

Fisheries and Oceans Canada Englishman River Projects 2010


Dave Davies for Margaret Wright
Englishman River Watershed Planning
Meeting
Parksville, February 19, 2011

A stylized, layered mountain range graphic in shades of teal and blue, located in the bottom right corner of the slide.

DFO Projects 2010

- ◆ Groyne Removal
- ◆ Englishman River Hatchery
- ◆ Clay Young channel monitoring
- ◆ Project Inspections

Bio-Assessment 2010

- ◆ Coho Smolt Survey
 - ◆ Adult escapement enumeration
 - ◆ Juvenile Fish trapping
 - ◆ Vancouver Island University Monitoring
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- A stylized silhouette of a mountain range in shades of teal, located in the bottom right corner of the slide.



Hatchery

- ◆ Community Fisheries Development Centre
- ◆ DFO provides one million pink eggs from brood stock taken at the Quinsam Hatchery each year.
- ◆ In 2010, 500,000 pink eggs are currently incubating in the hatchery and another 500,000 in cassette incubators in the Clay Young channel.
- ◆ Chinook fry (210,000) are transplanted from the Big Qualicum Hatchery to the settling pond of the Clay Young channel, where they acclimate to Englishman River water over a number of weeks to encourage their return as adult spawners. Fry are fed and released at approximately 6 gms., then released in early June.






Clay Young Channel Monitoring

- ◆ Agreement between DFO & the Community Fisheries Development Centre for channel monitoring.
- ◆ Nine monitoring points are visited regularly to ensure continuous flow in the channel.
- ◆ Beaver dam monitoring and small dam removal at 2 critical times of the year: smolt outmigration and adult returns.

Inspections

- ◆ Biannual project inspections occur of the Clay Young Channel, as part of the agreement for operating in the Regional Park.
 - ◆ Conducted by DFO Biologist and either a DFO or a CFDC technician, and a DFO engineer if we find something that requires engineering advice.
 - ◆ The entire 4 km length of the channel is inspected and a report is submitted to the RDN.
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Englishman River
Regional Park

Outlet

Clay Young
Side-Channel

Intake

Settling
Pond

Lot 1, Block 602

Owned by the Province managed by the
RDW under a 29 year renewable lease.

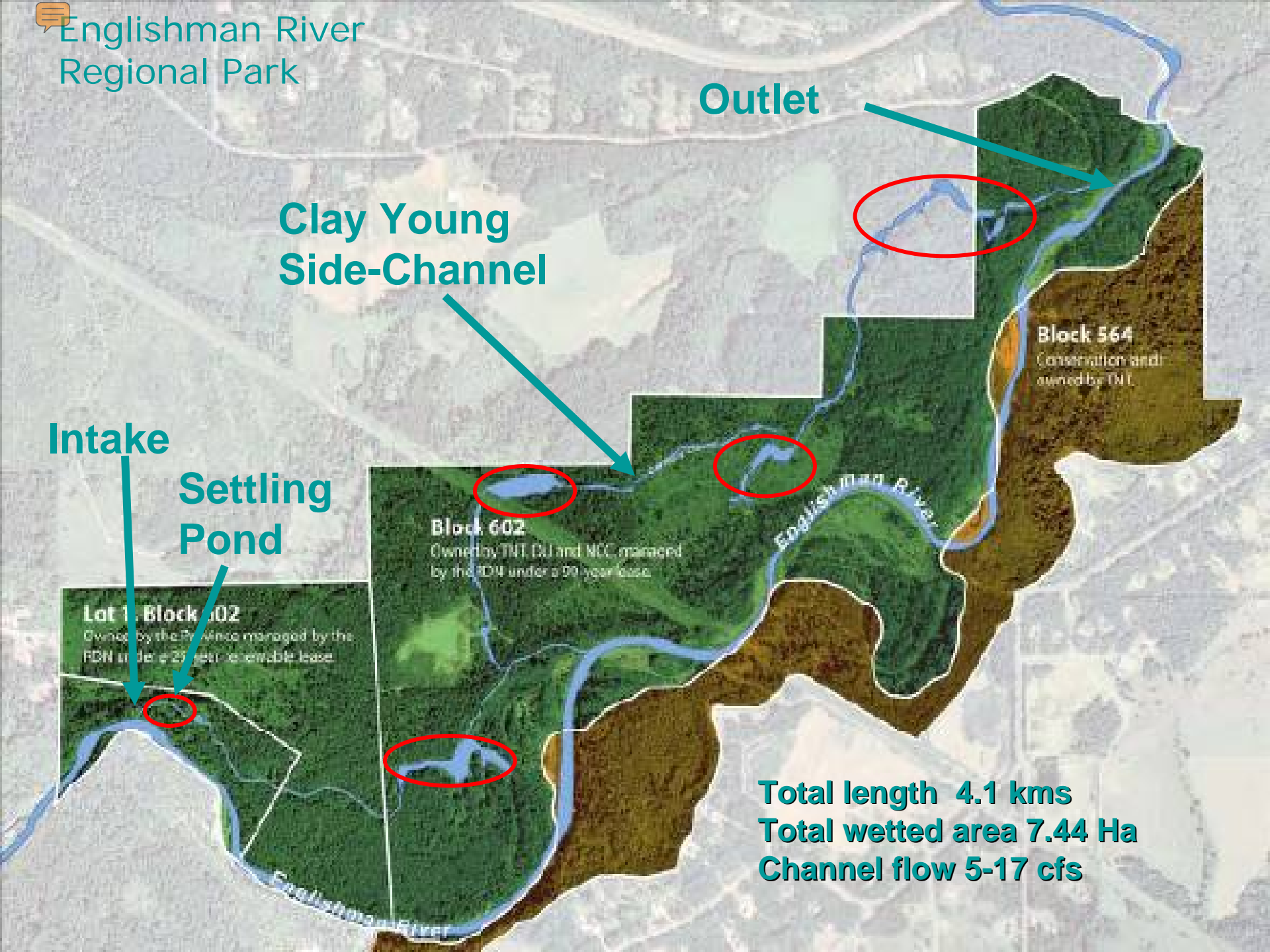
Block 602

Owned by TNT, DJ and MCC, managed
by the RDW under a 99 year lease.

