Steelhead Kelt Reconditioning Program Update

Presented by:

Bill Bosch, Yakama Fisheries

Acknowledgements:

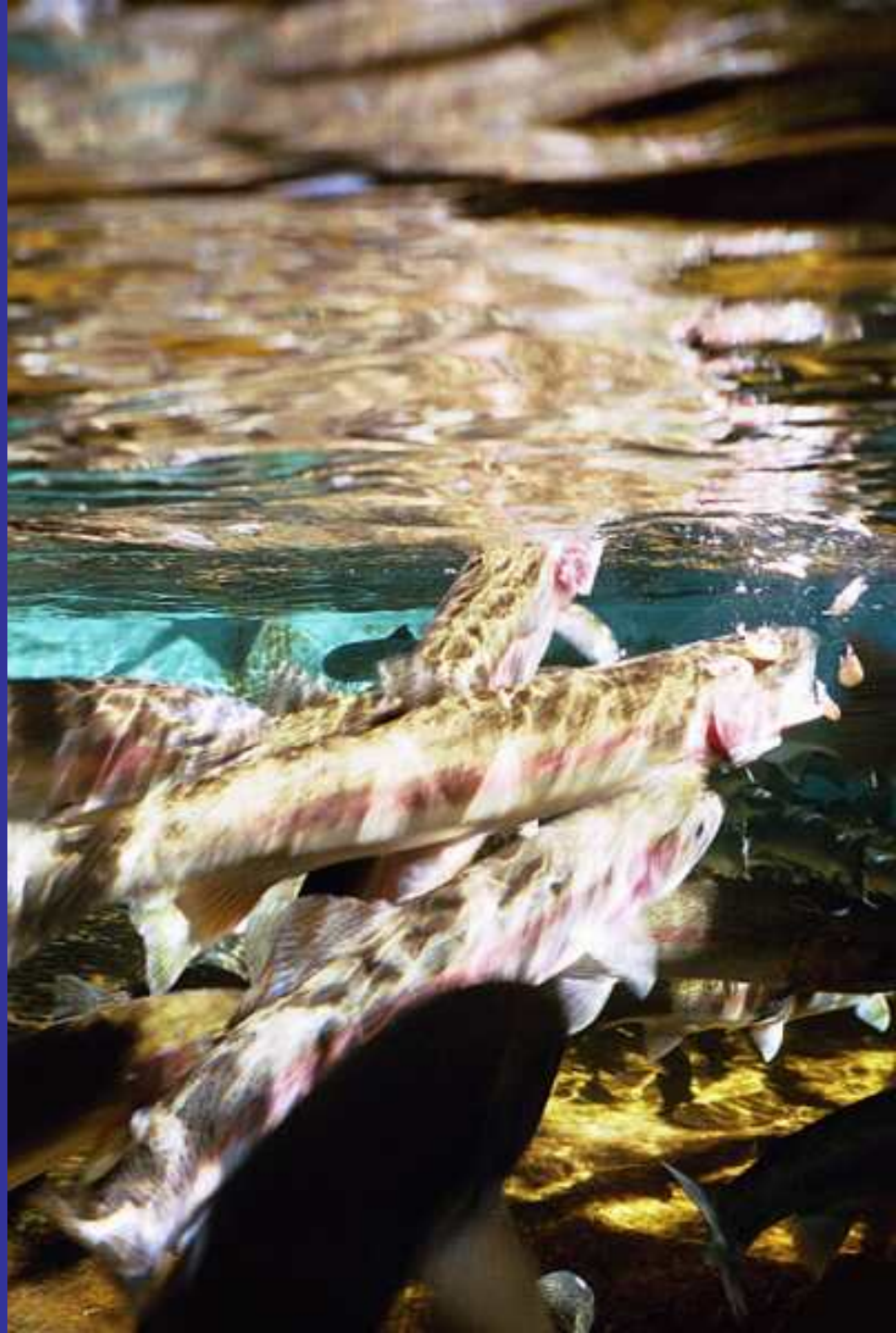
D. Fast, M. Johnston, T. Newsome

Prosser Hatchery Crew

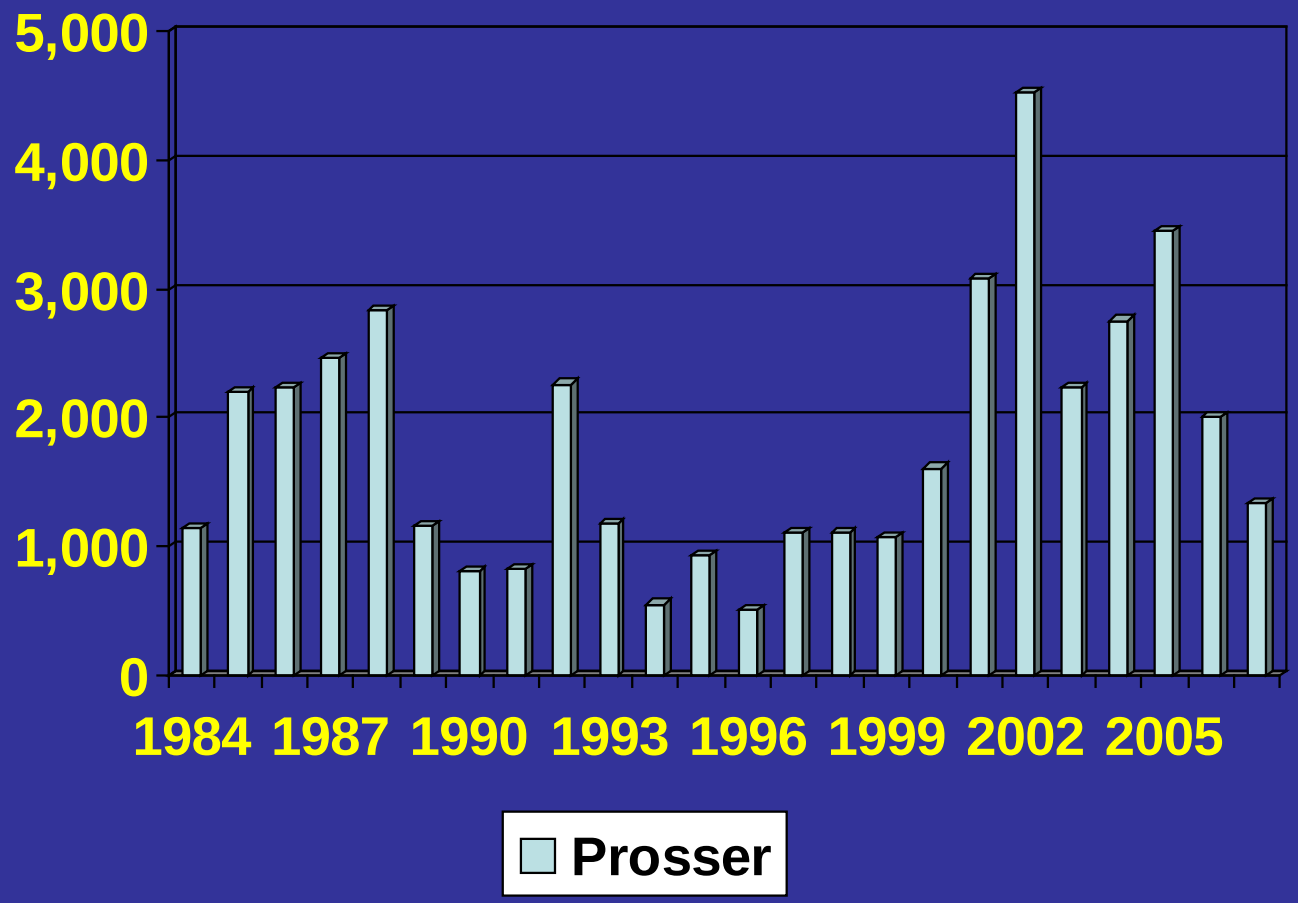
Columbia River Inter-Tribal Fish Commission

