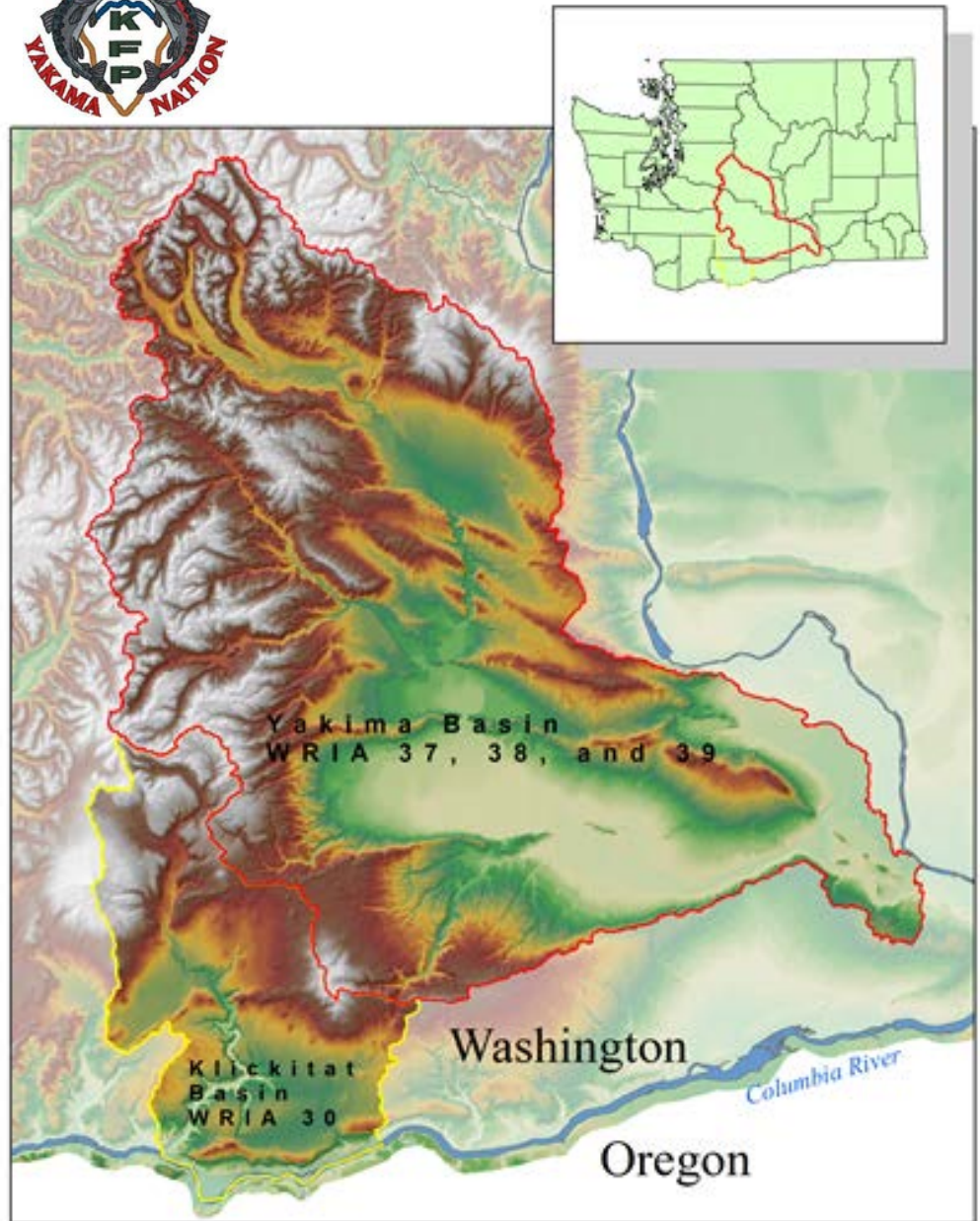




Yakima Klickitat Fisheries Project

Michael Porter
Fisheries Biologist

- Avian and Fish Predation Studies
- Yakima River Basin
- Great Blue Heron
- Yakima River Fish Assemblages





PIT Tags – Passive Integrated Transponder Tags

- Detailed info – Origin, Run, Rear....
- ESU specific species
- In river interrogation sites tracking tagged fish



