

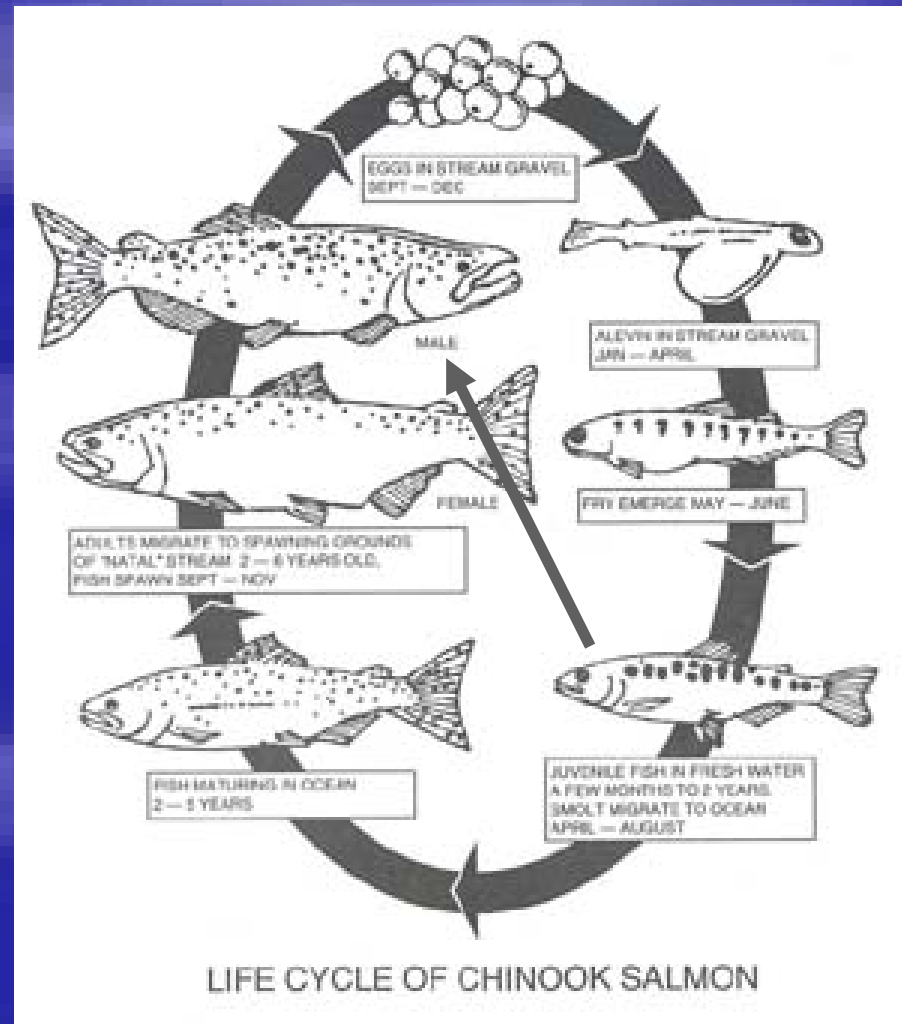
# Precocious Wild and Hatchery Spring Chinook on the Spawning Grounds

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# Chinook Life-History

- Chinook salmon are typically anadromous but some complete their entire life in freshwater – precocious (age 0+ and age 1+)





- Hatcheries have the potential to unintentionally produce high or low numbers of precocious males
- Artificially high or low number of precocious males may harm wild populations