Block 564

Conservation and
owned by TNT.

Total length 4.1 kms
Total wetted area 7.44 Ha
Channel flow 5-17 cfs













Coho Smolt Survey

Objectives:

1. To assess the output of coho smolts from the Englishman River Watershed and specifically to examine the contribution of smolts from the Clay Young side channel to watershed production.
2. To compare the 2009 & 2010 data to pre-extension baseline watershed smolt production data from 1998 – 2005.




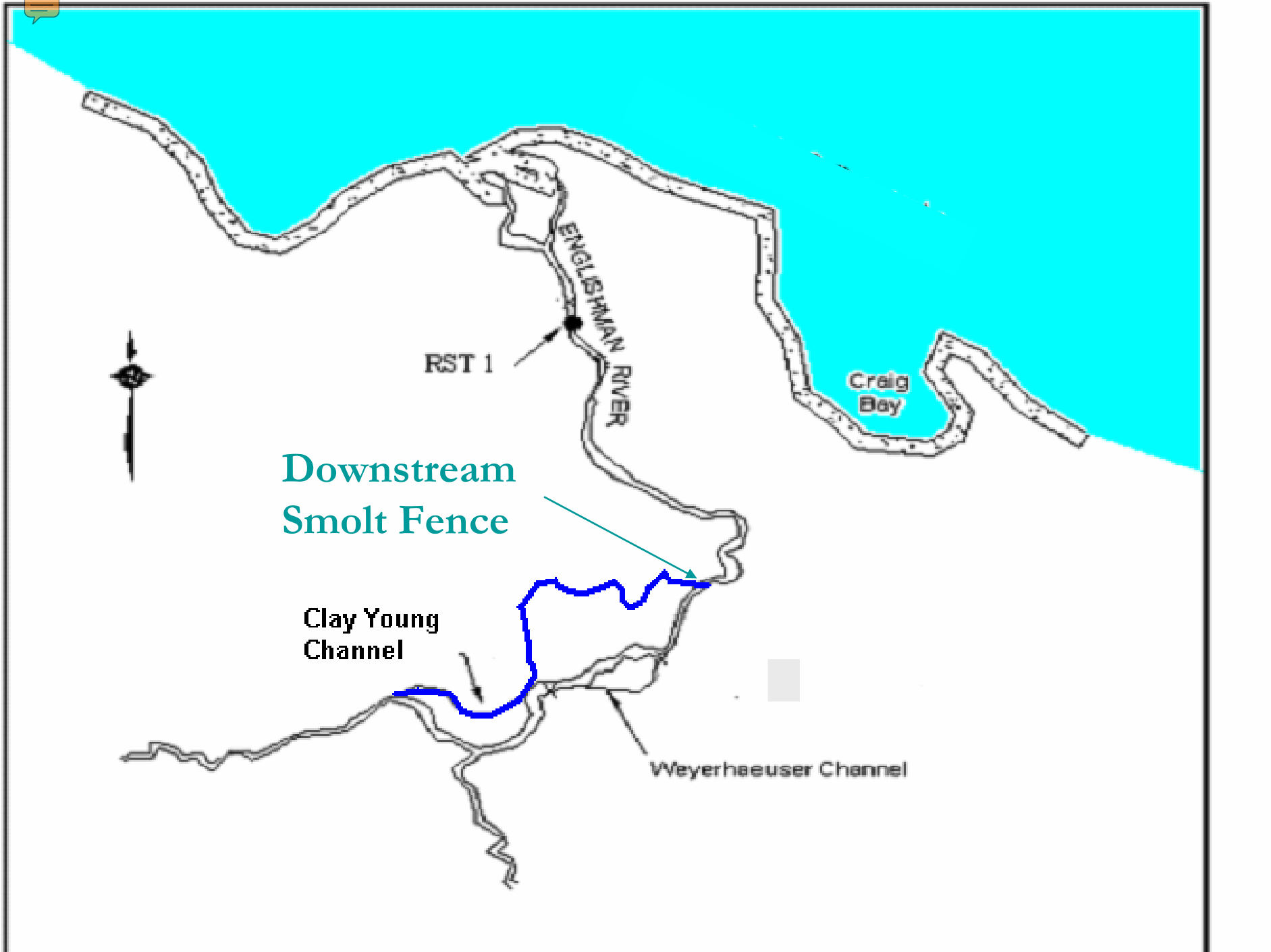
Smolt Survey

Participants/Funding 2009 & 2010

- ◆ Community Fisheries Development Centre
 - ◆ Doug Poole, Bio Tech., Resource Restoration Unit, SCA
 - ◆ John Taylor, J.A.Taylor & Assoc.
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- ◆ Project Funding: BC Living Rivers and DFO

Extension of Clay Young Channel

- ◆ In 2007, the Clay Young side channel was extended to a length of 4.1 km, increasing the overall wetted area to 7.44 ha.
 - ◆ Rearing habitat was increased by 44,000 sq. m.
 - ◆ The channel provides both stream and pond habitats.
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ENGLISHMAN RIVER

