

# An Overview Of Snake River Subyearling Chinook Salmon Transport Studies, 2001-2004



# Objectives

1. Study design
  - A. 2001-2003
  - B. 2004
  - C. 2002-2004 late season
2. Problems found with study design

# Transport Marking

## – Overall study design

Similar to study design used for spring migrants

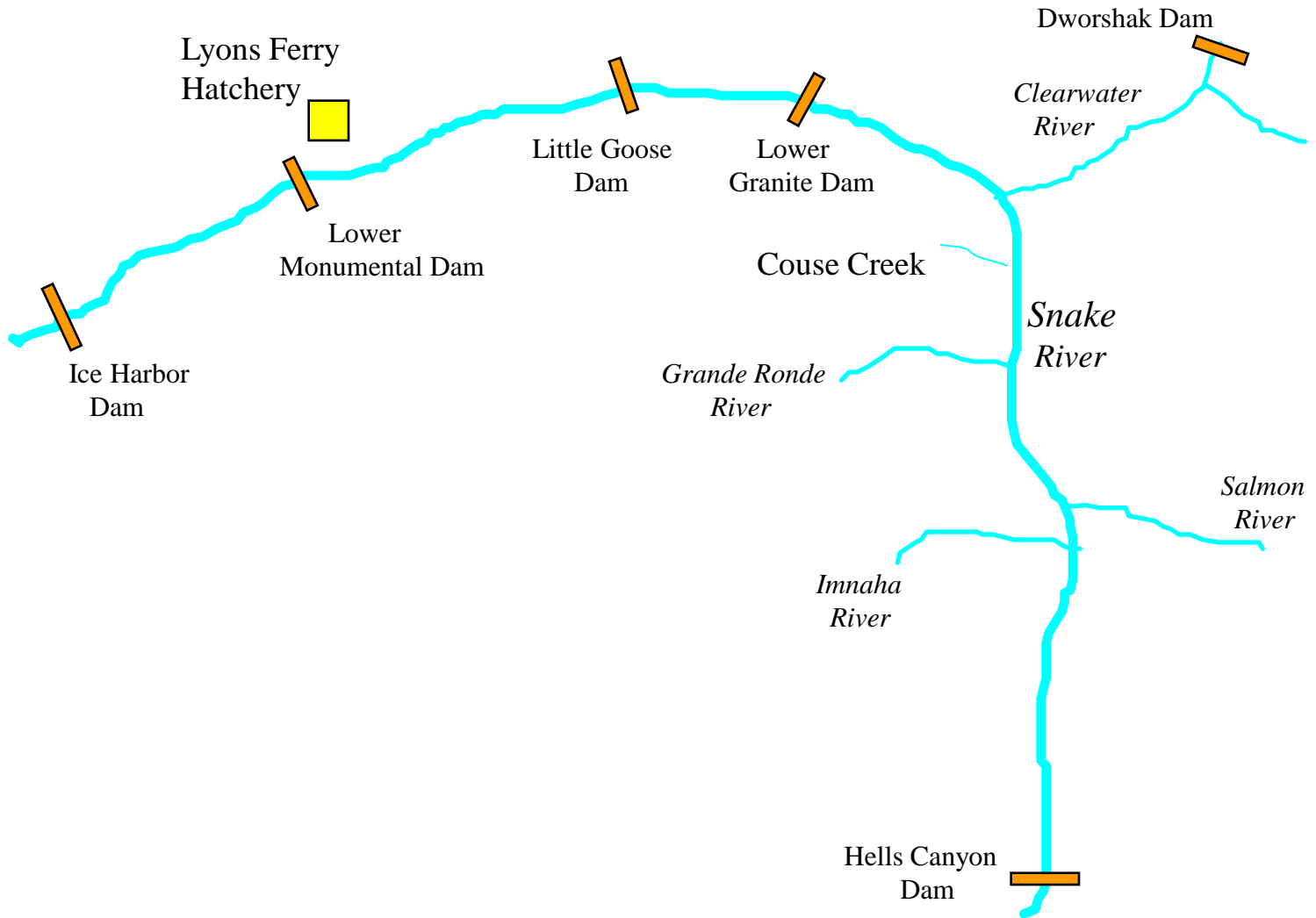
- Tag fish and release above LGR
- Set PIT-tag diversion systems to transport 80% of PIT-tagged fish collected
  - 20% returned to river for survival estimates
- Use Sandford and Smith methods to estimate the number of non-detecteds
- Compare SARs of transported and non-detected fish



