Ancillary benefits for Southern Resident Killer Whales from the coast wide Chinook management regime

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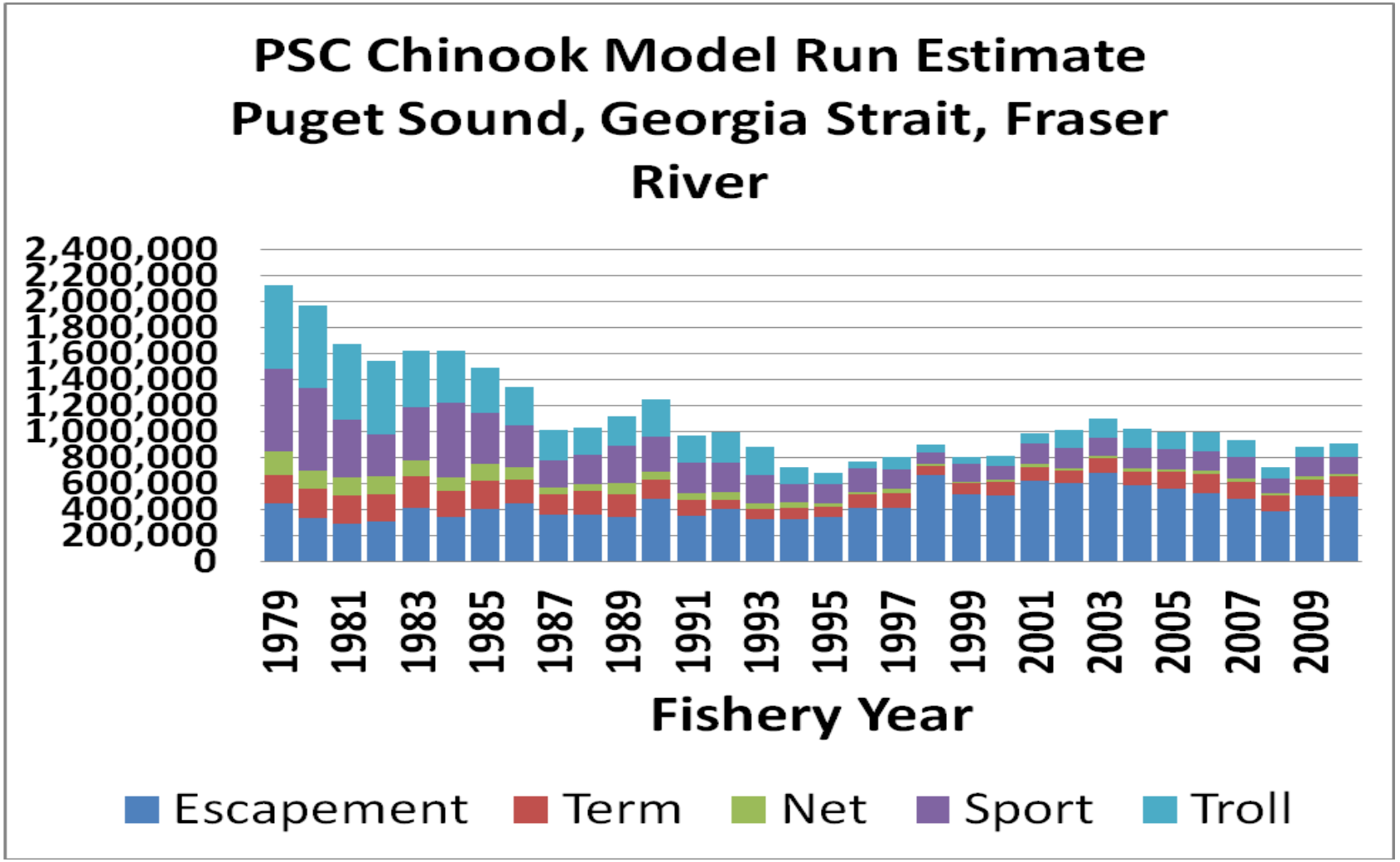
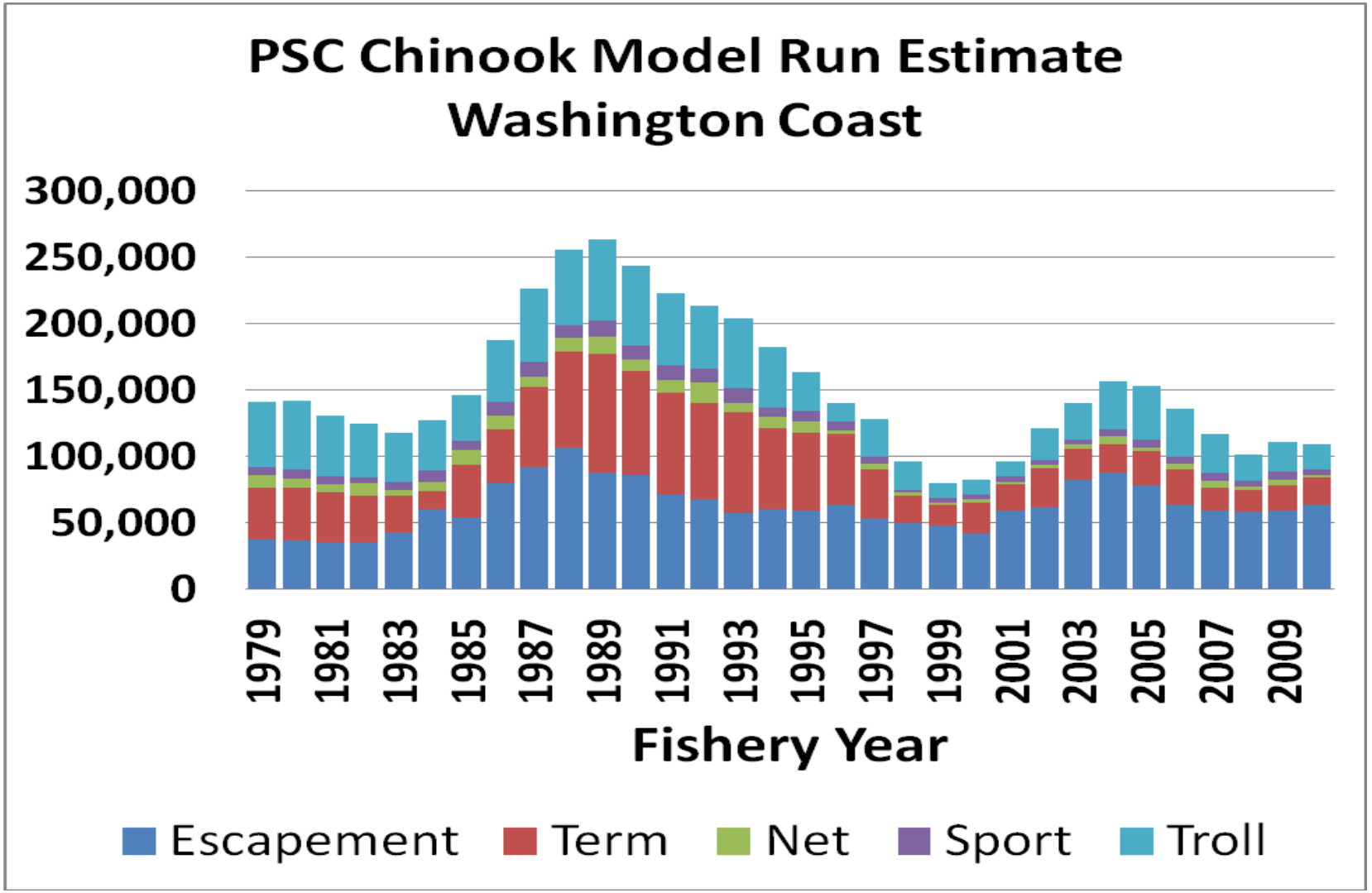
- Southern Resident Killer Whales (SRKW) have benefited from the refinement of the coast wide management regime for Chinook salmon.
- Chinook management has progressed from unrestricted seasons to abundance-based management.
- This management action has transferred to terminal areas an increasingly larger portion of the total run size.

