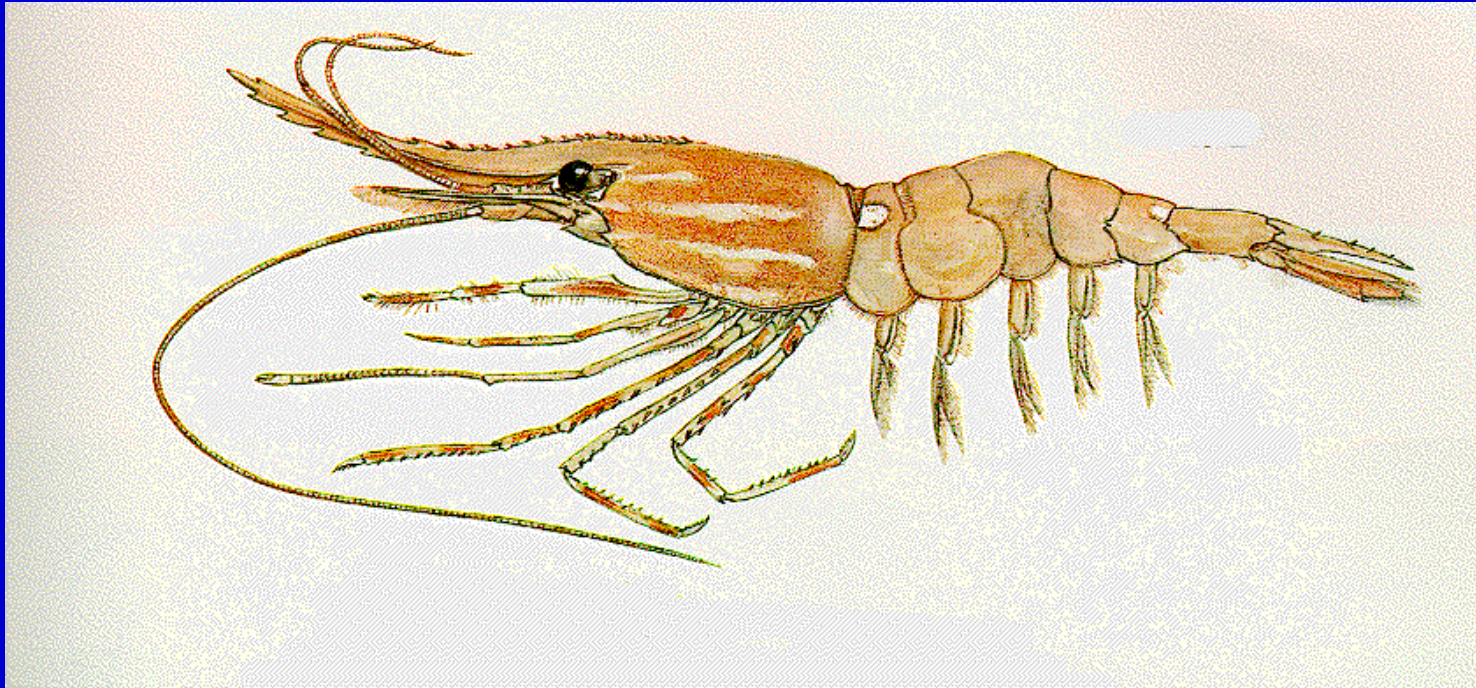


# Puget Sound Shrimp Fisheries



**Rich Childers; Puget Sound Shellfish Manager, Fish Program**

**Washington Fish and Wildlife Commission Meeting**

**June 1, 2012**

# Presentation Outline

- Overview of life history of Pandalid shrimp
- Summary of conservation and fishery management strategies
- Key elements of Puget Sound shrimp fishery policies C-3610 and C-3008
- Trawl fishery
- Pot fishery: non-spot shrimp
- Pot fishery: Spot shrimp
- Summary

# Shrimp Species Harvested by Commercial and Recreational Fisheries



***Pandalus eous*: Pink Shrimp**  
Overall length 4 inches, trawl fishery  
commercial



***Pandalus danae*: Dock (coonstripe)**  
Overall length 5 inches, commercial and  
recreational pot fishery, and trawl fishery

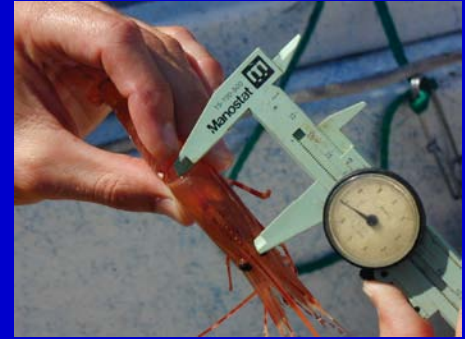
***Pandalus hypsinotus* :Coonstripe,**  
Overall length 7 inches, commercial and  
recreational pot fishery, and trawl fishery