# 2001-2003 Transport Marking – At Lyons Ferry Hatchery

## Juvenile tagging

- Study design
  - Tag surrogate-sized fish
  - Goal: 150,000 fish
  - Release at Couse Creek



2001 – Tagged surrogate-sized fish

Due to drought, only tagged enough for transport group

2002 – Tagged surrogate-sized fish

Due to an outbreak of bacterial gill disease,  
we were only able to tag 100k due to stunted growth

2003 – Tagged production-sized fish

Due to the lack of surrogate-sized fish and COE funding shortfall,  
only tagged 50,000 fish







2005 6 29







2005 6 29





# 2004 Transport Marking

## – At Lower Granite Dam

### Juvenile tagging

- Study design
  - Tag surrogate-sized hatchery fish
  - Goal: 75,000 fish
  - Release at Couse Creek

# 2004 Transport Marking

## – At Lower Granite Dam

### Juvenile tagging

- Study design
  - Tag surrogate-sized hatchery fish
  - Goal: 75,000 fish
  - Release at Couse Creek
  - Problems:
    - Lack of space at hatchery to raise surrogate-sized fish

# 2004 Transport Marking

## – At Lower Granite Dam

### Juvenile tagging

- Study design
  - Tag surrogate-sized hatchery fish
  - Goal: 75,000 fish
  - Release at Couse Creek
  - Problems:
    - Lack of space at hatchery to raise surrogate-sized fish
    - Difficulty in tagging at satellite facilities





# 2004 Transport Marking

## – At Lower Granite Dam

### Juvenile tagging

- Study design
  - Tag surrogate-sized hatchery fish
  - Goal: 75,000 fish
  - Release at Couse Creek
  - Problems:
    - Lack of space at hatchery to raise surrogate-sized fish
    - Difficulty in tagging at satellite facilities
    - No voluntary summer spill provided



# 2004 Transport Marking – At Lower Granite Dam

## Juvenile tagging

- Study design
- Actual operations
  - Tagged river-run subyearlings at LGR
  - 3 June-31 July
  - Release numbers
    - Barge 3,617
    - Tailrace 45,296



# Snake River Transport studies

## - Late spring and summer releases

Tagging year	Number tagged	Returns by age-class					SAR
		Jacks	2-ocn	3-ocn	4-ocn	5-ocn	
2004*	48,904	14	13	21	15	—	0.13
2003	53,579	22	20	2	0	—	0.08
2002	97,916	86	168	67	14	—	0.34
2001	74,245	71	72	39	7	—	0.25

\* Fish tagged at Lower Granite Dam during June and July





# 2002-2004 Transport Marking

- Sept/Oct at Lower Granite Dam

## Juvenile tagging

- Study design
  - Originally intended to supplement fish tagged and released above due low PIT tag numbers being transported at that time of year
  - Goal: 2,500 fish for transport

# Snake River Transport studies - Fall releases, tagged at LGR

Tagging year	Number tagged	Returns by age-class					SAR
		Jacks	2-ocn	3-ocn	4-ocn	5-ocn	
2004	2,544	13	14	16	5	—	1.89
2003	2,552	34	28	29	7	—	3.84
2002	2,500	42	47	24	9	—	4.88