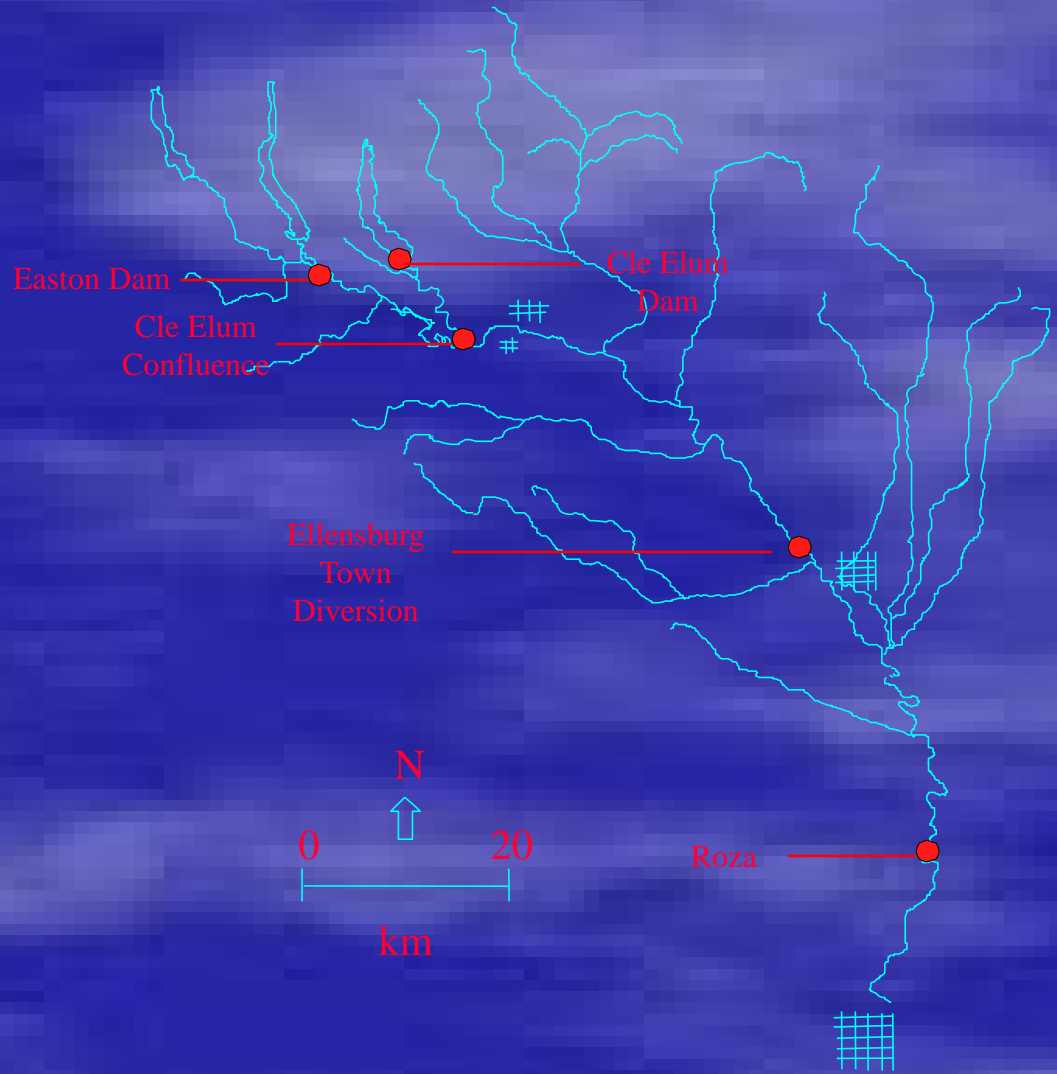
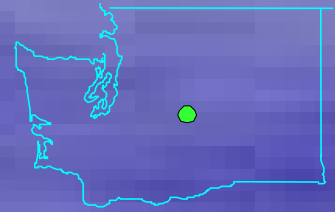


# Study Objectives

- Determine if the Cle Elum Supplementation and Research Facility alters the distribution, abundance, age/size, and behavior of precociously maturing males in the natural environment.
- Focus on potential differences in observations between 1999-2003 and the first release year of precocious males subjected to growth modulation, 2004.