Roza Reach

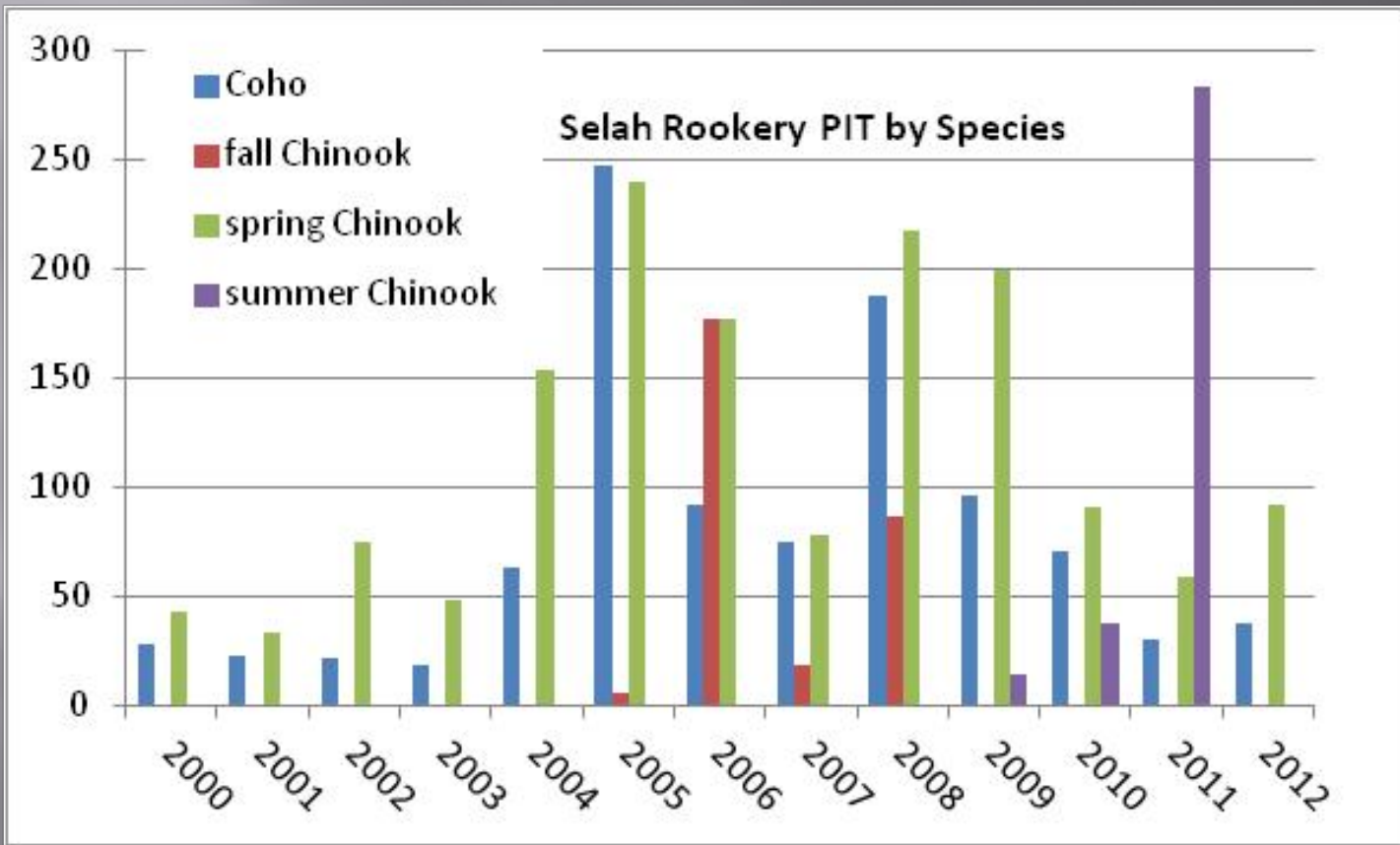
- Reach - Roza Dam to confluence Naches River
- Reach Distance - 18.3 Km
- Dam pulls water for Irrigation & Power
- The Reach commonly experiences low water flow during smolt out-migration
- Provides predation opportunities for wading birds (Great Blue Heron)

Roza Dam



Naches River





A photograph of two Great Egrets perched on a nest made of sticks and twigs in a tree. The birds are dark with long necks and beaks. The background is a clear blue sky. The nest is situated in the upper part of the tree, with some green leaves visible on the left side.

