

This presentation was given  
by Greg Andrew, Marin  
Municipal Water District,  
at a meeting of the Statewide  
Coho Recovery Team, March  
1, 2016

Please note that any views given in  
this presentation do not necessarily  
represent those of California  
Department of Fish & Wildlife

# Salmon Spawning in Lagunitas & Walker Creek MMWD Fisheries Program

Gregory Andrew (MMWD) Coho Recovery Team Meeting  
March 1, 2016 Sacramento, CA

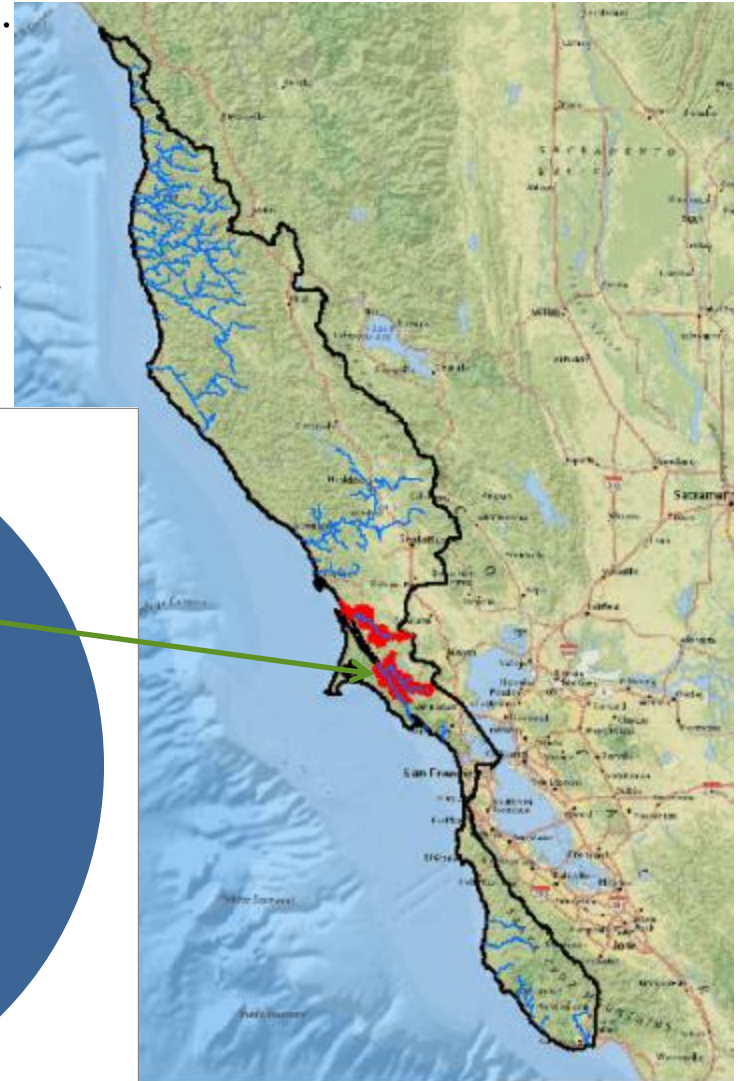


# BACKGROUND

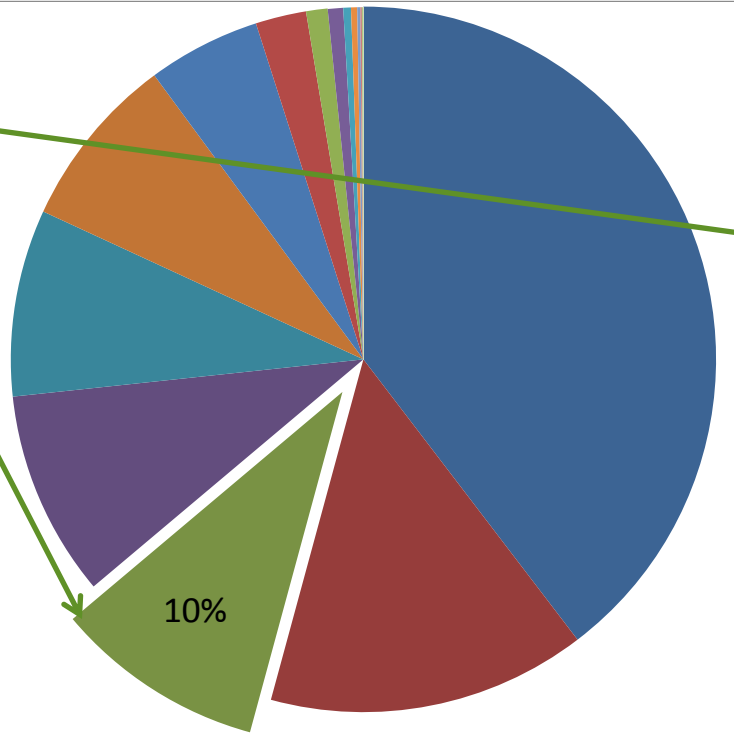


# Central California Coast Coho Salmon

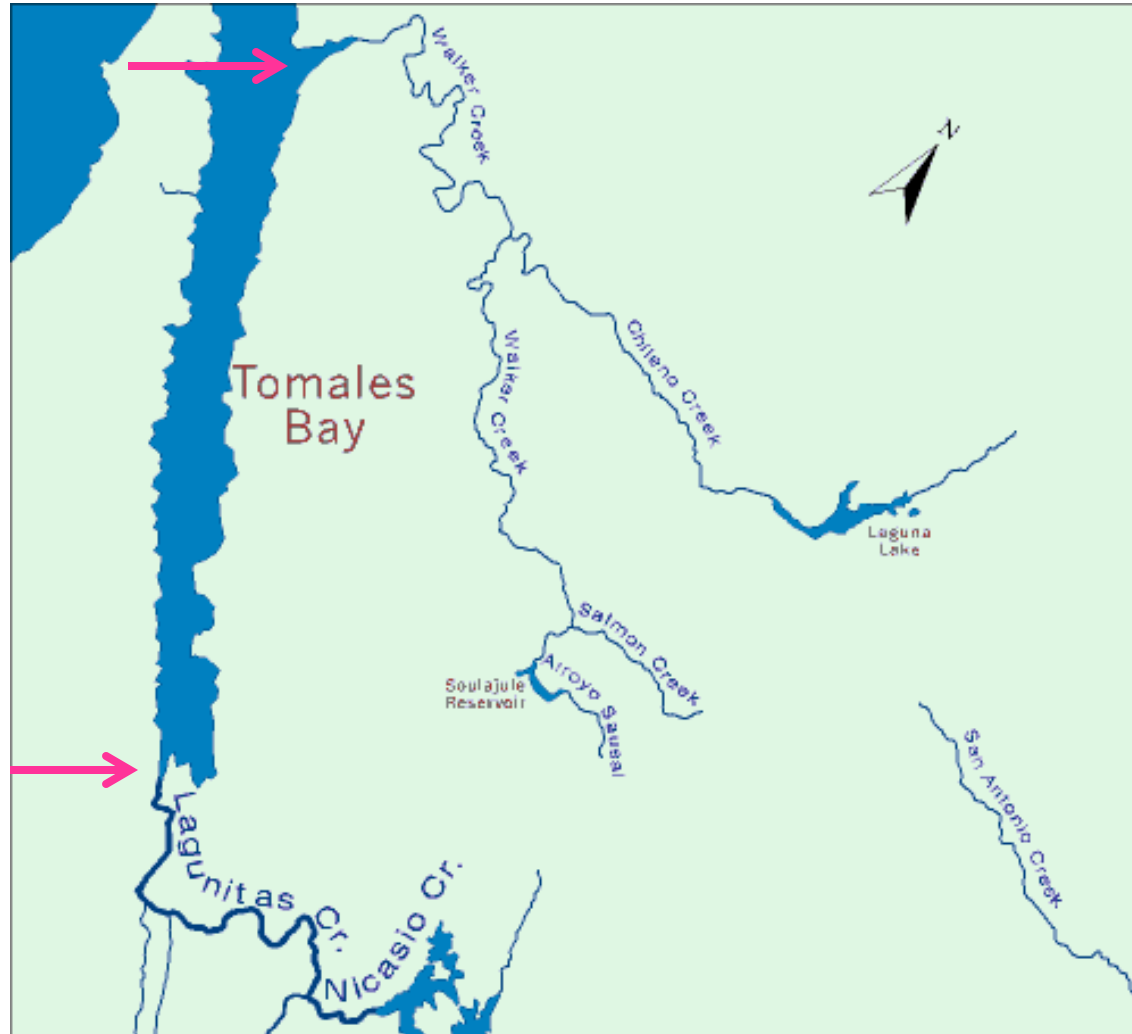
- Coho salmon within the Central California Coast (CCC) “*Evolutionarily Significant Unit*,” are genetically similar. Coastal drainages from Punta Gorda (Mendocino County) south to the San Lorenzo River (Santa Cruz County).
- Lagunitas Creek coho comprise 10% of the CCC population.