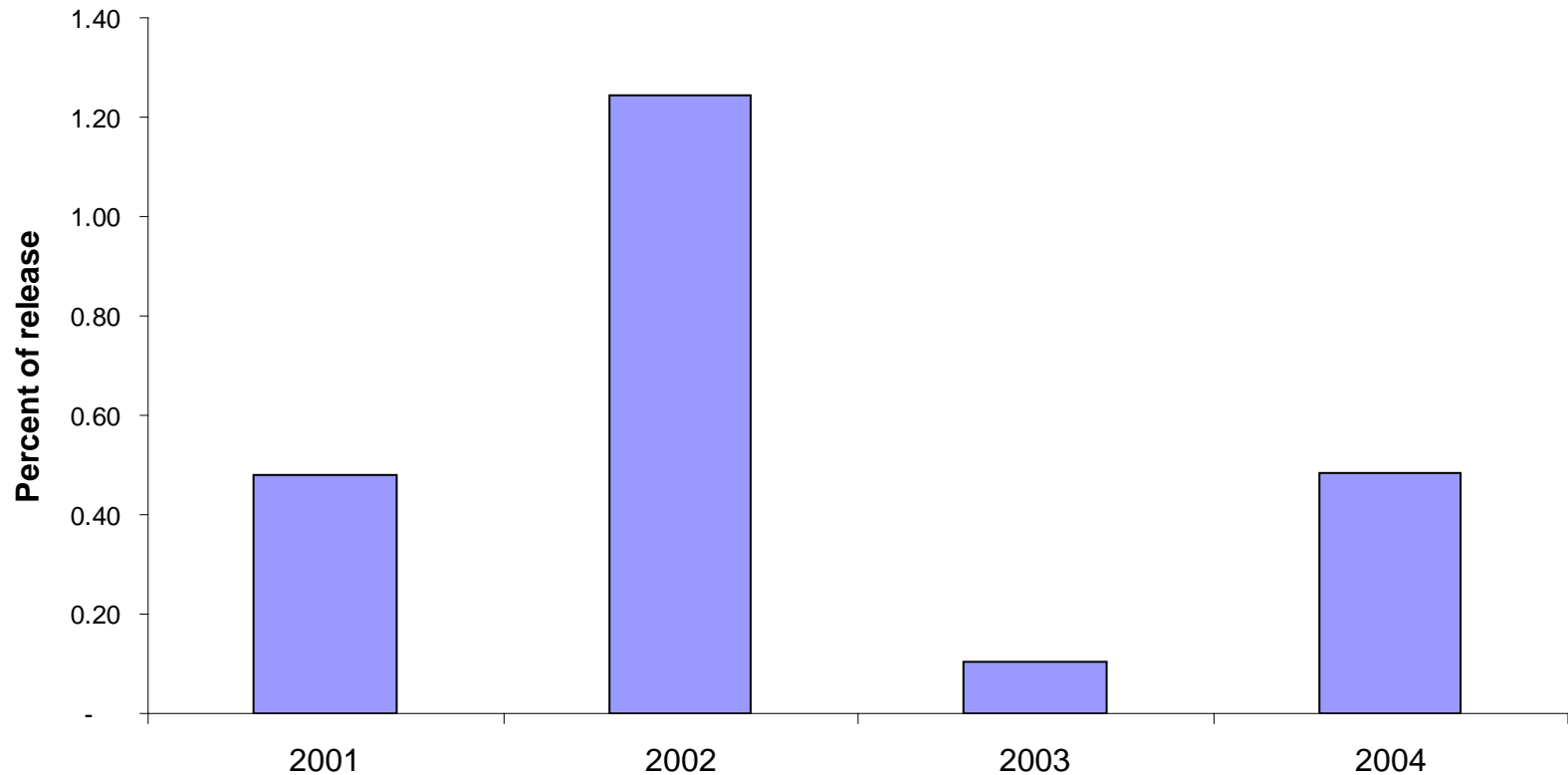


# Problems found with study design

