

Analysis of Southern Resident Killer Whale
Fin Growth Rates 1977-2003

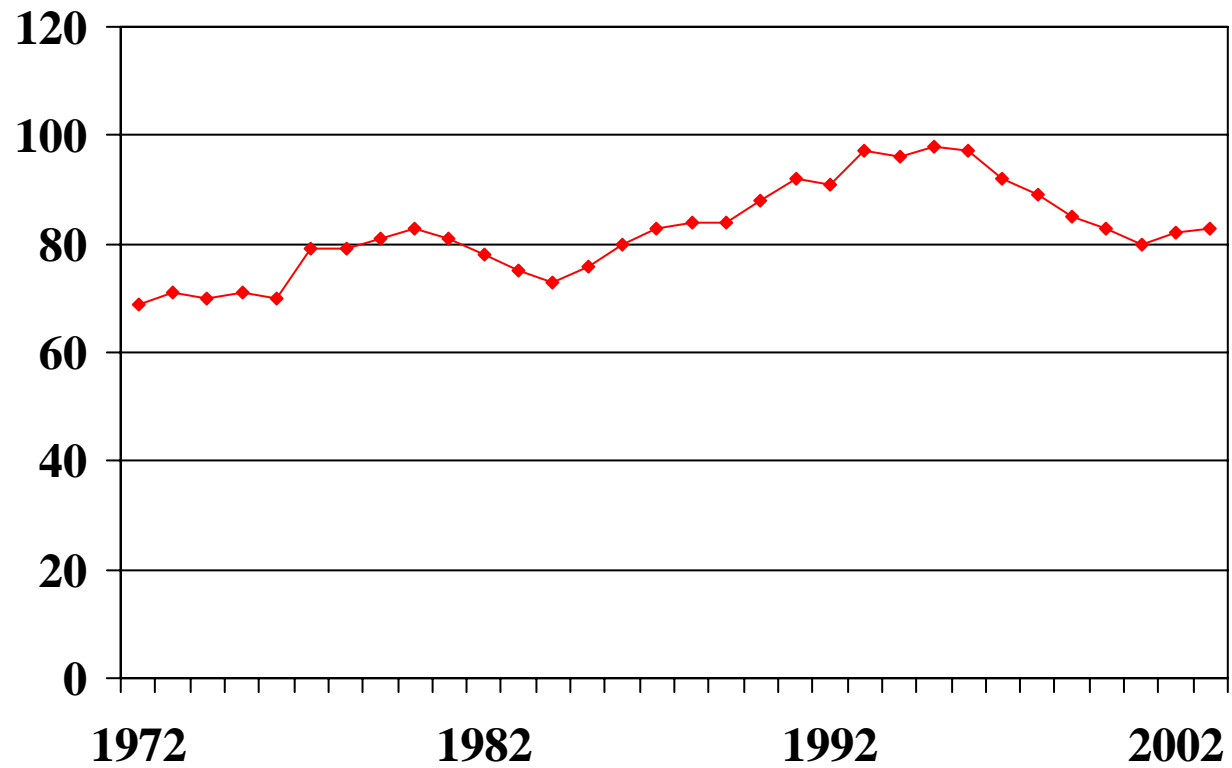
Adam U, Eli Holmes and Ken Balcomb

Some natural history about KWs

- 2 types of KWs
- SRKWs are found in the summer in the San Juan Islands and then spend the winter elsewhere
- 3 pods in the SRKWs
- Paternity can be from outside pod
- SRKWs were petitioned to be listed in 2001 in the US
- SRKWs are listed as an endangered species in Canada



