

Snake River Fall Chinook

Then and now



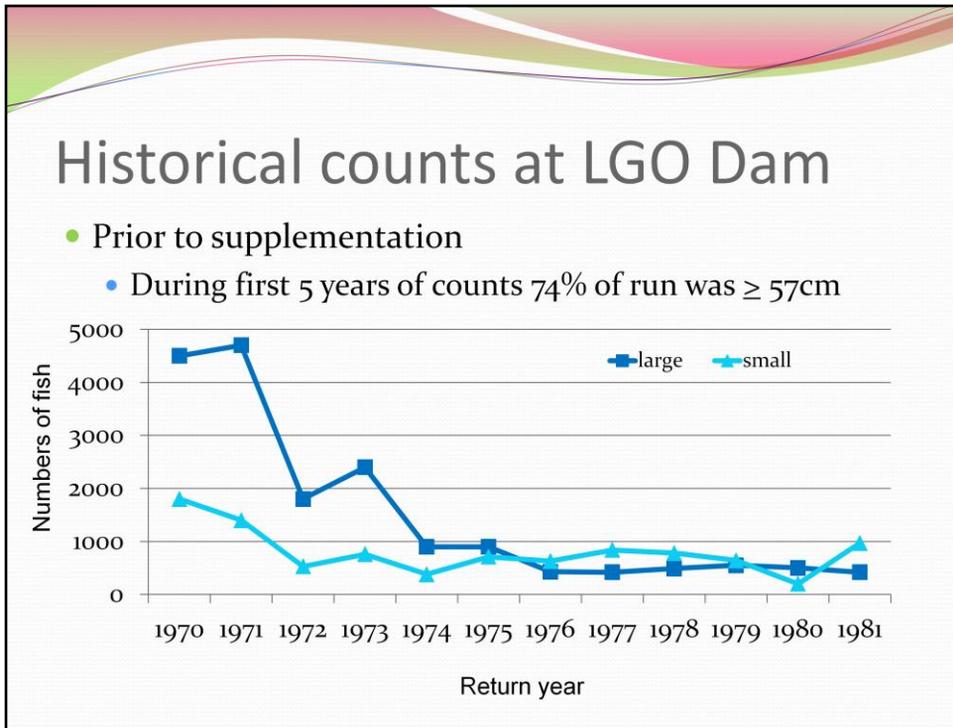
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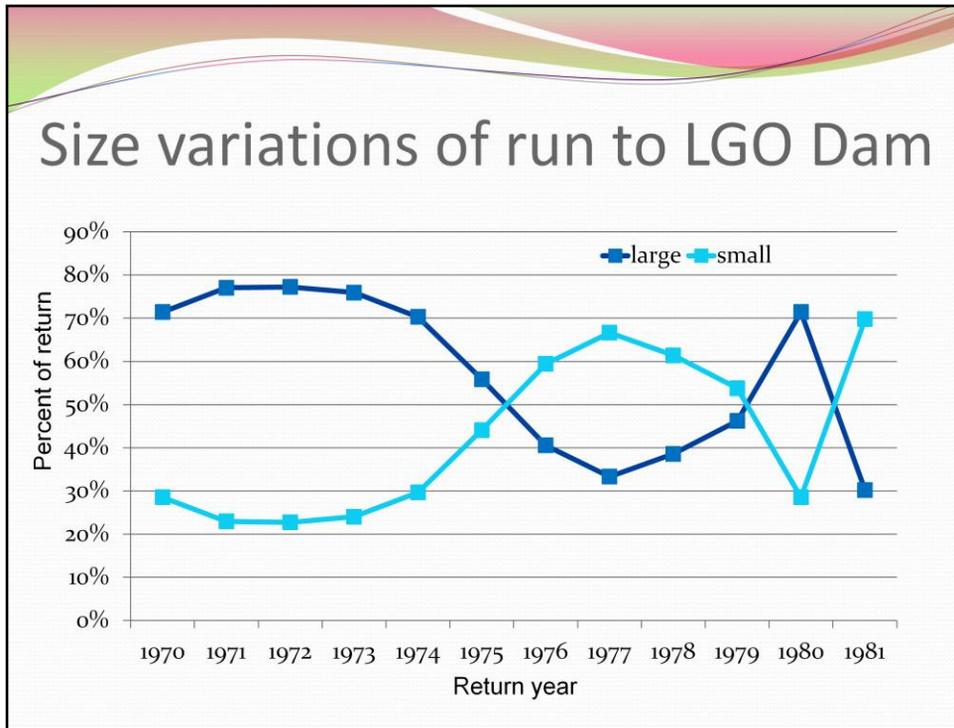


Questions

- What did the runs look like prior to supplementation?
- What do the natural fish look like today?
- What did the hatchery fish look like when supplementation began?
- What do the hatchery fish look like today?
- Any trends?