RST 1

Craig Bay

Downstream Smolt Fence

Clay Young Channel

Weyerhaeuser Channel

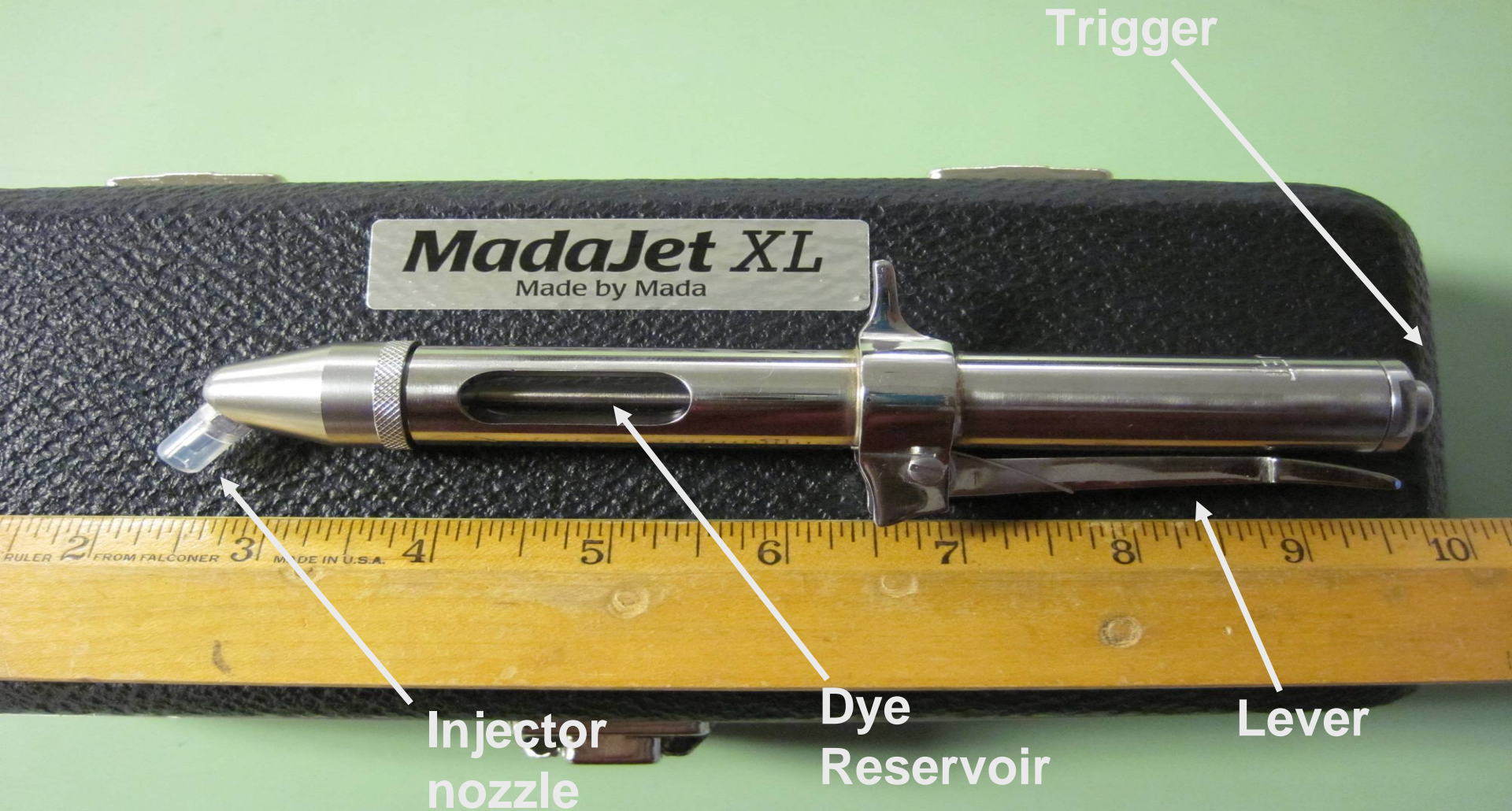
Downstream Smolt Fence



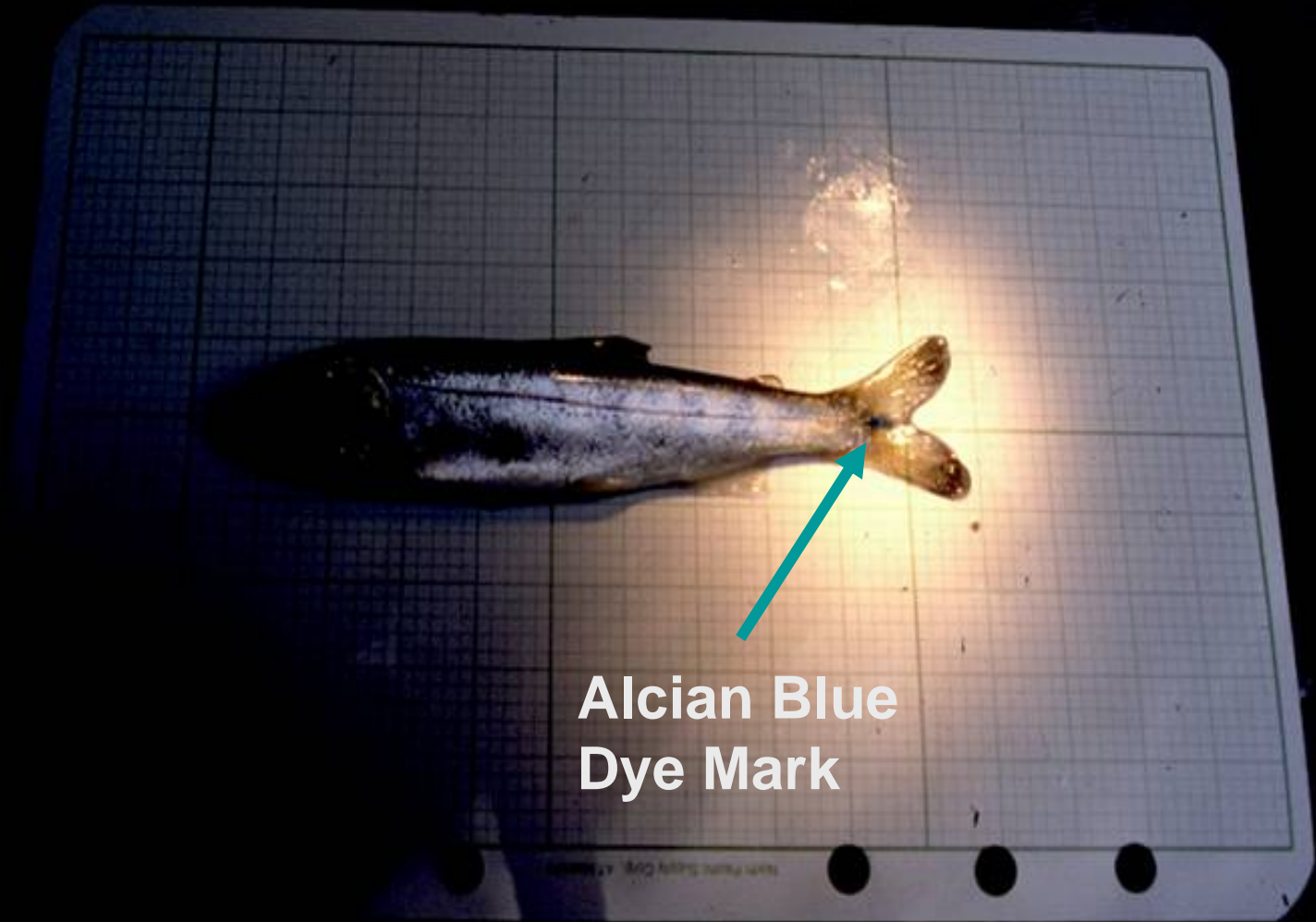
Fish counting and marking station



Marking tool



A Madajet dental inoculator was used to apply a sub-dermal tattoo of Alcian Blue dye to a fin. It is spring loaded to inject the dye under pressure.