***Pandalus platyceros*: Spot shrimp**  
Overall length 10 inches, commercial and  
recreational pot fishery



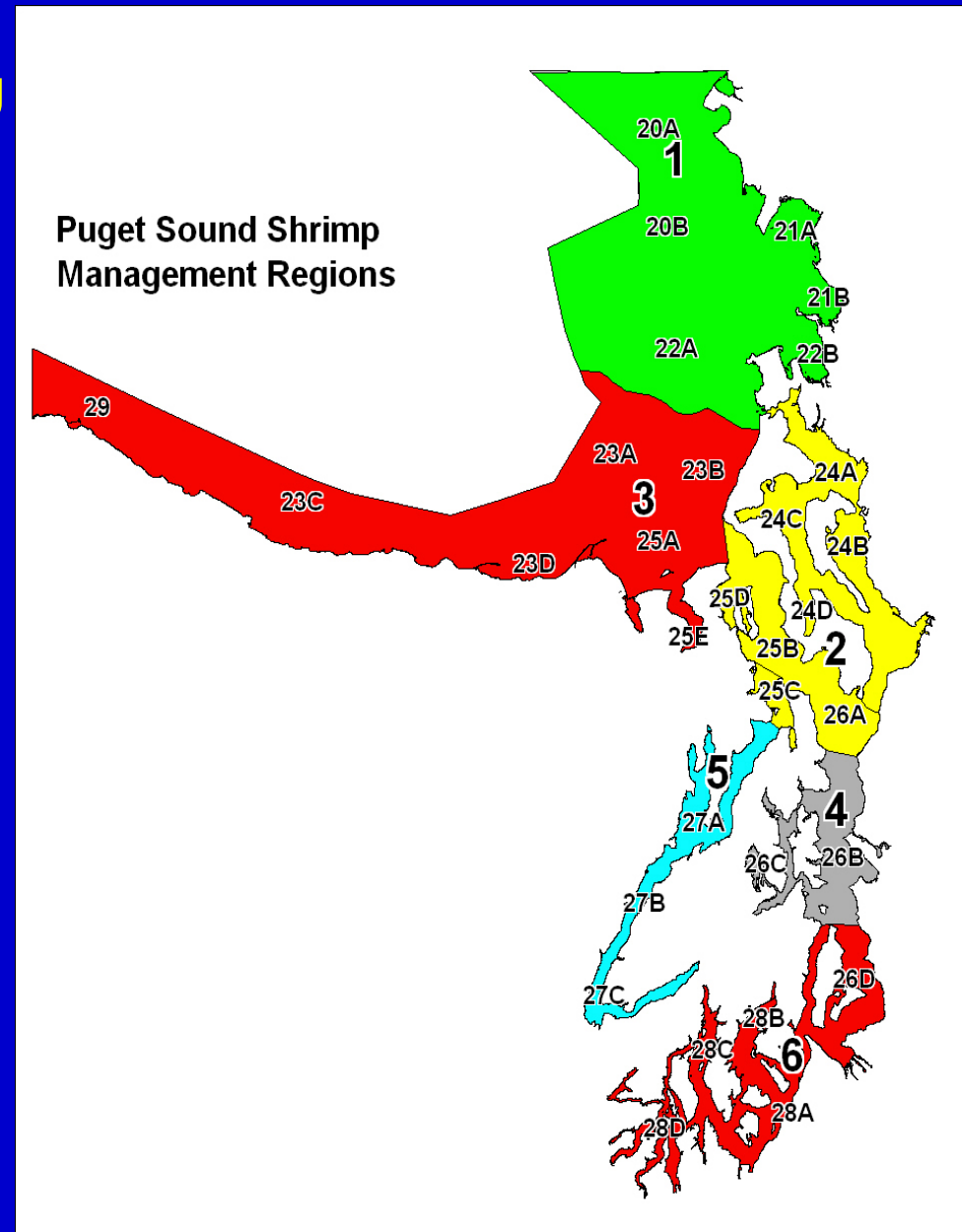
# Pandalid Shrimp Life History

- Protandrous hermaphrodites: Male  $\xrightarrow{\text{Transitional}}$  Female
- Spot shrimp: Male 20-36 mm  
Transitional stage 36-39mm  
Females > 39mm
- Ovulation: October-November (2 to 3 thousand eggs)
- Female brood eggs for 3 to 4 months
- 90% of eggs mature and hatch by mid April
- 30-60 day planktonic larval stage
- Live 2-4 years
- Bottom dwelling ( spot shrimp >150 feet)



# Conservation and Fishery Management

- Fishery closure during egg bearing period (October-April)
- Minimum pot mesh protects small spot shrimp to allow for spawning
- Time, area and depth restrictions for non-spot fishery restrictions
- Annual State-Tribal harvest management agreements
- Fishery quota management
- Fishery quotas are evaluated and adjusted annually using log book information and test fishery data