- Ten Mile River
- Pudding Creek
- Lagunitas Creek
- Big River
- Navarro River
- Noyo River
- Russian River
- Albion River
- San Vicente Creek
- Caspar Creek
- Usal Creek
- Redwood Creek (Marin Co)
- Scott Creek
- Little River
- Pine Gulch
- San Lorenzo River
- Garcia River
- Pescadero Creek
- Gazos Creek
- Waddell Creek
- Aptos Creek

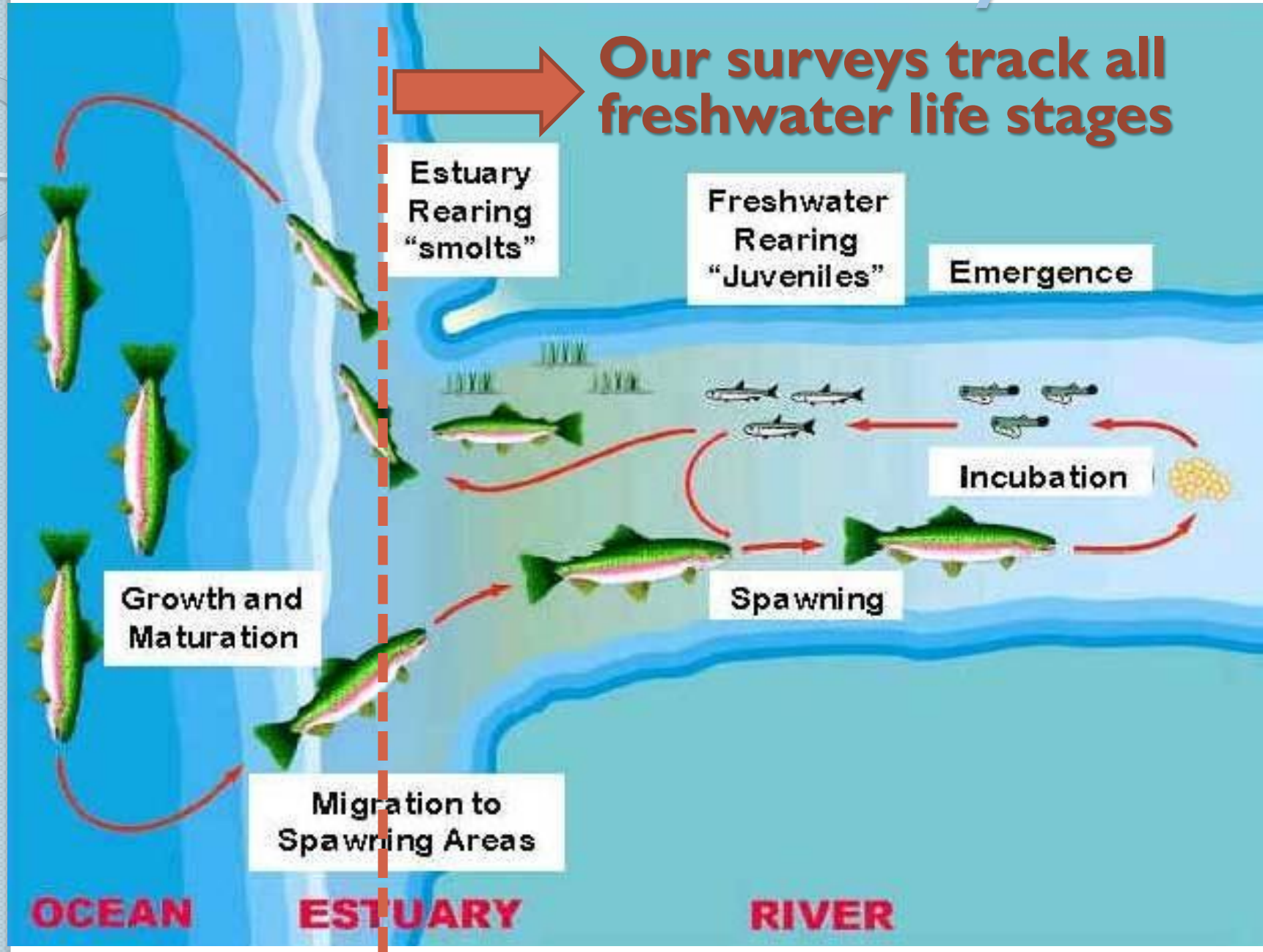


# No Sand Bars into Lagunitas or Walker



- No sand bar forms at the creek mouth, which is somewhat unique for coastal California streams.
- This means salmon and steelhead can migrate into or out of the creek without waiting for the creek mouth to be open for passage.