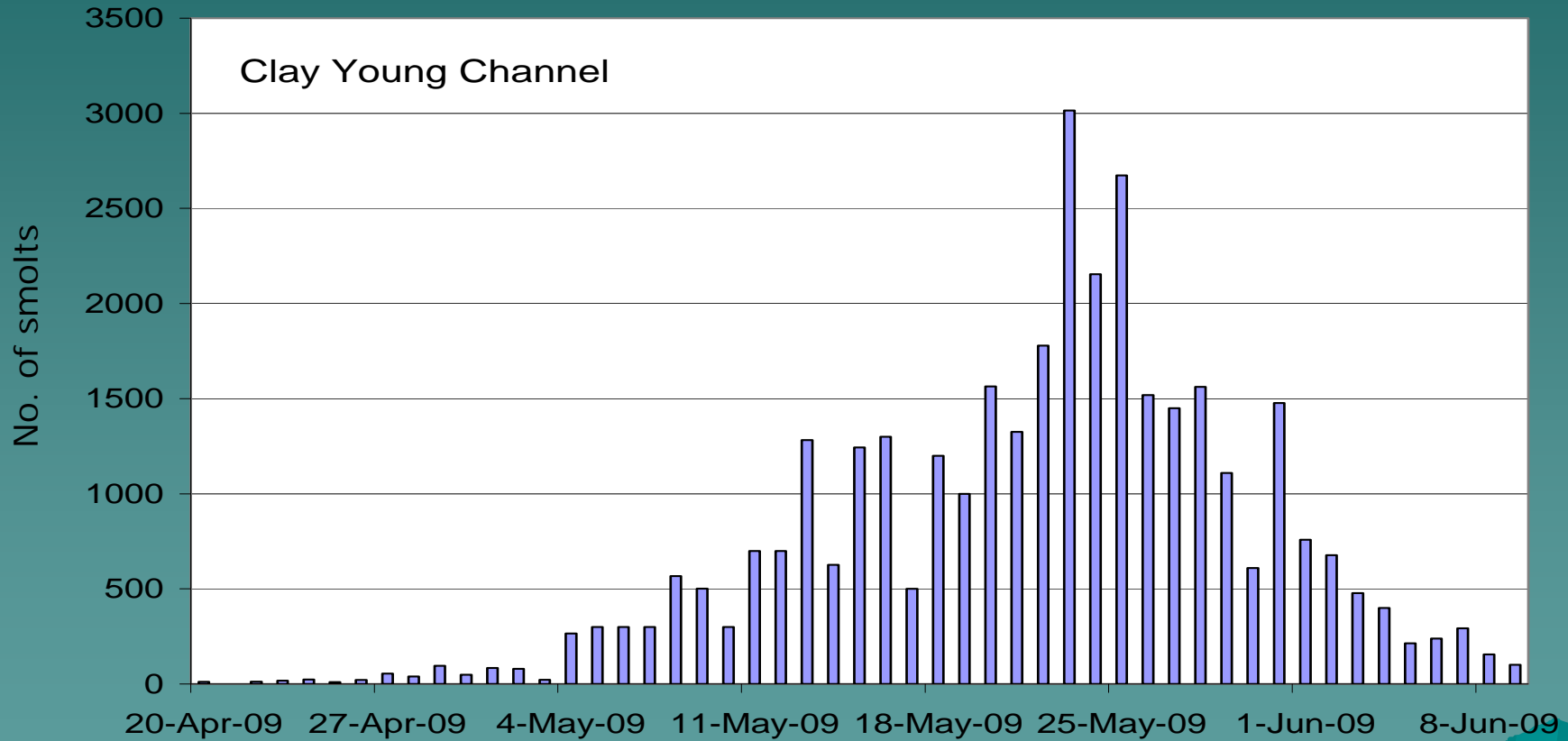
**Alcian Blue
Dye Mark**

Rotary Screw Trap






Daily Smolt Outmigration from the Channel

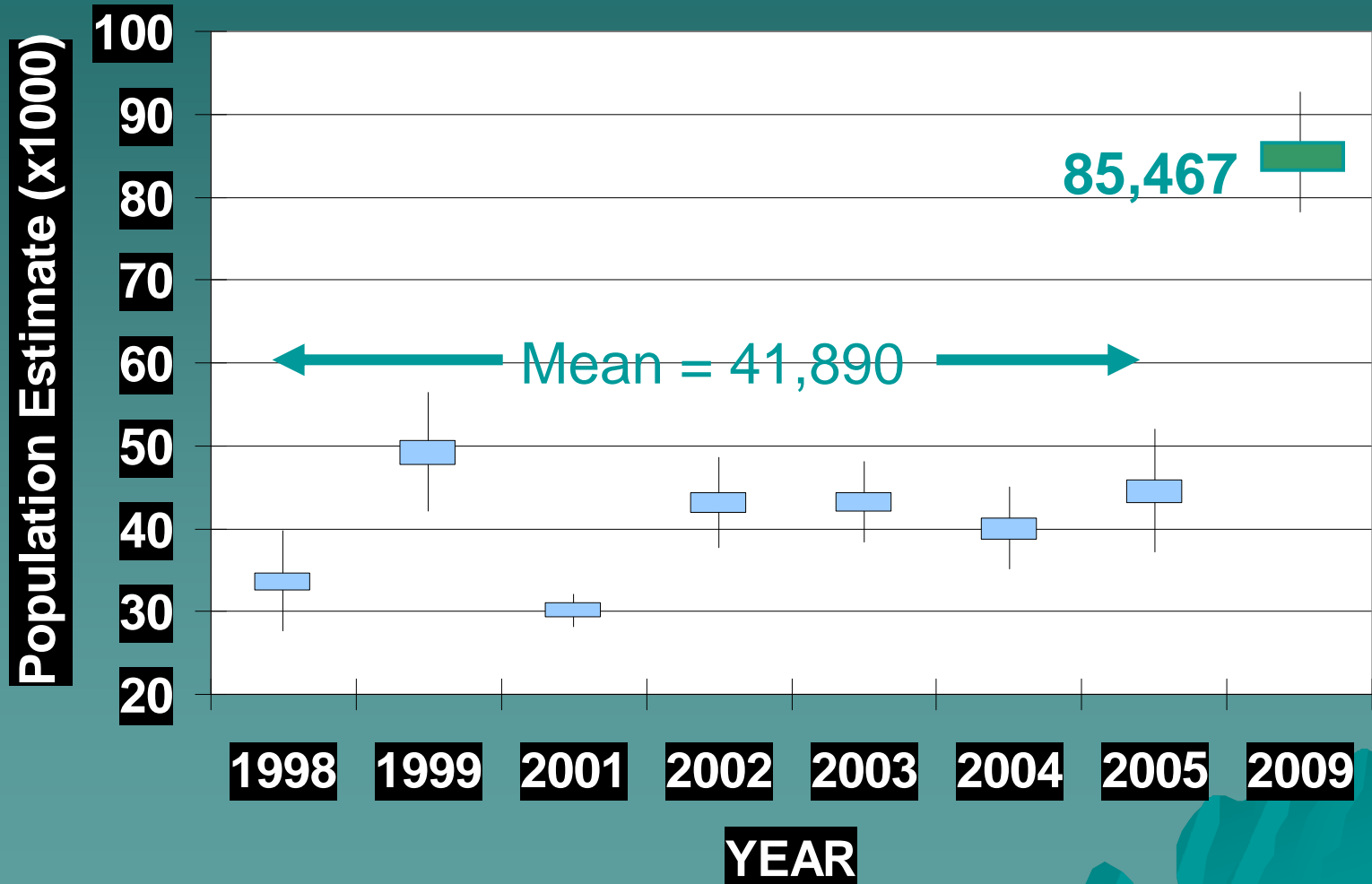


Water temperature in the channel ranged from 6 - 16 °C, slightly warmer on average than the mainstem (7 - 14 °C)

Smolt survey results 1998-2005

- ◆ Coho smolt production in the watershed ranged from 31,005 to 50,622 smolts per year.
 - ◆ The two side channels contributed between 15 - 25% of the total watershed smolt production.
 - ◆ Smolt densities in the channels ranged from 0.2 to 0.6 smolts per square meter.
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Englishman River Watershed Coho Smolt Production






Results

- ◆ The total production from the Clay Young channel in 2009 was 35,900 smolts to a total of 85,467 from the entire watershed.
- ◆ In 2010, the channel produced 18,044 smolts and an estimated watershed production of 44,312.
- ◆ In both years the contribution of smolts from the Clay Young channel to the overall watershed production is approximately 42%.