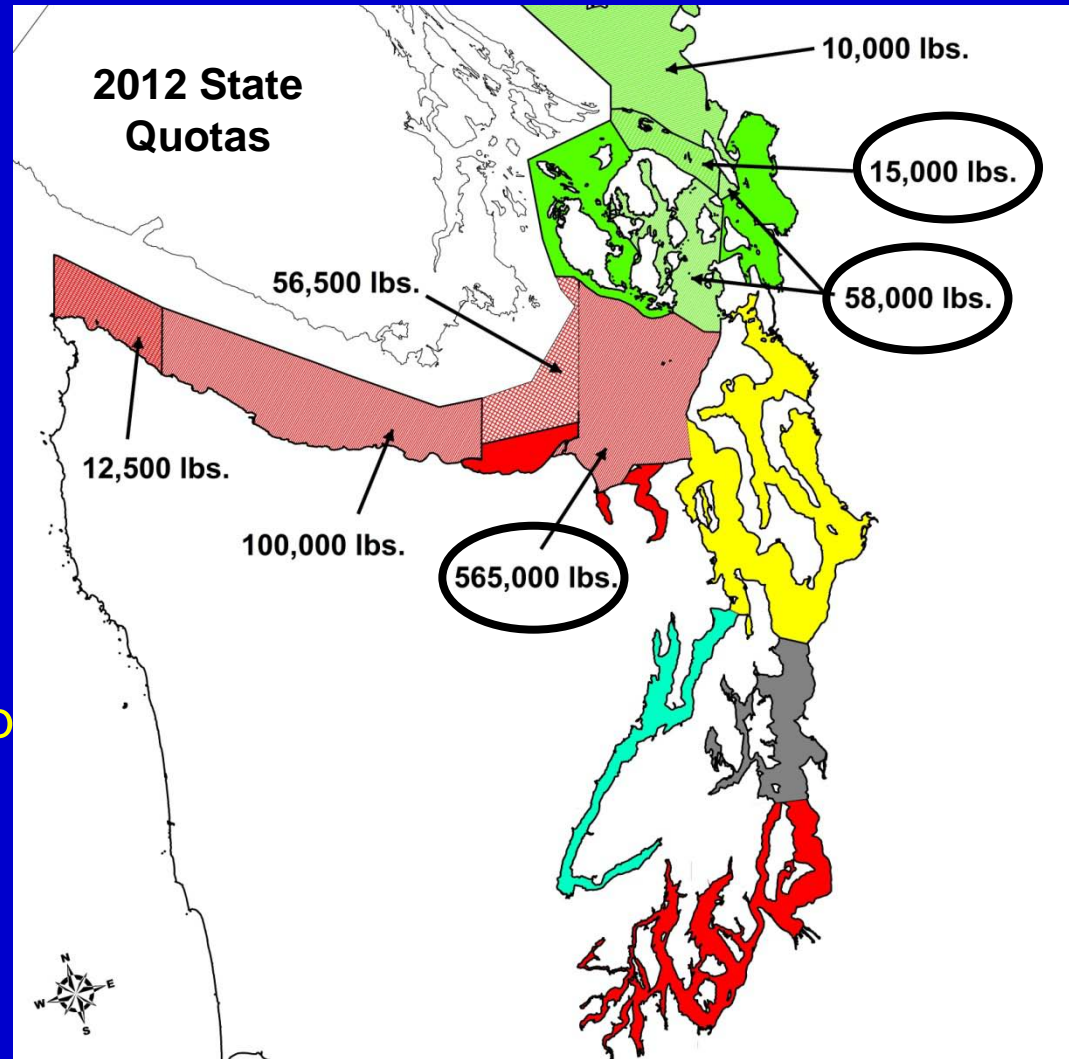


# Puget Sound Shrimp Fishery Policy C-3610 and C-3008

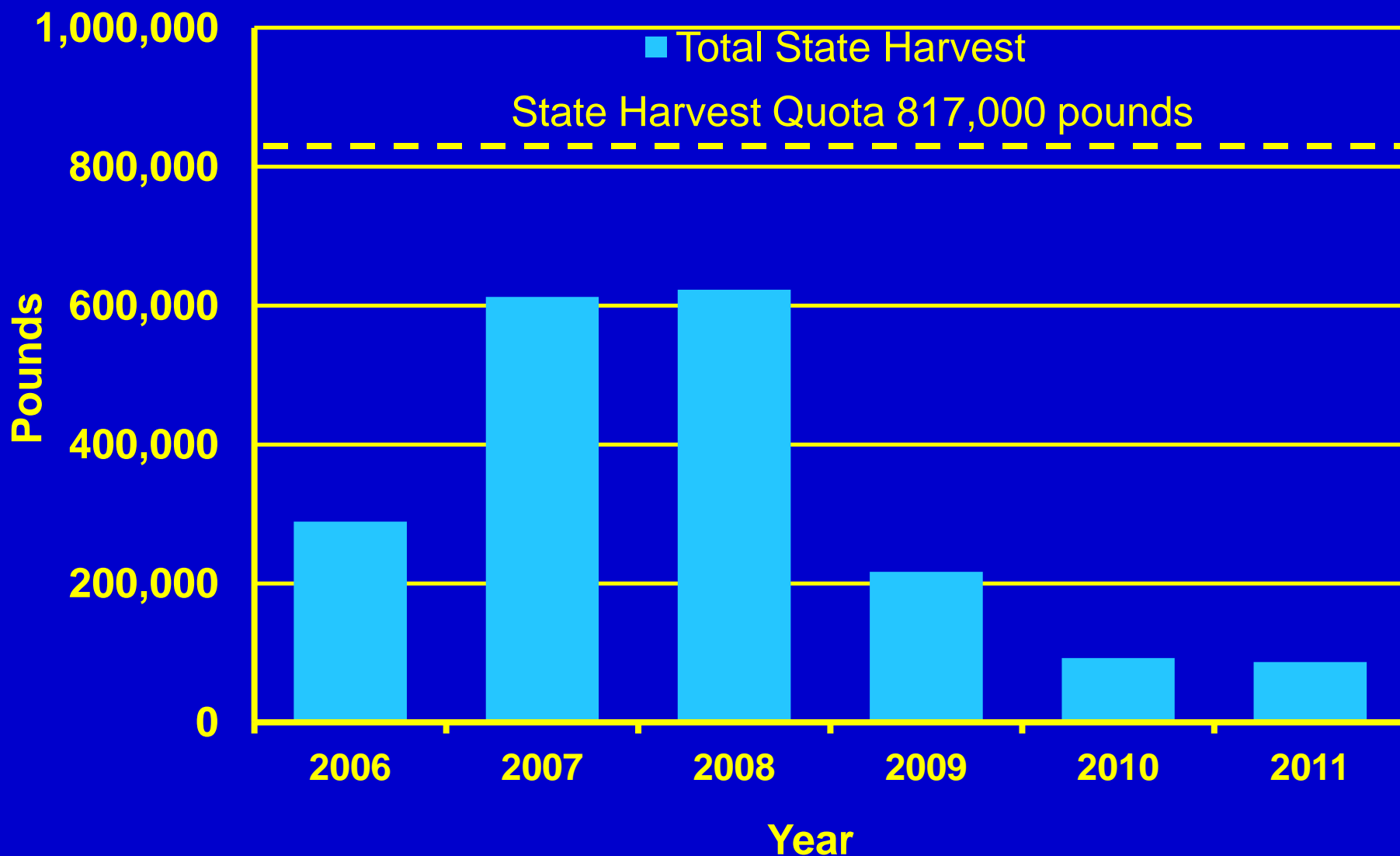
- Policy C-3610 was revised and updated in 2003
- Both policies provide resource conservation and management provisions
- C-3610 provides for recreational and commercial pot fisheries and a commercial trawl fishery
- C-3610 establishes regional harvest allocation objectives for the state commercial and recreational fisheries
- Policy C-3008 is specific to Hood Canal and provides for a recreational fishery only

