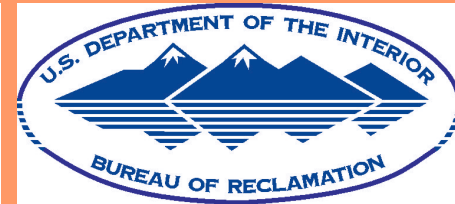
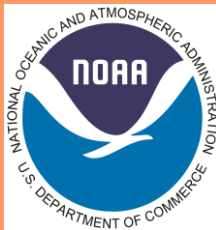


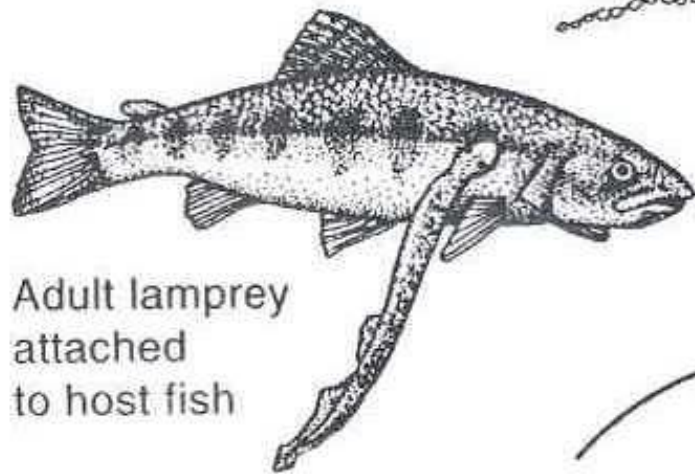
# Implanting PIT tags in larval Pacific Lamprey