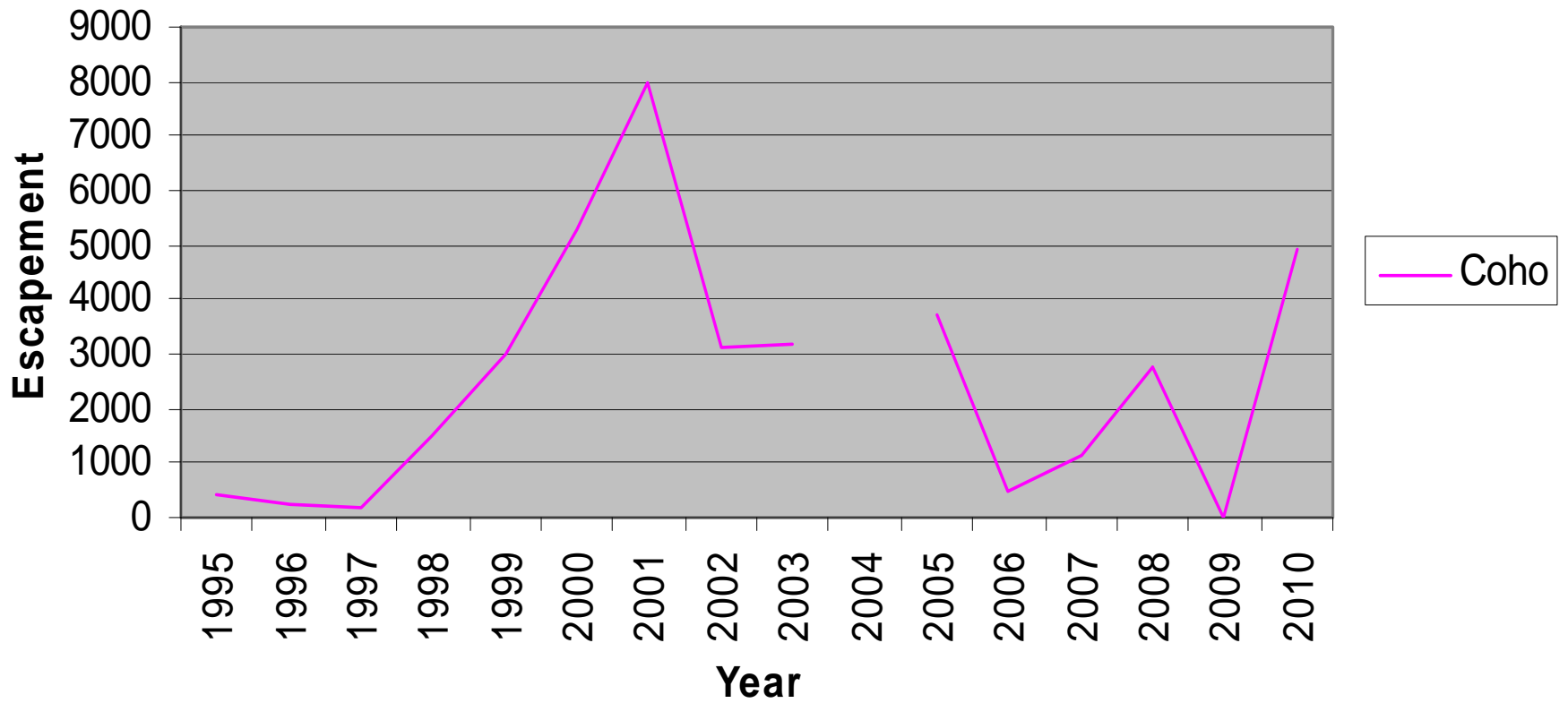


Adult Escapement

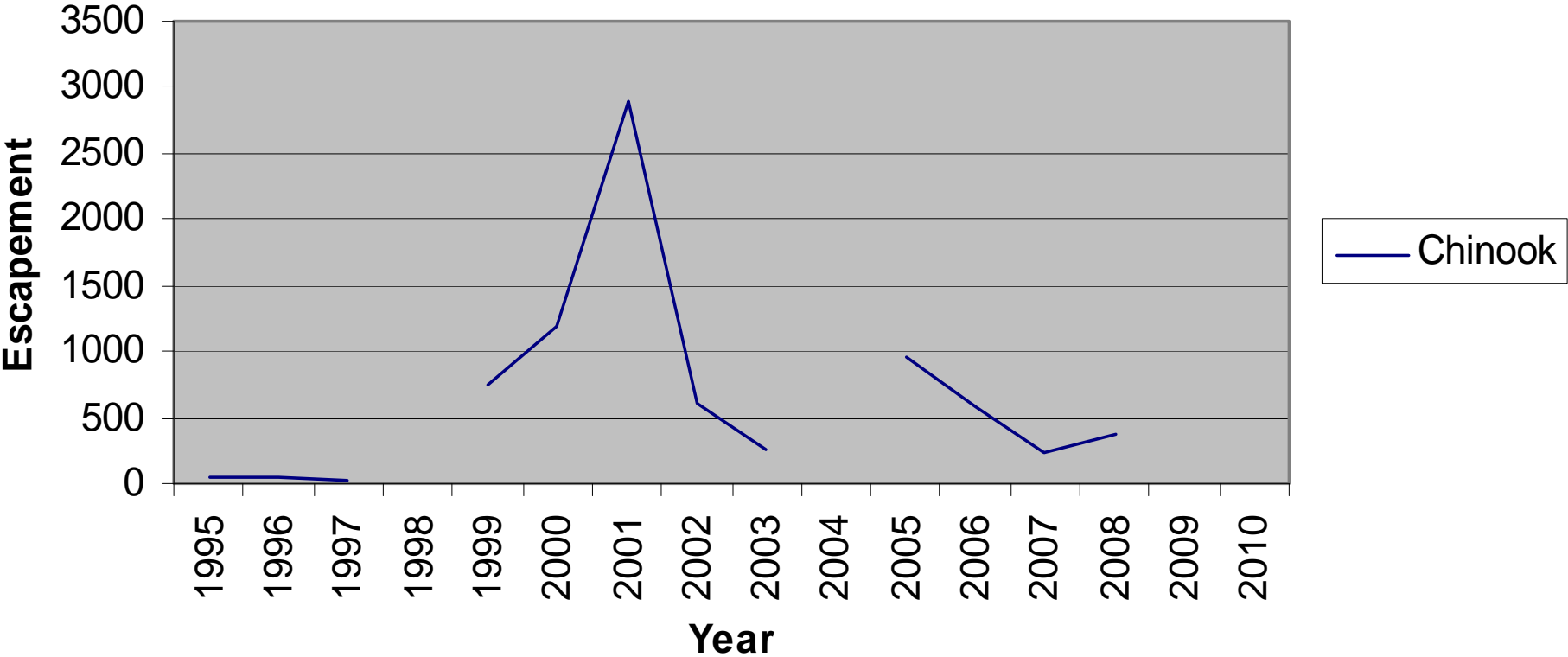
- ◆ Cooperative program between DFO, BC Living Rivers and the BC Conservation Foundation
 - ◆ Mainstem swims conducted from August 30 – Nov 16, 2010