# State Non-Spot Shrimp Trawl Fishery

- Limited entry fishery since 2001
- Six transferable permits (3 active past 5 years)
- Fishery restricted to regions 1 and 3 only
- Treaty tribes have not participated
- Not allowed to retain spot shrimp
- Bycatch observer program for ESA listed species initiated in 2011
- Quotas based on historical catches



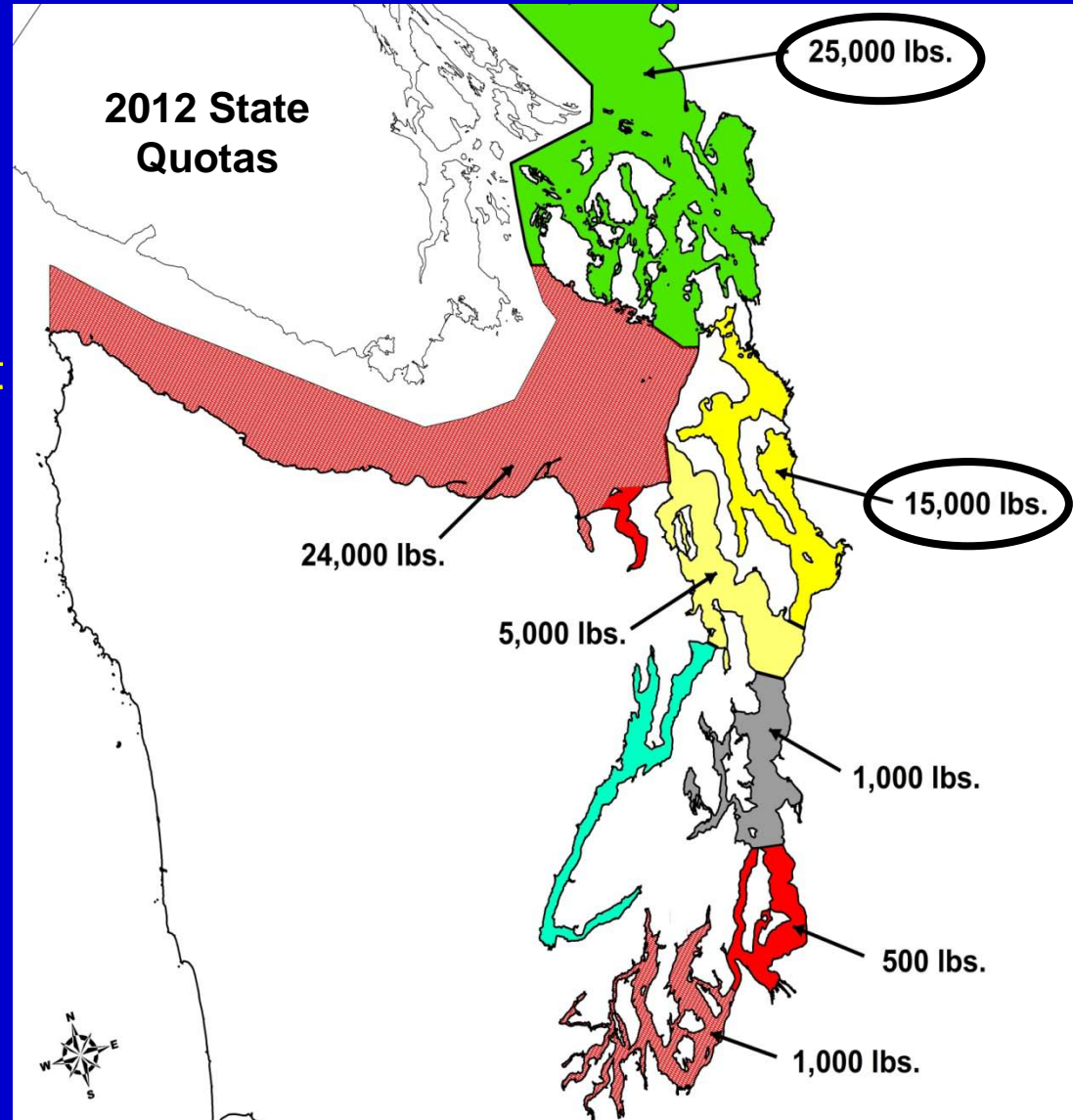
# State Non-Spot Shrimp Trawl Fishery Quota and Harvest (2006-2011)