- In 1999, the United States and Canada adopted an abundance-based approach for Chinook salmon.
- The approach was refined in 2008 and the agreement extended through 2018.
- All Chinook fisheries from Southeast Alaska to Central Oregon are managed collectively to meet stock conservation obligations.
- This provides certainty and stability to the harvest distribution of Chinook salmon.

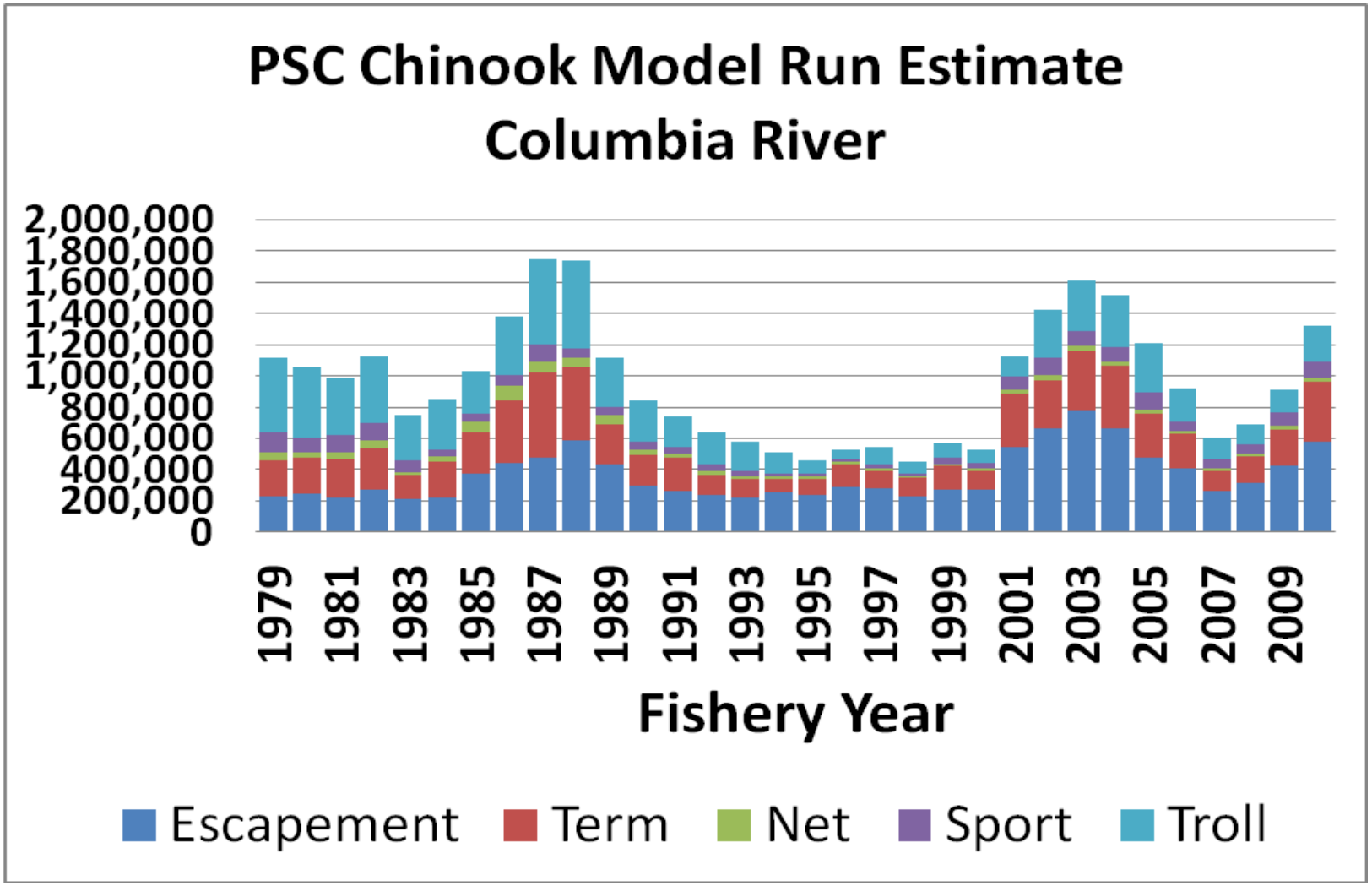
- The major mixed stock areas of Southeast Alaska, North/Central British Columbia, and West Coast of Vancouver Island are managed for a harvest rate based on aggregate stock abundance.
- All other fisheries are managed based on individual stock abundance and corresponding conservation requirements.
- This progression to abundance-based management has lowered total exploitation rates and increased ocean escapement.