Southern Resident KW pods: 1970s to present

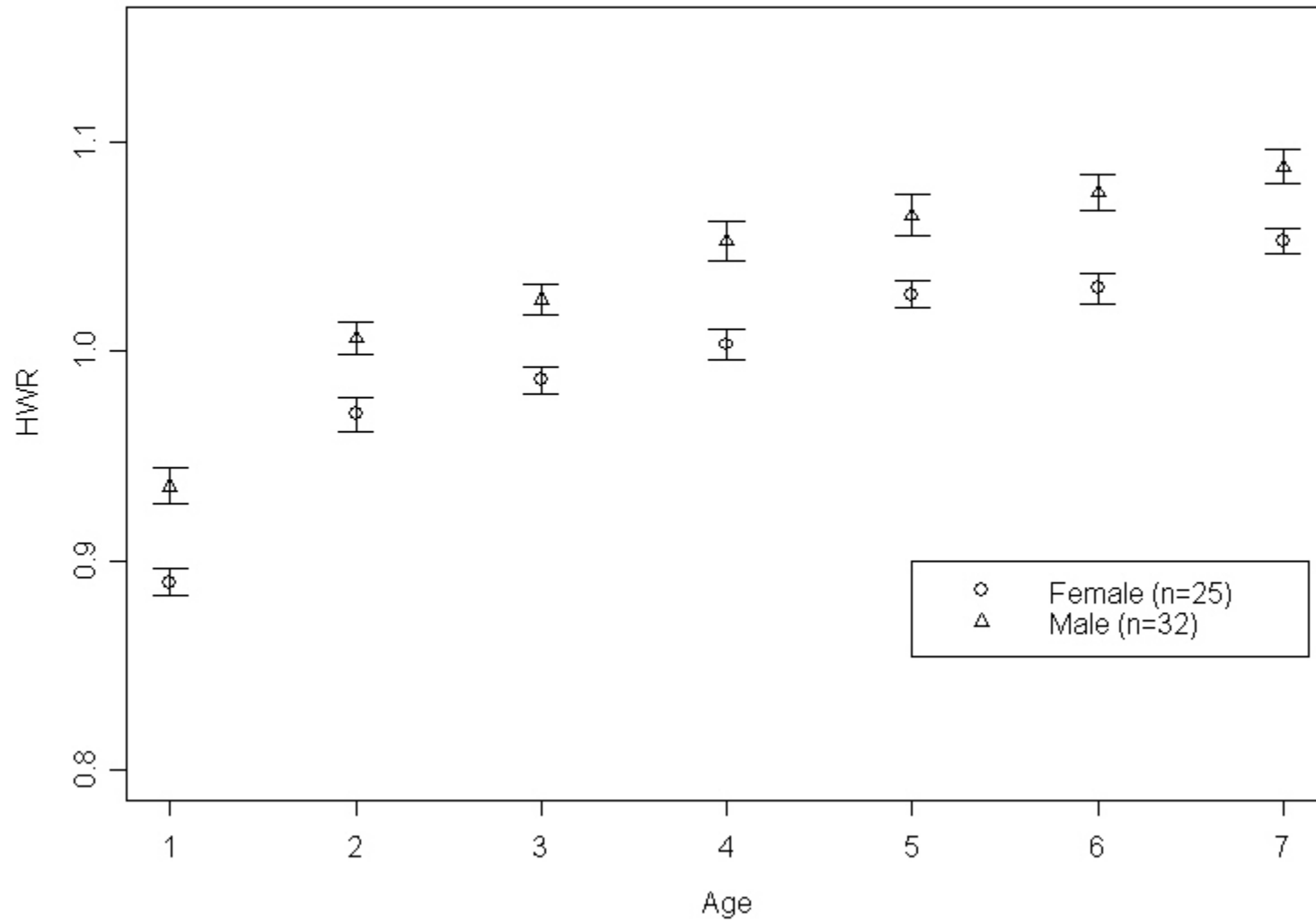


Long-term data set

- 30+ year record of all individuals with birth and death year
- Multiple ID photos per individual per year