These are the first wild counts to LGO. Tell purpose of why showing this slide. Age at maturity strongly adults to more jacks than adults it appears based on size



During first 5 years of counts 74% of run was ≥ 57 cm

Proportion of fish > than 57 is highly variable

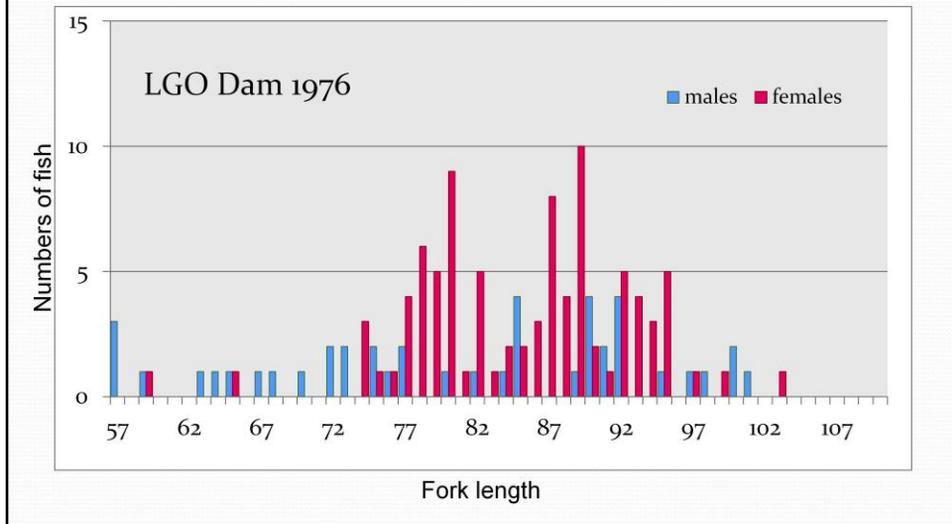


First data on fork lengths of run at LGO Dam

- 1976 return
- Pre-supplementation
- 30.9% of the adult run was measured
- No age data available

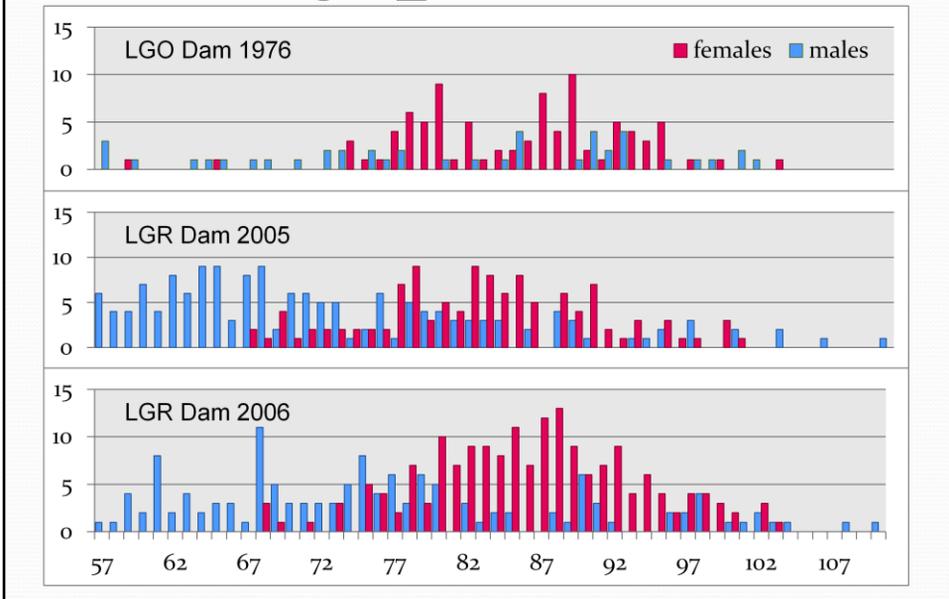
These are the first lengths recorded on Snake R fall Chinook