Bonneville Power Administration

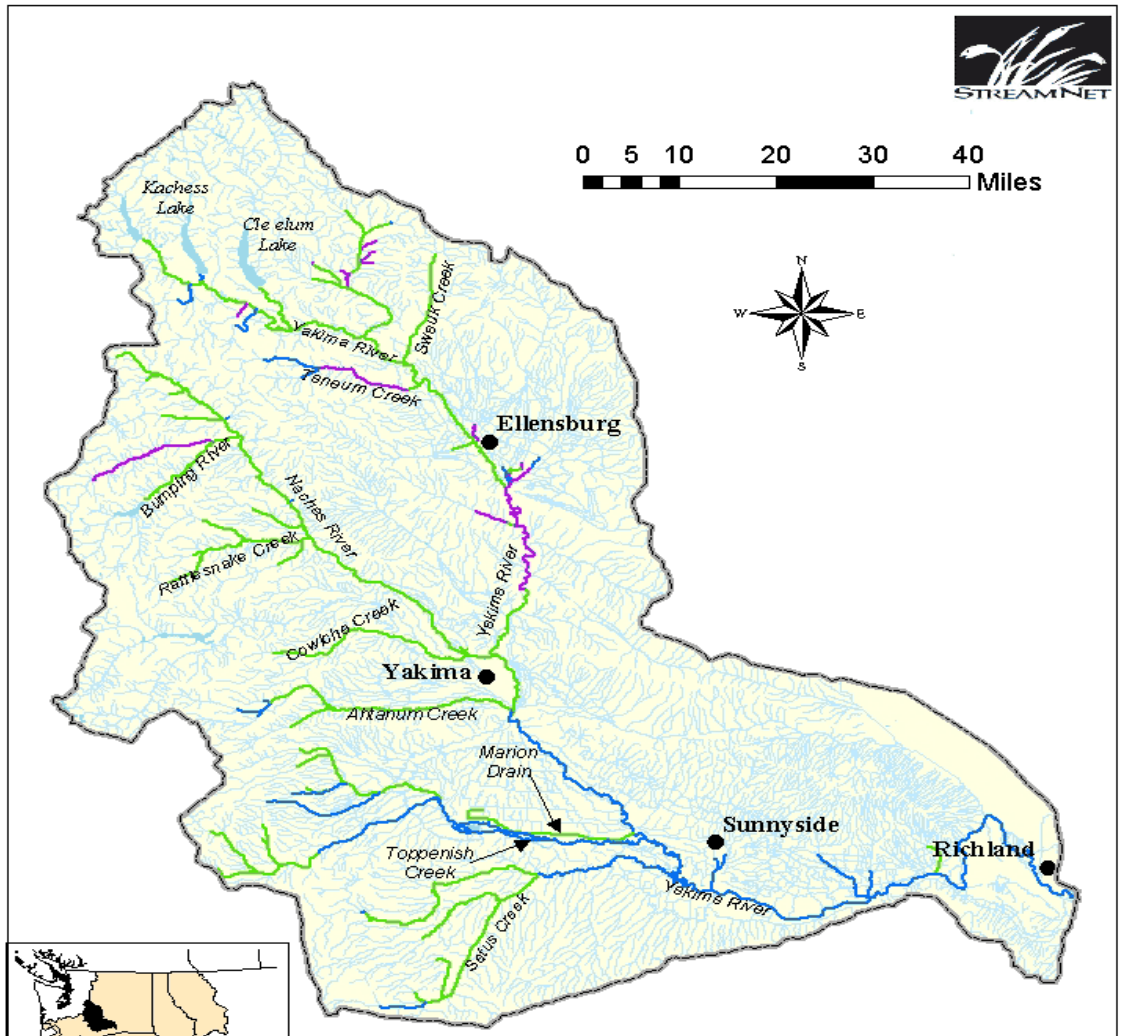
Pacific States Marine Fisheries Commission



Yakima River Steelhead Returns, 1984 – Present



Summer Steelhead Distribution - Yakima Subbasin



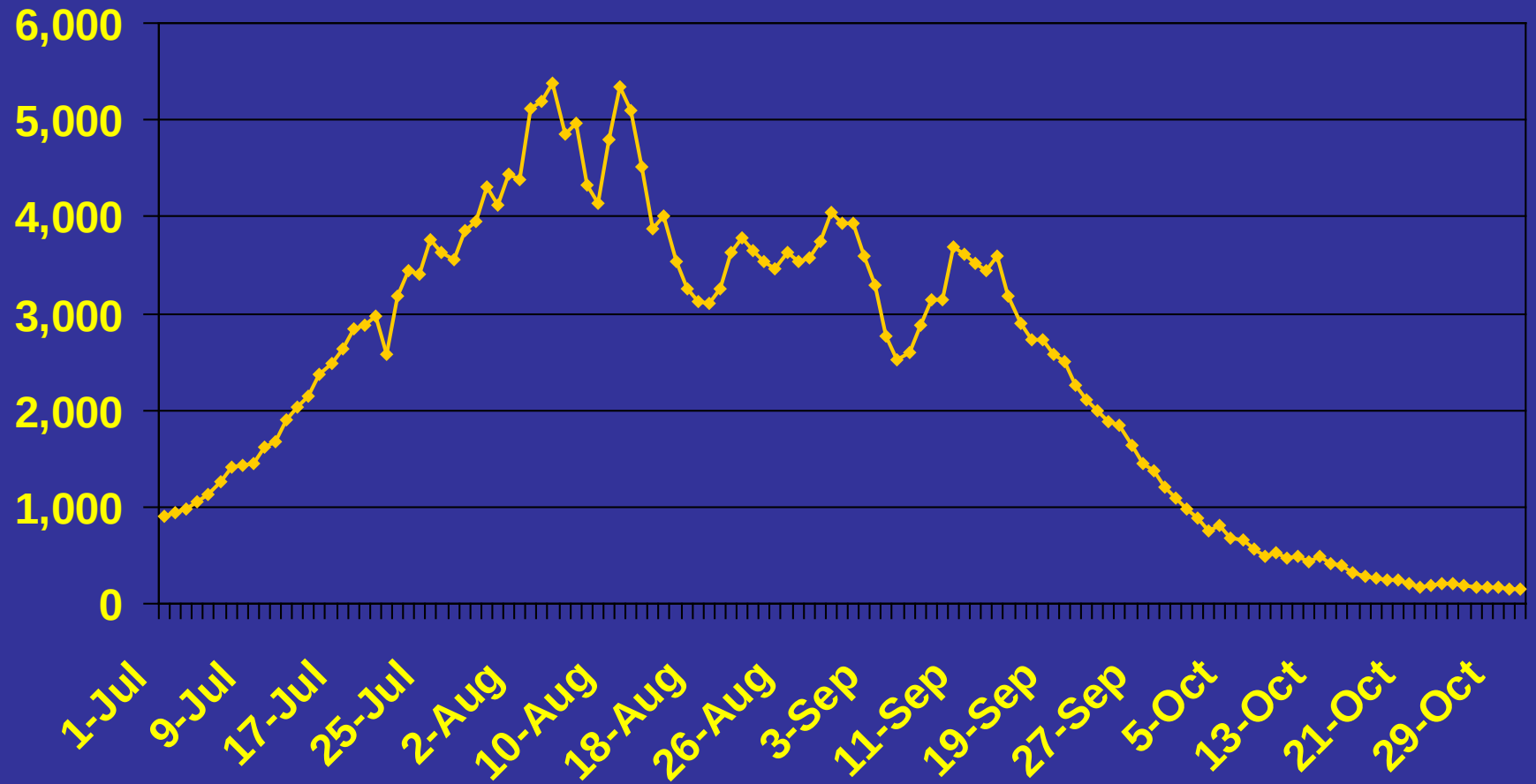
Map Date: February 2001. Data Sources:
Washington Dept of Fish & Wildlife and Yakama Nation

Natural Life History of Steelhead (*Oncorhynchus mykiss*)

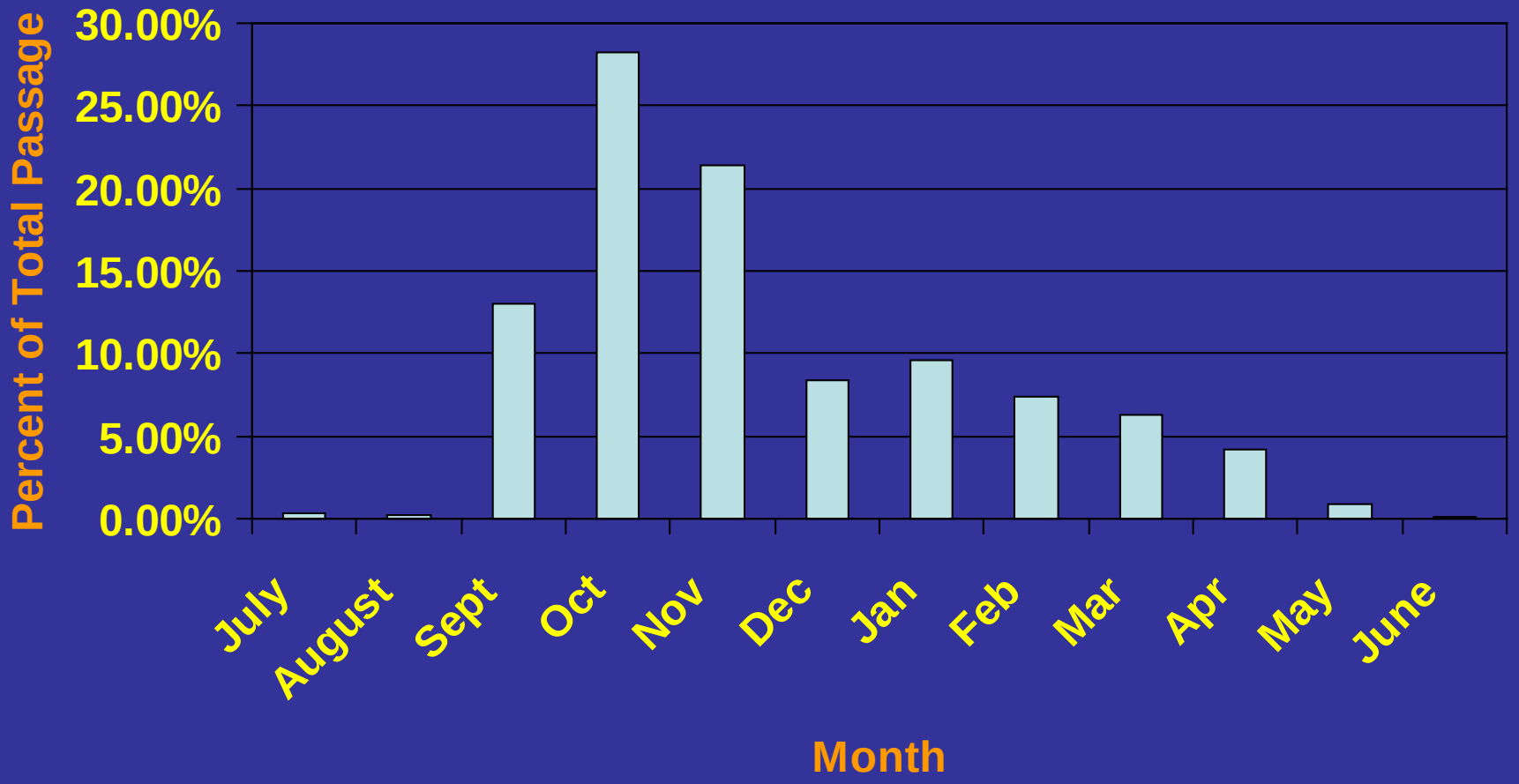
- Anadromous and Resident Forms
- Smoltify at various ages
- Multiple years in ocean
- Able to spawn on more than one occasion –