Height-to-Width ratio

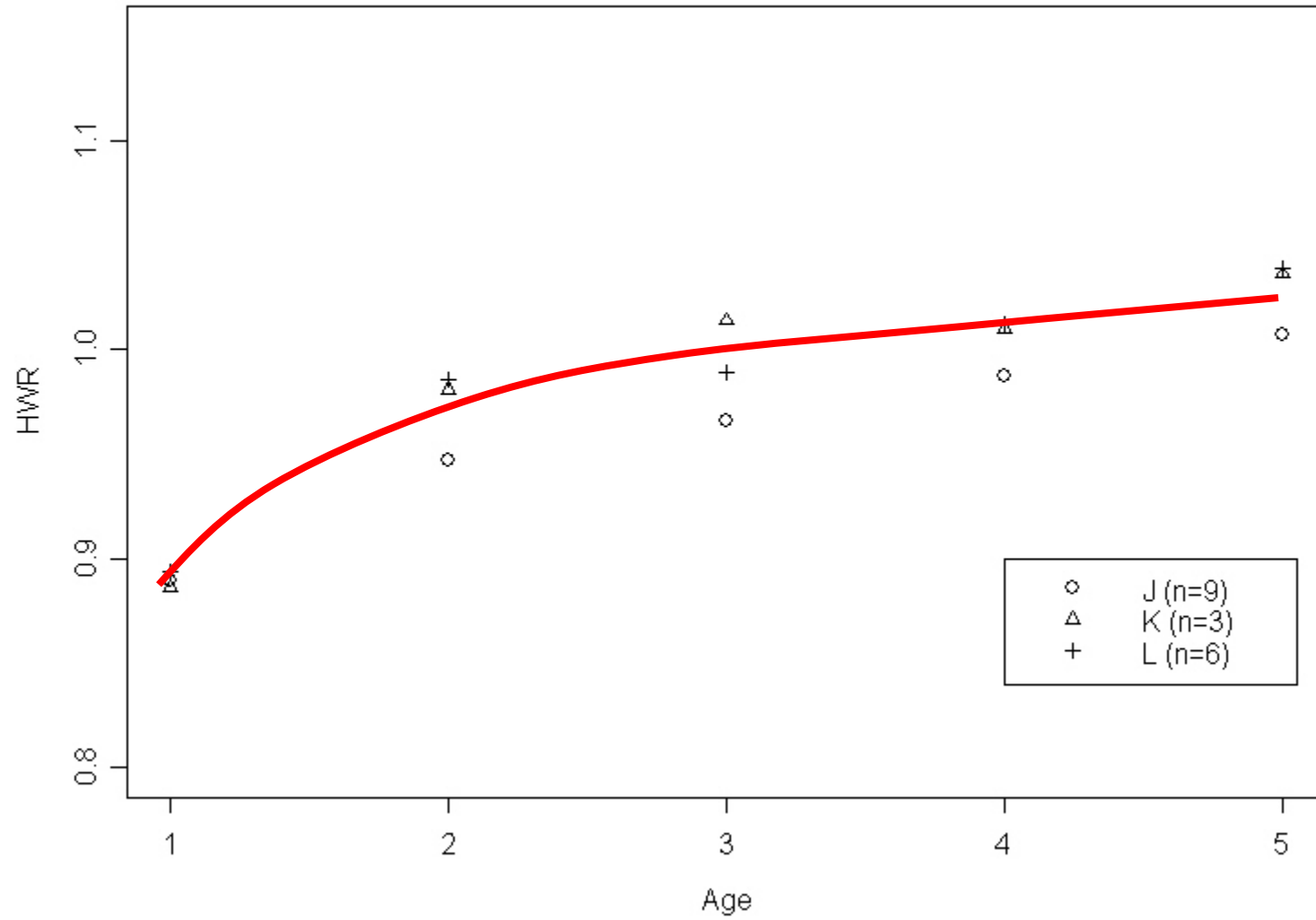


Photogrammetric analysis of fin growth rates 1977-2003

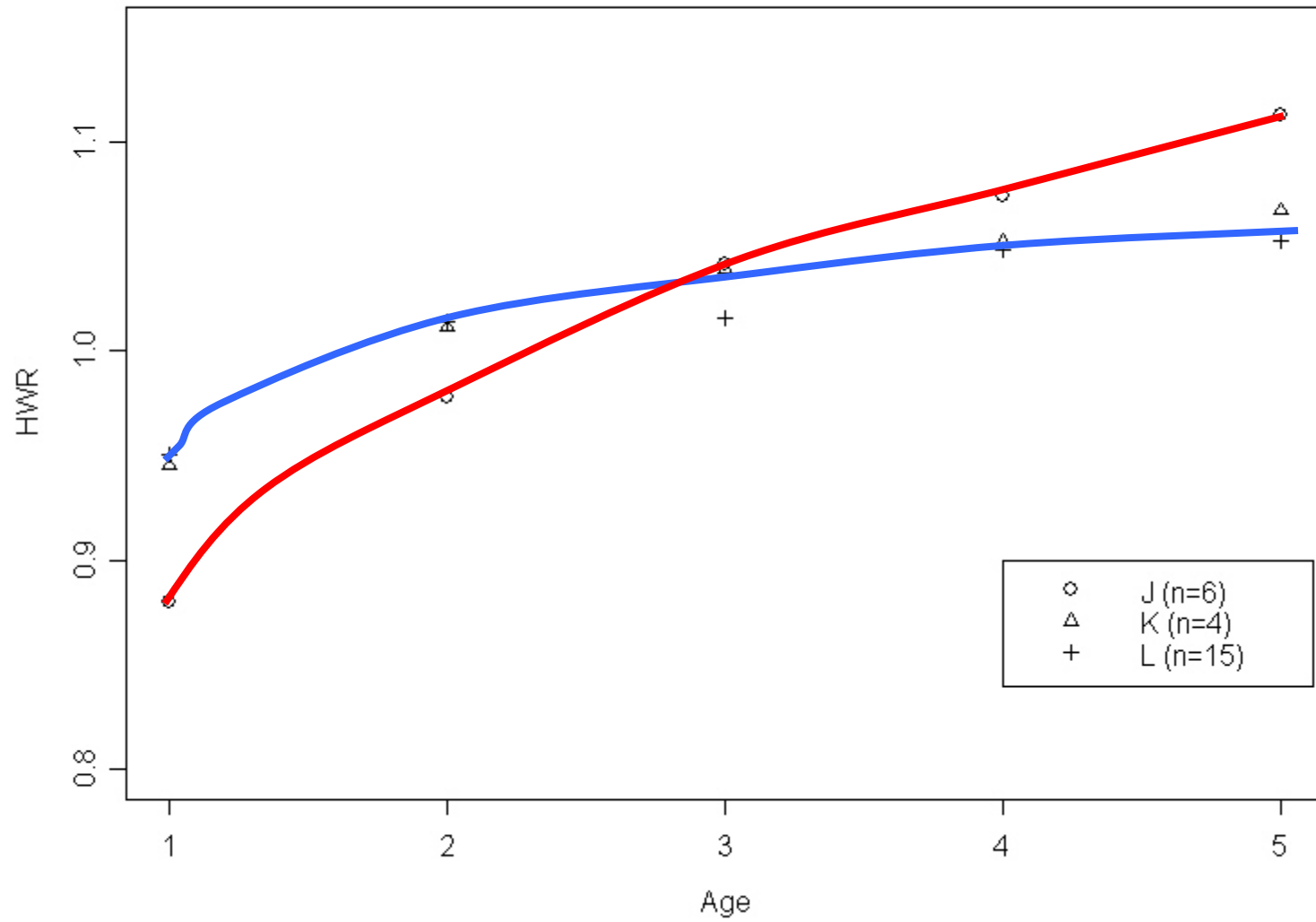


- **Goal:** Look for evidence (or lack thereof) of temporal changes in growth rates that might be consistent with food limitation.