Mary Moser, Aaron Jackson, Bob Mueller,  
Alexa Maine and Mary Davisson

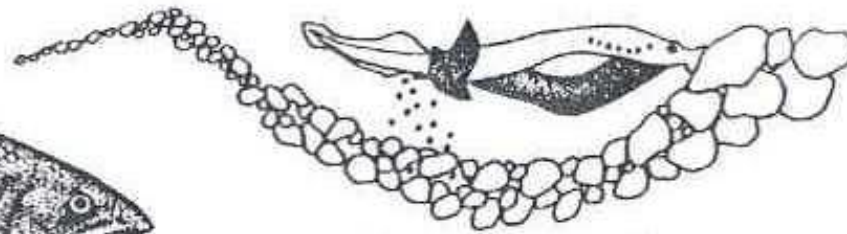








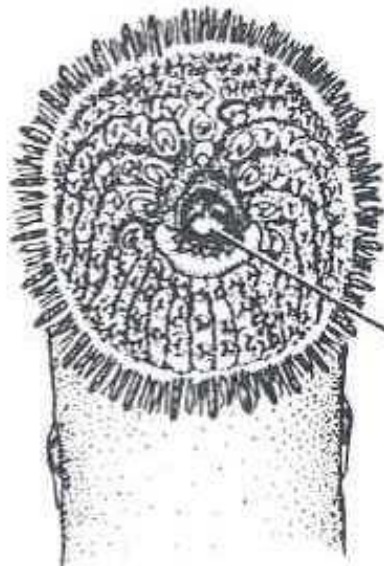
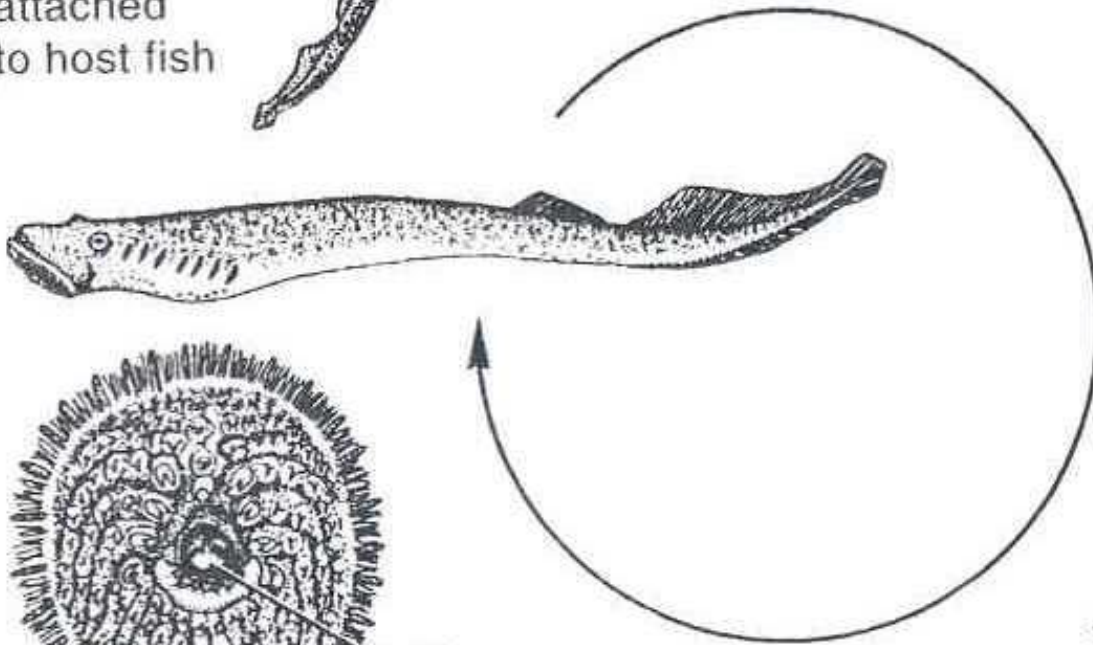
Adult lamprey  
attached  
to host fish



Eggs in gravel  
nest in stream riffle



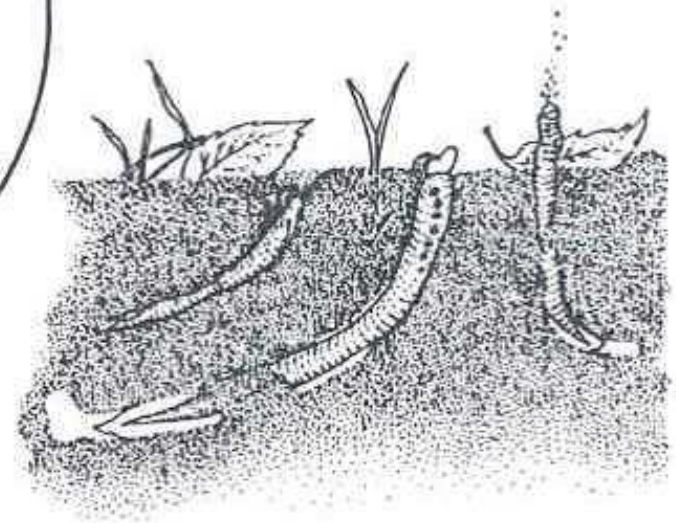
Larvae drift  
downstream to  
muddy backwater