  Spawned out adults (Kelts) return to the ocean, gain weight, develop new eggs, then return to fresh water streams to spawn again.
- Unique populations within subbasins

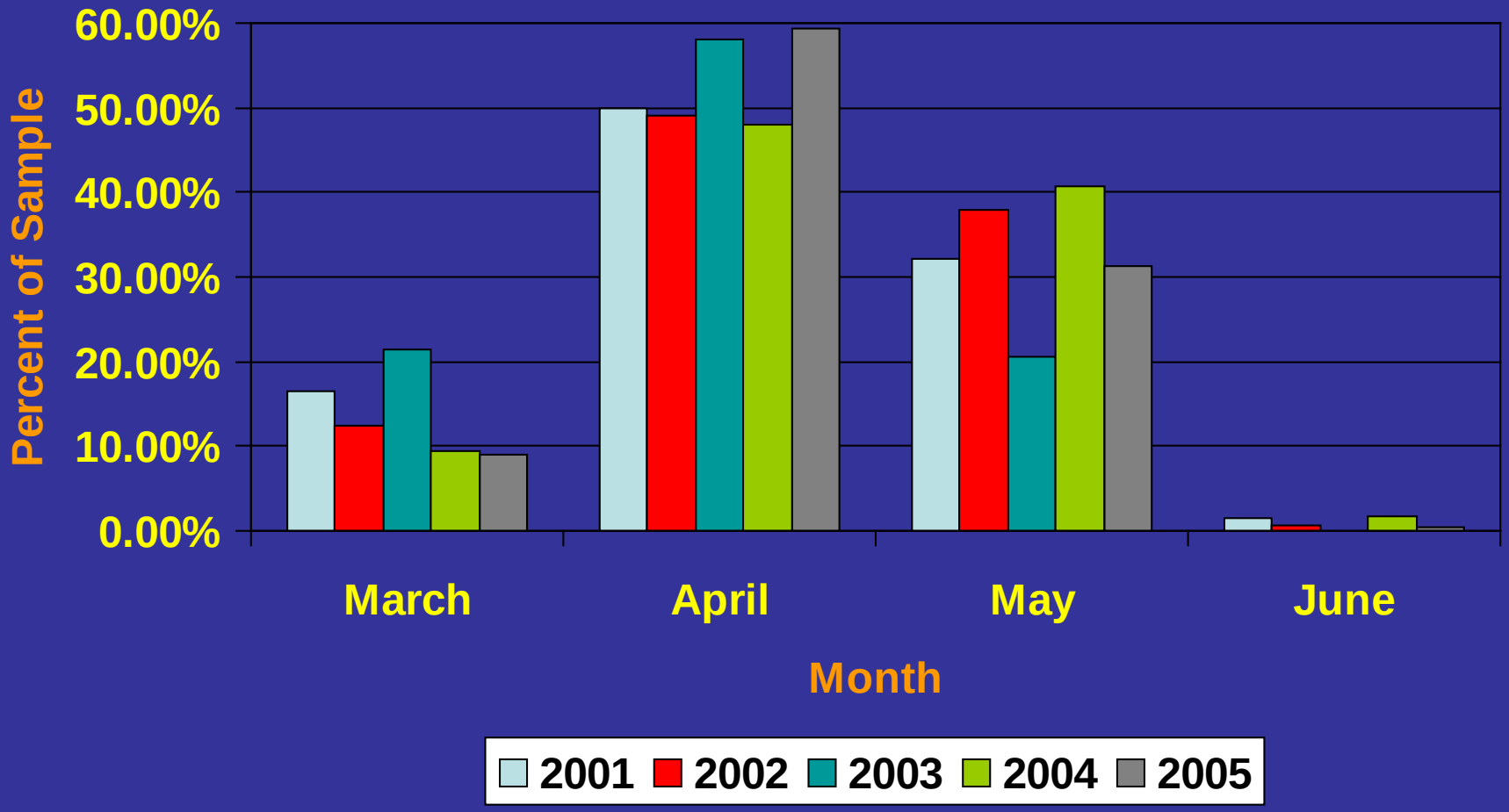
Summer Steelhead Passage Timing at Bonneville Dam