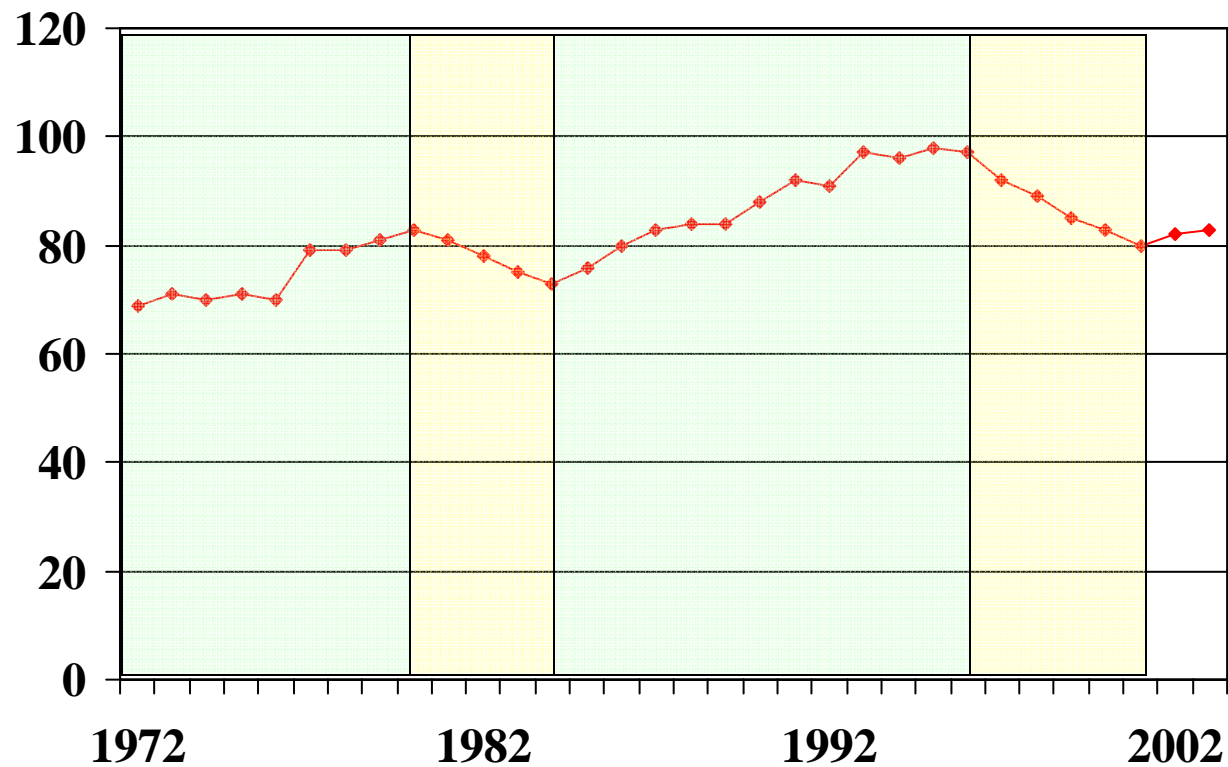
Average female growth by pod



Average male growth by pod



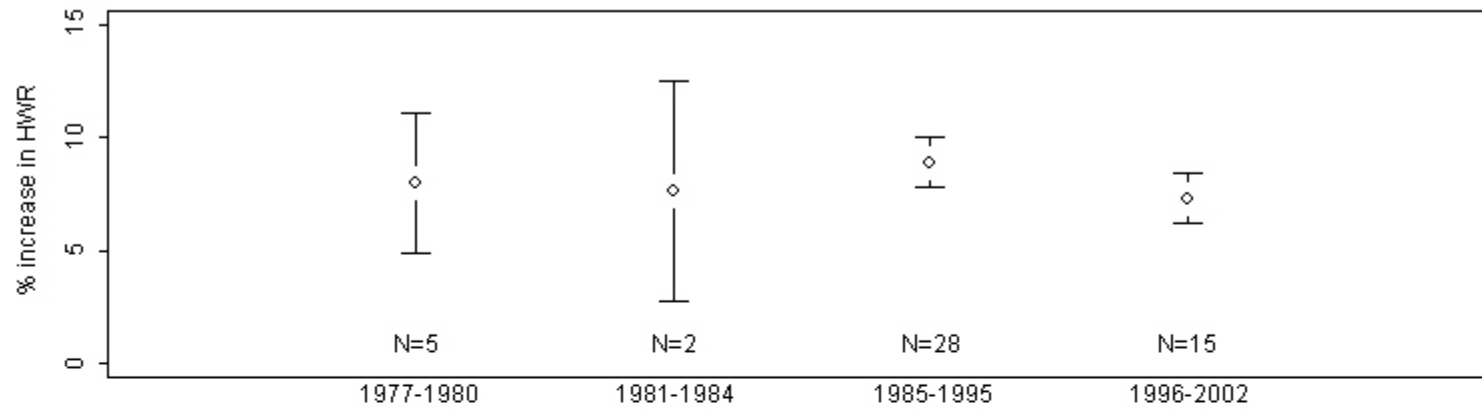
Analysis years divided into increasing and decreasing periods