 - ◆ Coho - 4924 Pink – 4881
 - ◆ Chinook – 1619 Sockeye - 6
 - ◆ Chum - 4135
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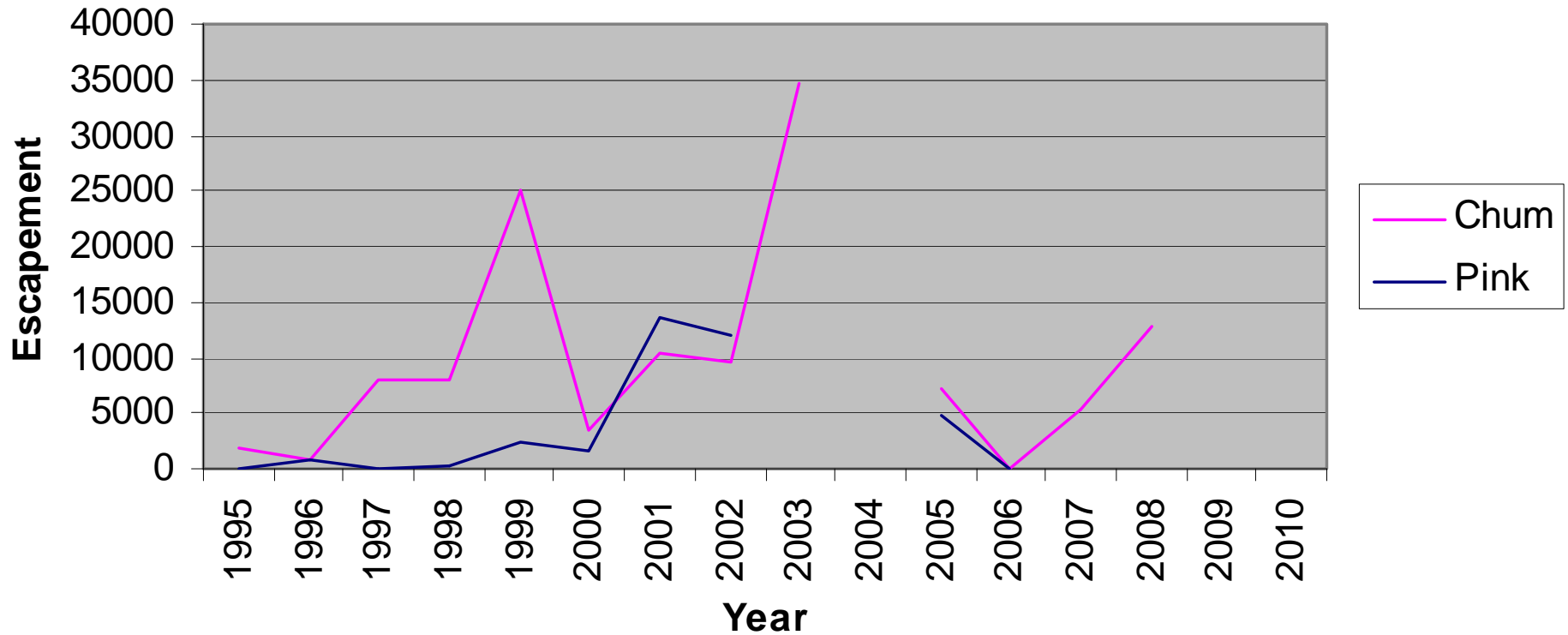
Englishman River Coho Escapement