Salmon ≥ 57 cm fork length



Maybe add % F in large size category

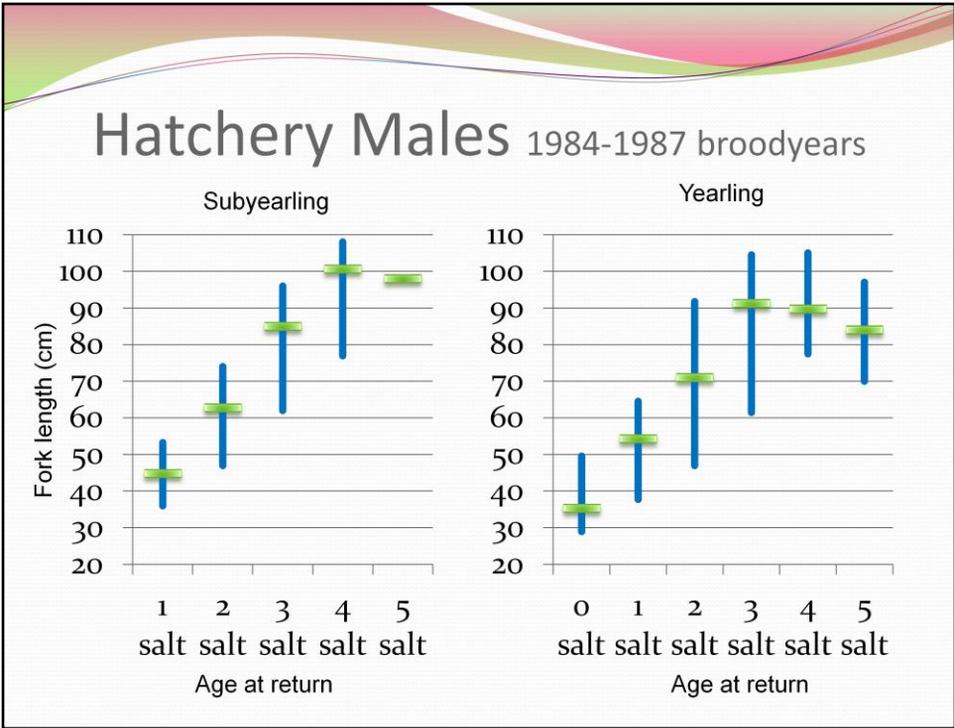
Natural origin ≥ 57 cm



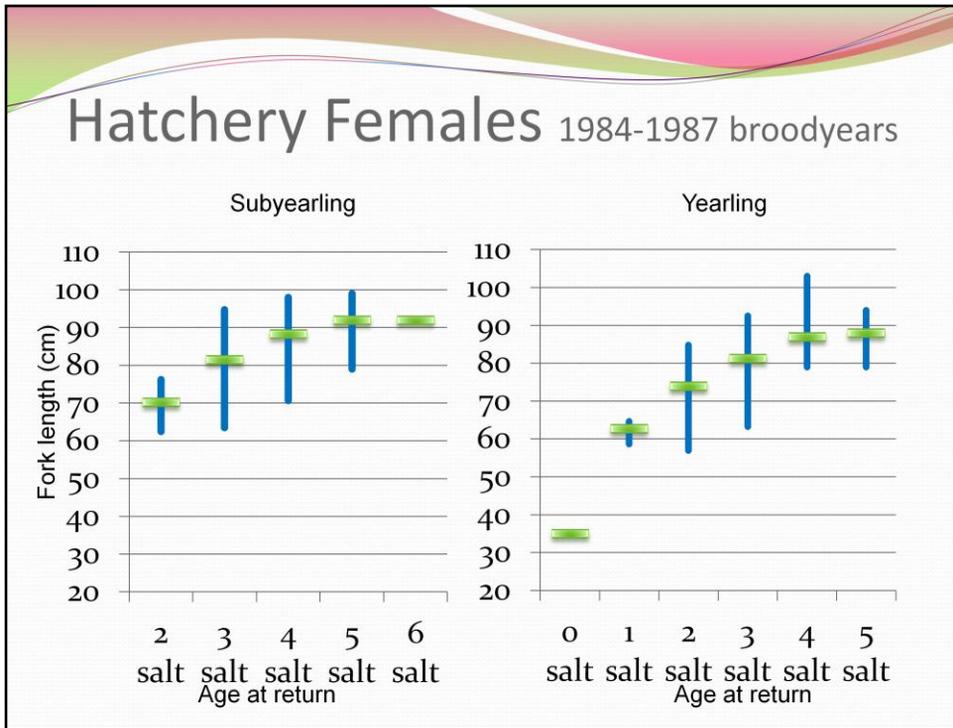
Unfortunate lack of data on age back then and just a snapshot on sizes

Supplementation (1984-1987)

- Two release strategies
 - Yearling
 - Subyearling
- To compare subyearling size and yearling size at return we will be using salt water age
- Males and females were evaluated separately because differences in ages at return



Subs on the left and yearlings on the right. Wide range in size at return for each of the groups, yearling males returning as 0 salts but not subyearlings

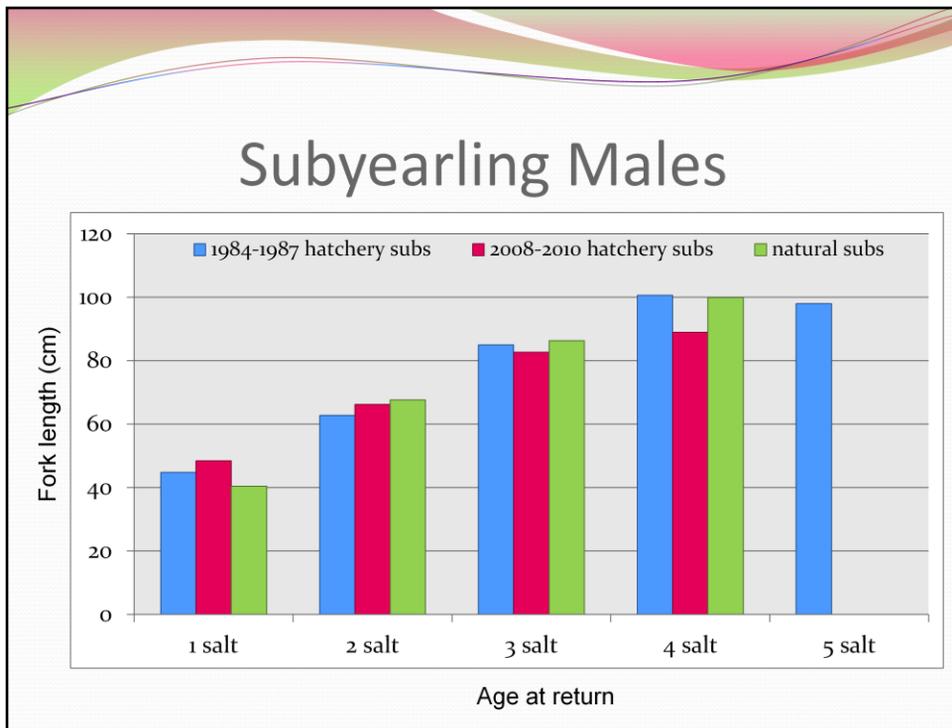


Again wide range in fork lengths for each return year and yearling females return as 0 and 1 salts but not subyearling. 6 salt subs do occur but they are rare. Note the 0 salt is a single fish