Total model run estimates for Chinook model stocks in Puget Sound, Georgia Strait and Fraser River combined from 1979-2010.



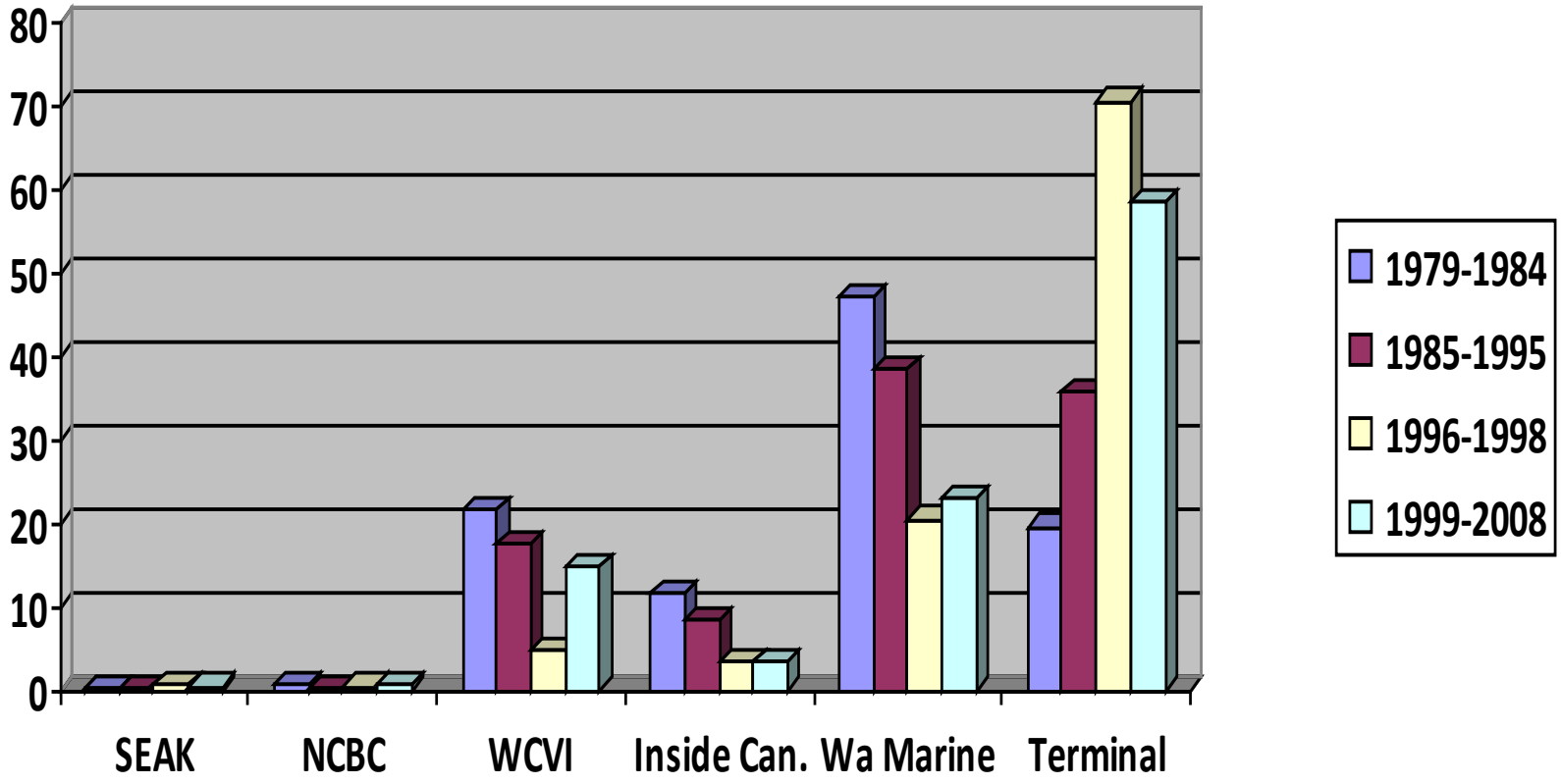
Total model run estimates for Chinook model stocks on the Washington Coast from 1979-2010.



Total model run estimates for Chinook model stocks in the Columbia River from 1979-2010.