Selah Rookery

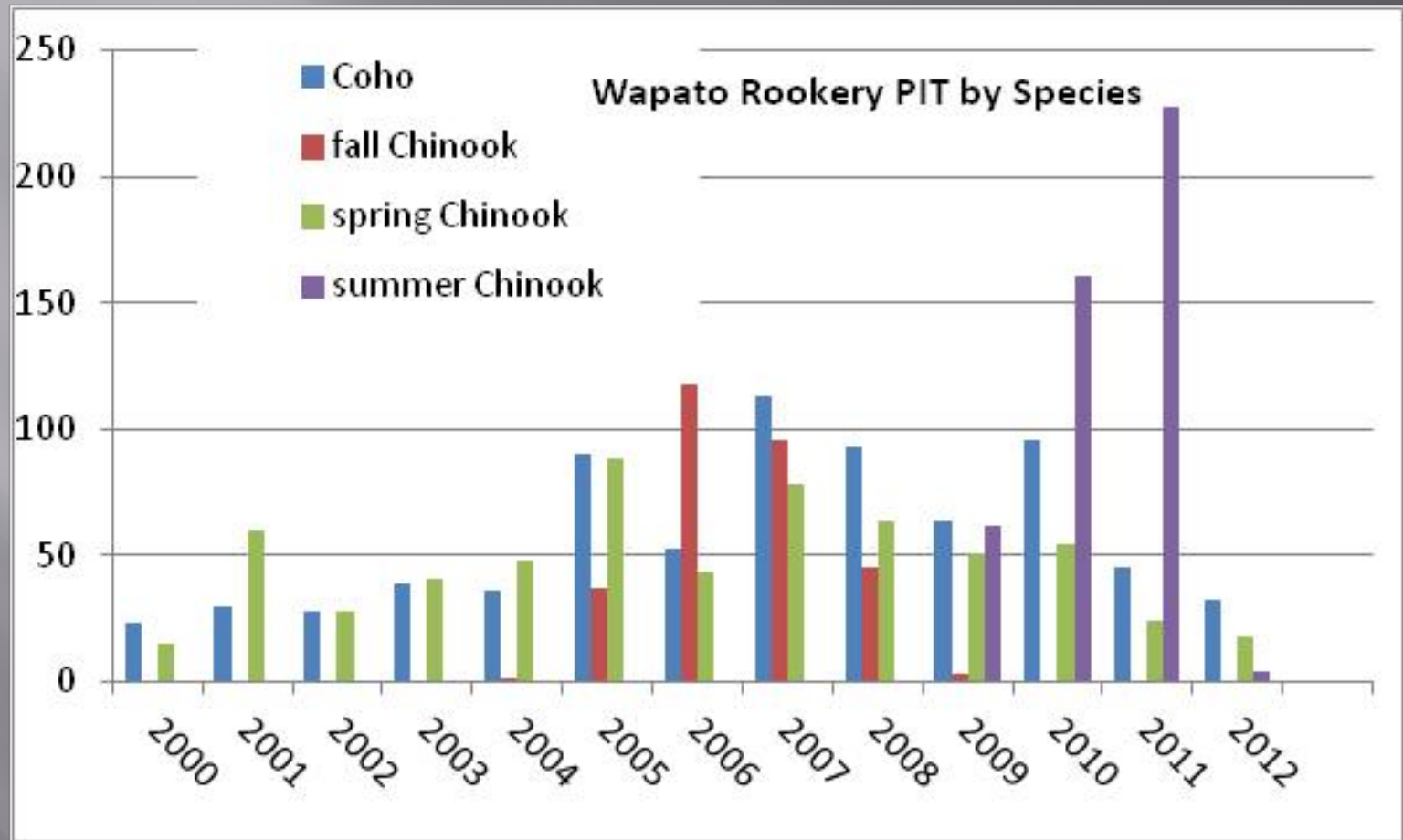
- Produced over 3000 PIT tags to date

During drought years flows in the Roza Reach drop below ideal flow regime for smolt out-migration

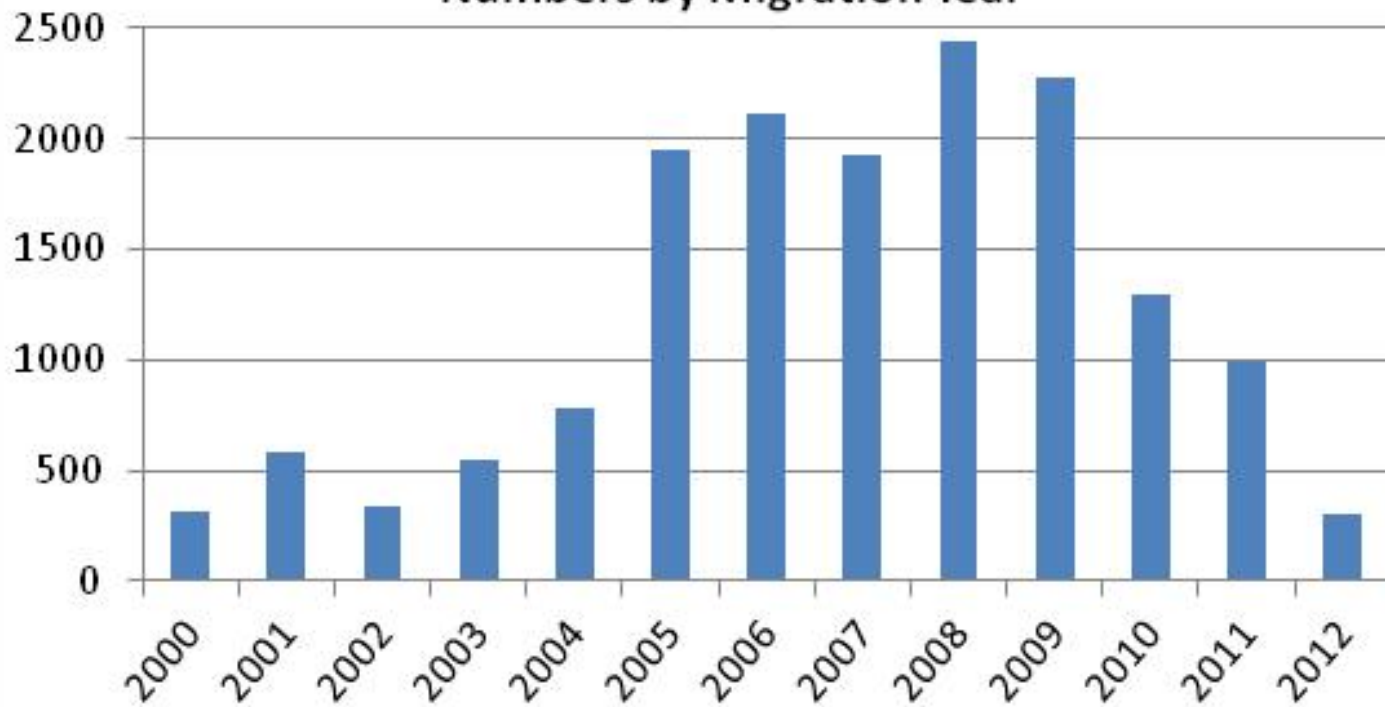
The System Operation Advisory Commission (Basin Biologists) suggests that smolt migration flows should be at least 1000 CFS over a period of three days