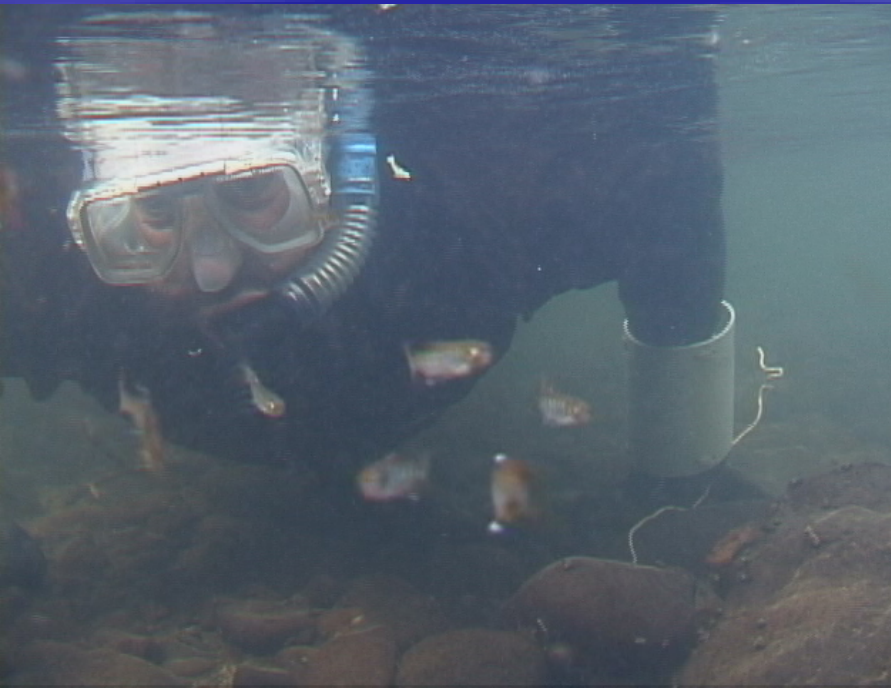


# Study Area



# Methods

- Peak of spawning snorkeling surveys
- Behavioral interactions on redds
- Fall abundance estimate of HSPC (drift boat electrofishing)
- Backpack electrofishing / hook and line sampling