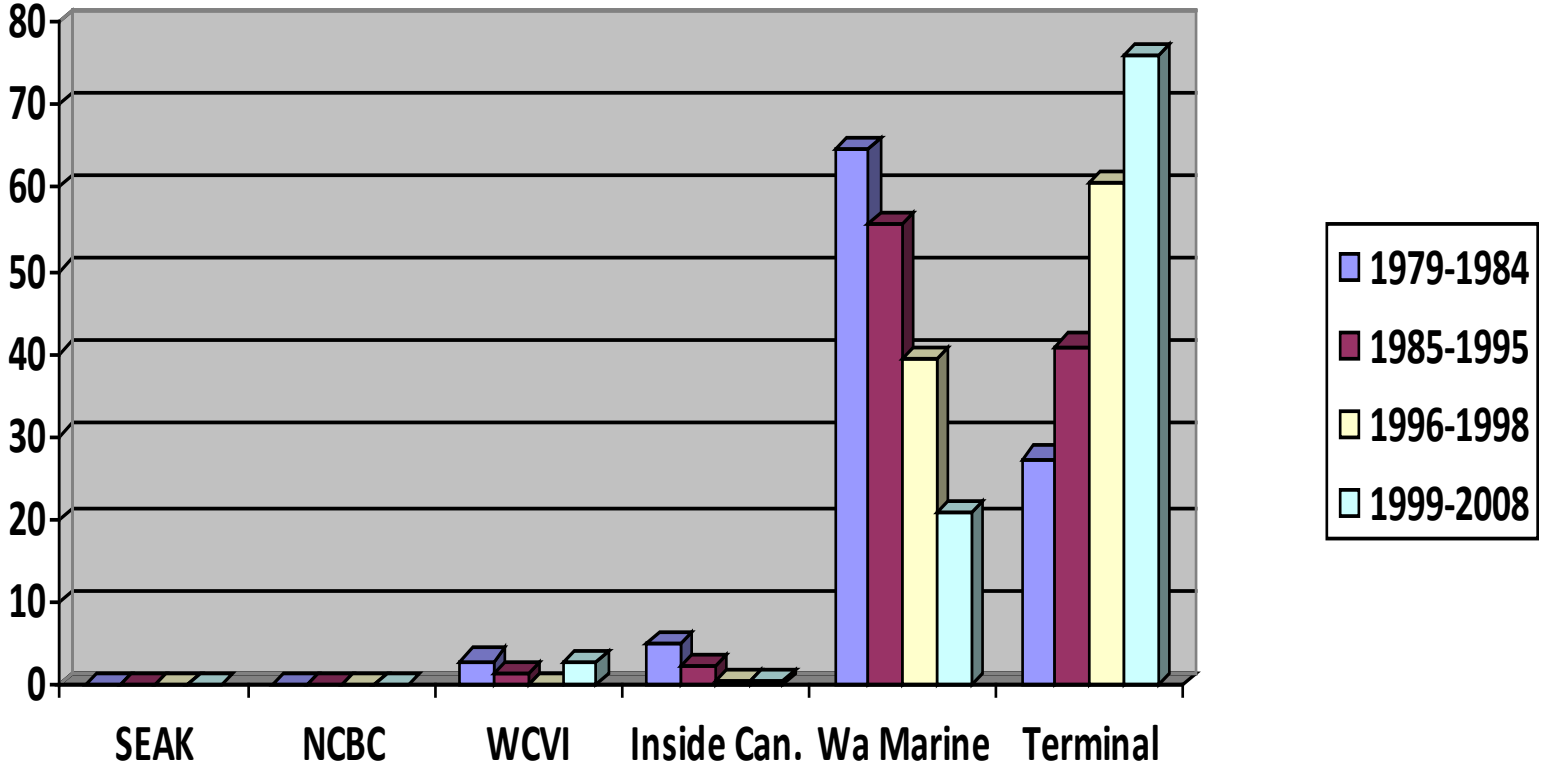
- Analysis of coded wire tag data indicates that fisheries are not significantly impacting abundance within the critical habitat of the SRKW.
- Distribution of total fishing mortalities among salmon fisheries and escapement indicates that over 60% of the fall stocks and 50% of the spring stocks pass through the Salish Sea to terminal areas.
- These percentages represent the additional proportion of the run size available to SRKWs.