Great Blue Heron PIT tag Mortalities

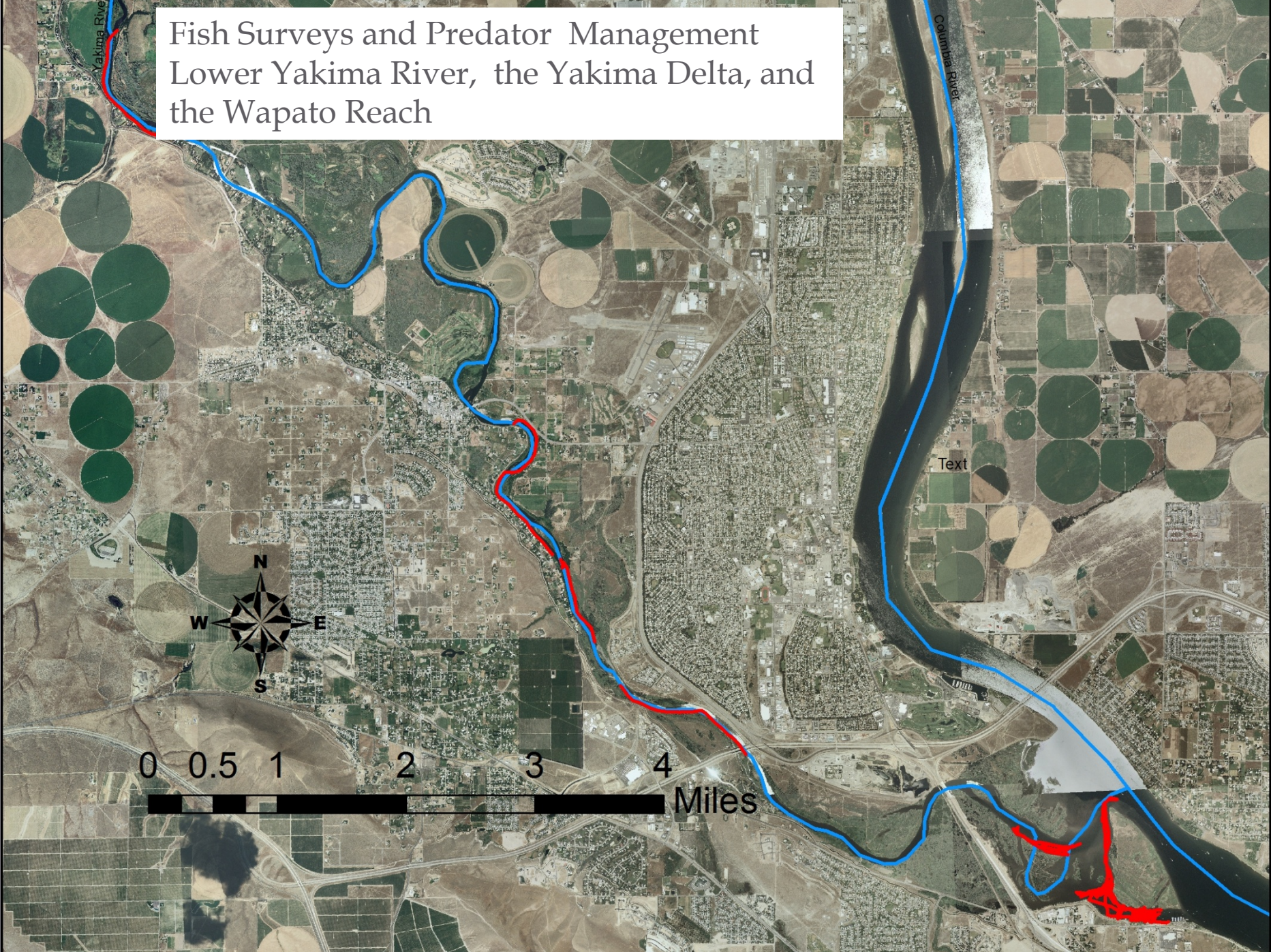
- ▣ Useful in pointing out areas of smolt vulnerability to predation
- ▣ Wapato Wildlife Rookery
- ▣ Produced a high number of PIT tags – 4097
- ▣ Located below both Parker and Sunnyside Dams
- ▣ Investigation of close proximity Irrigation Diversion Canals and Fish Screening Facilities



Great Blue Heron Rookerie PIT Numbers by Migration Year



Fish Surveys and Predator Management Lower Yakima River, the Yakima Delta, and the Wapato Reach



SMALLMOUTH BASS - *Micropterus dolomieu*



By 1925, 5000, Smallmouth Bass had been introduced to the Yakima River and had established resident populations. The Yakima River serves as a spawning nursery for Smallmouth Bass coming from the Columbia River

CHANNEL CATFISH - *Ictalurus Punctatus*



Introduced into Washington State in 1892 (Lampman 1946)
Channel Catfish naturally produce in only the Columbia , Snake, Walla Walla, and
Yakima Rivers.