Average Upstream Passage Timing at Prosser Dam

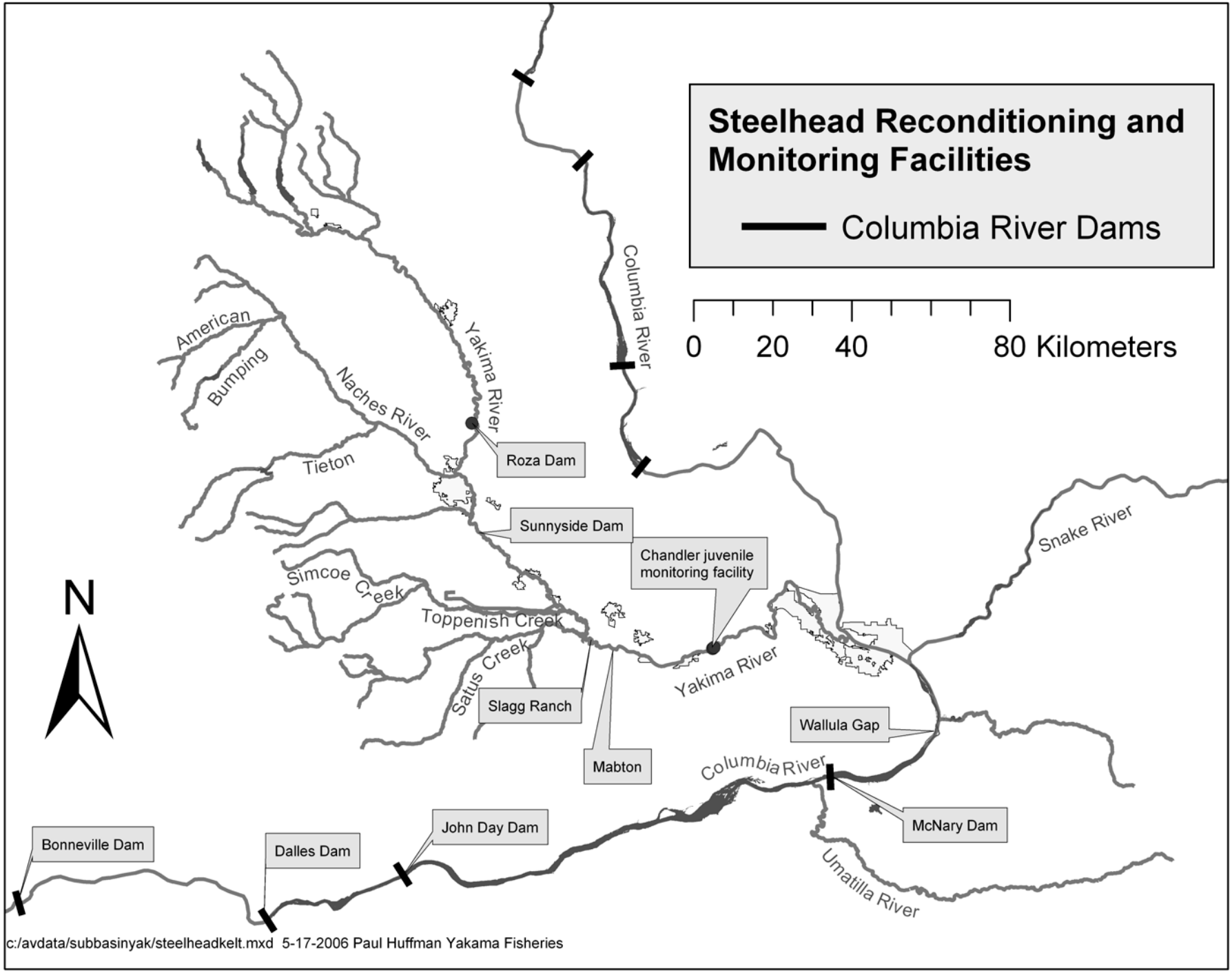


Chandler Kelt Collection, 2001-05



Juvenile Fish Separator

Steelhead Reconditioning Area


Steelhead Reconditioning and Monitoring Facilities
Columbia River Dams
0 20 40 80 Kilometers
N
American
Bumping
Naches River
Yakima River
Columbia River
Roza Dam
Tieton
Sunnyside Dam
Chandler juvenile monitoring facility
Simcoe Creek
Toppenish Creek
Satus Creek
Slagg Ranch
Mabton
Yakima River
Snake River
Wallula Gap
Columbia River
McNary Dam
Umatilla River
John Day Dam
Dalles Dam
Bonneville Dam
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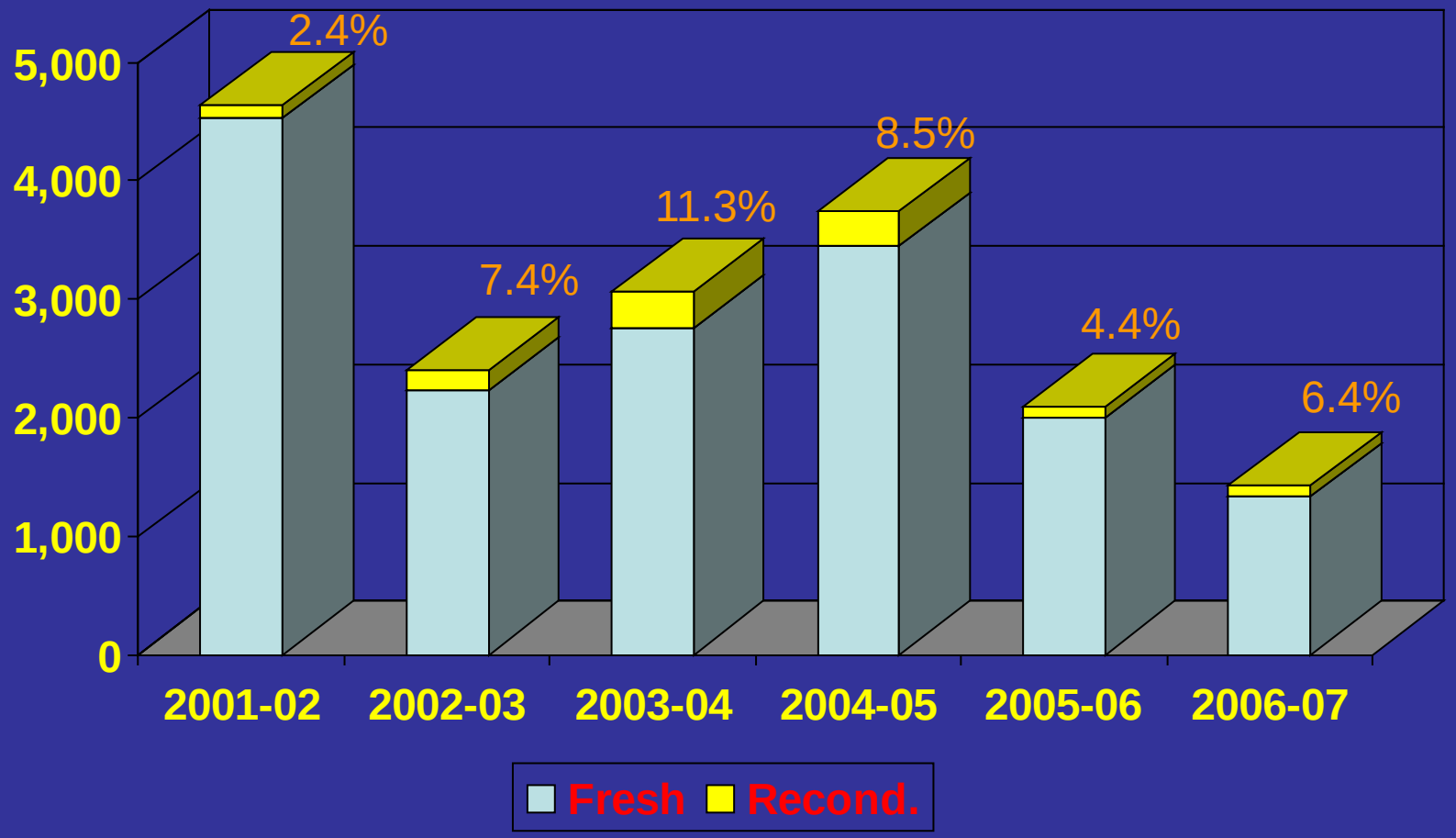
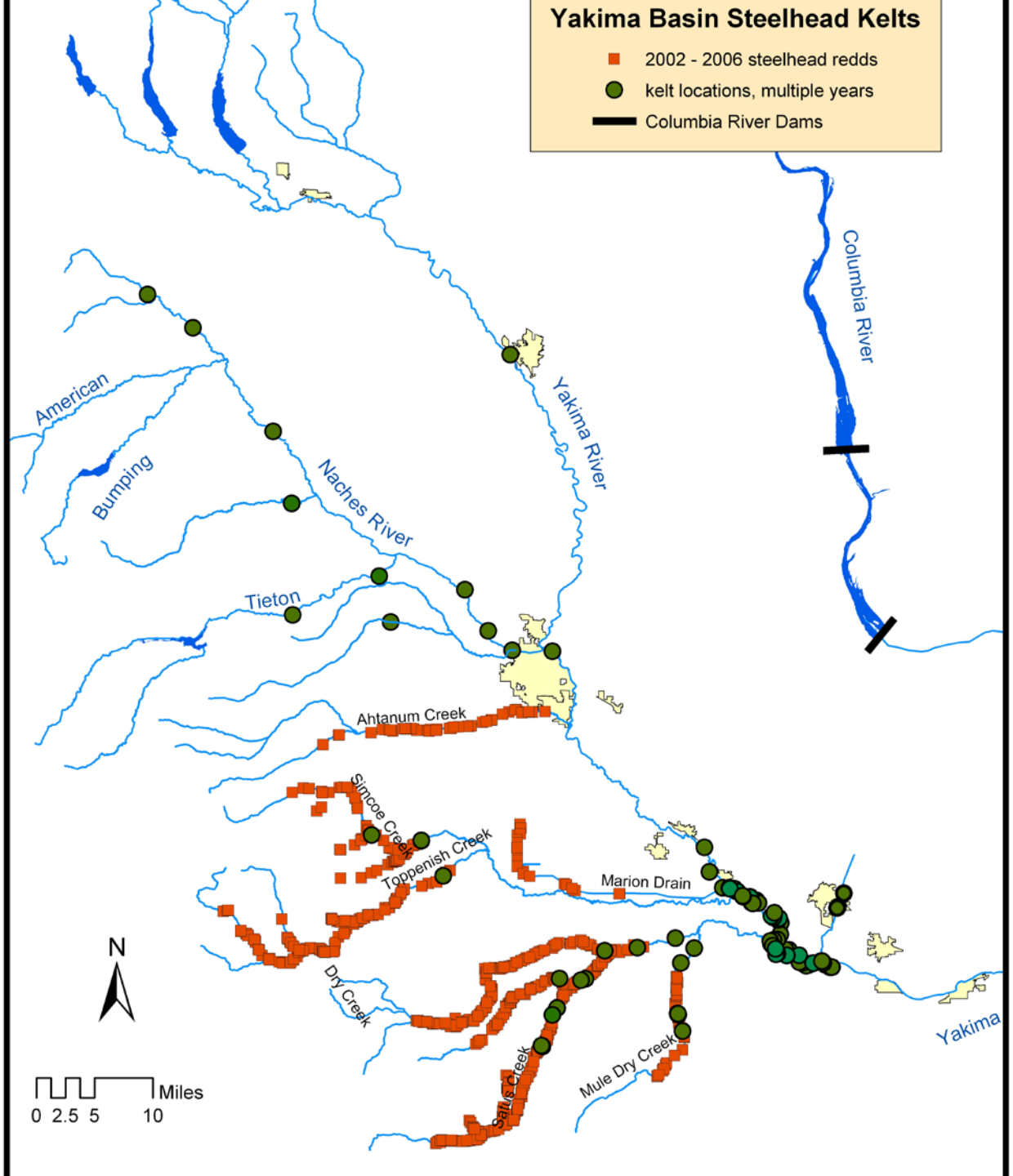
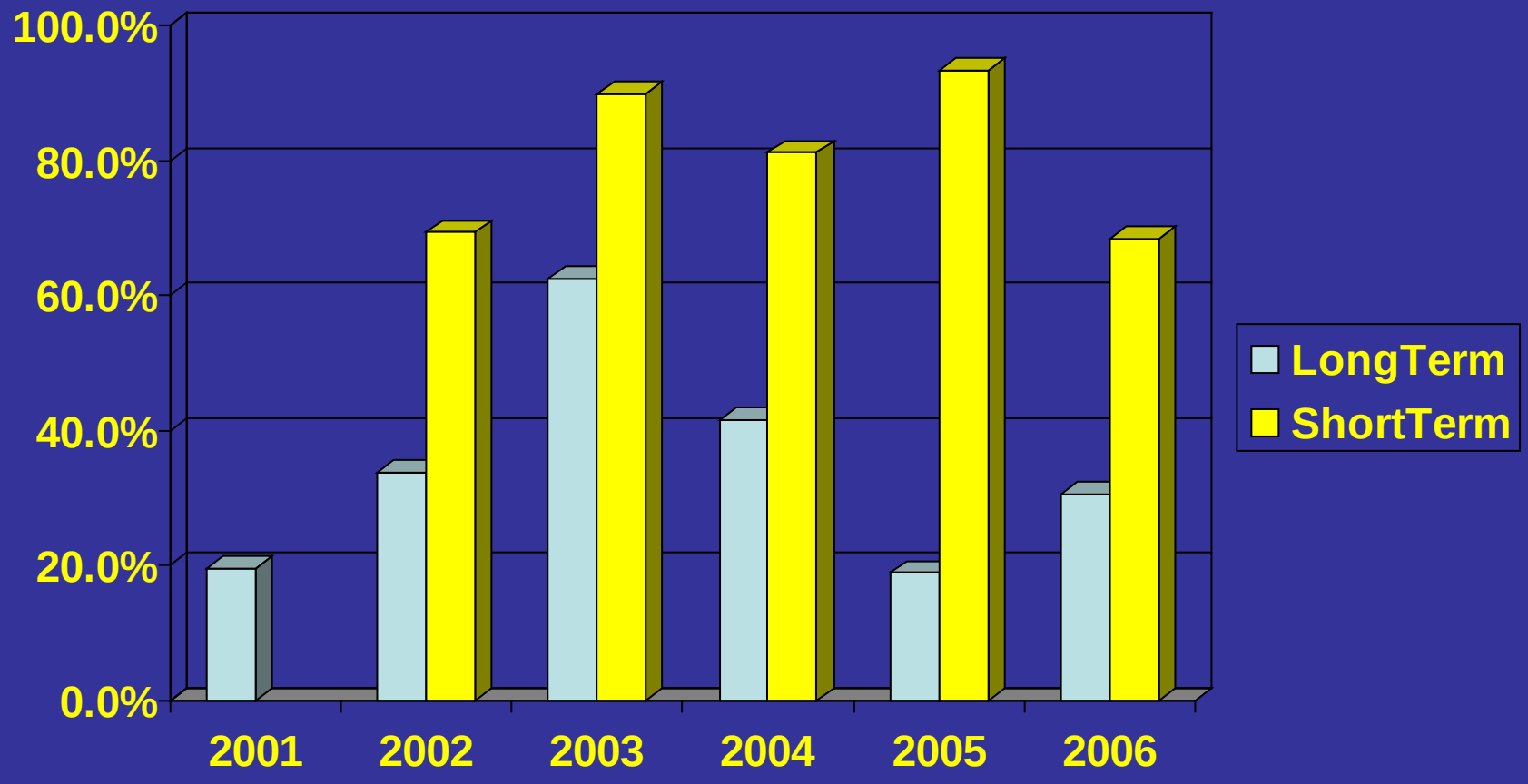
Yakima R. Steelhead Escapement with Reconditioning