Puget Sound - South Sound Hatchery Fall



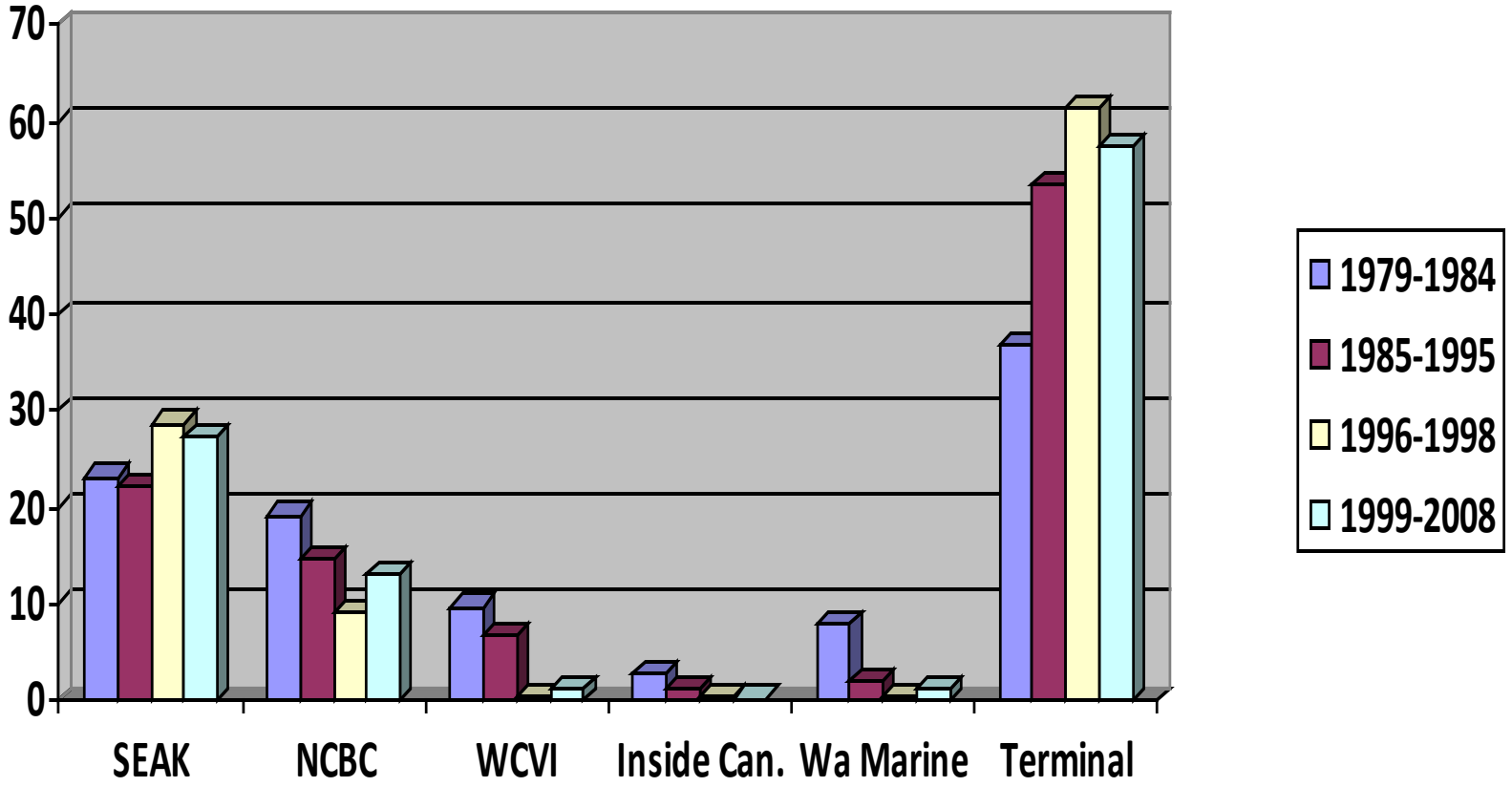
Comparison of CWT based distribution of total mortality among fisheries and escapement for South Sound Hatchery fall Chinook by significant management time frames.

Puget Sound - White River Spring



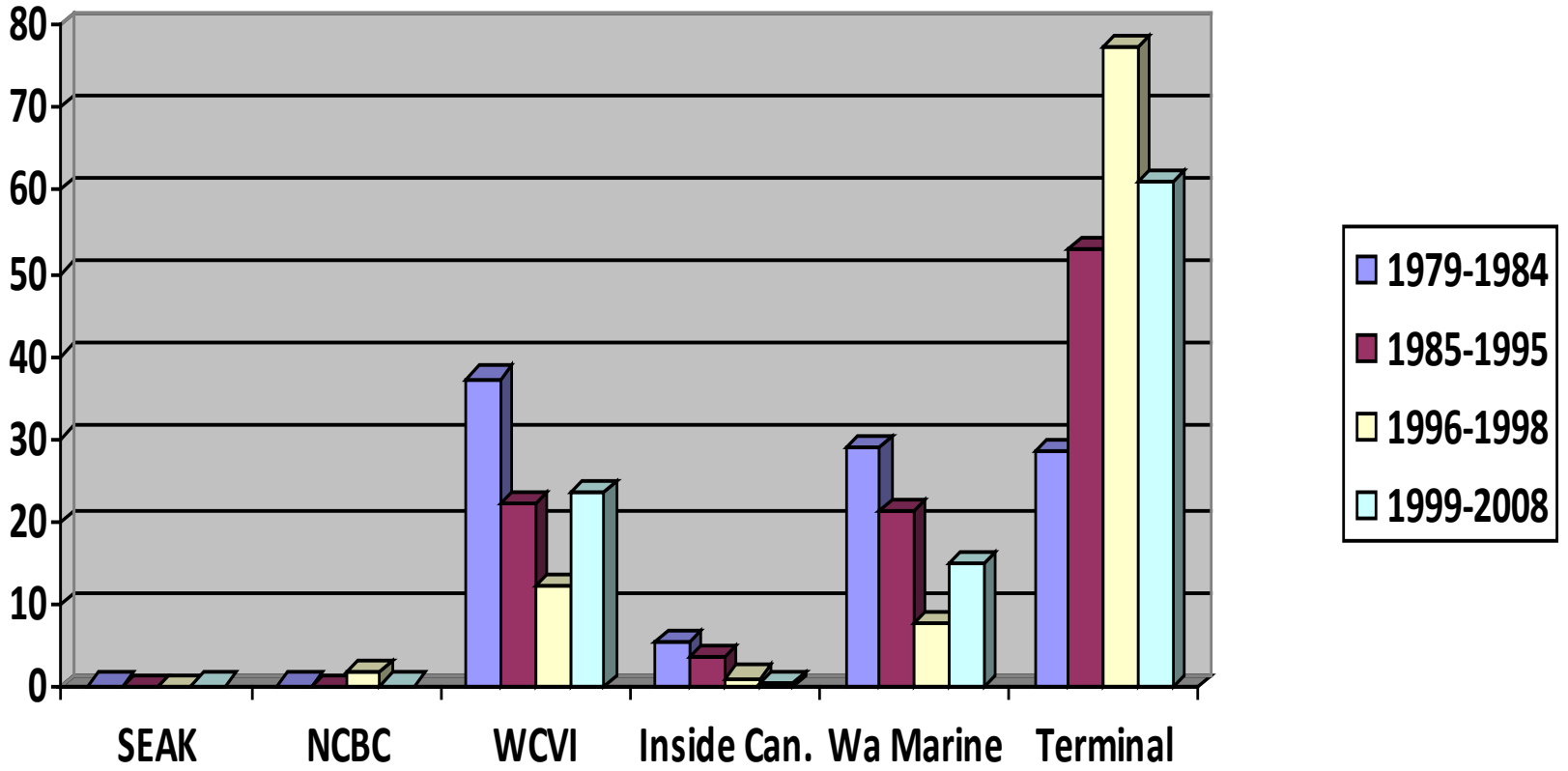
Comparison of CWT based distribution of total mortality among fisheries and escapement for White River spring Chinook by significant management time frames.