BROWN BULLHEAD - *Ameiurus Nebuloso*



Introduced into Washington State in 1882 - 1883(Lampman 1946)
Brown Bullheads inhabit warm-water ponds, lakes, sloughs, and
Sluggish areas in streams. (Yakima Delta)

LARGEMOUTH BASS - *Micropterus Salmoides*



Widely introduced into Washington by 1895 the Largemouth Bass has established large populations in much of the Columbia River is frequently present in the Delta of the Yakima River

Lower Yakima River and Delta Fish 23 Species

Family	Common Name	Scientific Name
Salmonidae:		
	Steelhead/Rainbow trout	<i>Oncorhynchus mykiss</i>
	Coho Salmon	<i>Oncorhynchus kisutch</i>
	Chinook Salmon	<i>Oncorhynchus tshawytscha</i>
	Mountain Whitefish	<i>Prosopium williamsoni</i>
Cyprinidae:		
	Chiselmouth	<i>Acrocheilus alutaceus</i>
	Carp	<i>Cyprinus carpio</i>
	Peamouth	<i>Mylocheilus caurinus</i>
	Speckled Dace	<i>Rhinichthys osculus</i>
	Northern Pikeminnow	<i>Ptychocheilus oregonensis</i>
	Redside Shiner	<i>Richardsonius balteatus</i>
Catostomidae:		
	Sucker	<i>Catostomus columbianus</i> , <i>Catostomus catostomus</i>
Ictaluridae:		
	Brown Bullhead	<i>Ameiurus nebulosus</i>
	Channel Catfish	<i>Ictalurus punctatus</i>
Centrarchidae:		
	Pumpkin Seed	<i>Lepomis gibbosus</i>
	Blue Gill	<i>Lepomis macrochirus</i>
	Smallmouth Bass	<i>Micropterus dolomieu</i>
	Large Mouth Bass	<i>Micropterus salmoides</i>
	White Crappie	<i>Pomoxis annularis</i>
Percidae:		
	Walleye	<i>Stizostedion vitreum vitreum</i>
	Yellow Perch	<i>Perca flavescens</i>
Cottidae:		
	Sculpin	<i>Cottus bairdi</i>
Clupeidae:		
	Shad	<i>Alosa sapidissima</i>

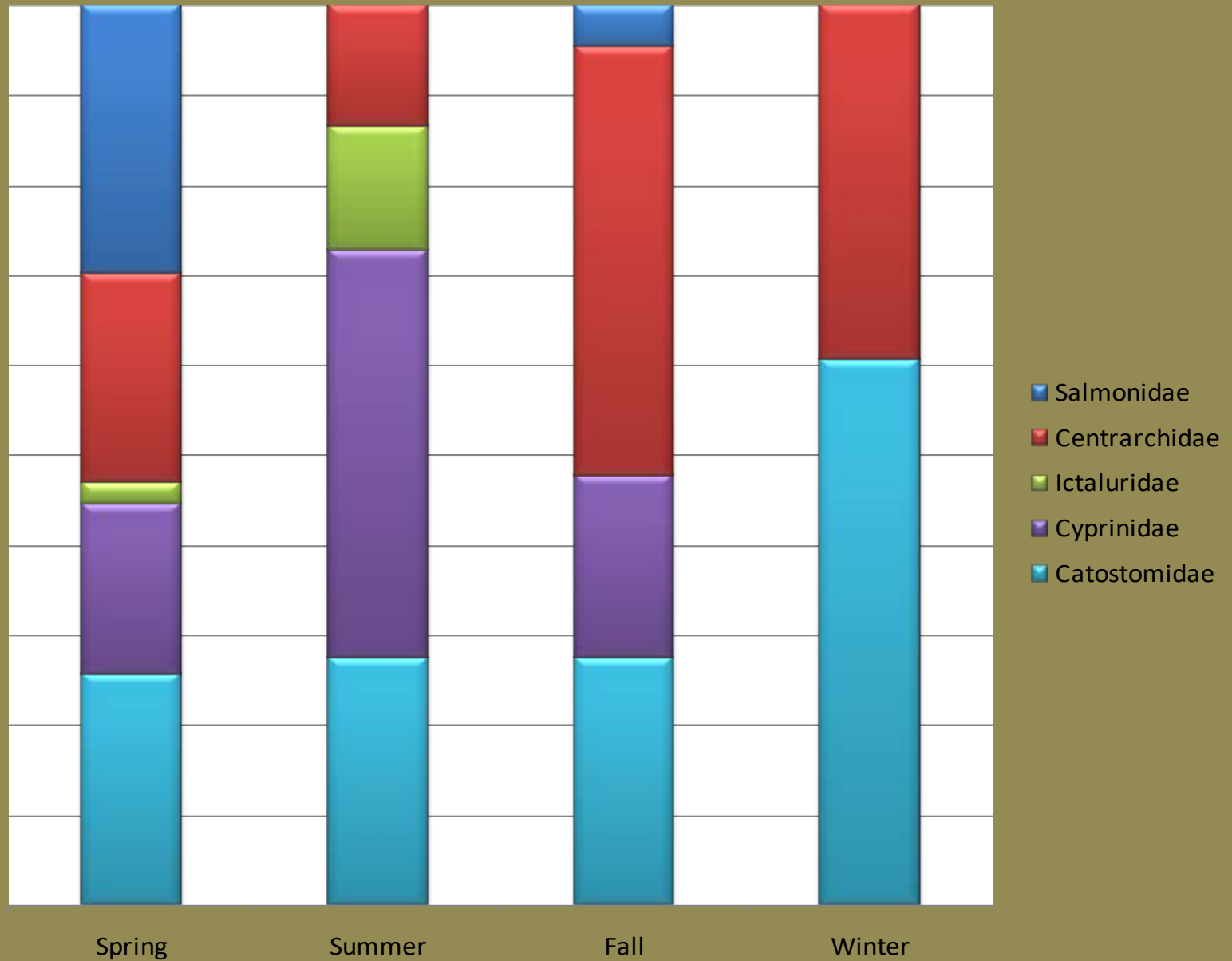
West of Causeway Below Bateman Island Displayed Greatest Utilization of Non-native fish species and piscivorous fish