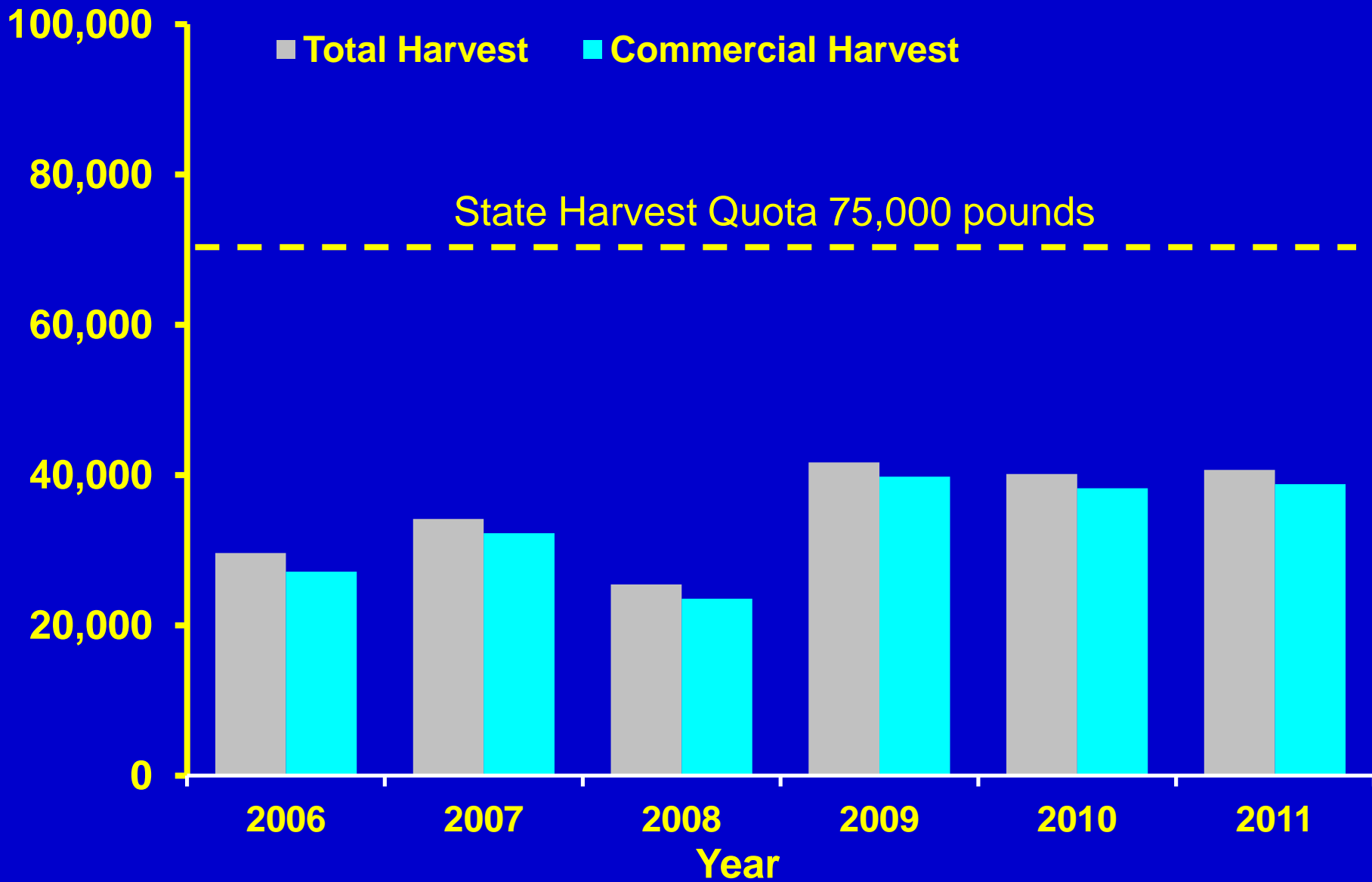


# State Non-Spot Shrimp Pot Fishery

- Limited entry commercial fishery since 2001
- 18 transferable commercial permits valid for both non-spot and spot shrimp
- Limited participation by the treaty tribes
- Very little recreational effort



# State Non-Spot Shrimp Pot Fishery Quota and Harvest (2006-2011)



# Puget Sound Spot Shrimp Fishery

- Quotas are fully utilized by state and tribal fisheries
- Participation in recreational fishery has increased significantly in recent years
- Adhering to regional allocation targets in policy C-3610 is difficult due to increase in recreational effort

# Spot Shrimp Allocation Targets

Policy C-3610 and C-3008 provides region specific allocation targets for the state commercial and recreational fisheries

<b>Region</b>	<b>Policy Recreational Target (%)</b>	<b>Policy Commercial Target (%)</b>
<b>1</b>	<b>15</b>	<b>85</b>
<b>2</b>	<b>60</b>	<b>40</b>
<b>3 Shrimp District</b>	<b>100</b>	<b>0</b>
<b>3 Outside District</b>	<b>15</b>	<b>85</b>
<b>4</b>	<b>60</b>	<b>40</b>
<b>5</b>	<b>100</b>	<b>0</b>
<b>6</b>	<b>40</b>	<b>60</b>