Washington Coast- Queets River Fall



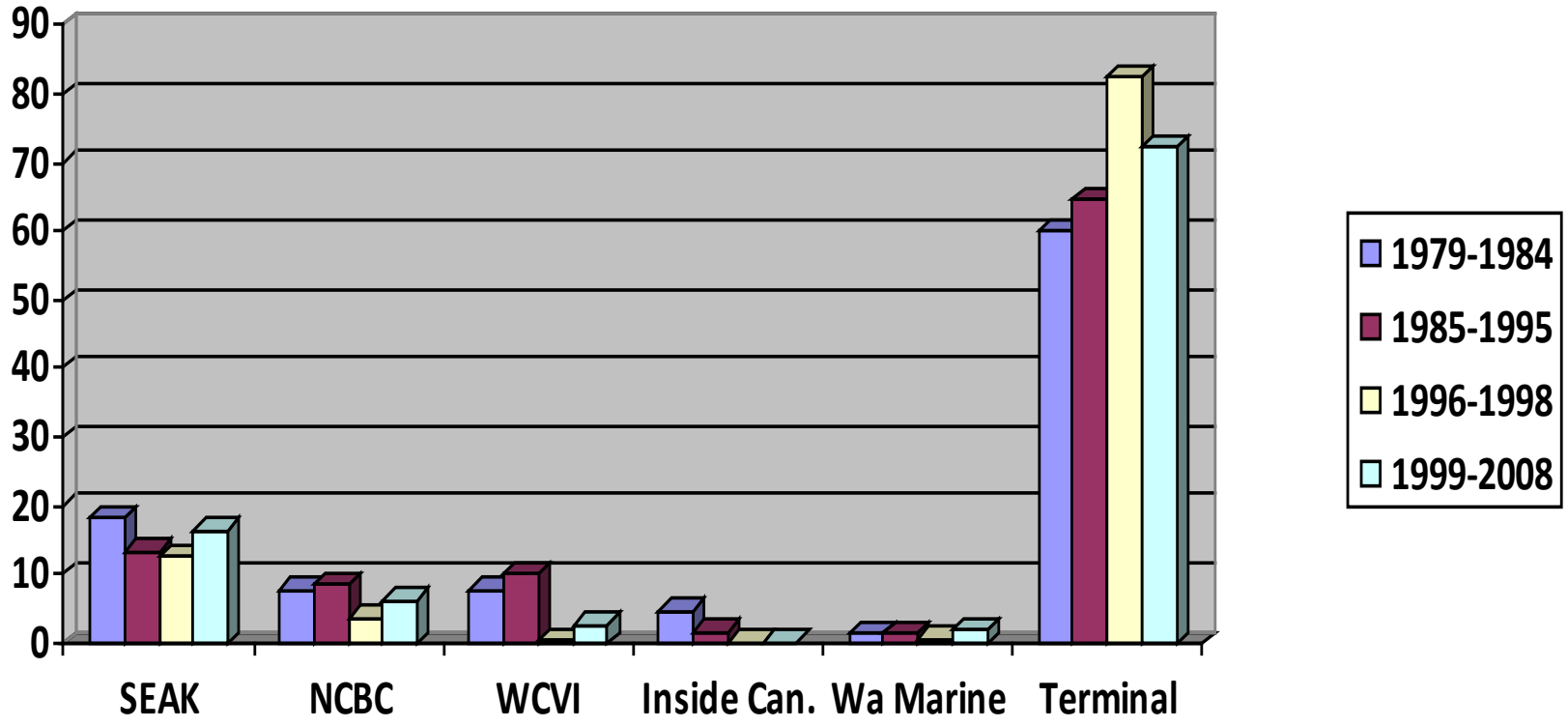
Comparison of CWT based distribution of total mortality among fisheries and escapement for Queets River fall Chinook by significant management time frames.

Columbia River – Lower River Tule



Comparison of CWT based distribution of total mortality among fisheries and escapement for Lower Columbia River tule Chinook by significant management time frames.