Abundant Numbers of:

- Smallmouth Bass
- Largemouth Bass
- Brown Bullhead



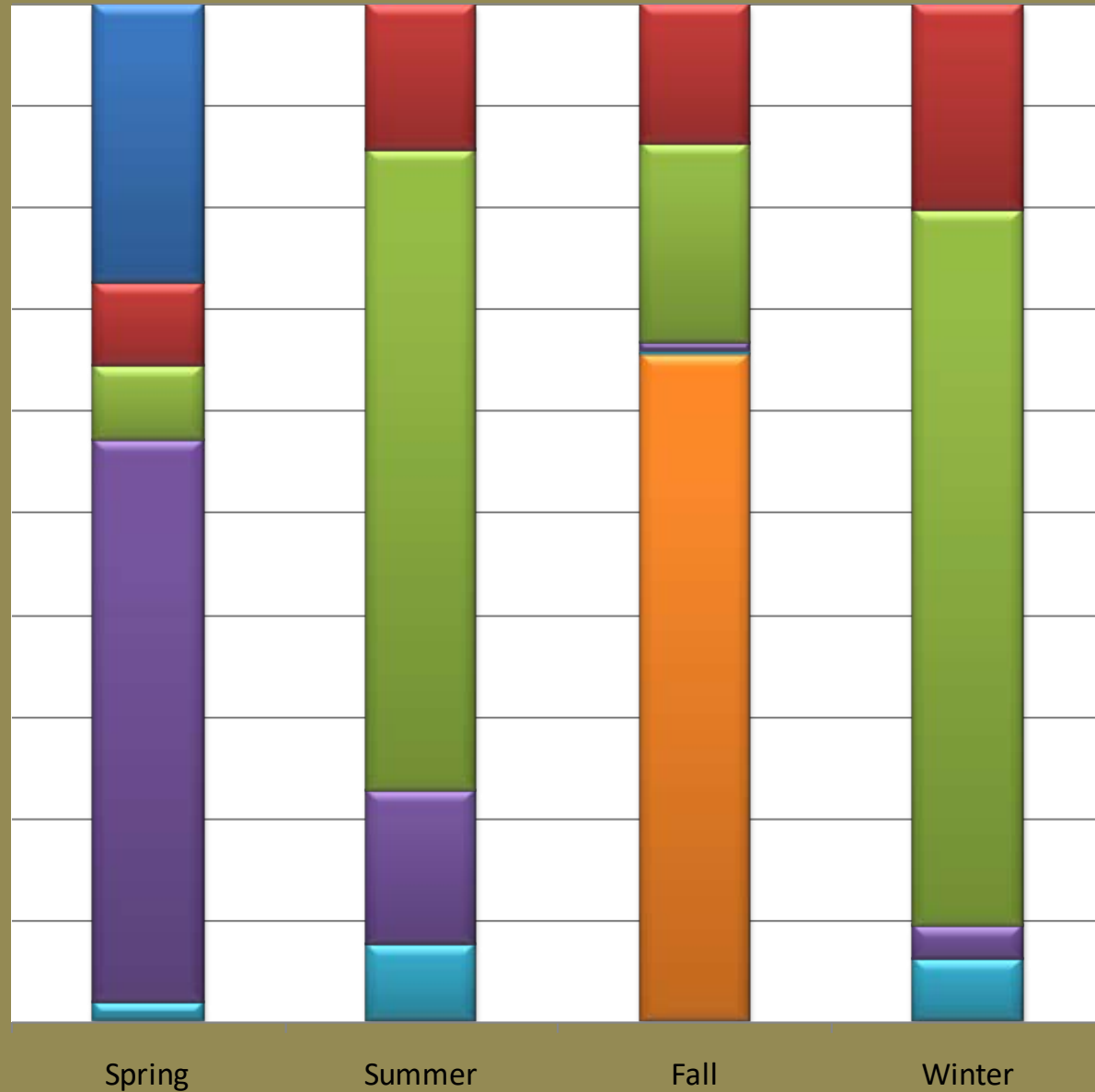
Relative Catch Per Unit Effort, Lower Yakima River