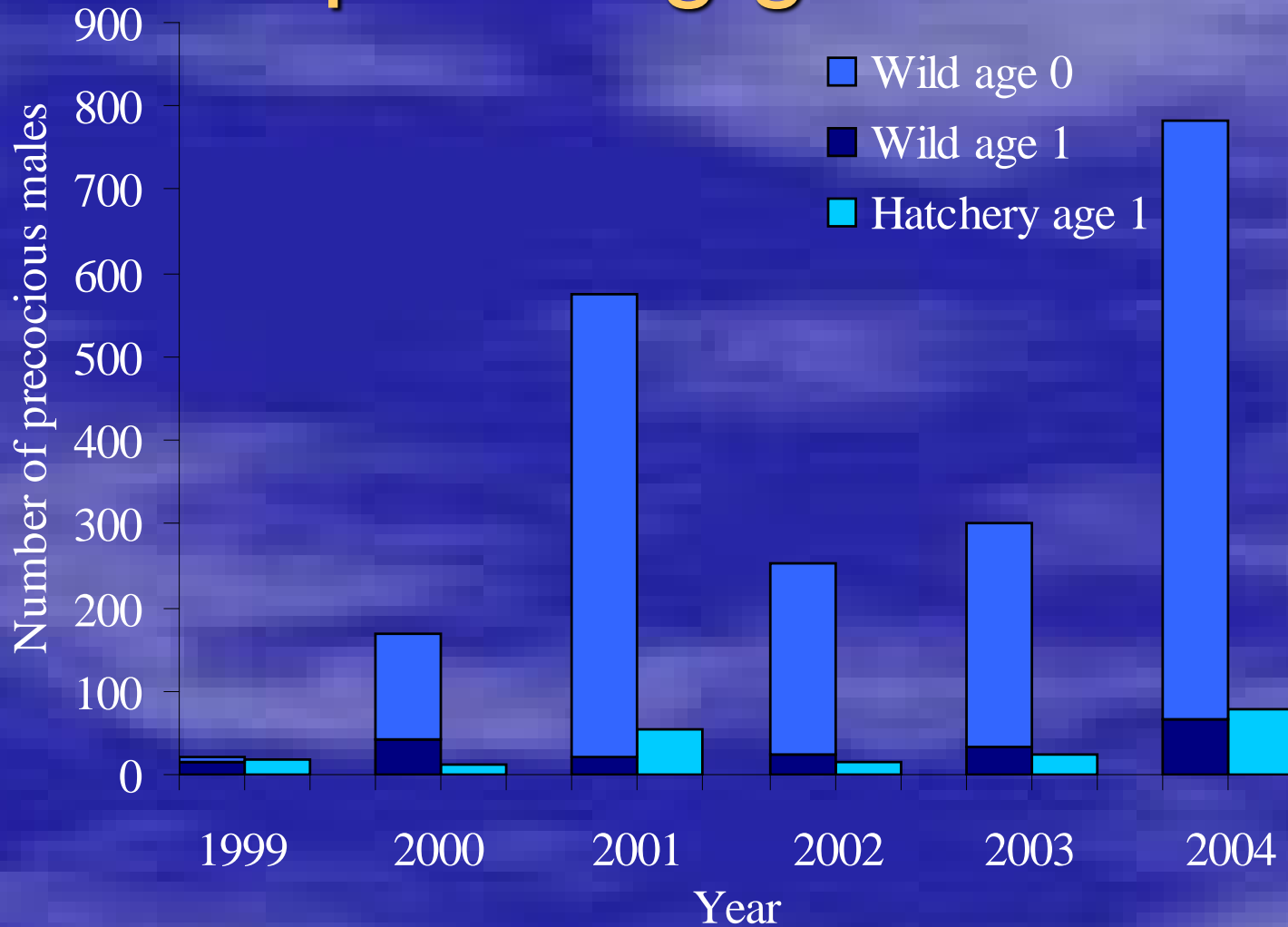


# 1999-2003

- Low numbers of hatchery spring Chinook observed on the spawning grounds relative to wild
- Hatchery precocials were most abundant in areas of low spawner density
- Hatchery spring Chinook were significantly larger than both wild age classes