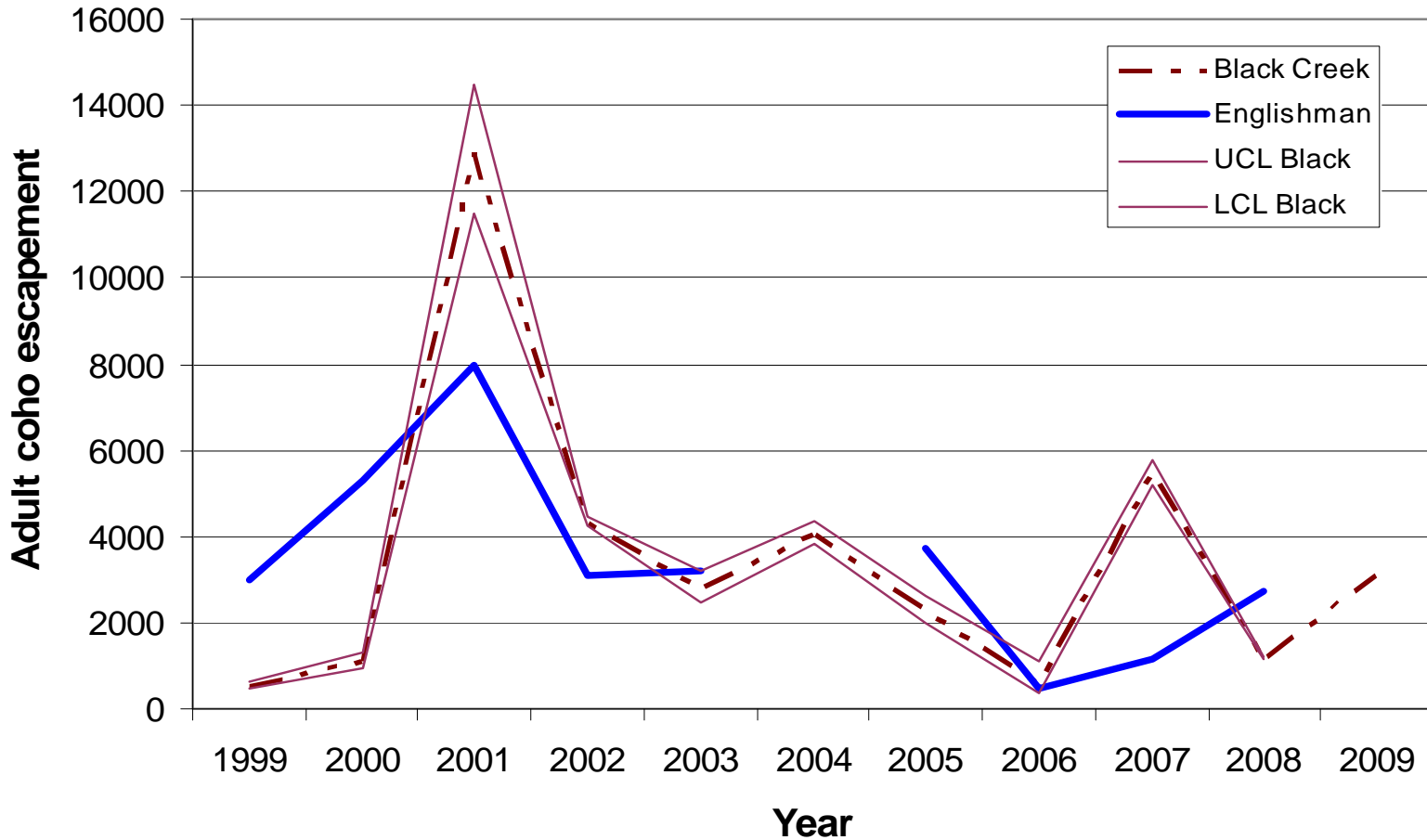
Englishman River Chinook Escapement



Englishman River Chum & Pink Escapement

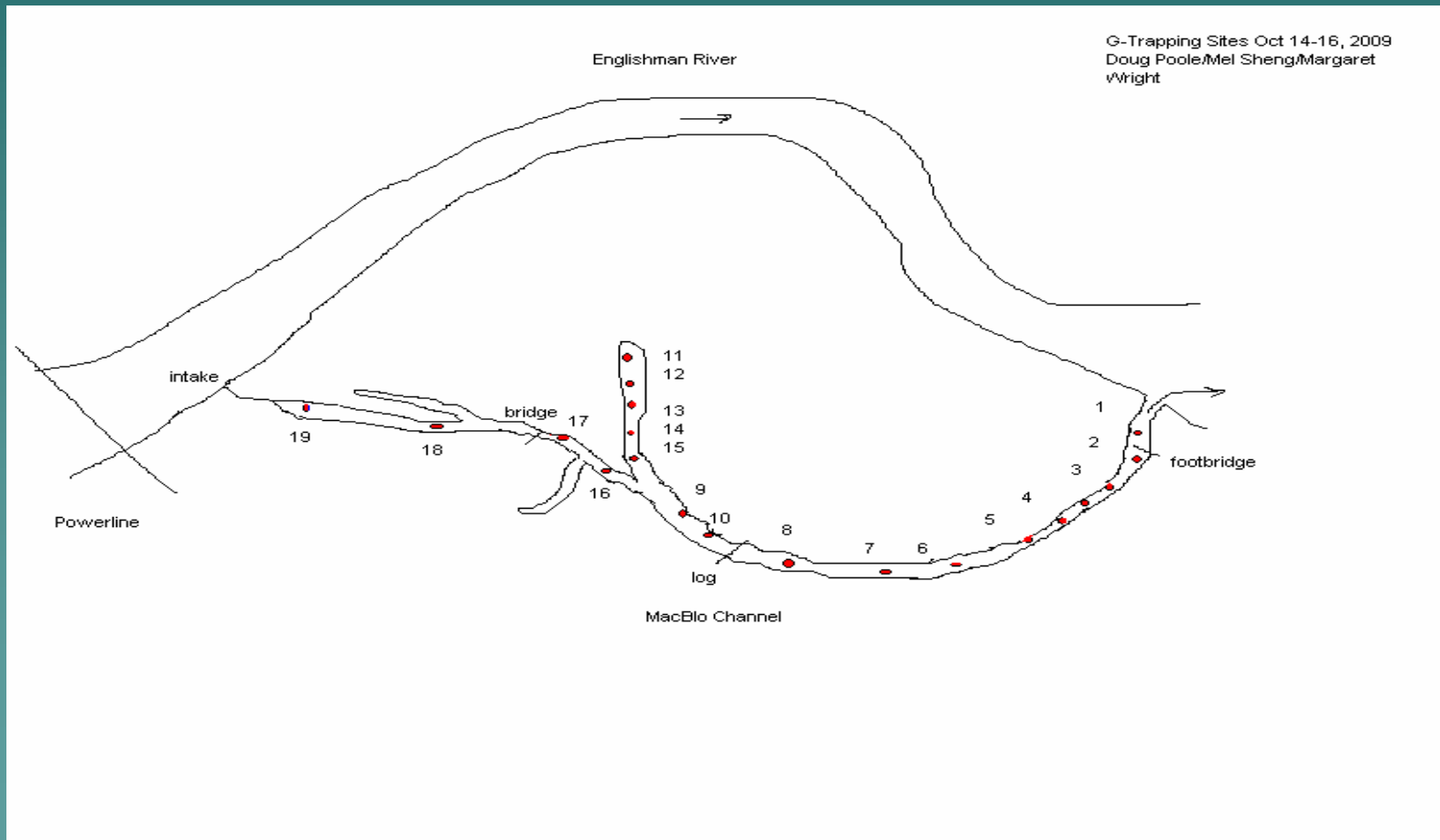


Englishman River and Black Creek coho



Juvenile Trapping - M&B Channel

◆ DFO and Vancouver Island University



2009, 2010 Data

	2009	2010
Date	Oct 14-16	Sept 23-24
Soak time	48 hrs	24 hrs
Temp (deg C)	10	12
# traps	19	26
Crew	DFO	VIU
# coho	64	105
ave length	85.33	73.6
CPUE	3.3	4.0
# trout	10	0
ave length	130.8	
# sculpin	36	16
ave length		124.8
# stickleback	32	238
ave length		49.1

Vancouver Island University Monitoring

- ◆ Funders:
 - Regional District of Nanaimo
 - BC Living Rivers
 - Vancouver Island University
 - Fisheries and Oceans Canada
- ◆ Clay Young channel
 - water quality, benthic invertebrates 2008, 2009, 2010
 - spawner survey 2009, 2010
- ◆ M&B channel
 - water quality, benthic invertebrates 2009, 2010
 - spawner survey 2010

Clay Young channel - Spawner survey

2009 adult escapement to Clay Young channel

Oct 29 – Dec 3, 2009

Totals

Coho: 347 (16) Chum: 188 (33)

Chinook: 2 (3) Trout: 4

2010 adult escapement to the Clay Young channel

Oct 28 – Dec 31, 2010

Totals

Coho: 1824

Chum: 137

Chinook: 13