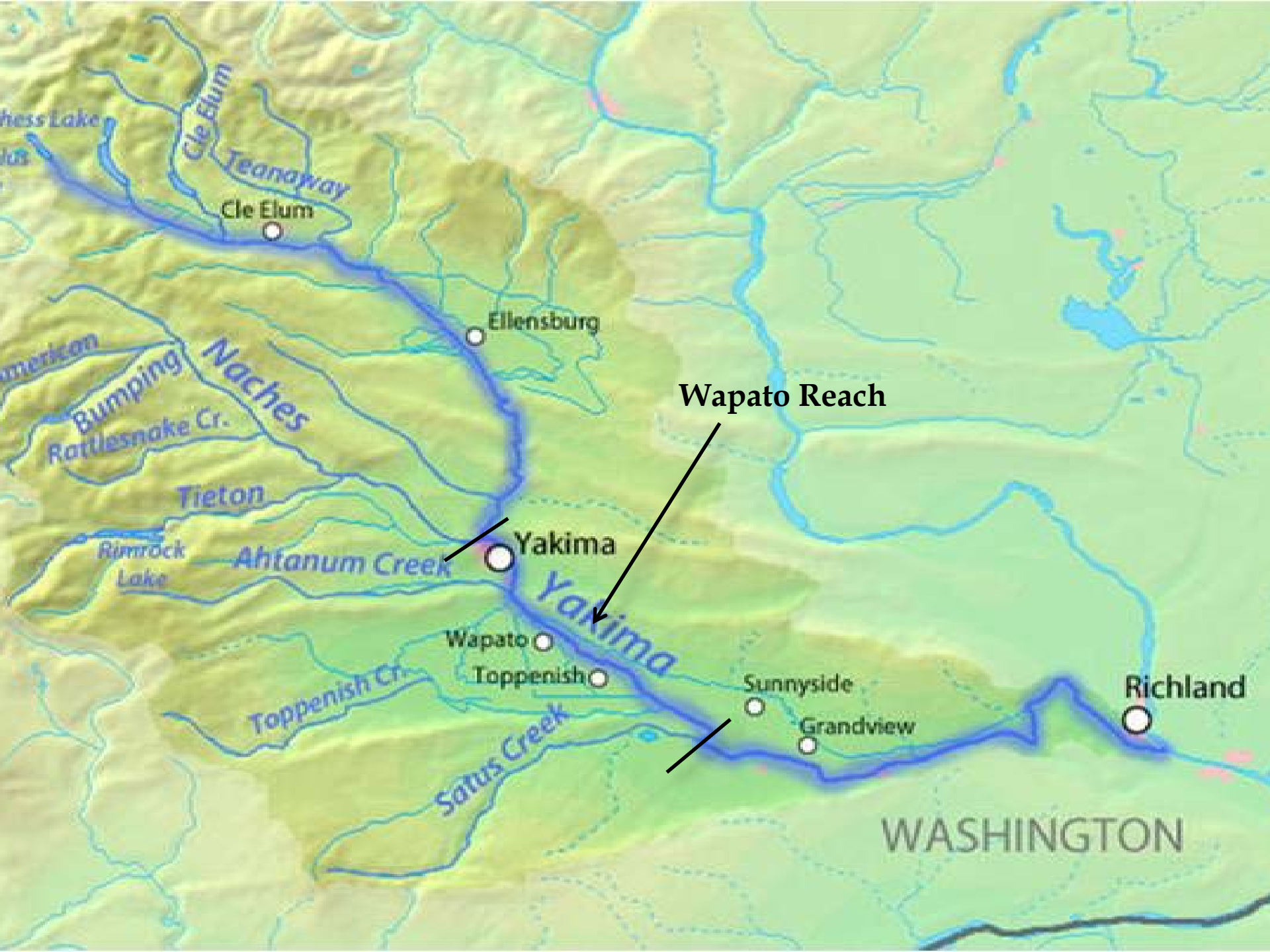


Yakima Delta Fish Survey Areas



Relative Catch Per Unit Effort, West of Causeway





Wapato Reach

Yakima

Richland

WASHINGTON

Cle Elum

Ellensburg

Wapato

Toppenish

Sunnyside

Grandview

Teanaway

Naches

Tieton

Ahtanum Creek

Toppenish Cr.

Satus Creek

Yakima

Shess Lake

American

Rattlesnake Cr.