Columbia River - Upper River Bright



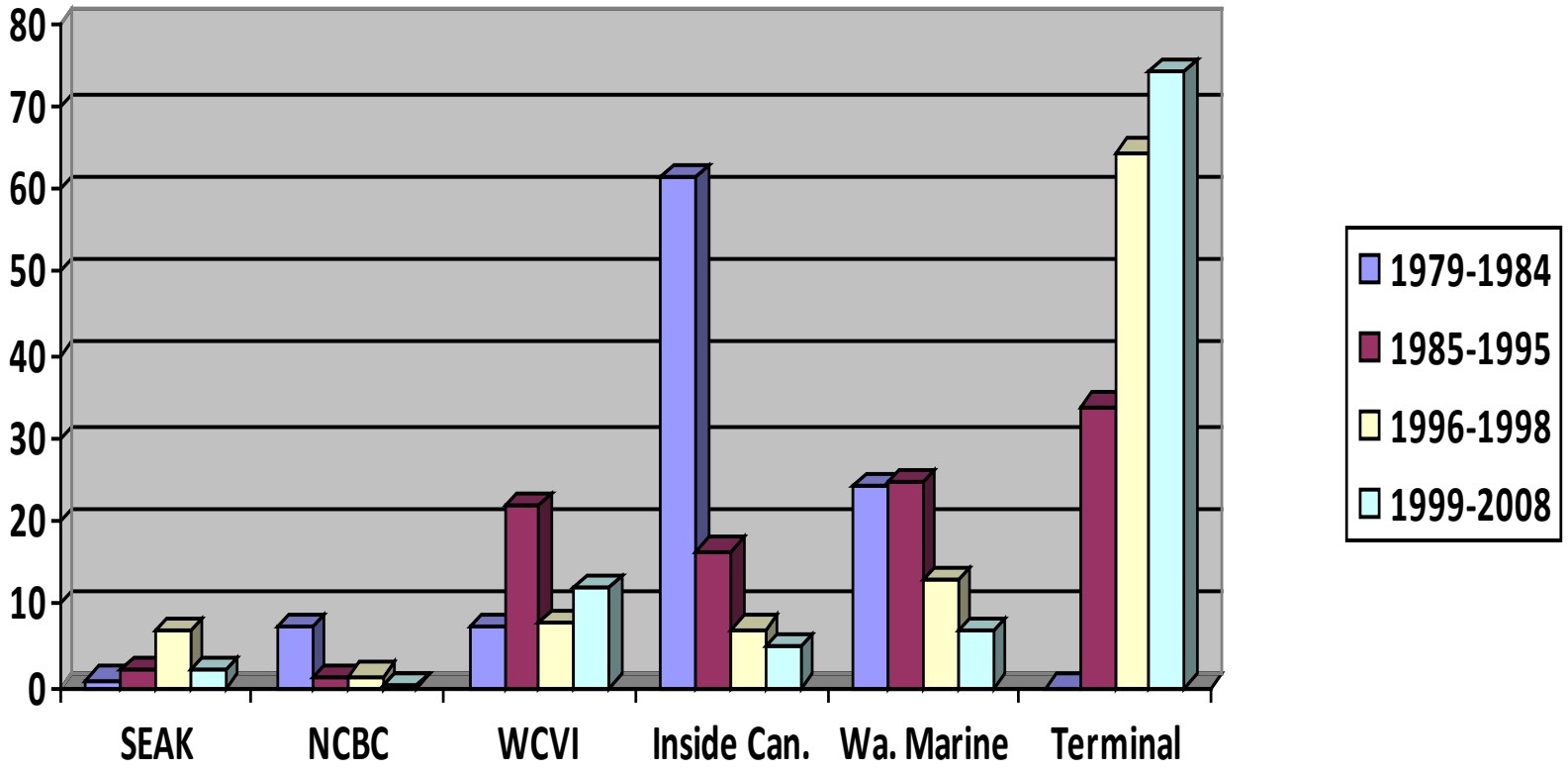
Comparison of CWT based distribution of total mortality among fisheries and escapement for upper Columbia River bright Chinook by significant management time frames.

Summary

- The transition to abundance-based management and its resulting fishery structure has benefited the SRKW.
- The management regime has provided salmon in sufficient abundance to result in positive growth for the SRKW and all other apex predators which consume Chinook salmon within the Salish Sea.
- Overall Chinook abundance within the Salish Sea has been stable over the past three decades.

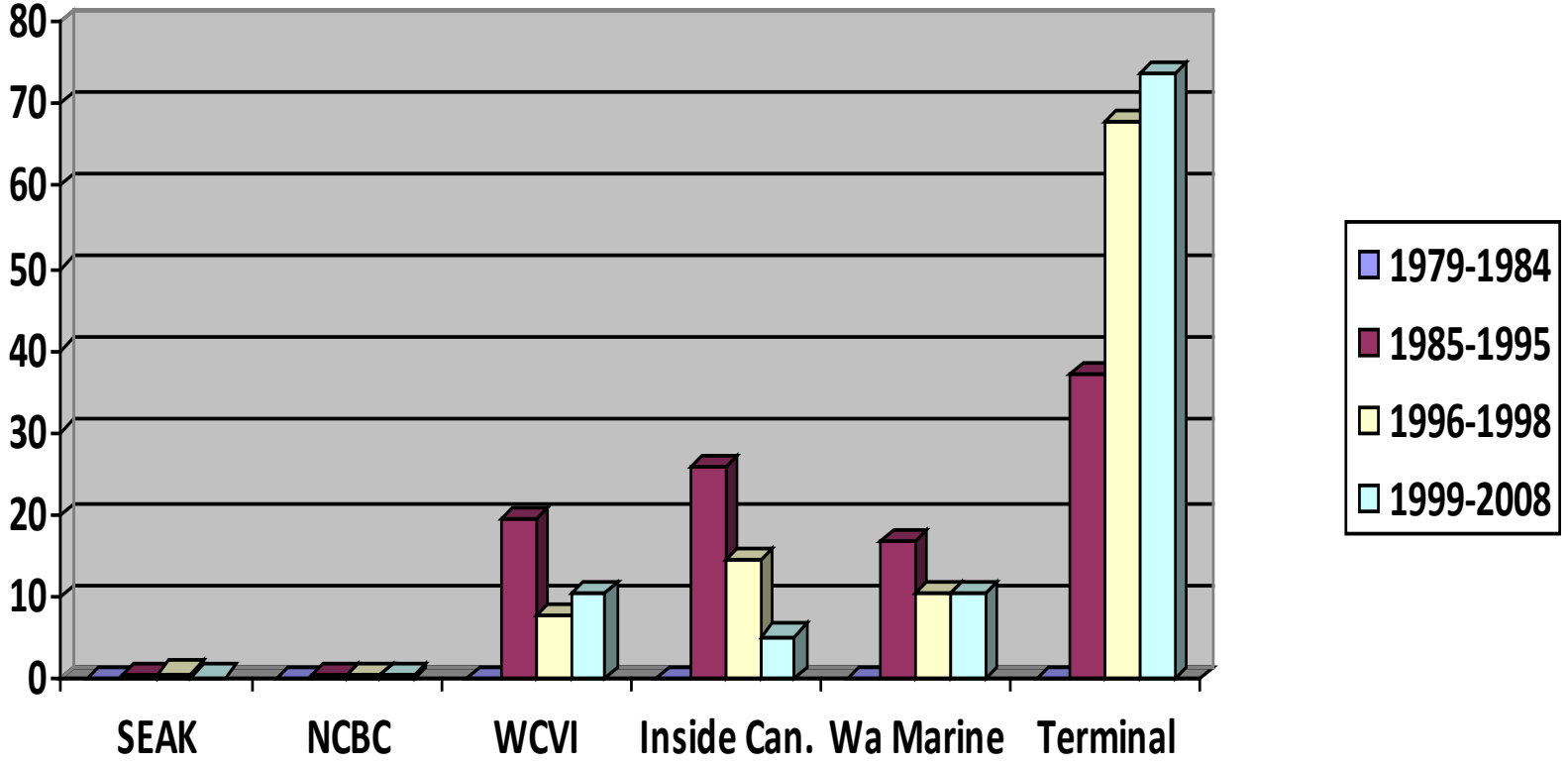
- The distribution of total mortality among fisheries and escapement indicates the limited capacity to further transfer significant Chinook abundance to SRKW and other apex predators.
- Alternative fishing scenarios are to be considered, but to address what need and where would this abundance be transferred?
- SRKW recovery goals can not be achieved by reducing harvest, Chinook recovery is required.