# Salmon & Steelhead Life Cycle



# SPAWNER SURVEYS





# Spawning



# Spawning



# Surveys



- Finding fish and redds

# Surveys



- Measure redd dimensions(length X width)

# Surveys



- Flag & GPS redd locations in the creek

# POPULATION TRENDS

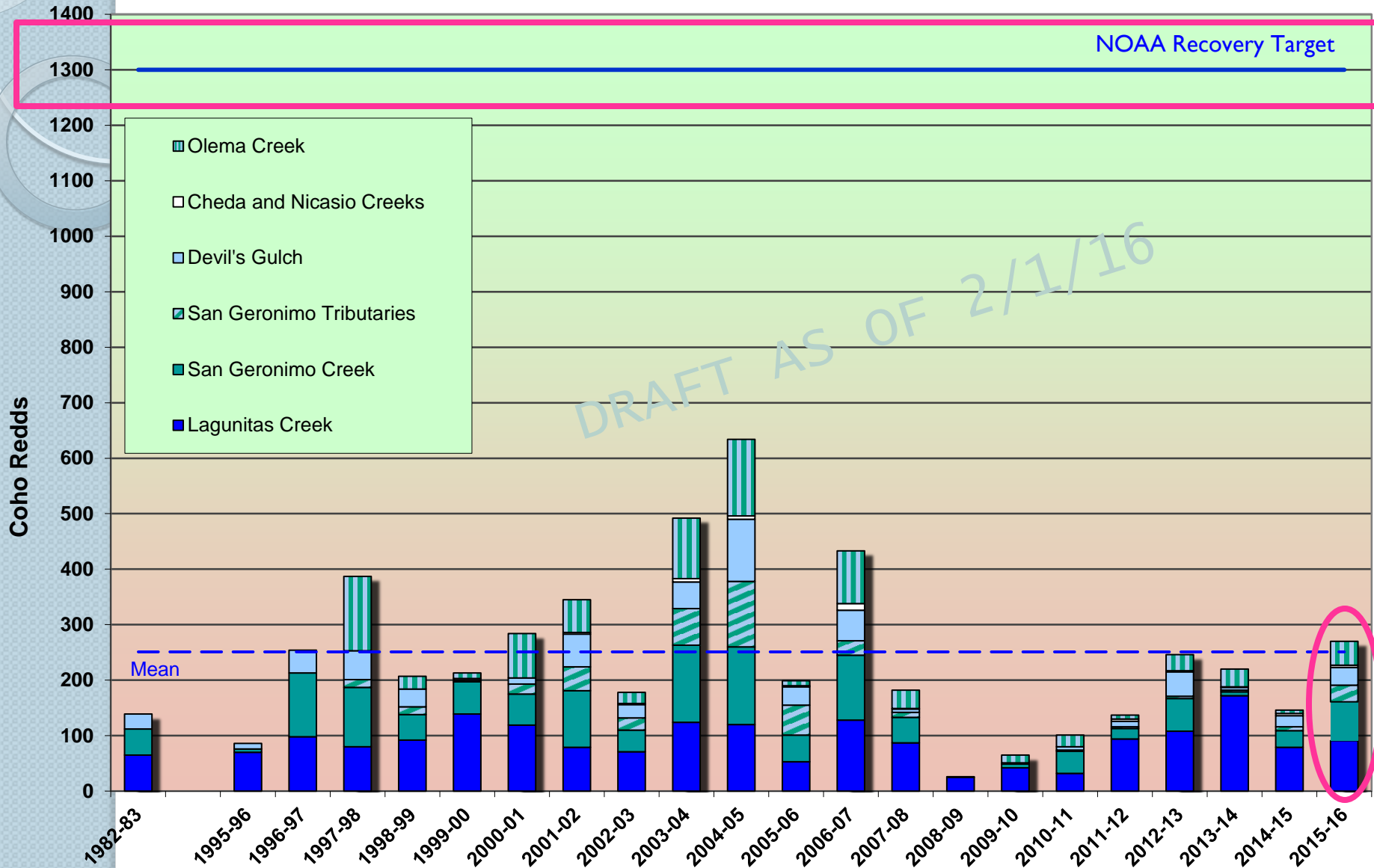


# Adult Spawning – Lagunitas Creek

**DIDSON**



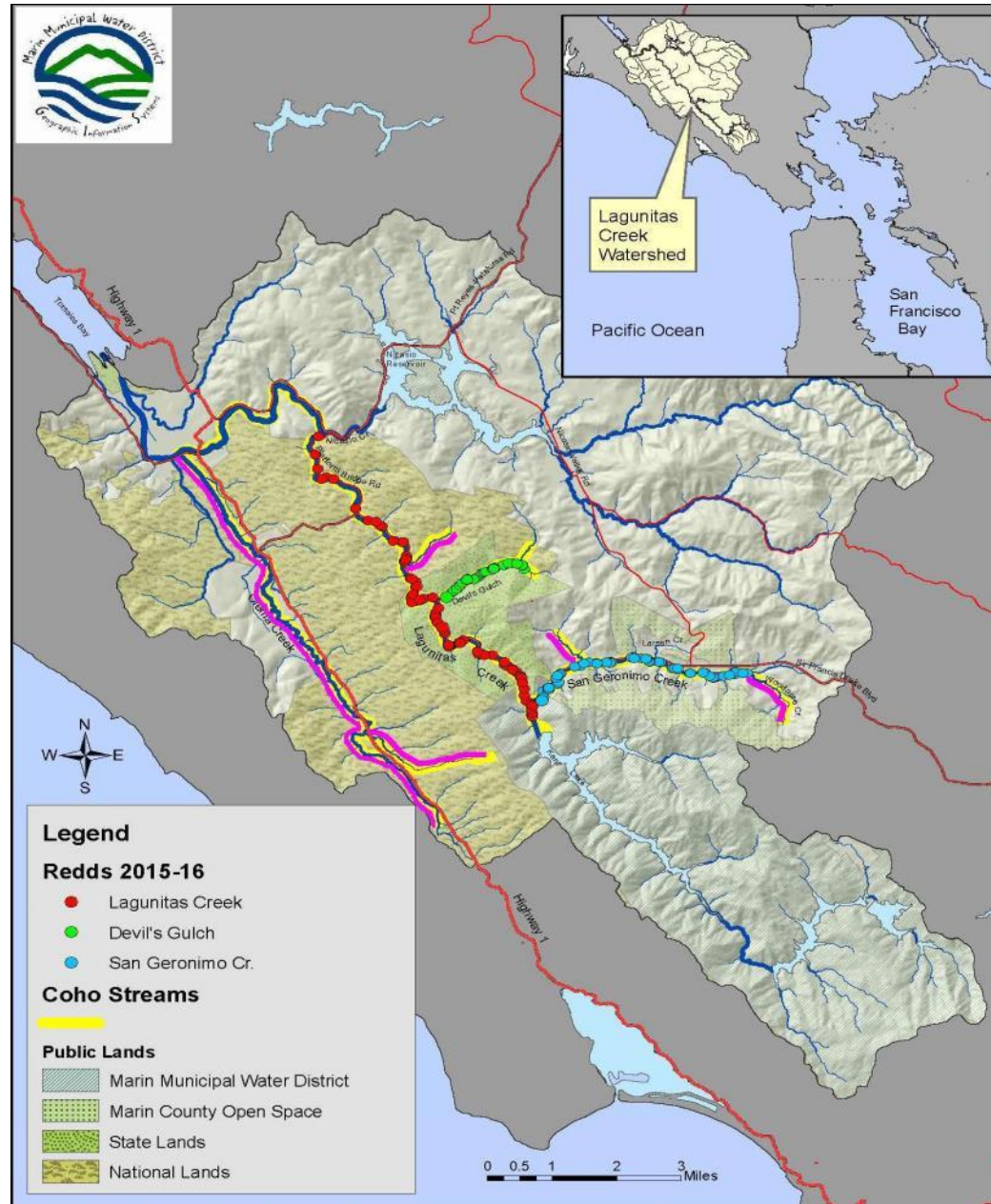