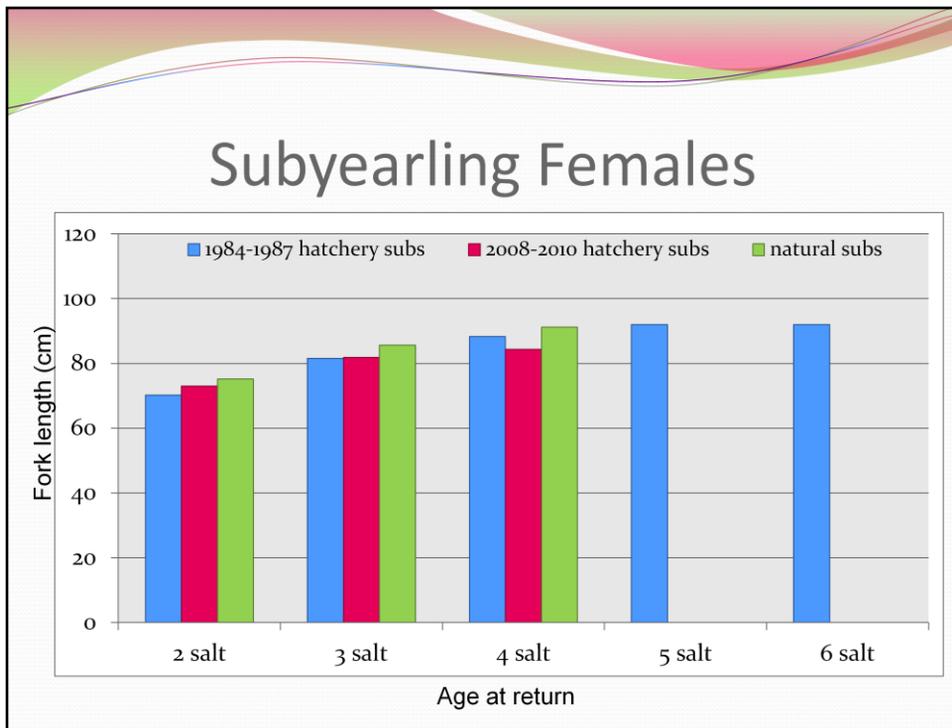
Has length at age changed and how does that compare to Natural origin fish?

- Full brood year data from 1984-1987 broods (hatchery)
- Returns of CWT hatchery fish from 2008-2010
- Fork length data from 2004-2006 returns (natural)

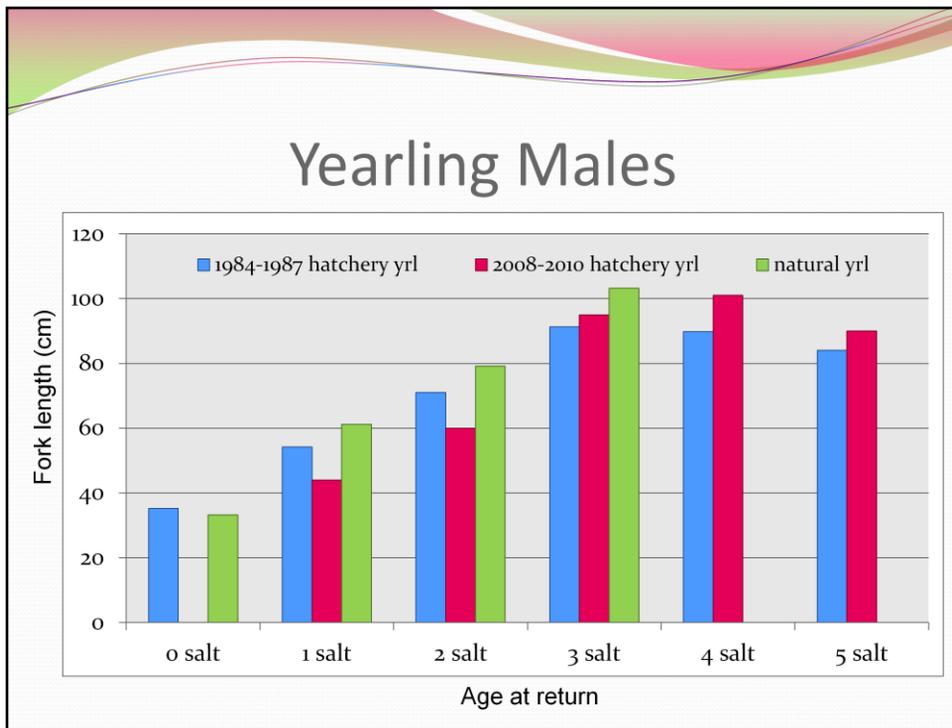


Blue are hatchery fish at start of supplementation, red are hatchery fish now and green are natural origin fish.

