 1 way	116	127	111	106
No. Trips This Year	3.5	3.2	3.7	3.63
% That Cancelled a Trip in Past due to HABS	45%	35%	34%	40%

Survey Results #2 - Ave. Expenditures per Clammer-day

	Average	Mocrocks	Copalis	Twin Harbors	Long Beach
Hotel	\$ 24.10	\$20.54	\$37.90	\$16.34	\$21.64
Camping	\$ 2.87	\$2.60	\$1.67	\$3.89	\$3.30
Restaurant	\$ 21.93	\$14.78	\$27.03	\$17.42	\$28.49
Groceries	\$ 13.02	\$8.31	\$10.99	\$15.96	\$16.80
Gas and Oil	\$ 28.51	\$19.41	\$32.81	\$26.82	\$35.00
Ferry Tolls	\$ 0.16	\$0.40	\$0.12	\$0.11	\$0.00
Other Transport	\$ 1.08	\$0.25	\$0.24	\$0.14	\$3.71
All other (art)	\$ 9.20	\$3.85	\$14.92	\$7.07	\$10.96
TOTAL	\$ 100.87	\$70.13	\$125.68	\$87.76	\$119.90

Extrapolation of Sample Spending to 2007-08 Season

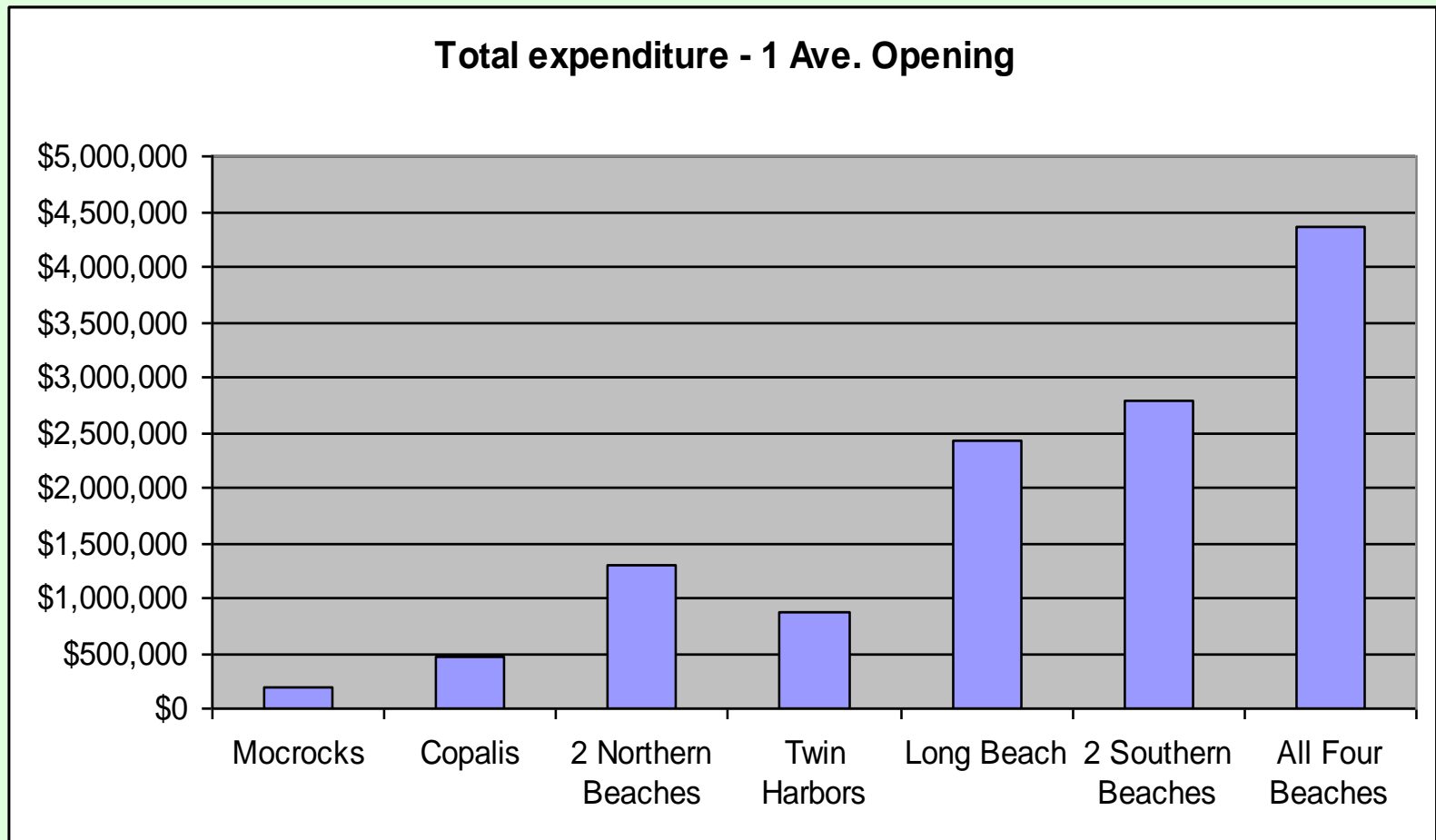
- At each beach, \$/day x No. of clammer/days = total spending
- ASSUMES sampled \$/day in April is typical for full season.