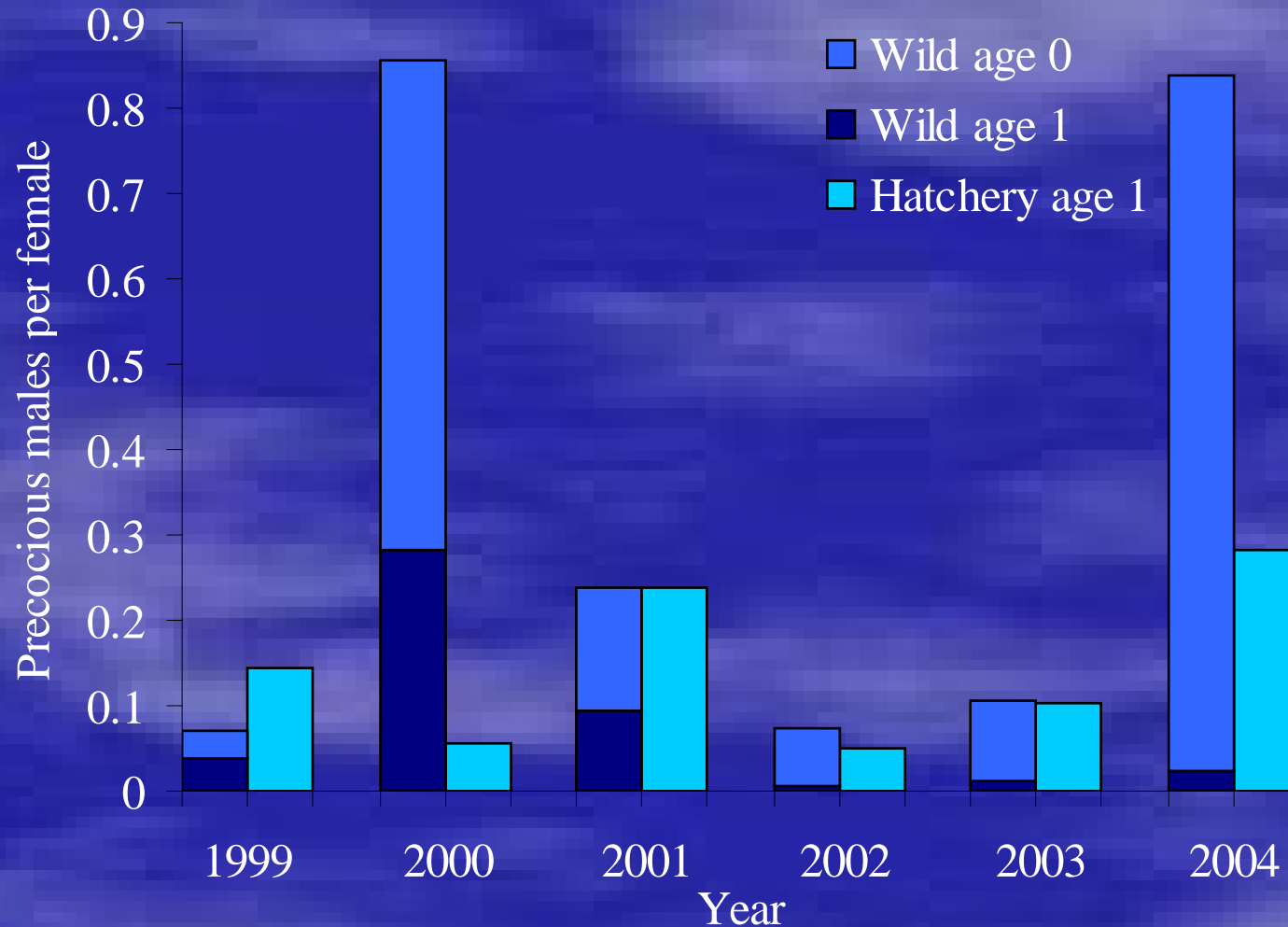


# Index of abundance on the spawning grounds

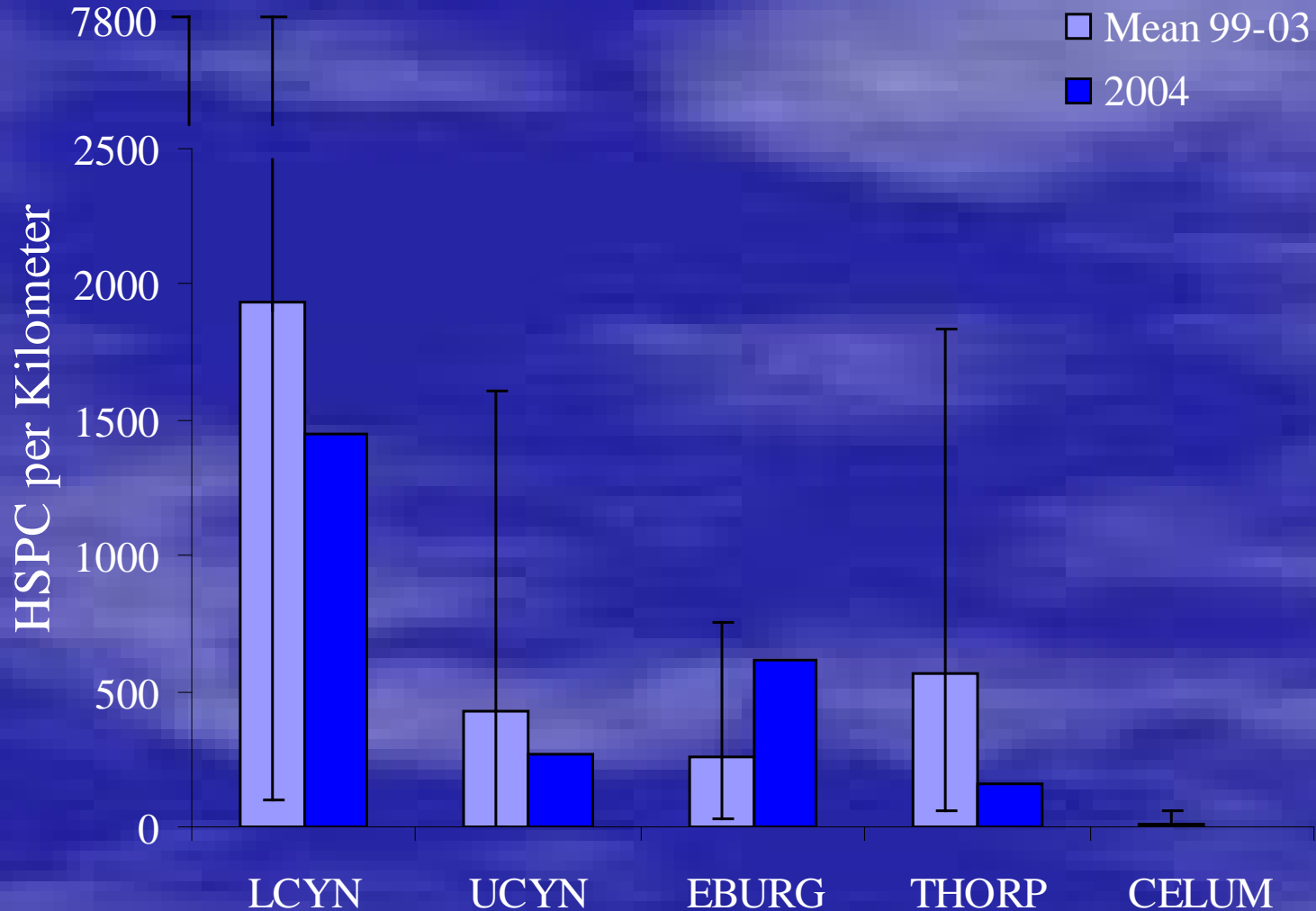