Tongue

Sucking disk

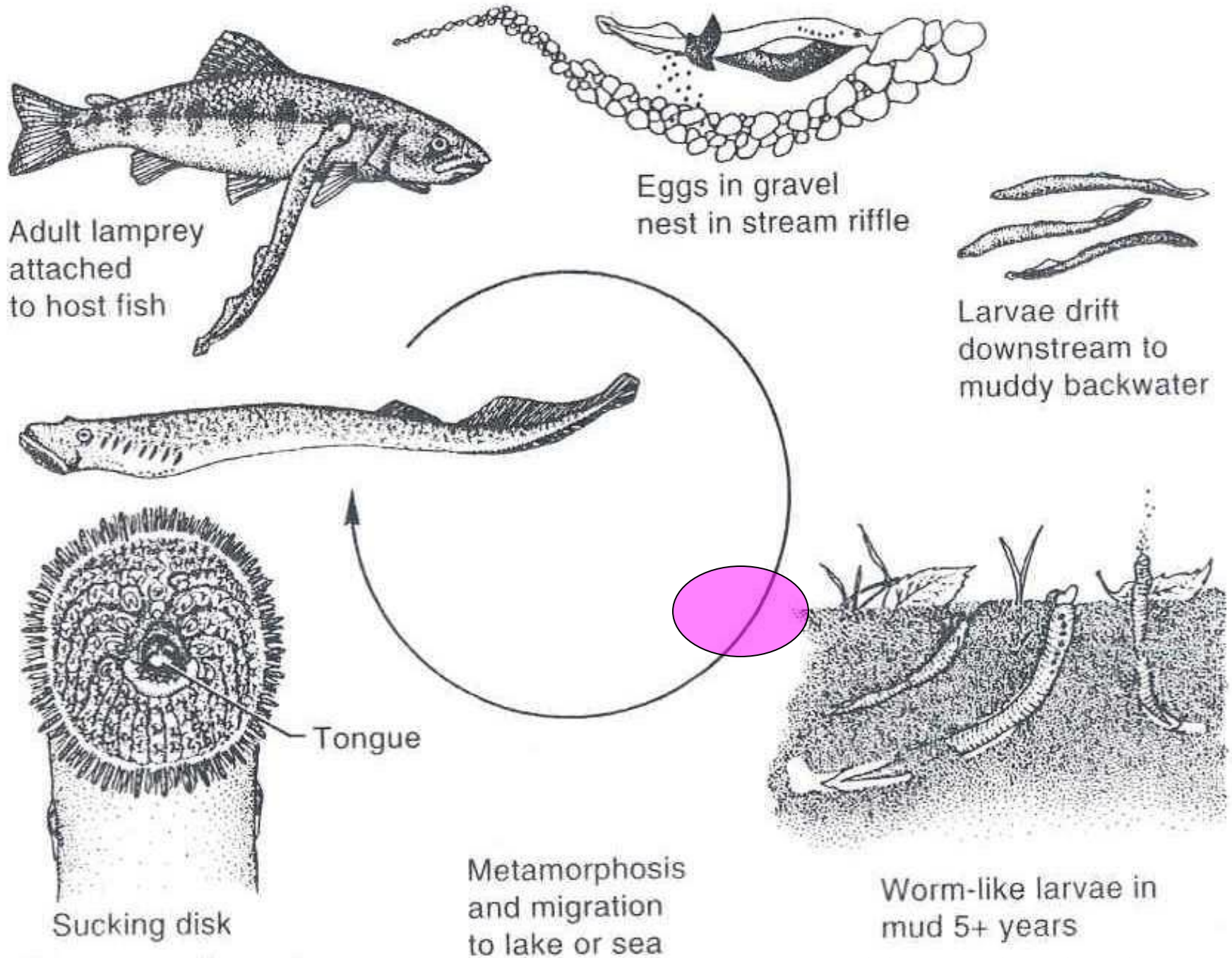
Metamorphosis  
and migration  
to lake or sea



Worm-like larvae in  
mud 5+ years

A Lamprey life cycle

From: Fishes, Moyle and Cech 1996



A Lamprey life cycle

From: Fishes, Moyle and Cech 1996

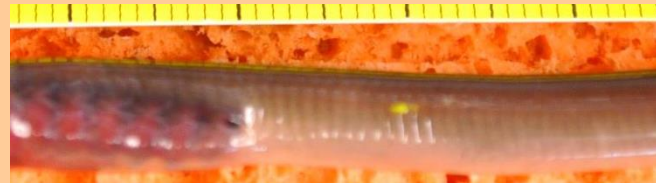




Larval Pacific lamprey (*Entosphenus tridentatus*)

Sea lamprey ammocoetes had 40% survival and 5% tag loss (Dawson et al. 2015)