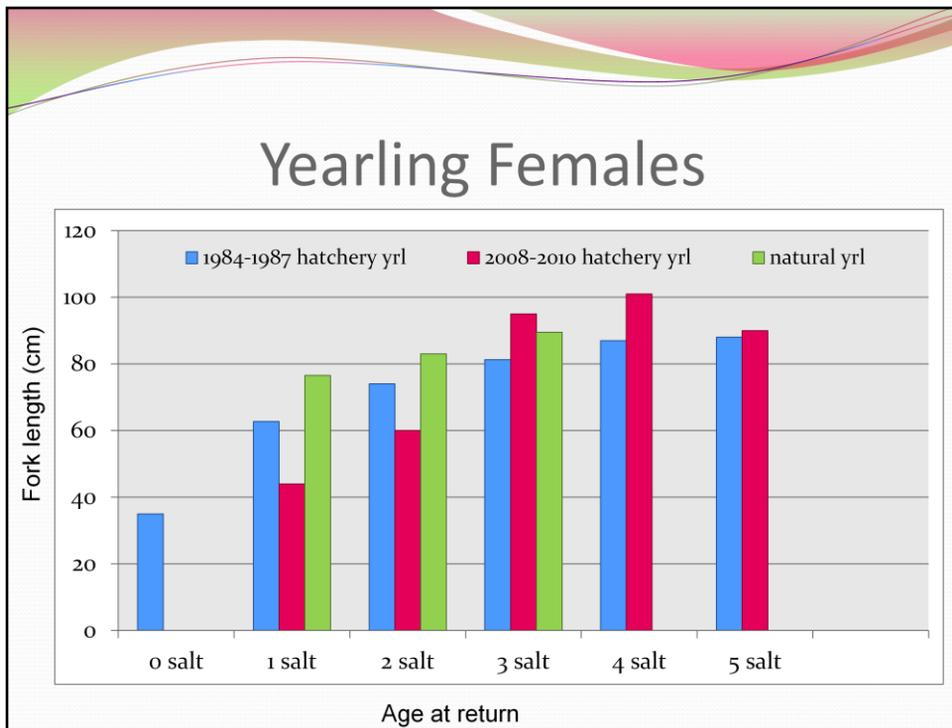
At beginning of supplementation the hatchery subs were similar in length to the natural origin subs, but when we compare them to our current hatchery subs, it appears our subs are slightly decreasing in size from the beginning of the program.



For subyearling females seem to be similar to the natural origin fish but at the 4 salt age it appears our current supplementation fish are returning smaller. Age 5 and 6 salt fish are small sample sizes.



The current yearling program shows a decrease in size of fish at return when compared to earlier supplementation and natural origin returns. This occurs until the fish reach 3 salt age then the current supplementation fish return at a larger size. Due to small sample size of natural origin fish we did not see 4 and 5 salts.



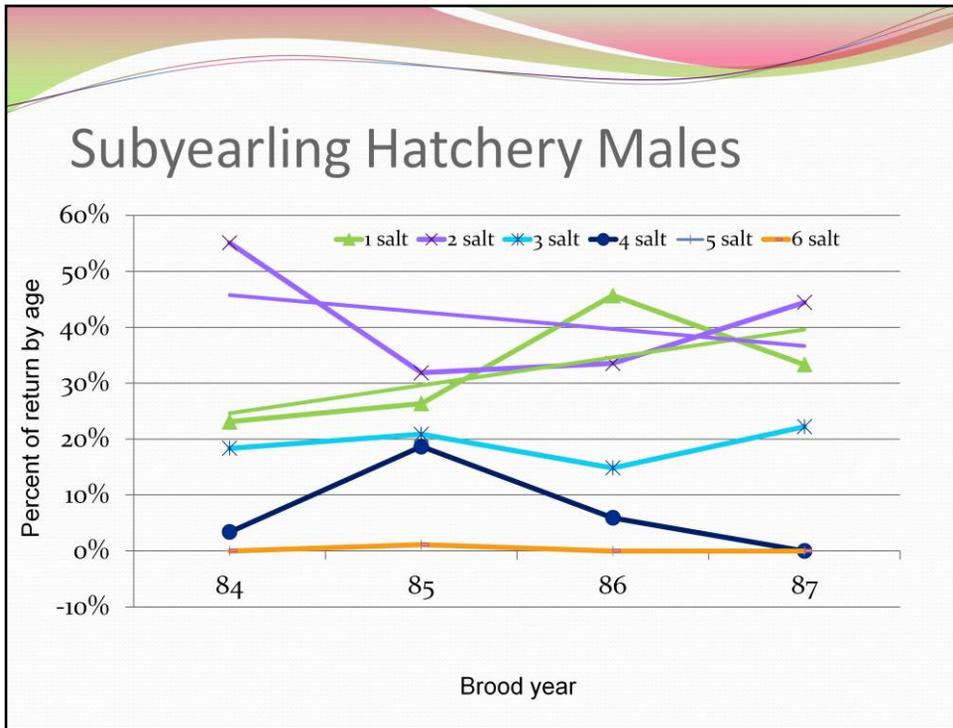
Hatchery yearling females have decreased in size at return until they reached the age of 3 salts then it appears they are returning at larger sized than the early supplementation and natural origin fish. Again, the 0 salt fish is a single fish.