# Coho Trends – Lagunitas Creek



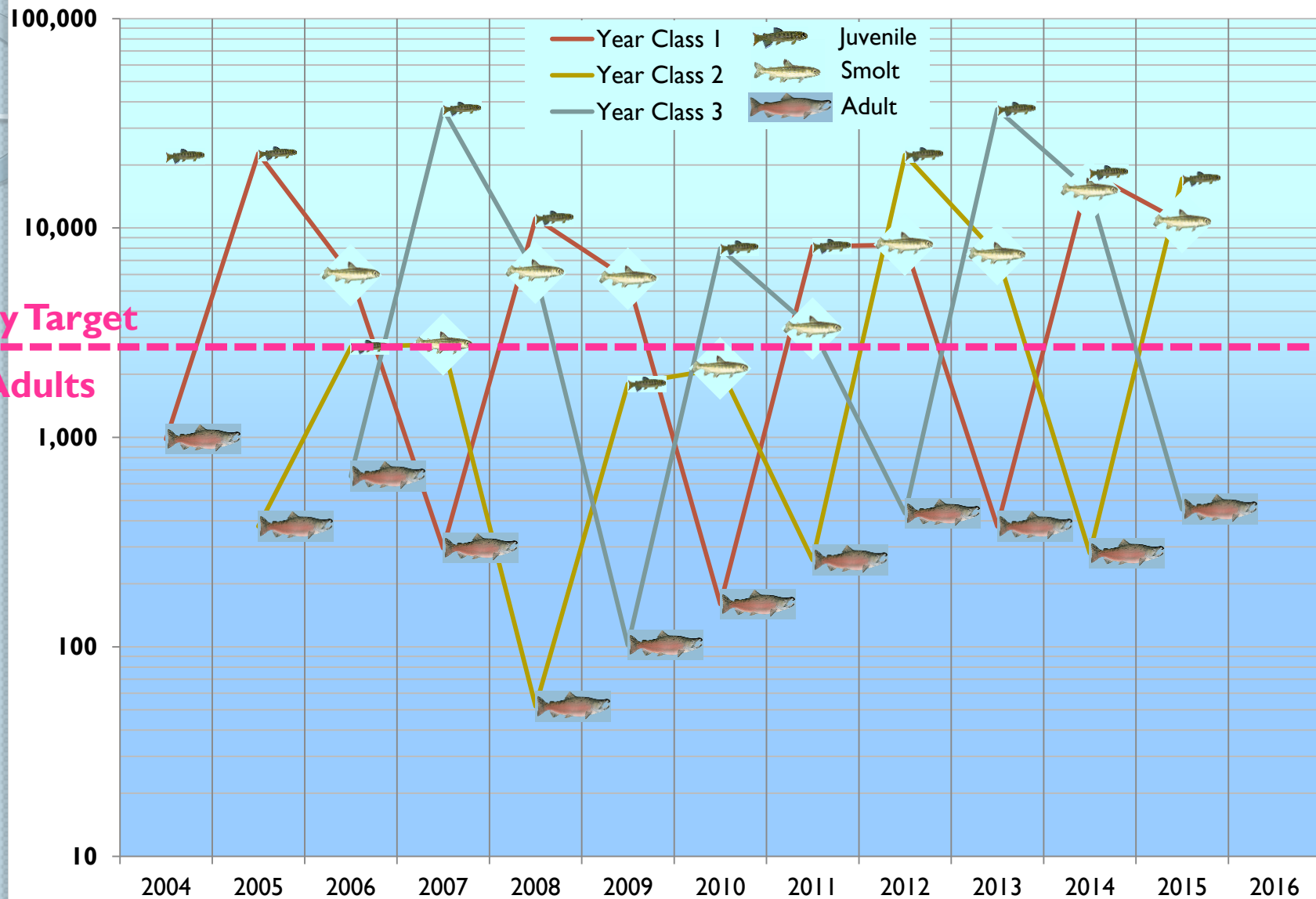
Notes: The NOAA recovery target is 2,600 adults by the year 2120, or 1,300 redds assuming two fish per redd. The current year class is indicated by shadow.