Tagged 25-27 Nov. 2013

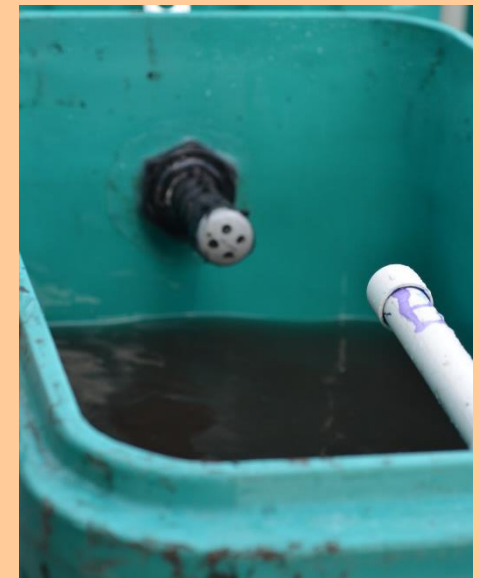


WEC: re-circulating UV-  
irradiated water at 13°C,  
sterilized sand substrate

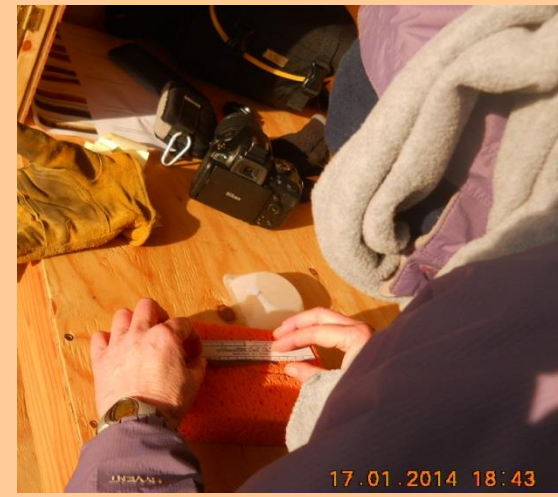
$N = 41$

Minthorn: flow-through  
stream water at 6-11°C,  