Age at return data

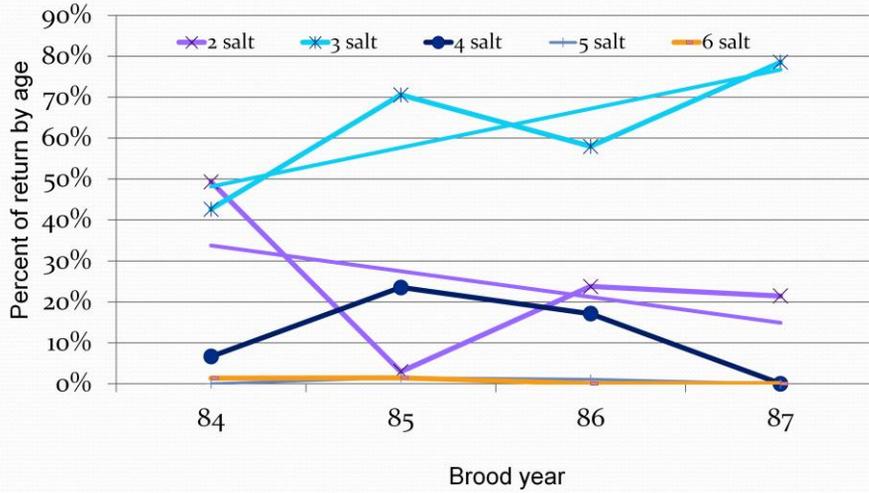
- We can only estimate for hatchery fish
 - Early supplementation (1984-1987 broods)
 - Late supplementation (1994-2003 broods)

Sample size

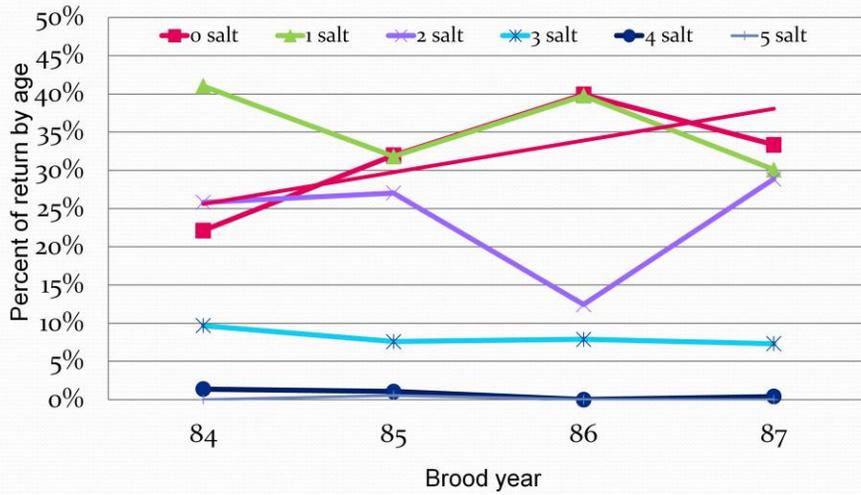


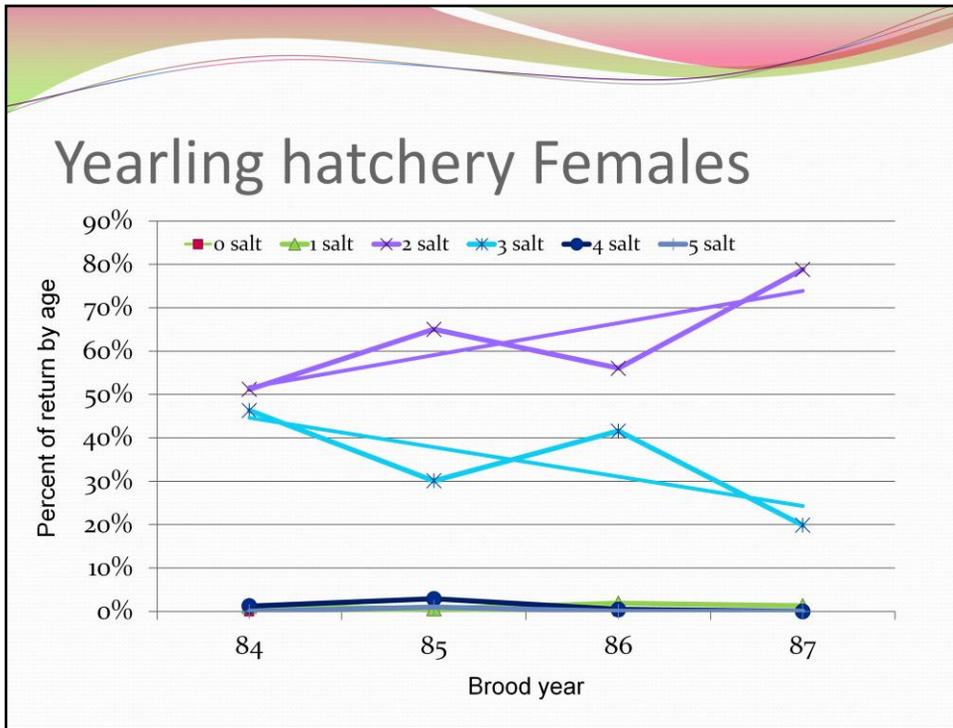
Trend line suggests that we are seeing an erosion of 2 salts and an increase of 1 salts