# Adult Spawning – Lagunitas Creek



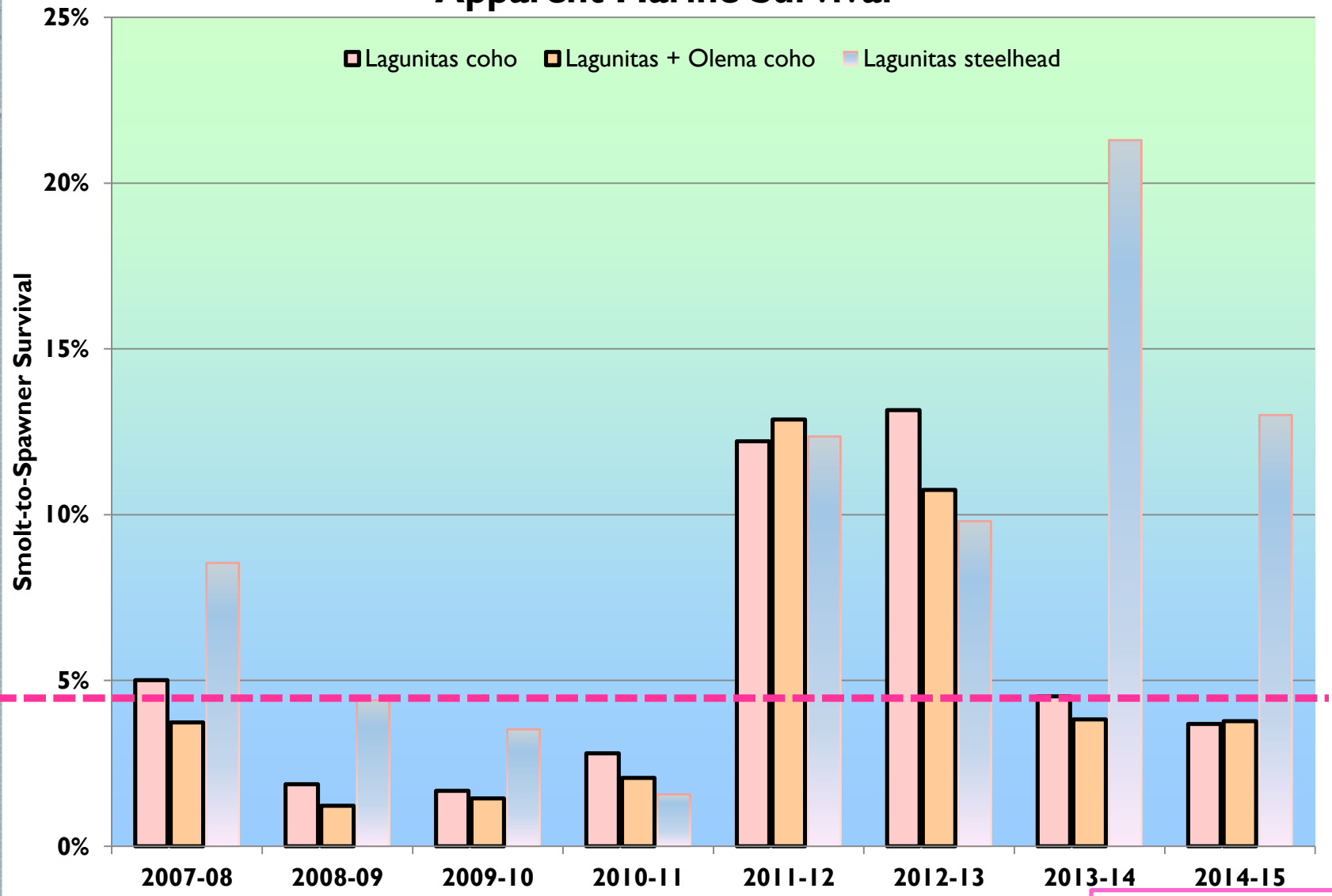
# Coho Year Class & Life Stage Trends



Recovery Target  
2,600 Adults

# Marine Survival

## Apparent Marine Survival



Mean  
4.7%

2015-16 = 2.8%

# Adult Spawning - Walker Creek



Figure 1. Salmonid redds in Walker Creek, 2015-16

# Adult Trends - Walker Creek

Years	Coho Released	Life Stage Released	Coho Redds	Adult Coho	Steelhead Redds	Adult Steelhead
2003/04	80*	Adults	2	80*	11	22
2004/05	87*	Adults	4	87*	1	2
2005/06	40*	Adults	0	40*	0	0
2006/07	3,400	Smolts	7	14	19	38
2007/08	57*	Adults	4	57*	46	92
2008/09	500	Fingerlings	1	2	17	34
2009/10	0	-	2	4	12	24
2010/11	6,500	Fingerlings	0	0	0	0
2011/12	12,000	Fingerlings	0	0	36	72
2012/13	10,000	Fingerlings	1	2	18	36
2013/14	7,000	Fingerlings	6	12	33	66
2014/15	7,600	Fingerlings	10	20	0	?
<b>2015/16</b>	<b>2,200</b>	<b>Fingerlings</b>	<b>31</b>	<b>62</b>	<b>6</b>	<b>12</b>