natural mud substrate

$N = 78$

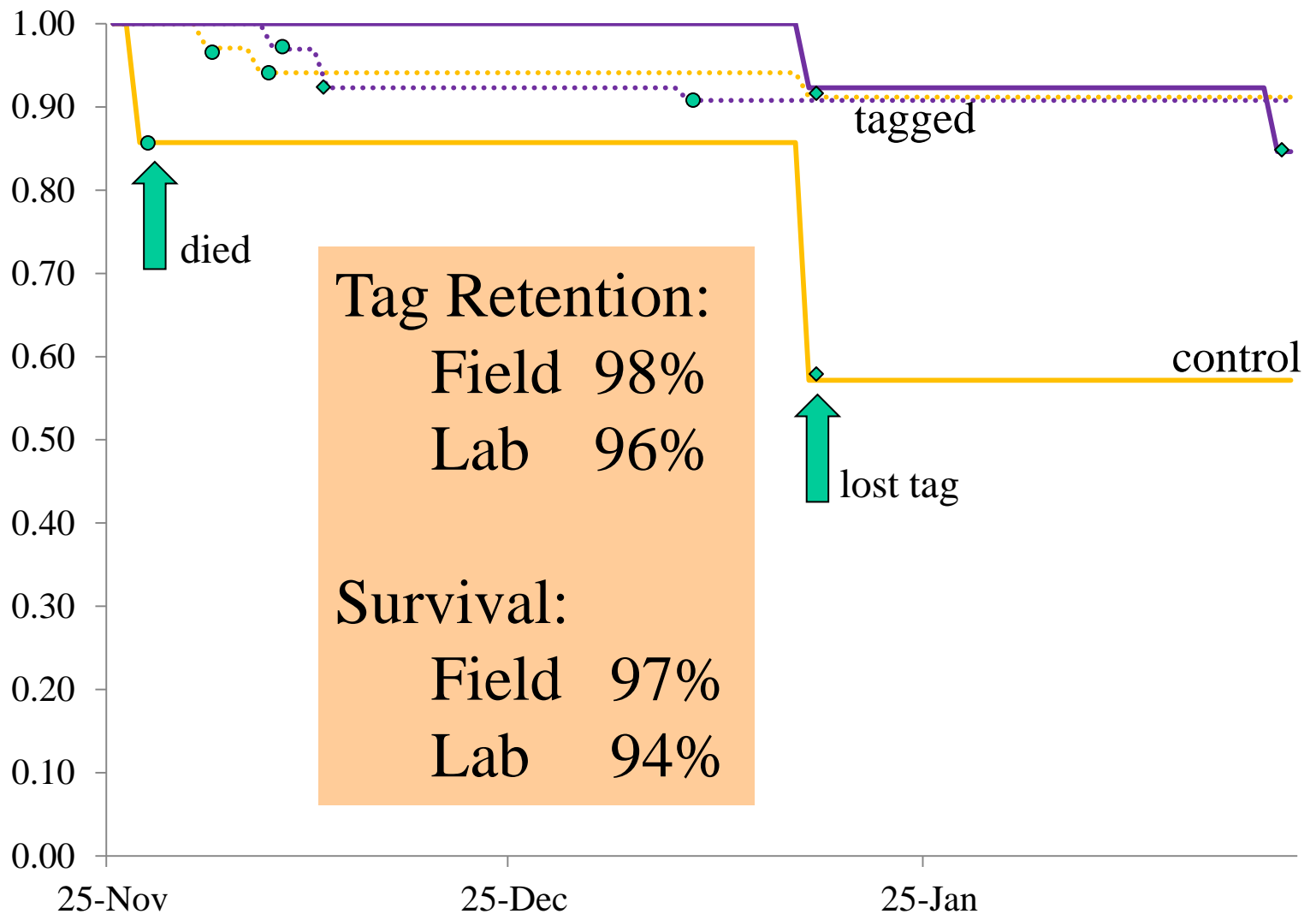


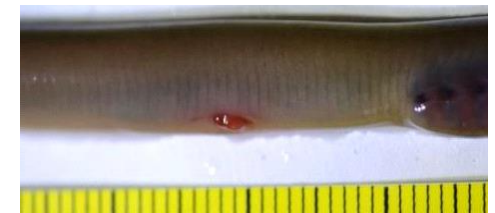
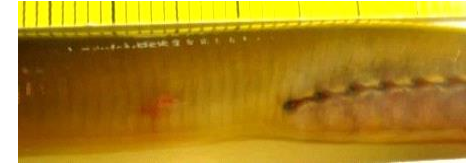
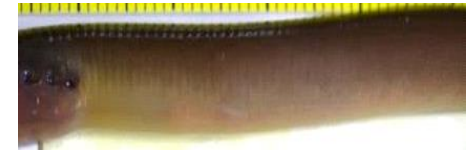
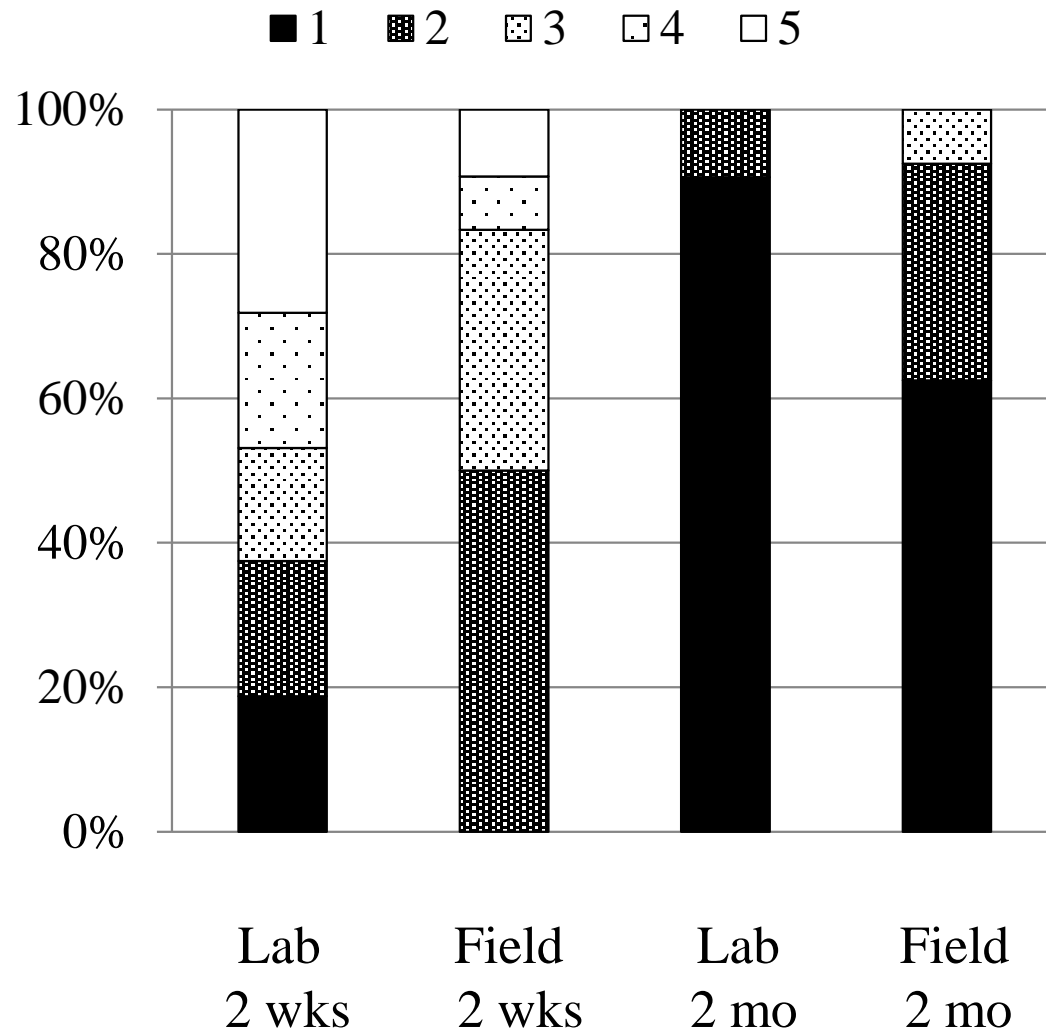