Puget Sound - Stillaguamish River Fall



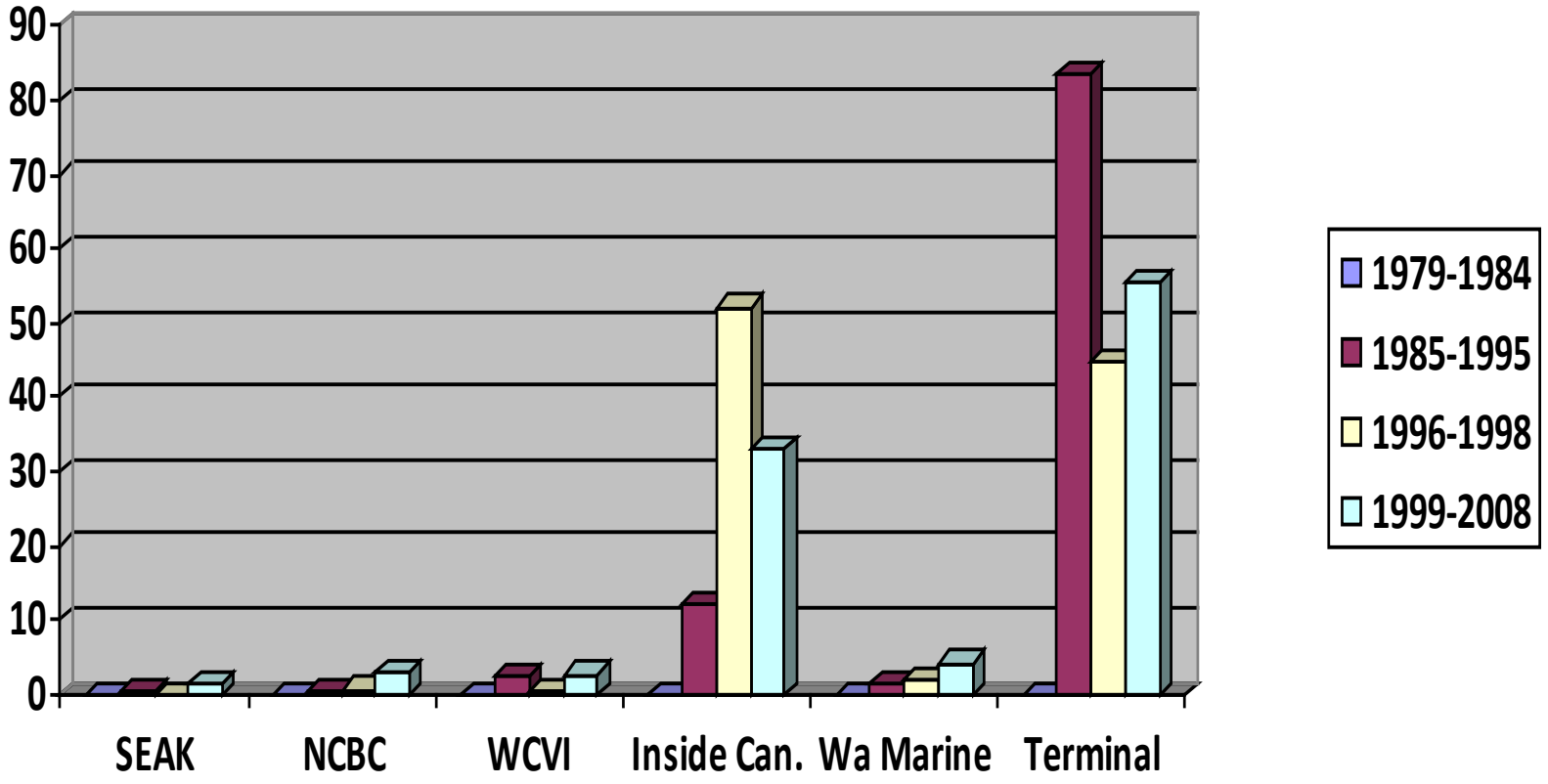
Comparison of CWT based distribution of total mortality among fisheries and escapement for Stillaguamish fall Chinook by significant management time frames.

Fraser River – Chilliwack Fall



Comparison of CWT based distribution of total mortality among fisheries and escapement for Fraser River-Chilliwack fall Chinook by significant management time frames.

Fraser River – Dome Spring



Comparison of CWT based distribution of total mortality among fisheries and escapement for Fraser River-Dome spring Chinook by significant management time frames.