Rimrock Lake

Yakima River – Wapato Reach – 10 Fish Species

Family	Common Name	<i>Scientific Name</i>
Salmonidae:		
	Steelhead/Rainbow trout	<i>Oncorhynchus mykiss</i>
	Coho Salmon	<i>Oncorhynchus kisutch</i>
	Chinook Salmon	<i>Oncorhynchus tshawytscha</i>
	Mountain Whitefish	<i>Prosopium williamsoni</i>
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	Chiselmouth	<i>Acrocheilus alutaceus</i>
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	Northern Pikeminnow	<i>Ptychocheilus oregonensis</i>
	Redside Shiner	<i>Richardsonius balteatus</i>
Catostomidae:		
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Centrarchidae:		
	Smallmouth Bass	<i>Micropterus dolomieu</i>

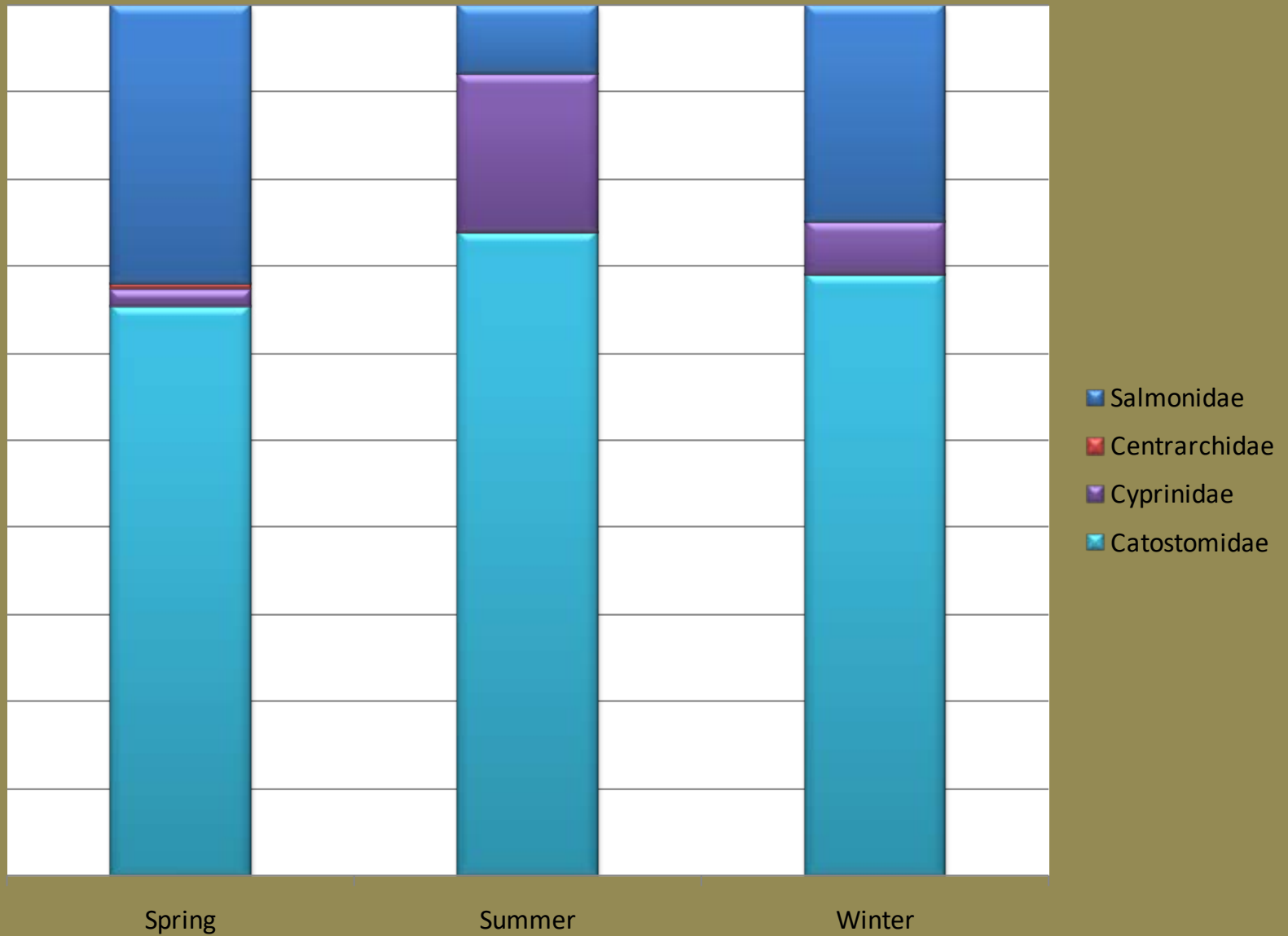
Fish Predator Wapato Reach

- ❑ Northern Pike Minnow
- ❑ CPUE 5 fish per minute in side channels
- ❑ Sub basin Drain showed extremely high numbers of NPM –
Toppenish Sewage Plant





Relative Catch Per Unit Effort, Wapato Reach



Yakima Delta – Bateman Island Causeway

- ❑ Blocks Yakima River Flow on south side of Island
- ❑ Creates an unnatural River Delta which limits flow and creates stagnant water
- ❑ Stagnant pool of water west of causeway raises water temperatures creating habitat for non-native warm water fish species (piscivores)
- ❑ Creates a thermal barrier for adult salmon migrating to the Yakima Basin by mixing with flowing river water
- ❑ Disrupts spawning timing for adult summer migrants and causes salmon to hold at the mouth of the Yakima River until temperature drops (Sockeye and Summer Chinook)

Questions?