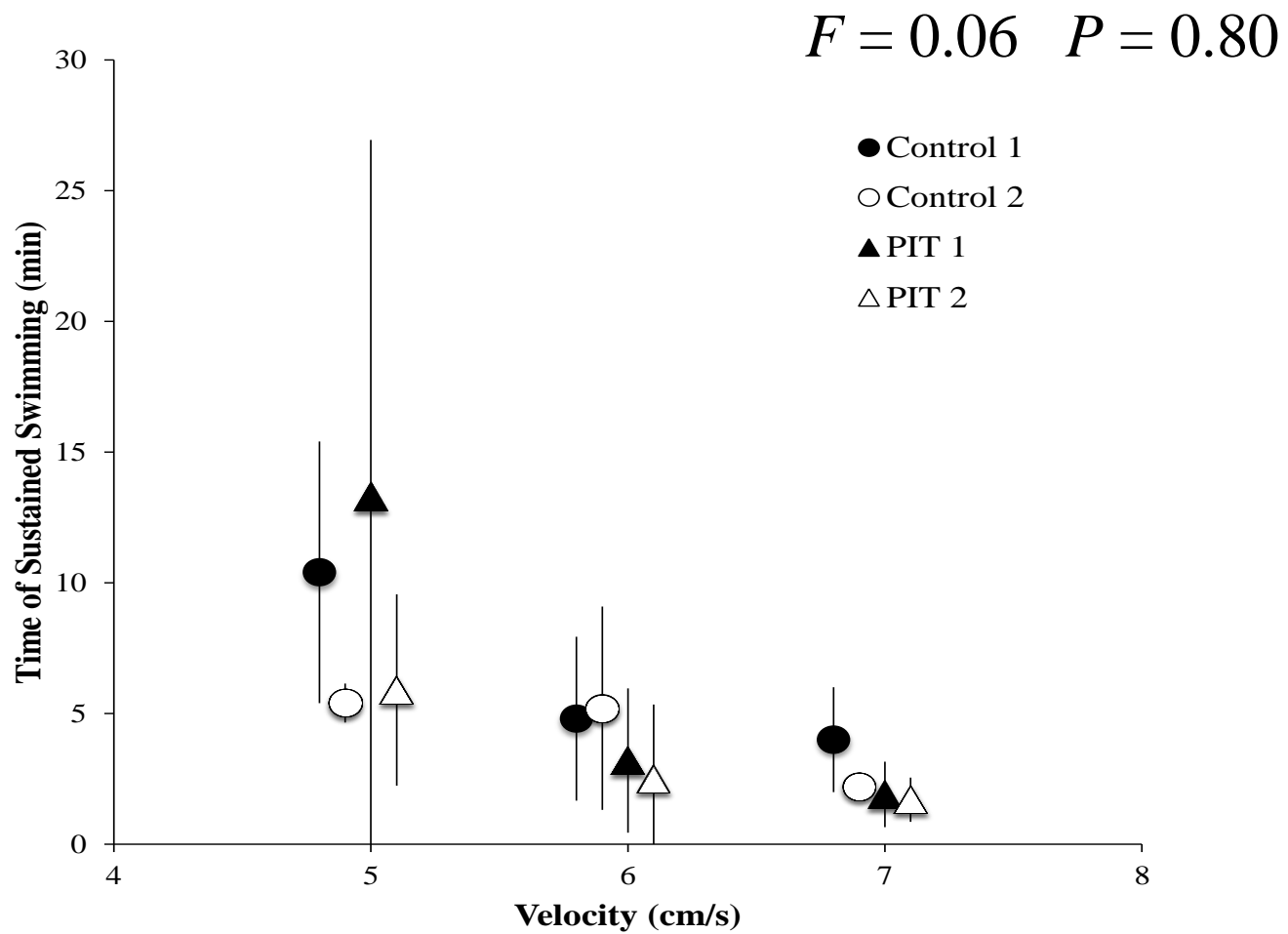
Healing, growth and tag loss checked  
15, 37, and 87 d post tagging