Subyearling hatchery Females



Yearling hatchery males



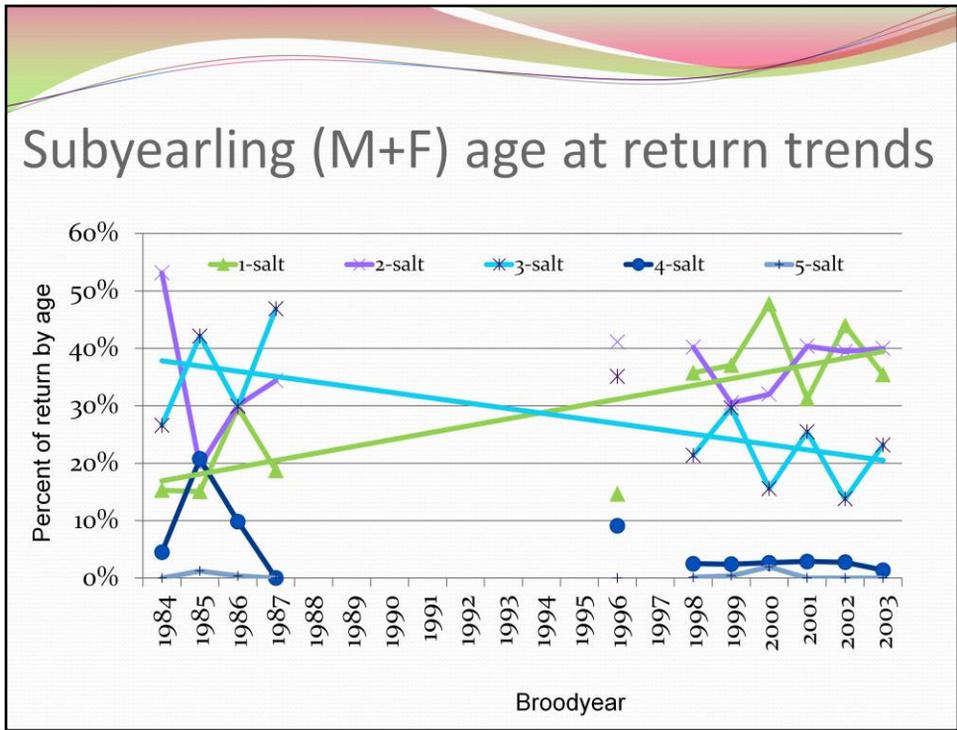


Increase in 2 salt decrease in 3 salts

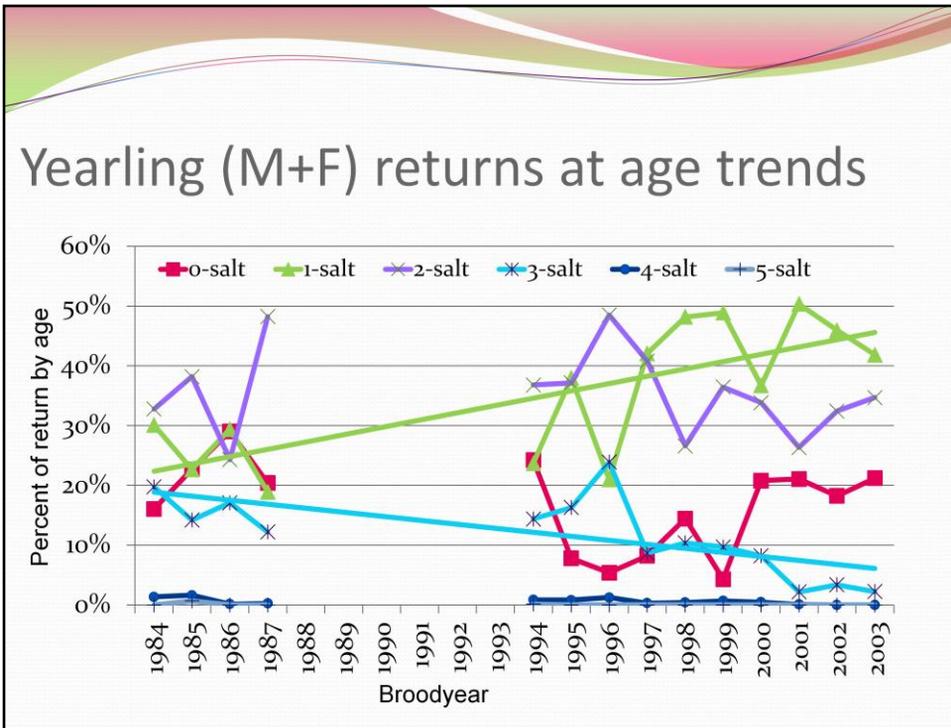


Trends over time

- Hatchery supplementation 1984 -2003 broodyears

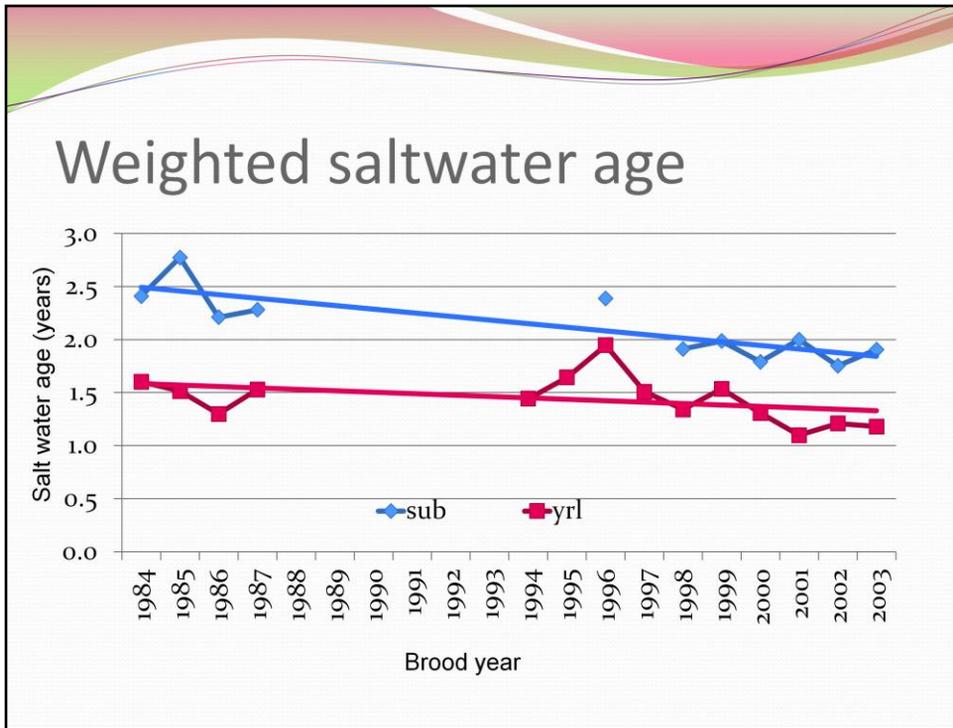


Increased trend in percent of age 1 and 2 salt and decrease of age 3.



Increase in 0 salts, increase in 1 salts

Decrease in 3 salts, 4 and 5 steady but rare



Completed brood years. Calculated for the hatchery subyearling and yearling groups as a whole.

Natural origin summary

- The sex composition and size of natural origin fish ≥ 57 cm is similar to 1976 run
- Lack scale data for historical benchmark for age
- Reservoir reared naturals are longer than natural origin subyearlings, hatchery subyearlings, and hatchery yearlings for both males and females when comparing saltwater ages
- Reservoir reared fish return at younger saltwater ages than subyearling natural origin fish