# Puget Sound Spot Shrimp Fishery

## Recreational Fishery Management:

- Minimum pot mesh size of 1 inch
- Most areas are only open for several days during the month of May
- Maximum of 4 pots per boat
- Daily limit of 80 shrimp
- Effort estimates: aerial surveys for boat counts and buoy counts from on-the-water surveys
- Harvest estimated using effort counts and catch data from creel surveys

## Commercial Fishery Management

- Minimum pot mesh size of 1 inch
- Occurs June through September
- 600 pound weekly trip limits per license since 2000
- Market primarily live shrimp
- Area openings and closings managed through emergency regulations
- Fishers are required to report harvest information daily by email or text message



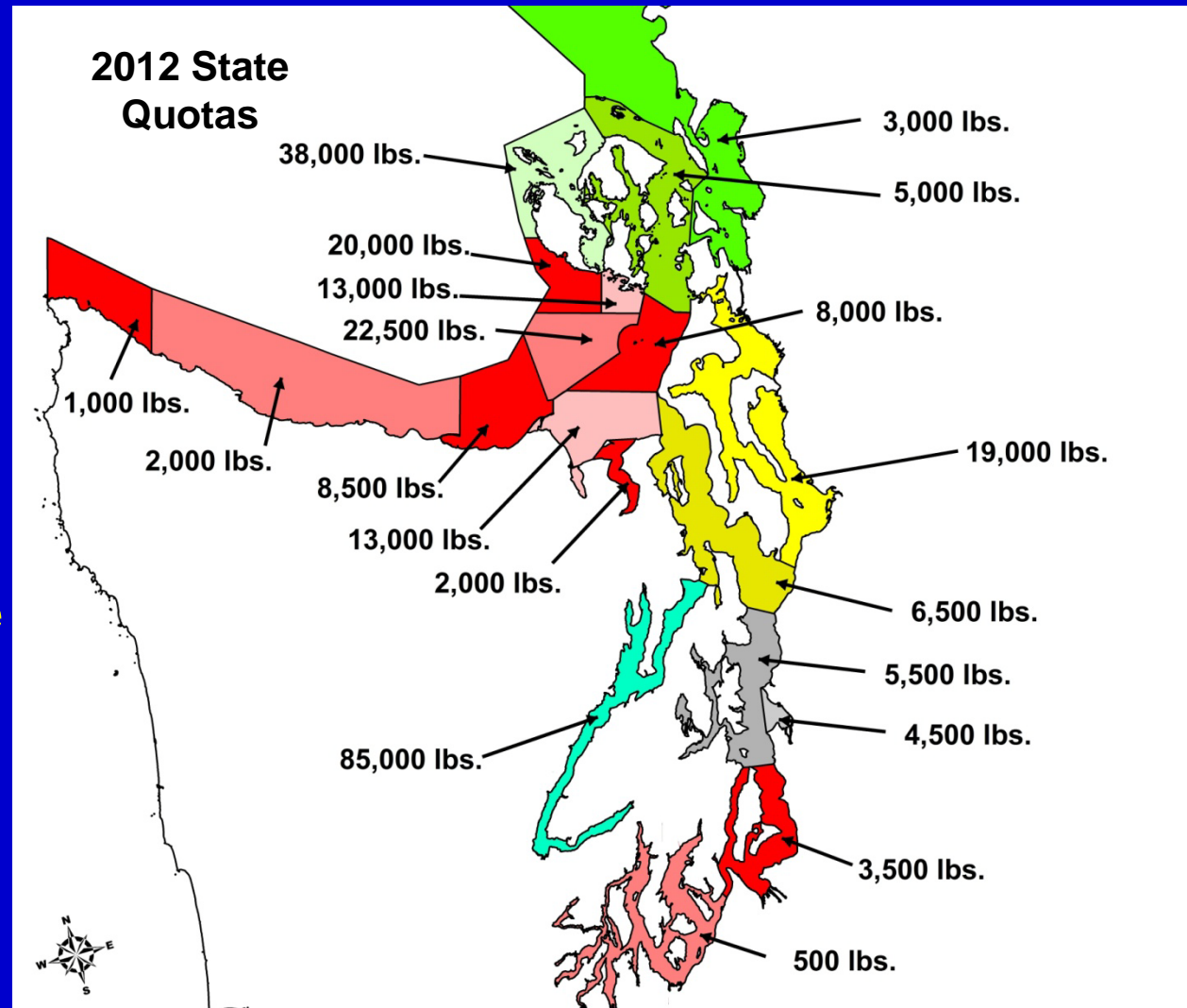
# Spot Shrimp Harvest Quotas

Regions divided into 19 sub-regional quota areas

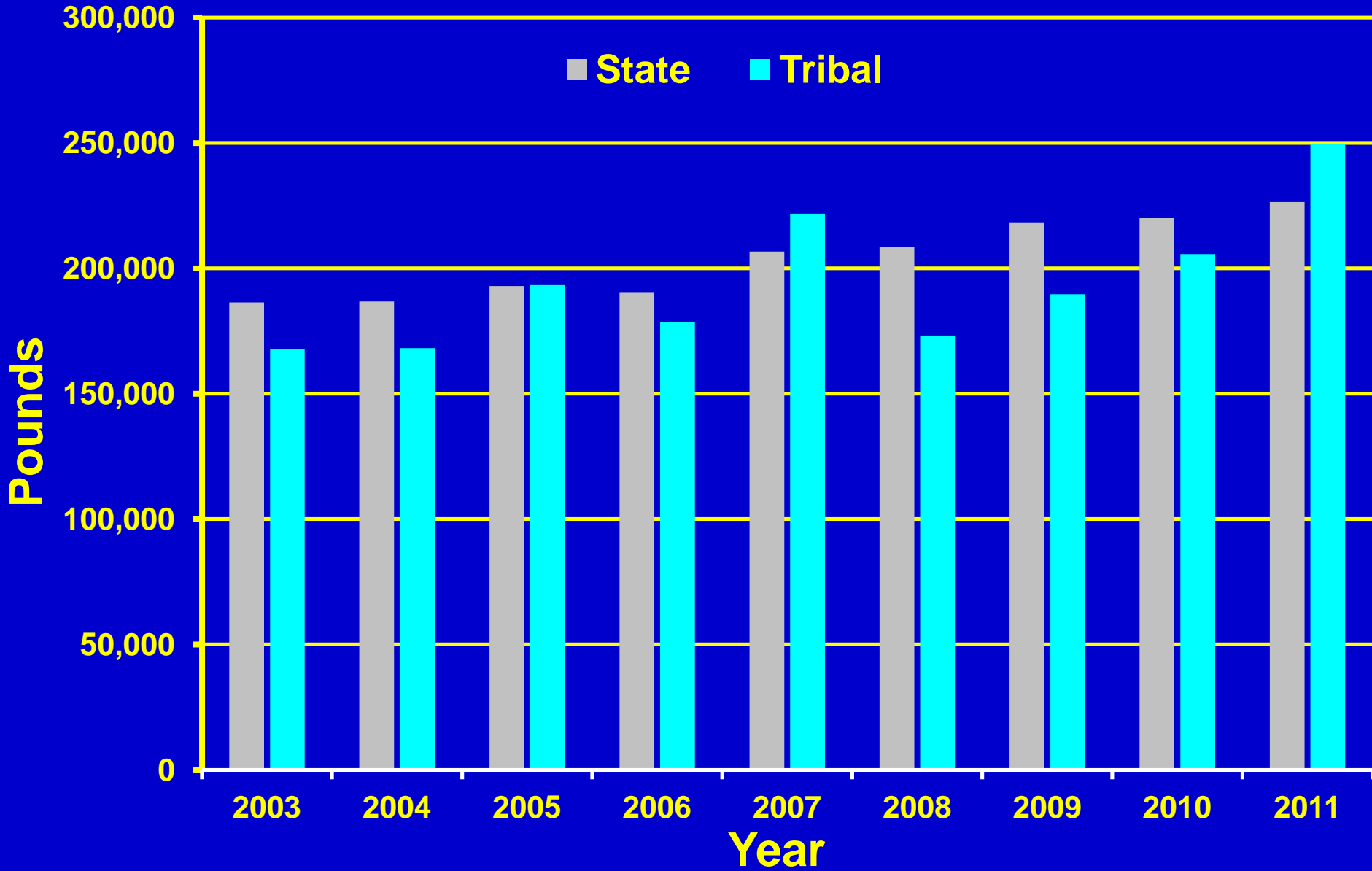
Quotas are evaluated and adjusted annually using log book information and test fishery data

Quota increases in remote “non-recreational” areas benefited commercial fishers