## Burrowing Trials

Tagged = 6.0 min

$$F = 0.57 \quad P = 0.45$$

Control = 5.2 min





## Growth (88 d)

Lab  $(F = 1.17, P = 0.29)$

-0.08 to -0.2%/d controls

-0.07 to -0.2%/d tagged fish

Field  $(F = 0.21, P = 0.65)$

-1.1 to +0.1%/d controls

-0.4 to +0.2%/d tagged fish

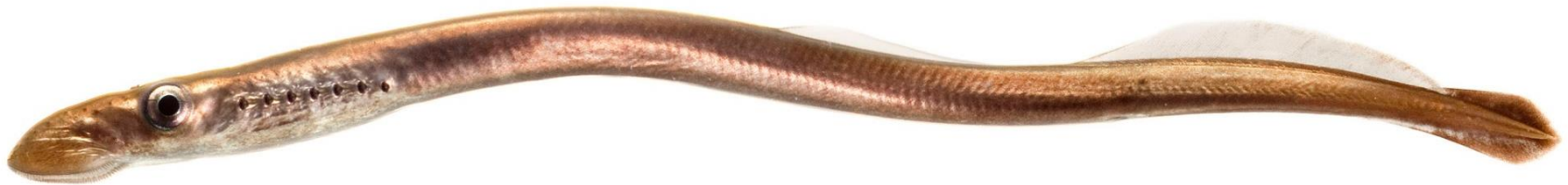


Metamorphosis two years later.....