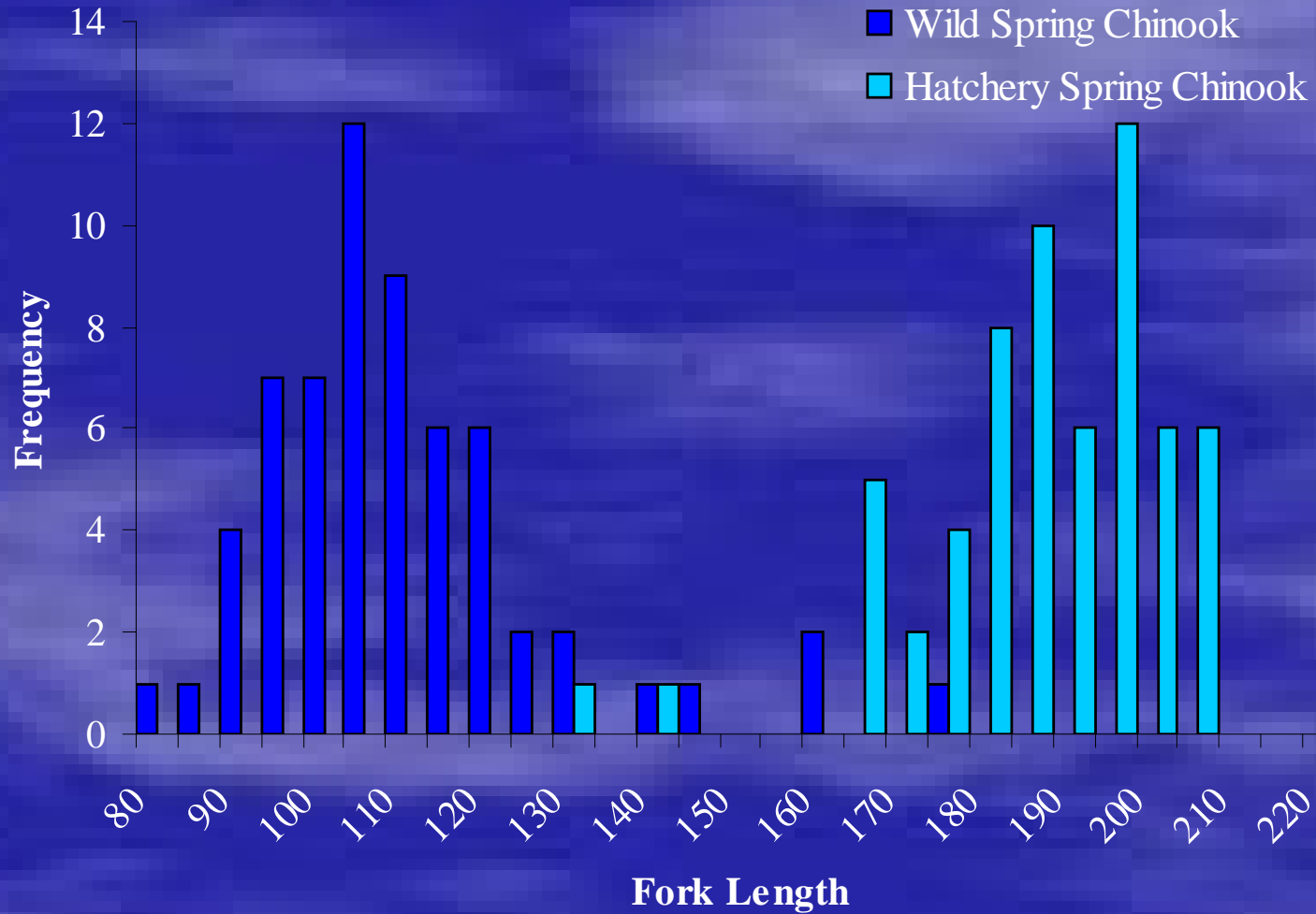
# Index of precocious males per female parent