- Lacking age at return data for full broodyears

Supplementation Summary

- Subyearlings
 - Late supplementation hatchery subyearlings are similar in length at salt water return to early supplementation subyearlings
 - Return at older saltwater ages than yearlings
 - Trending towards a decrease in mean weighted saltwater age at return
 - Trending towards an increase in 1 salts, decrease in 3 salts

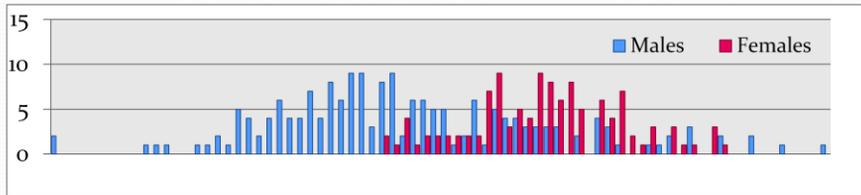
Supplementation Summary

- Yearlings

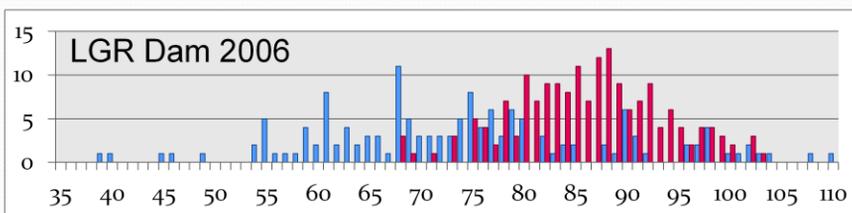
- Return at younger ages than subyearlings
- Return at larger sizes than subyearlings by saltwater age until 4 salts, then subyearlings are larger
- Late supplementation yearlings return at smaller sizes than early supplementation yearlings
- Trending to younger weighted saltwater age at return
- Trending towards and increase in 1 salts and a decrease in 3 salts

Natural origin ≥ 30 cm

LGR Dam 2005



LGR Dam 2006



Consider deleting this and adding % of run that were less than 57 for each of the years