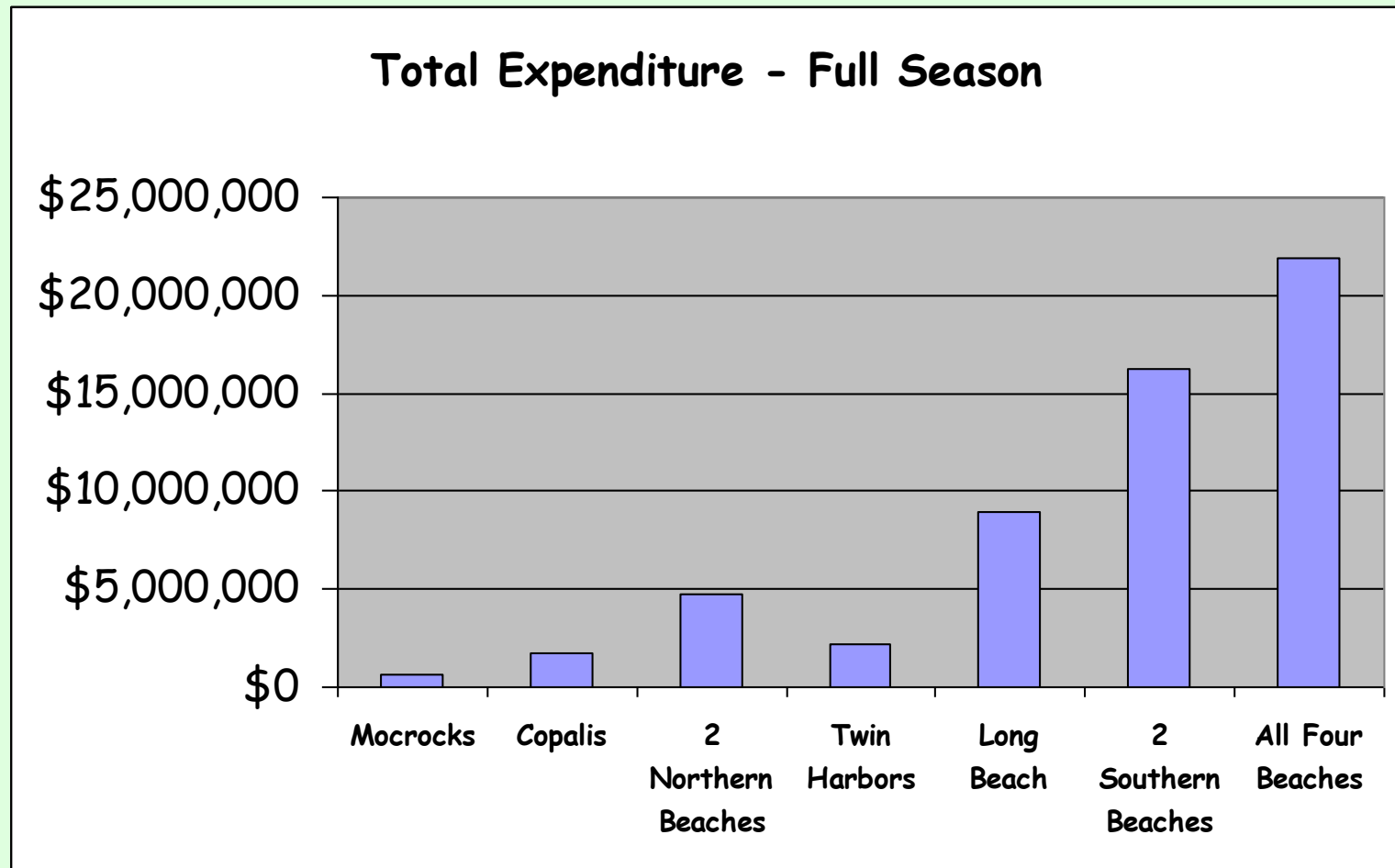
Survey Results - #2: Reaction to Closures

Yes, I've experienced a Closure	86	38.7%
What Did you do?		
Went to beach anyway	15	14.3%
Went elsewhere	8	7.6%
Stayed home	70	66.7%
Other	12	10.5%
If more closures occur would you ..		
Go to same beach less frequently?	115	51.8%
Go to a different beach?	81	36.5%
Visit beach without razor clamming	33	14.9%
Stay Home	68	30.6%
Do a different recreational activity	35	15.8%

Reduced spending due to beach closures = $\$/\text{day} \times \Delta \text{ days}$



Reduced spending due to full season closure



I-O Model Estimates Income and Employment Impacts

- I-O is a simple linear economic model.
- Reduced final sales in column I-O model = Δ spending by clammers
- Note local income < spending due to "leakages" - I.e. sales of items produced elsewhere
- Calculate direct & indirect impacts on local income & employment due to the Δ spending

Overall Impact Estimates

Estimated LOCAL Economic Impact of Beach Closures					
		One Opening		Entire Year	
Beach(es)	Employment	Labor Income (Mil. \$2008)	Employment	Labor Income (Mil. \$2008)	
Mocrocks	3	\$0.10	11	\$0.34	
Copalis	8	\$0.25	31	\$0.95	
Twin Harbors	14	\$0.43	35	\$1.08	
Long Beach	40	\$1.26	147	\$4.63	
North Beaches	23	\$0.71	84	\$2.57	
South Beaches	45	\$1.43	263	\$8.26	
All Beaches	73	\$2.28	364	\$11.36	

Summary & Conclusions

- Income impacts of season closure is ~ \$11.4 mil or ~44% of reduced expenditures in 2-county area.
- Reduced employment ~ 364 jobs
- This is relevant to local community.
- Net benefits of maintaining the clam fishery is a broader economic issue.

Gauging Value of Reduced Closures from Hypothetical Questions

- Asked whether survey respondents would be willing to pay to avoid closures, and how much they would be willing to pay.
- Haven't yet extrapolated this to total, because we lack an estimate of # clambers 2007-08

Would you pay to avoid a closure?		
YES	129	58.1%
Aver. Amount for Yes	\$5.18	