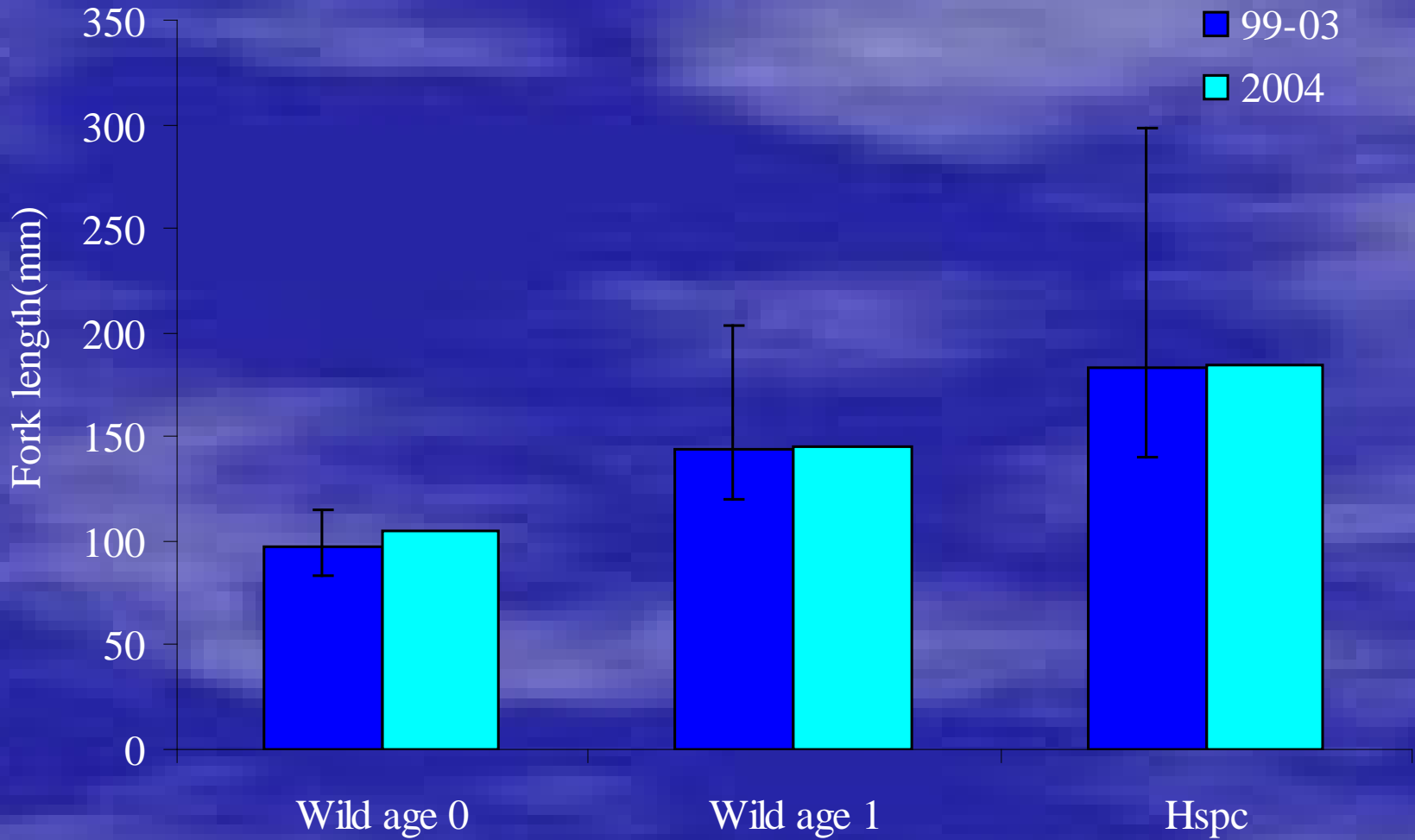
# Distribution off the redds



# Length Frequency 2004

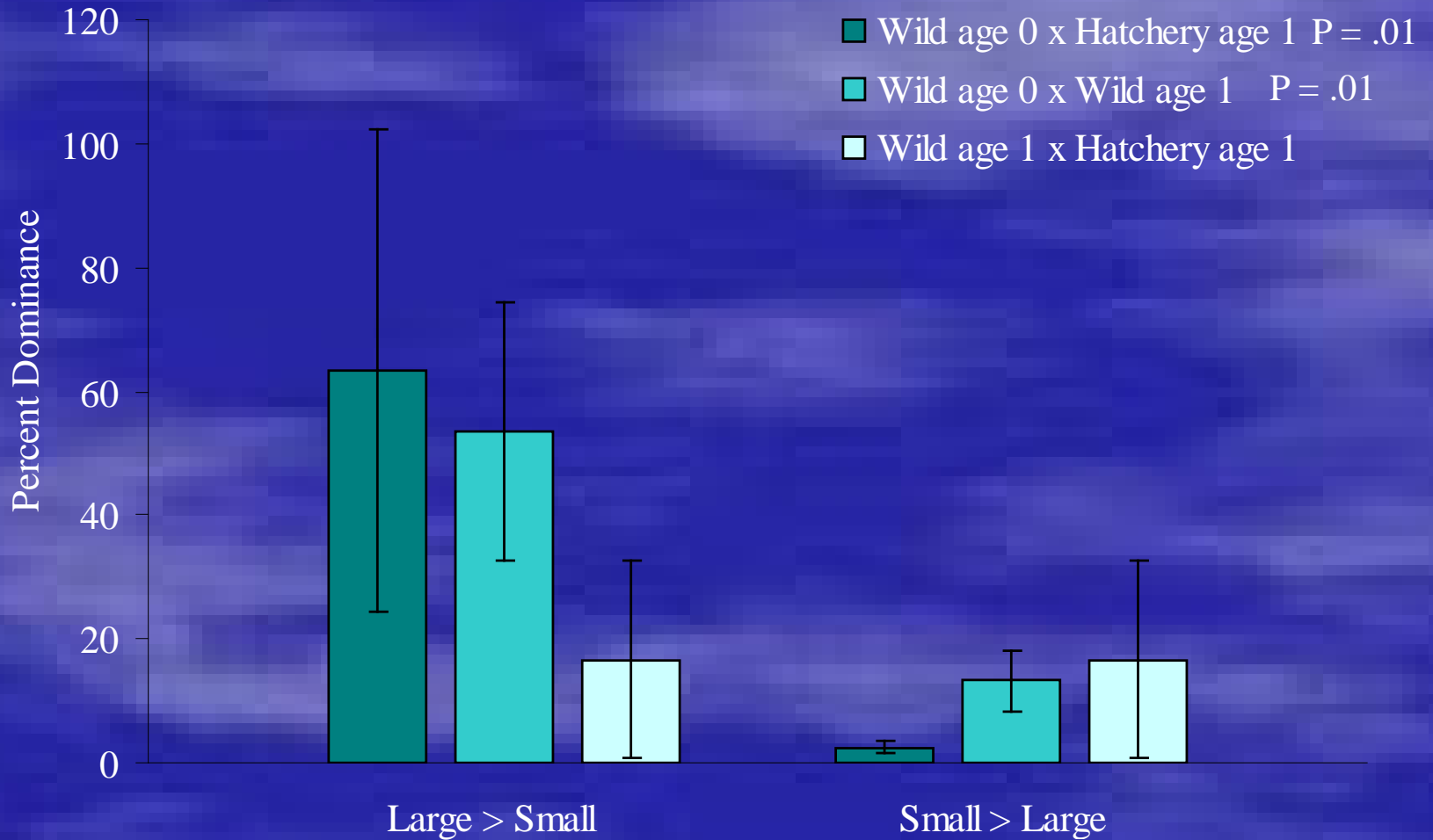


# Size



# Dominance by Size

## 2003-2004



# Findings

- No detectable reduction in the abundance of precocious males on the spawning grounds
- Hatchery precocious males continue to be most abundant in areas downstream of spawning locations.
- Hatchery precocious males were larger than those observed in the wild and dominated the majority of interactions on the spawning grounds.