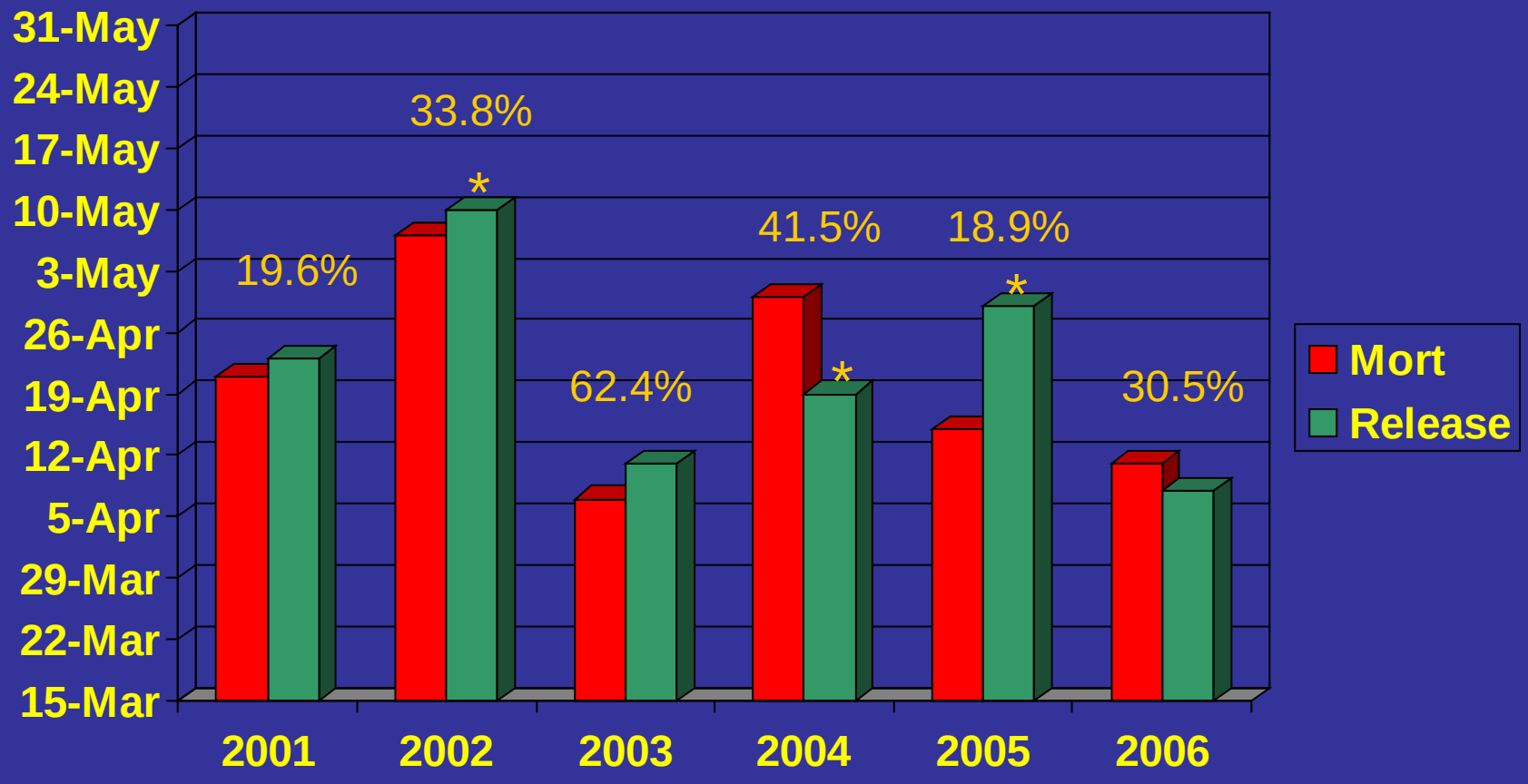
Percentage increase in escapement due to reconditioning.


