

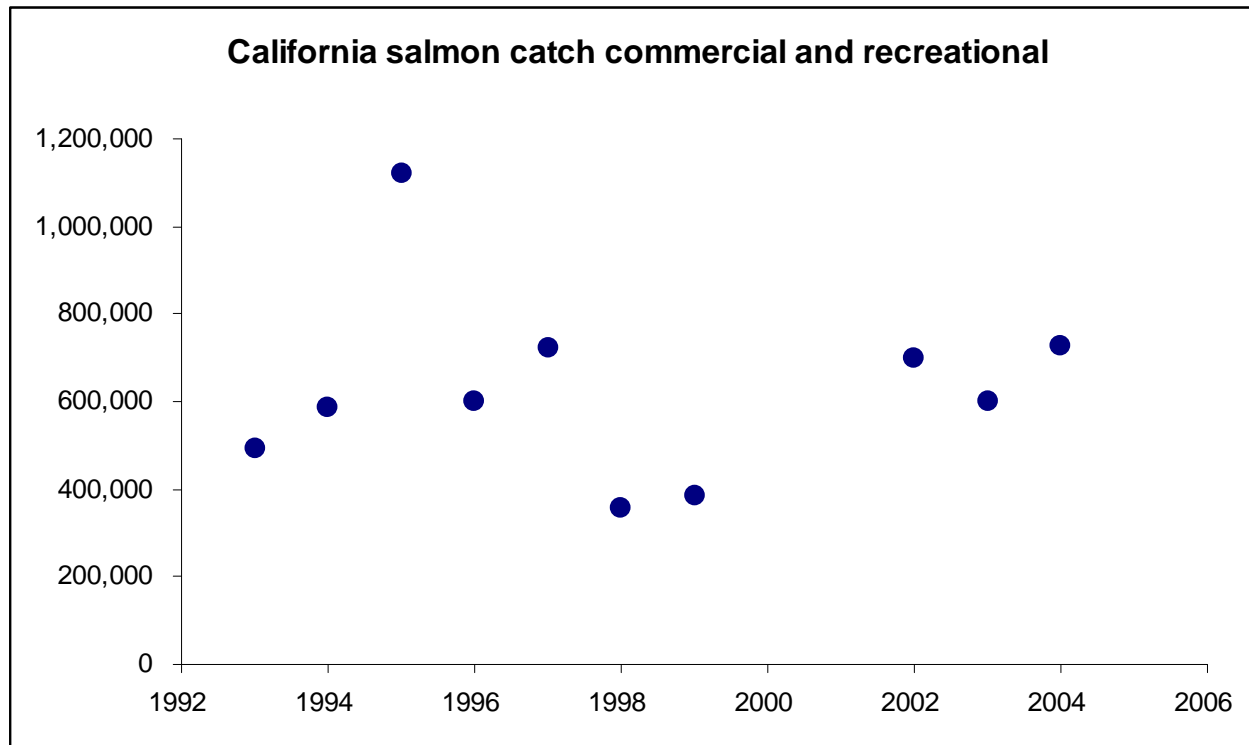
# Impact of associated catch from salmon trolling

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# Levels of salmon catch

Source North Pacific Anadromous Fisheries Commission report



# Associated catch while trolling

- Letter for Fish and Game Warden Dennis McKiver
  - “In my professional experience I would estimate the percentage of persons catching any rockfish or other fish, while targeting and trolling for salmon in less than 10 fathoms (20 meters), is less than one percent.”
- Similar comments from charter boat skippers and experienced fishermen

# Logbook data show more associated catch

trolling only <50m for kept and released

	<b>all salmon</b>	other	% other
<b>2001</b>	6,337	753	11%
<b>2002</b>	9,138	545	6%
<b>2003</b>	6,265	589	9%
<b>2004</b>	17,091	914	5%
<b>2005</b>	16,874	2,359	12%
<b>2006</b>	11,158	5,213	32%

# Below 50 meters

trolling only >50m for kept and released

	<b>all salmon</b>	other	% other
<b>2001</b>	7,394	103	1%
<b>2002</b>	20,698	219	1%
<b>2003</b>	20,804	181	1%
<b>2004</b>	26,495	57	0%
<b>2005</b>	13,197	96	1%
<b>2006</b>	15,903	409	3%