Hood Canal quota represents 60% of the Recreational allocation



# State and Tribal Spot Shrimp Harvest (2003-2011)



# State Spot Shrimp Harvest (2003-2011)



# Percentage of the State Spot shrimp Quota Harvested by the Recreational Fishery (2003-2012)

		Percentage of State Quota Harvested									
Region	Policy Recreational Target (%)	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	15	14	15	14	16	16	18	15	22	15	11
2	60	63	60	60	57	67	59	76	61	61	78
3	15	13	12	15	16	17	15	15	16	15	12
3 Dist	100	107	90	82	Clsd	Clsd	Clsd	Clsd	59	75	68
4	60	63	61	49	62	64	76	76	62	64	70
5	100	102	100	98	98	97	99	97	98	96	103
6	40	38	55	100	94	41	62	62	18	36	30
PS Total		59	58	57	56	58	57	58	56	53	51

# Number of Days Open for Recreational Spot Shrimp harvest (2003-2012)

	Number of Recreational Shrimp Fishing Days									
Region	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	79	86	51	22	45	13	8	7	7	6
2	7	6	6	4	4	4	3	2	3	2
3 Dist	2	3	4	Clsd	Clsd	Clsd	Clsd	4	4	4
3	172	174	156	157	128	128	107	72	109	90
4	4	3	3	4	3	3	2	2	3	2
5	4	4	5	4	9	9	5	4	5	4
6	51	4	1	1	1	1	1	2	2	2