Yakima Basin Steelhead Kelts
2002 - 2006 steelhead redds
kelt locations, multiple years
Columbia River Dams
Columbia River
Yakima River
American
Bumping
Naches River
Tieton
Ahtanum Creek
Simcoe Creek
Toppenish Creek
Marion Drain
Dry Creek
Satus Creek
Mule Dry Creek
Yakima
N
Miles
0 2.5 5 10

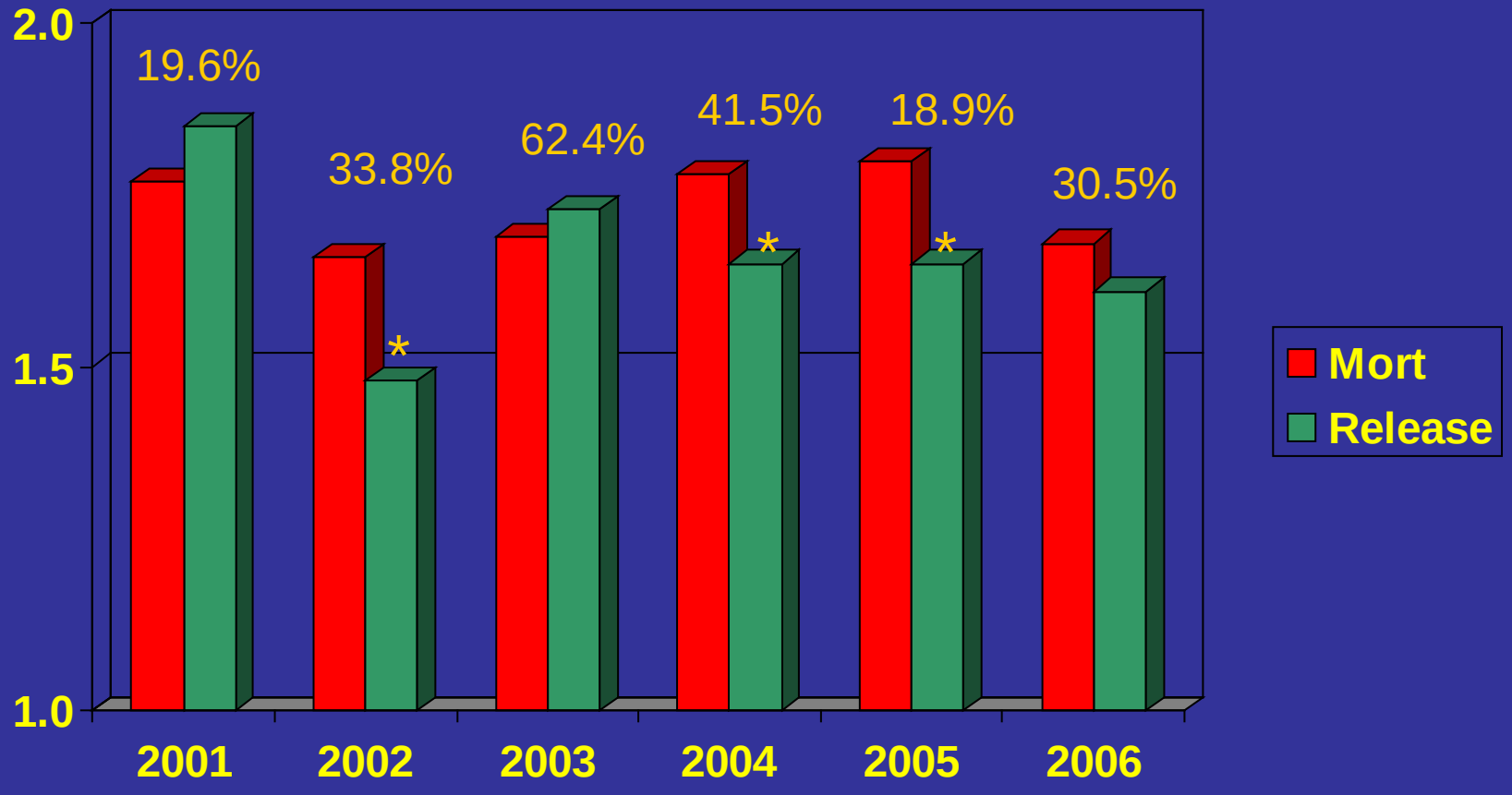
Short- and Long-Term Survival of Reconditioned Kelts to Release



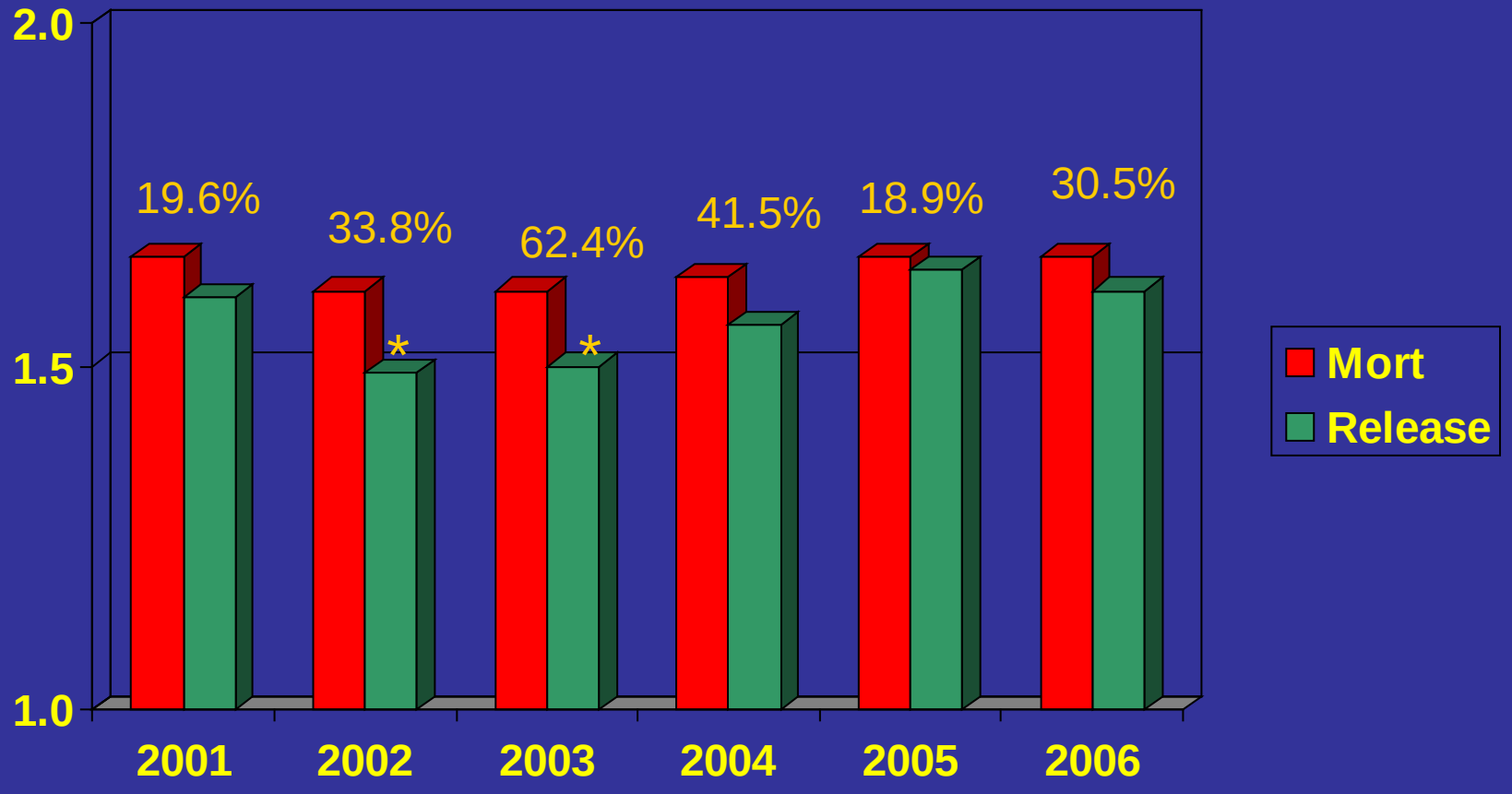
Early-arriving Fish Survive Reconditioning Better?