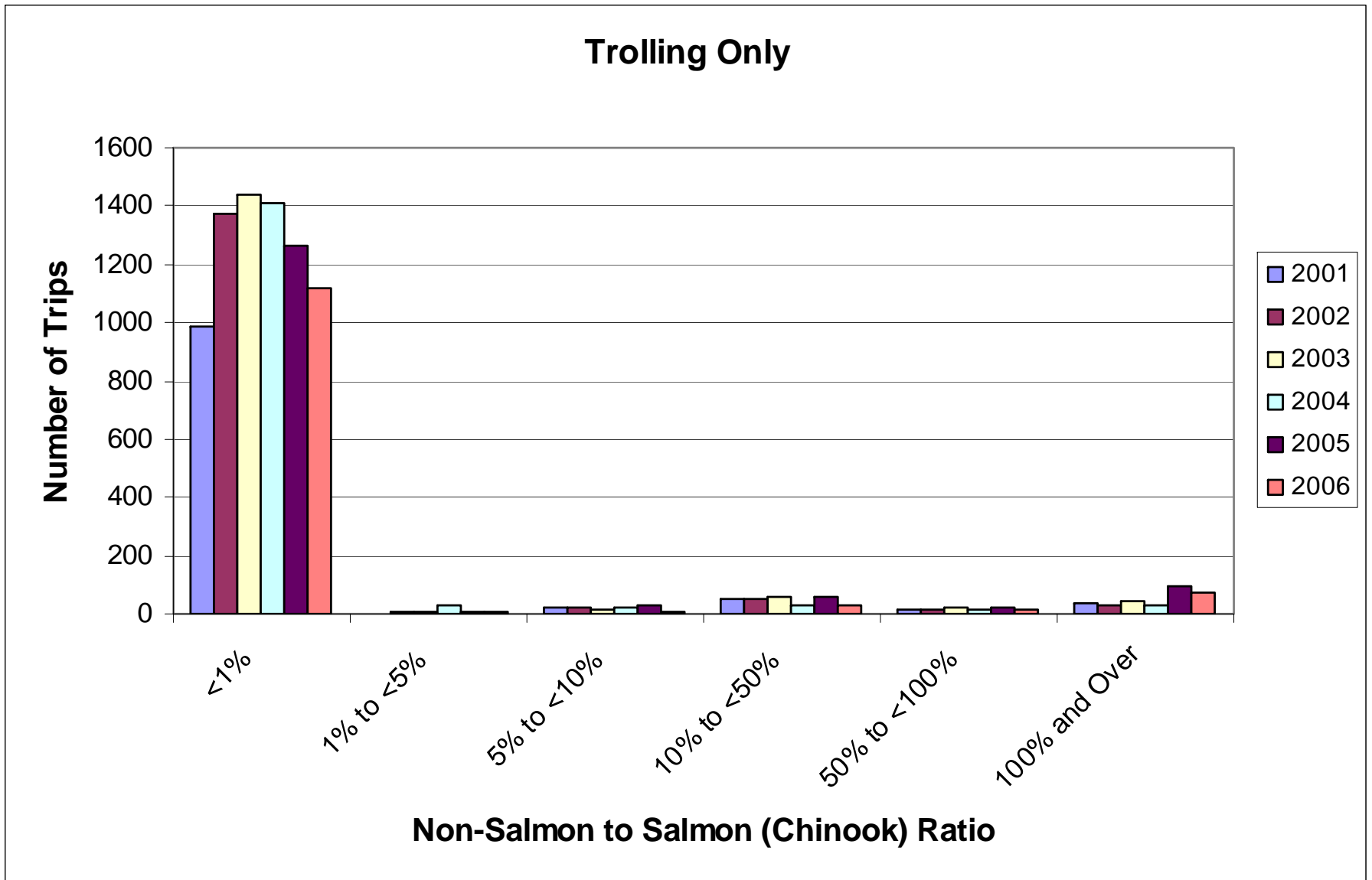
# Anomalies

- The much higher rates than the participants suggest
- The large rise, particularly in 2006

# Possible explanations

- Some vessels begin a trip trolling, and if not successful move to bottom fish but don't mark this in their "target species"
- Some skippers, fed up with rockfish restrictions, put down large numbers of associated catch

# Distribution of associated catch





# Almost all the associated catch is associated with a few trips

- It would seem likely these trips are not trolling trips
- Without these trips the associated catch rates average 3% across all years and all depths.

# Limited observer data

Depth Category	<50 m	>50 m
Species Caught	Number	Number
Chinook	810	1114
coho	24	40
black rockfish	37	0
Pacific mackerel	83	0
striped bass	5	0
lingcod	10	0
blue rockfish	4	0
thresher shark	3	0
spiny dogfish	2	3
jack mackerel	0	4
Pacific hake	0	2
Pacific sardine	0	2
steelhead trout	0	1
Total Salmon	834	1154
Total Species likely to benefit	51	0

# Comments on observer data

- General pattern is similar
- Very few trips
- Not sure if mode of fishing was dominant mode or only mode.

## Associated catch rates (lbs rockfish/lb salmon) while commercial trolling

Year	Bodega Bay	San Francisco	Monterey
2000	0.0020	0.0020	0.0030
2001	0.0010	0.0010	0.0030
2002	0.0000	0.0000	0.0010
2003	0.0000	0.0010	0.0010
2004	0.0000	0.0000	0.0010
2005	0.0000	0.0000	0.0050
average lbs salmon	910,155	1,771,968	1,072,658
average lbs rockfish per year 2000-2005	478	1302	2418

# Summary associated catch rates

- Commercial trolling - almost none
- Sport trolling >50 m – 1% or less
- Sport trolling <50 m – probably 2-5%
- Overall most catch is commercial, so overall rate would be 1-2%

# What this means in terms of exploitation rate on species likely to benefit

- Estimate density of “associated species” in state waters
- Calculate exploitation rate resulting from associated catch
- For reference 5%-10% per exploitation rate is a rough target for rockfish per year
- Rates that led to declines were 20-30%

# Some basic math

- If associated catch rate is 1% total associated catch is average 6,000 fish
- If rate is 10% catch is 60,000 fish
- These correspond to annual exploitation rates that are very low even with 10% associated catch rate, and assuming all salmon catch comes from NC Coast still estimate 1% exploitation rate

# Summary

- All the data available suggest that the species likely to benefit would be unaffected by salmon trolling at any depth