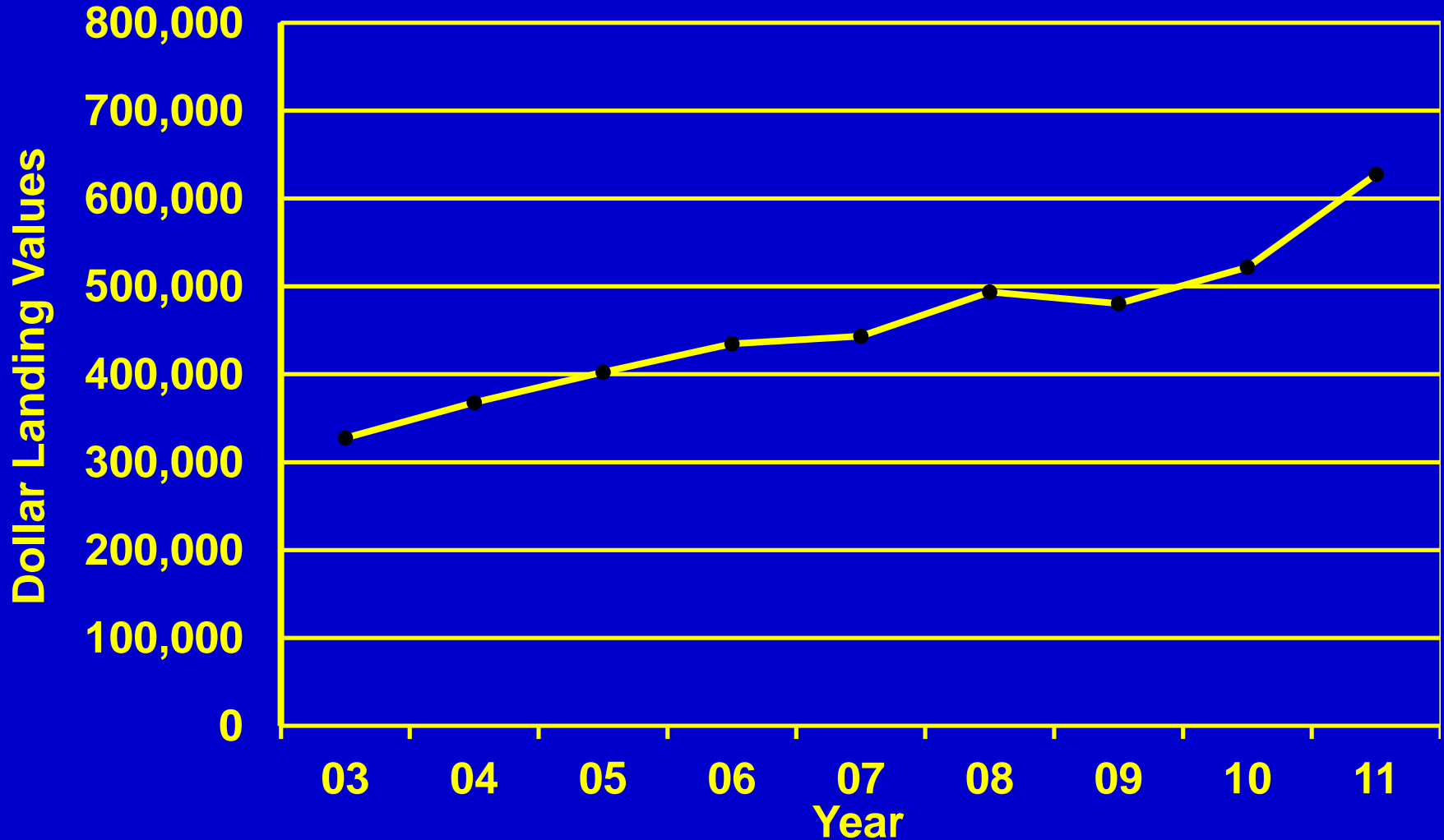
# Summary of the 2012 Recreational Fishery

Region	State Harvest Quota	Number of Recreational Shrimp Days	Recreational Harvest (pounds)	Percentage of State Quota Harvested	Policy Recreational Target (%)
1	46,000	6	5,246	11%	15
2	25,500	2	19,776	78%	60
3	88,000	90	10,359*	12%	15
3 Dist	2,000	4	1,356	70%	100
4	10,000	2	7,022	70%	60
5	85,000	4	87,632	103%	100
6	3,500	2	1,014	30%	40
<b>Total</b>	<b>260,000</b>		<b>132,802</b>	<b>51%</b>	

\*Estimated catch for 2012

# Total Adjusted Ex-Vessel Landing Values for the Puget Sound Commercial Shrimp Fishery (2003-2011)

Ex-vessel values were adjusted to 2011 dollars using a Consumer Price Index (CPI) conversion maintained by the United States Department of Labor Statistic



# Estimated Number of Angler Trips and Value for the Recreational Shrimp Fishery 2010-2012

**\$43 net economic value per angler trip taken from: *Economic Analysis of the Non-Treaty Commercial and Recreational Fisheries in Washington State (2008)***

<b>Season</b>	<b>Estimated Angler Trips</b>	<b>Estimated net economic value based on \$43 per angler day or trip</b>
<b>2010</b>	<b>28,378</b>	<b>\$1,220,254</b>
<b>2011</b>	<b>30,814</b>	<b>\$1,325,002</b>
<b>2012</b>	<b>32,204</b>	<b>\$1,384,772</b>

# Summary

- Puget Sound shrimp conservation measures include annual quotas, pot mesh size restrictions, season closures, and area restrictions.
- State non-spot shrimp trawl and pot fishery quotas are not fully utilized
- Spot shrimp quotas are fully utilized by the state and Tribes
- Participation in recreational spot shrimp fishery has increased significantly in recent years
- Recreational spot shrimp opening days has decreased significantly
- Adhering to regional allocation targets in policy C-3610 is difficult due to increase in recreational effort