Size of newborns over time



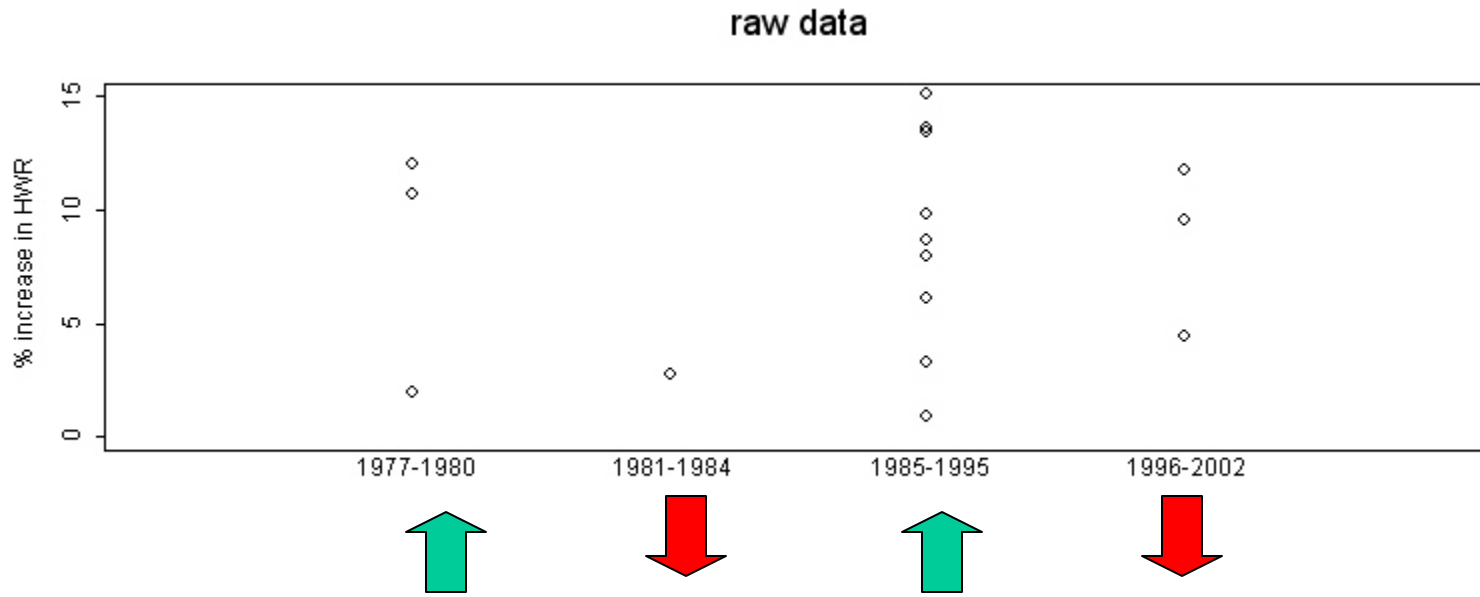
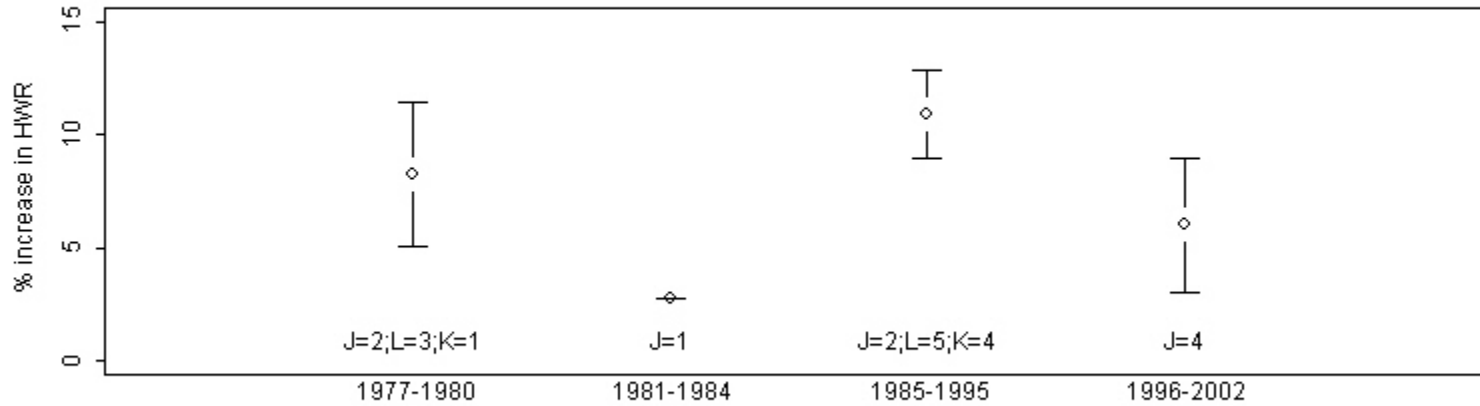
1st years average growth