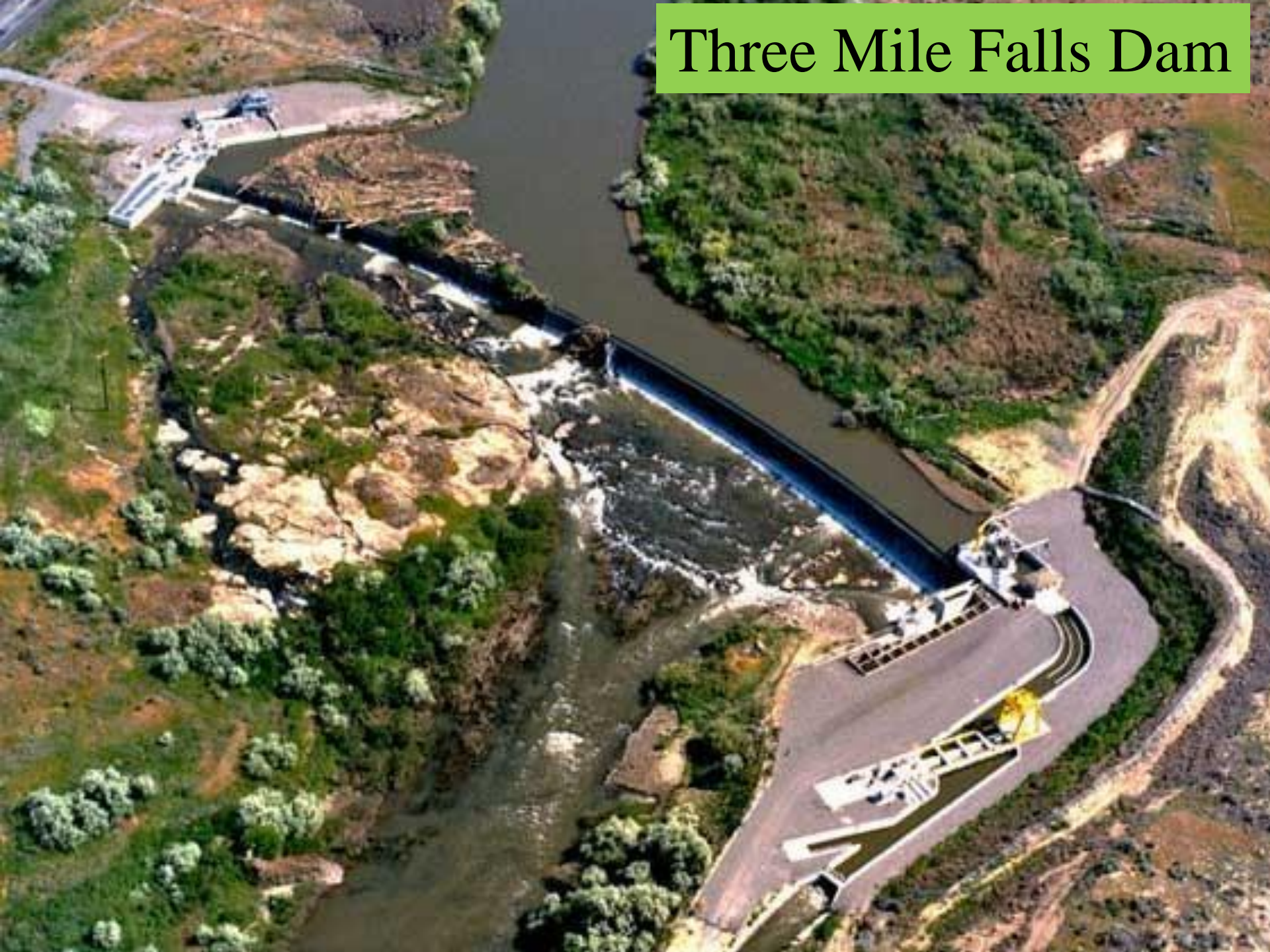


# Conclusions

- Tagging methods worked
- Ammocoete mortality and tag loss low
- Recommend lateral incision, no sutures
- Swimming performance and burrowing unaffected
- Evidence for highly variable growth
- Development of important tools for assessing juvenile growth and movements rangewide



# Three Mile Falls Dam





Thanks to:

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Sue Camp (BOR) and Debbie Docherty (BPA)