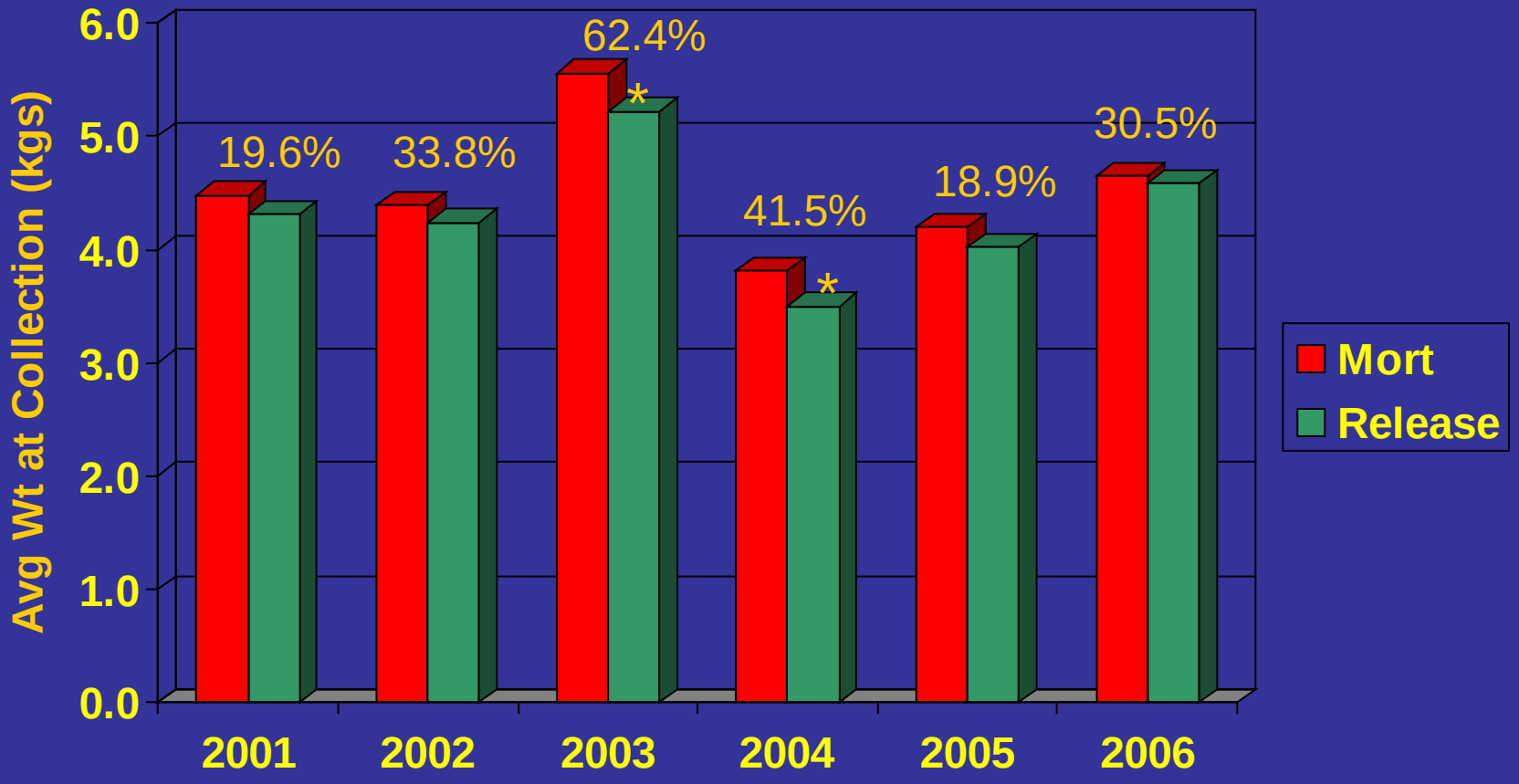
Brighter Fish Survive Reconditioning Better?



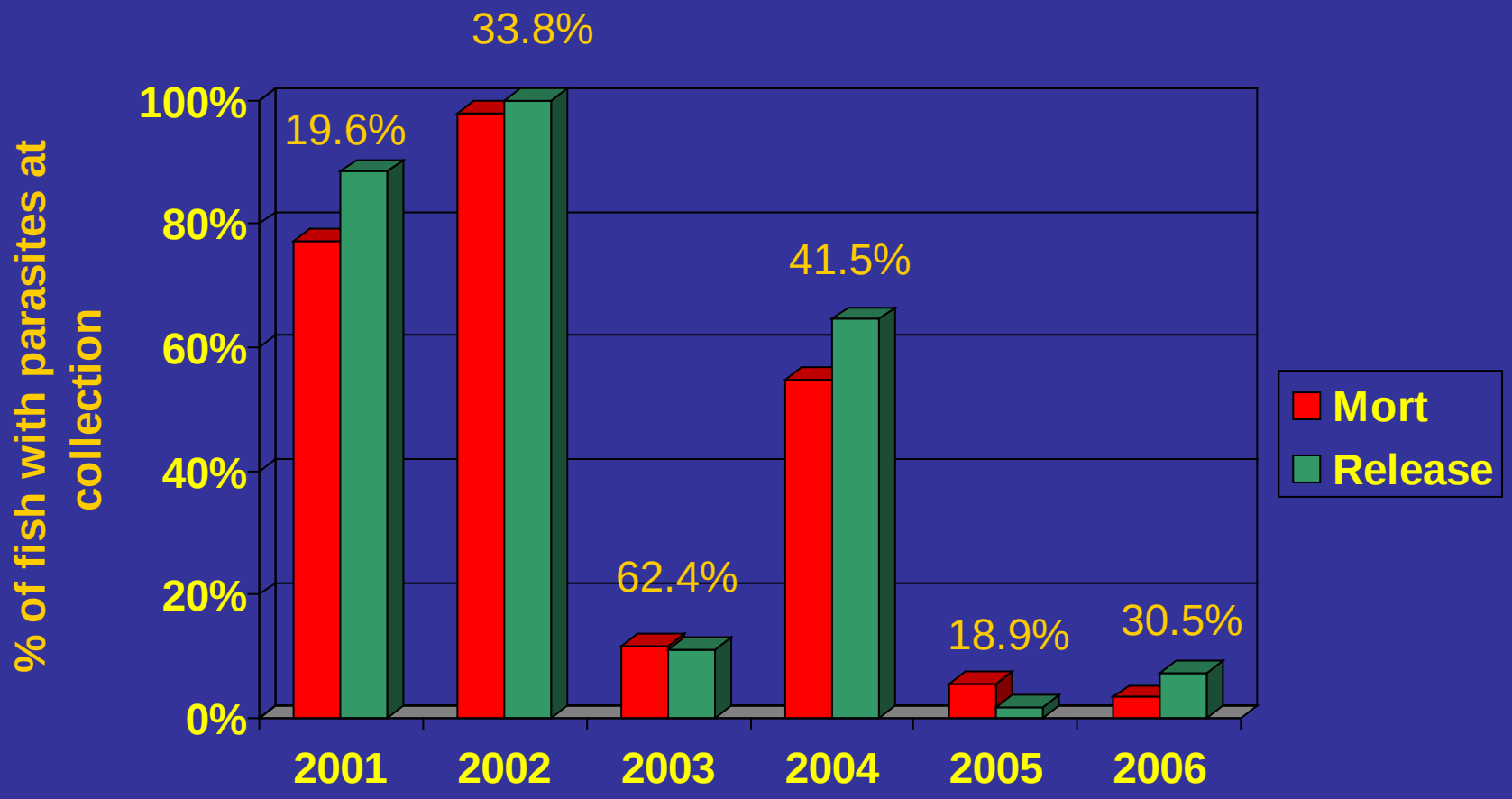
Fish in Better Condition at Collection Survive Reconditioning Better?



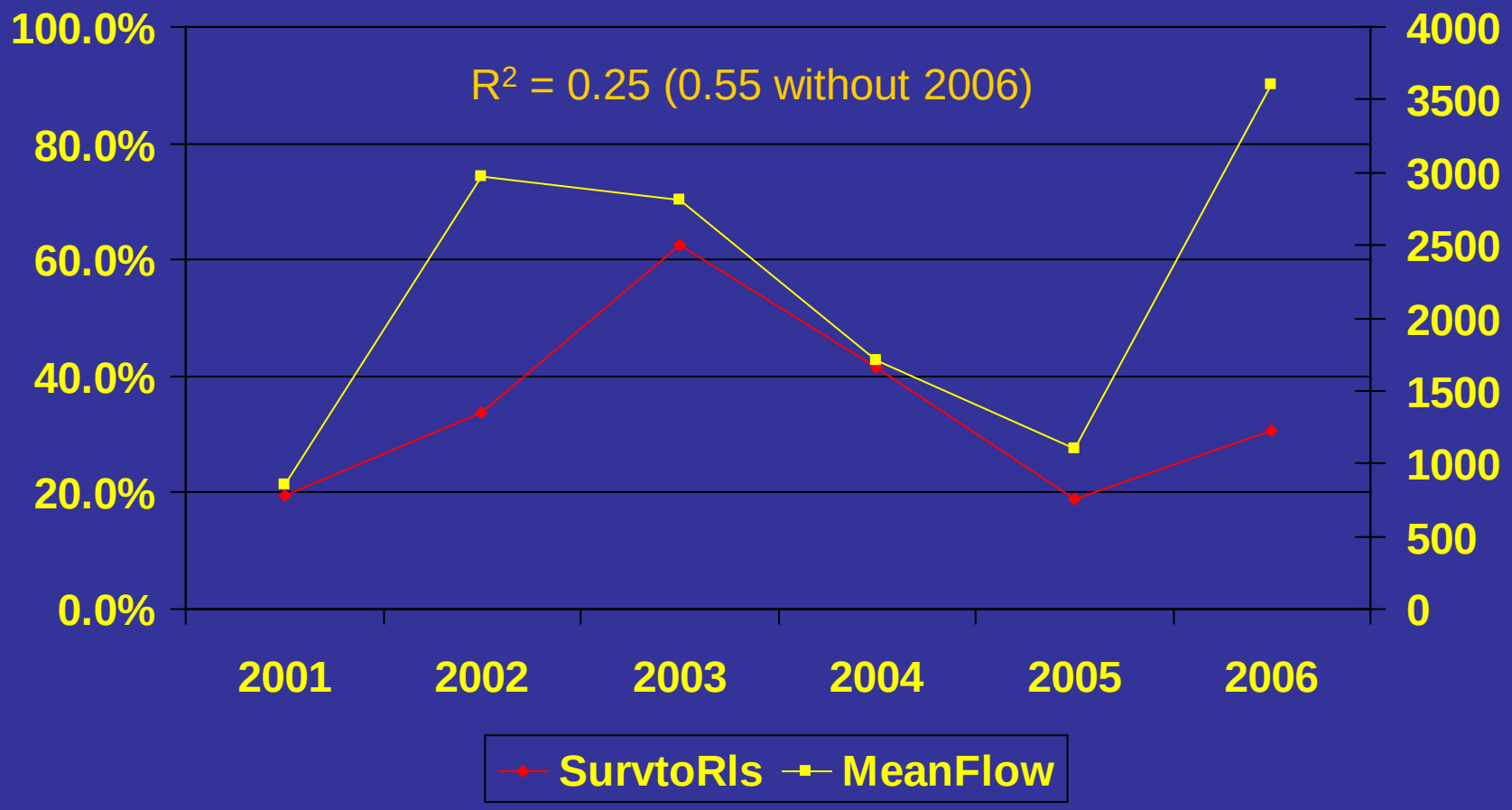
Larger Fish at Collection Survive Reconditioning Better?