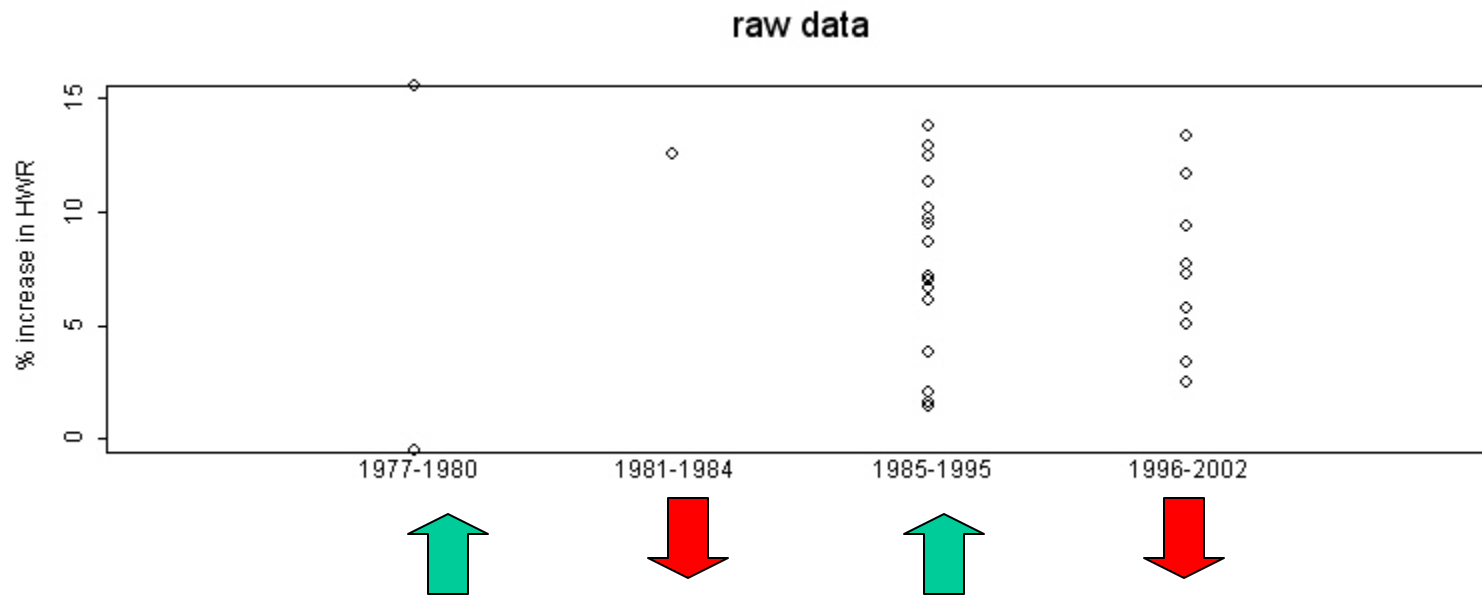
raw data



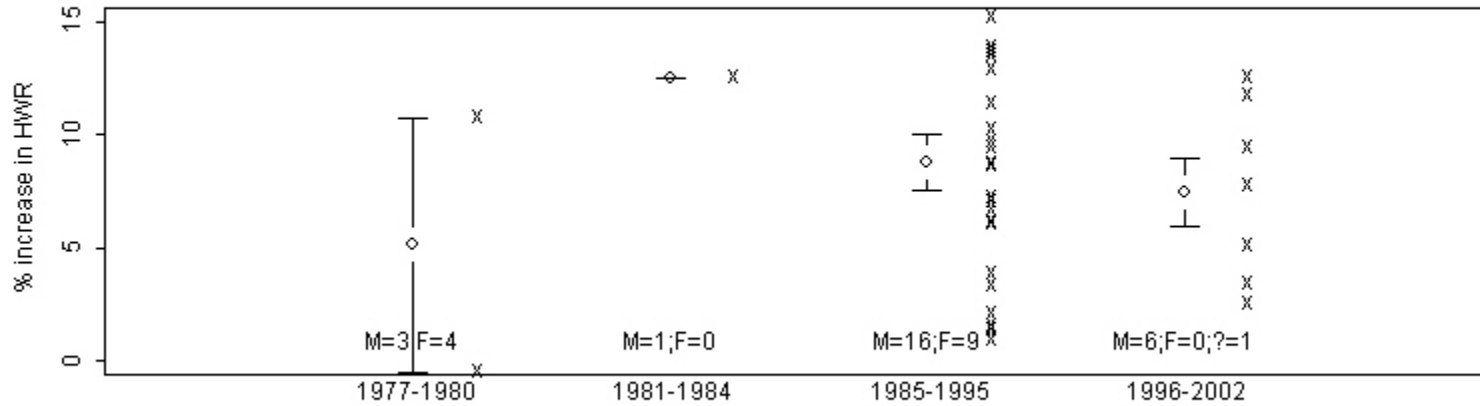
1st years average growth: females



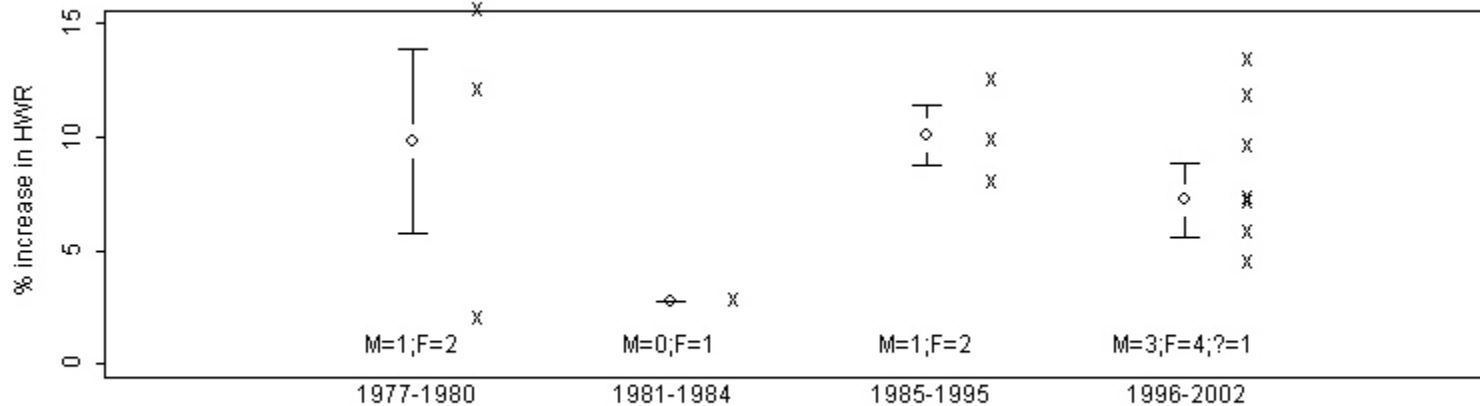
1st years average growth: males



1st years average growth: K,L



1st years average growth: J



Summary

- There is not much evidence of lower fin growth rate in declining years
- No evidence however I did the analysis: lagged years, growth versus actual population decline, or ditto with lagged years
- This suggests that whatever caused the higher mortality is not also causing lower physical growth.