\* Adult coho in Walker Creek are those released during stocking



# Adult Spawning - Walker Creek



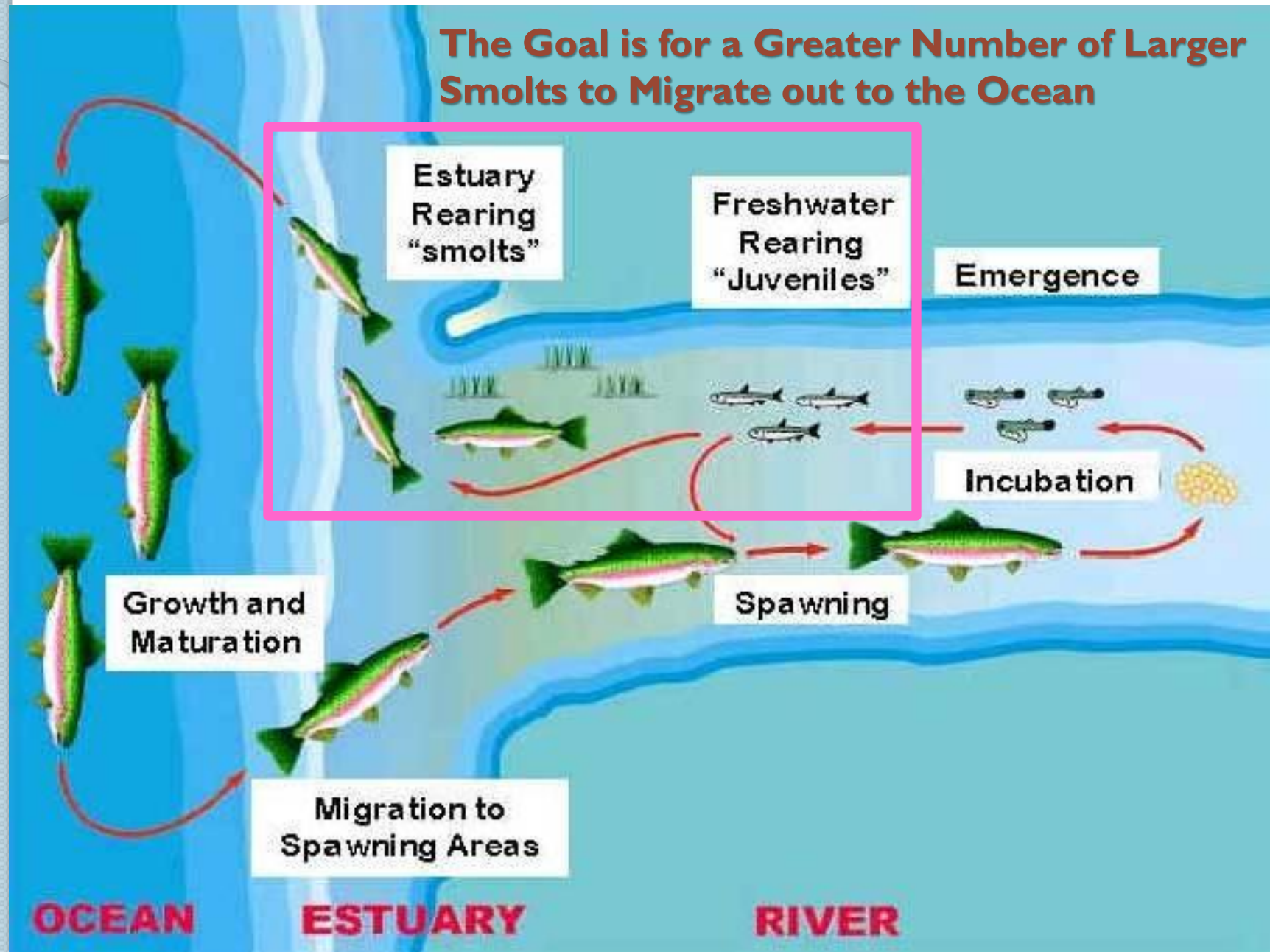
Figure 1. Salmonid redds in Walker Creek, 2015-16

# RECOVERY ACTIONS



# Winter Habitat Enhancement

The Goal is for a Greater Number of Larger Smolts to Migrate out to the Ocean





# CMP Sample Frame Development



# Thank You



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