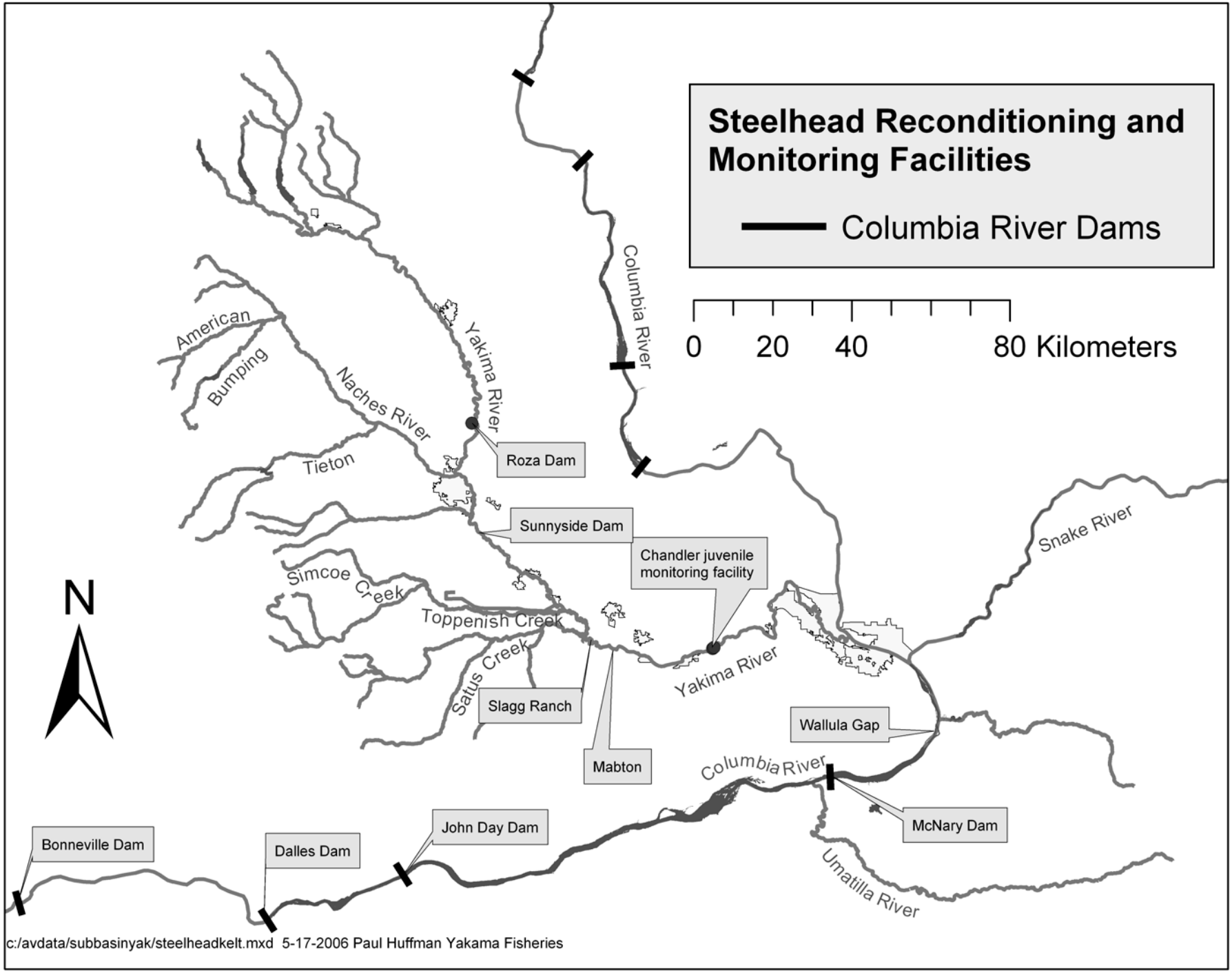


Fewer Parasites at Collection Survive Reconditioning Better?



Long-Term Survival versus Mean Prosser Flows, Jan-Jun

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McNary Dam
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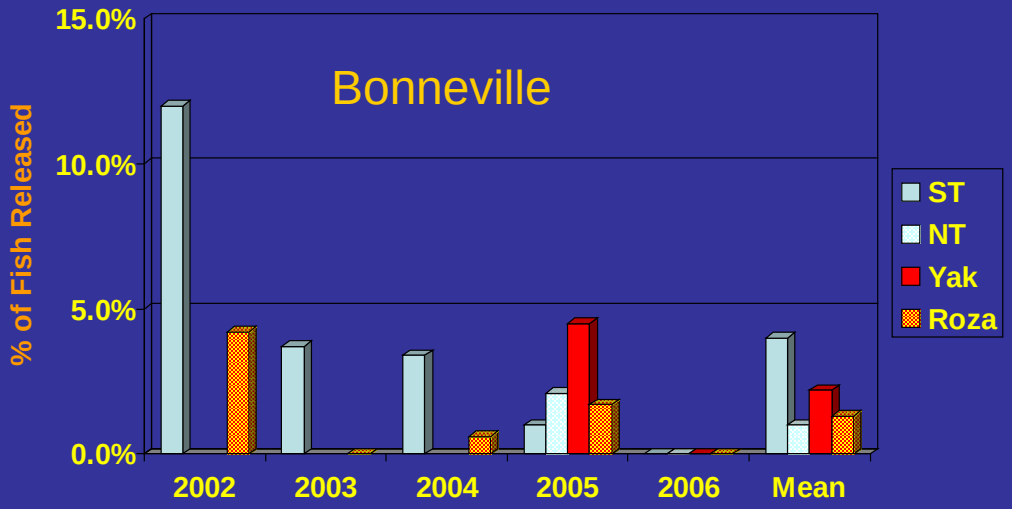
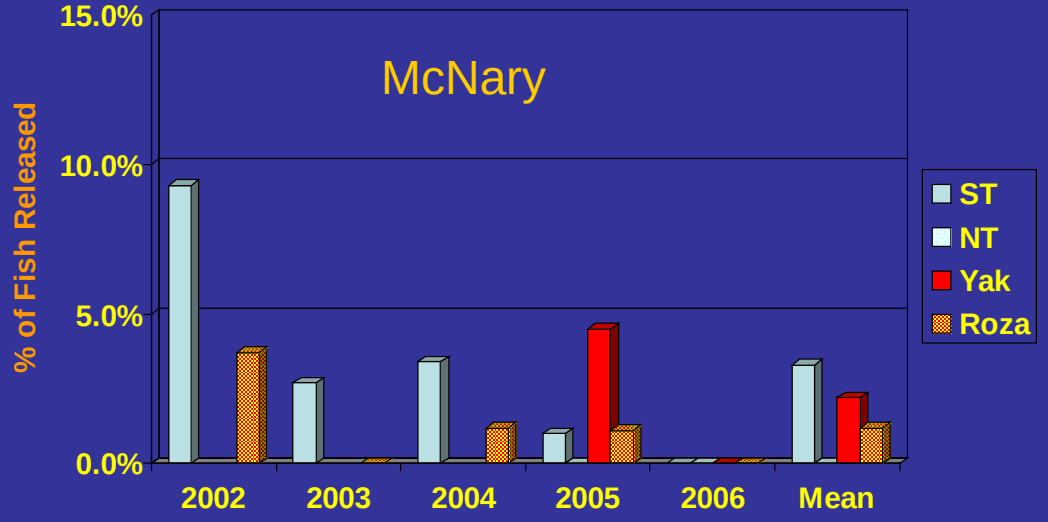
Survival Comparison of Short- and No-Term Reconditioned Kelts to 'Baseline' Iteroparity





Short-Term and YAK Return to Bonn. versus Mean Prosser Flows, Apr-Jun