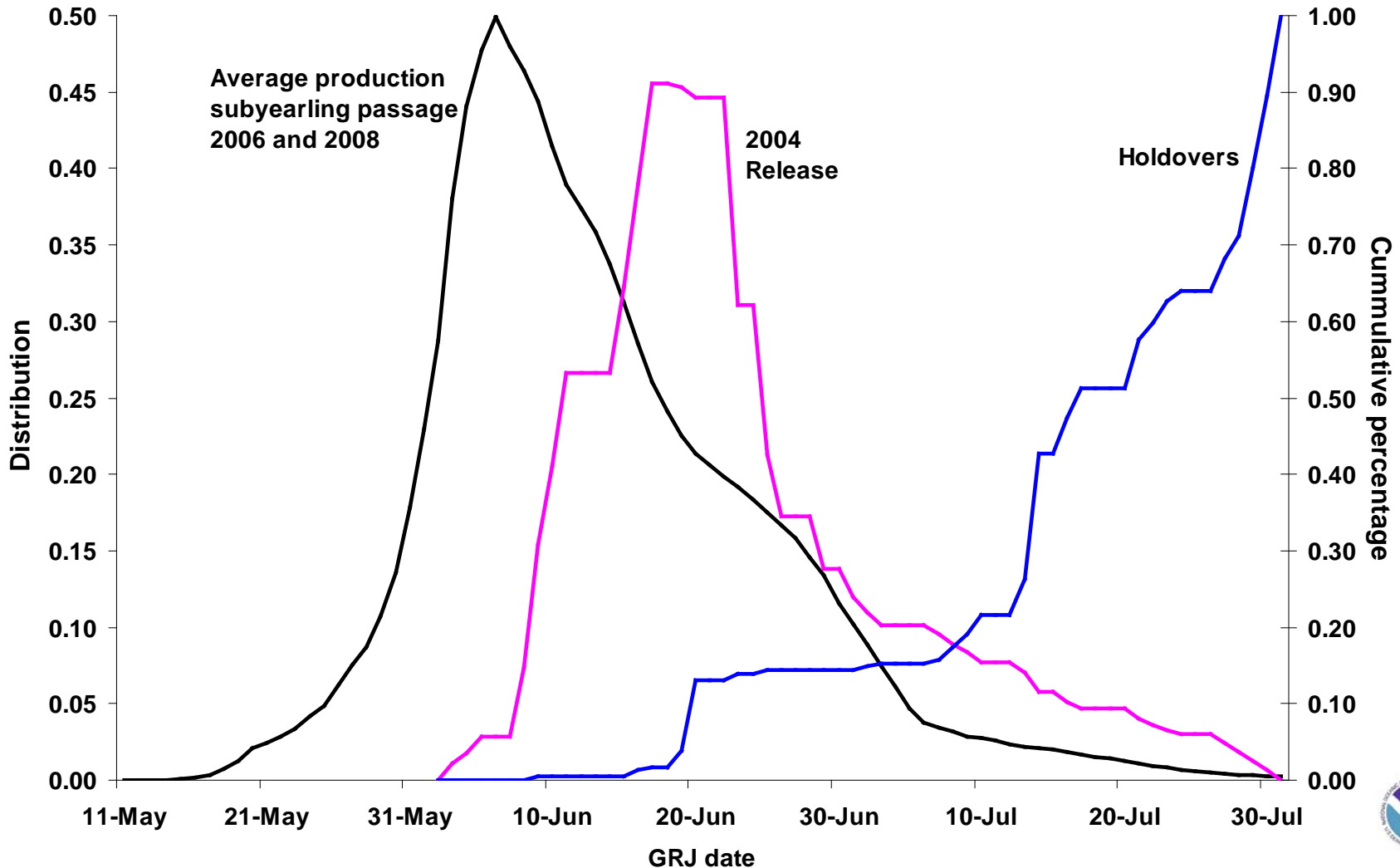


# Problems found with study design

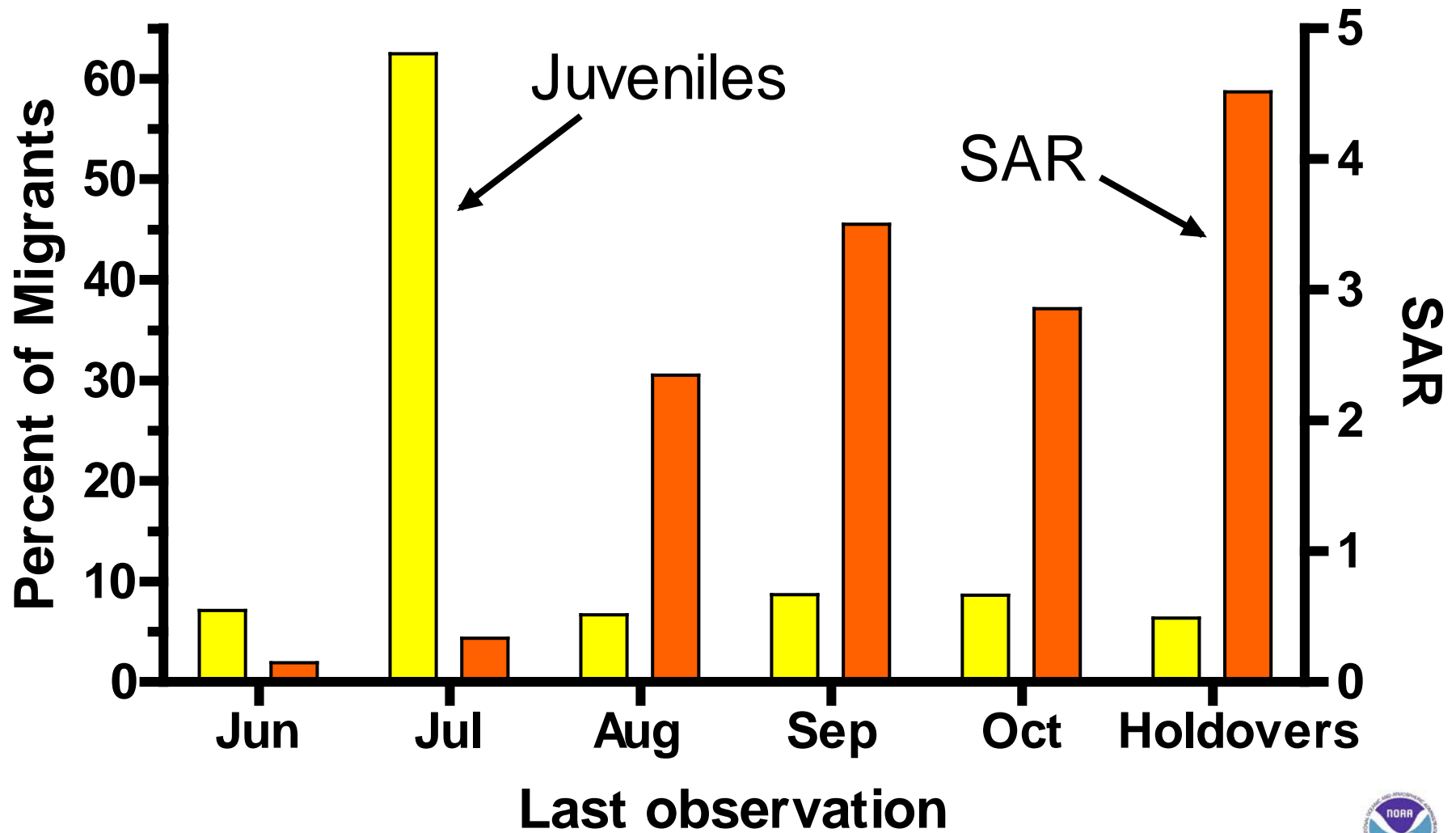
## - Holdovers



# Problems found with study design - Passage and Tagging at LGR

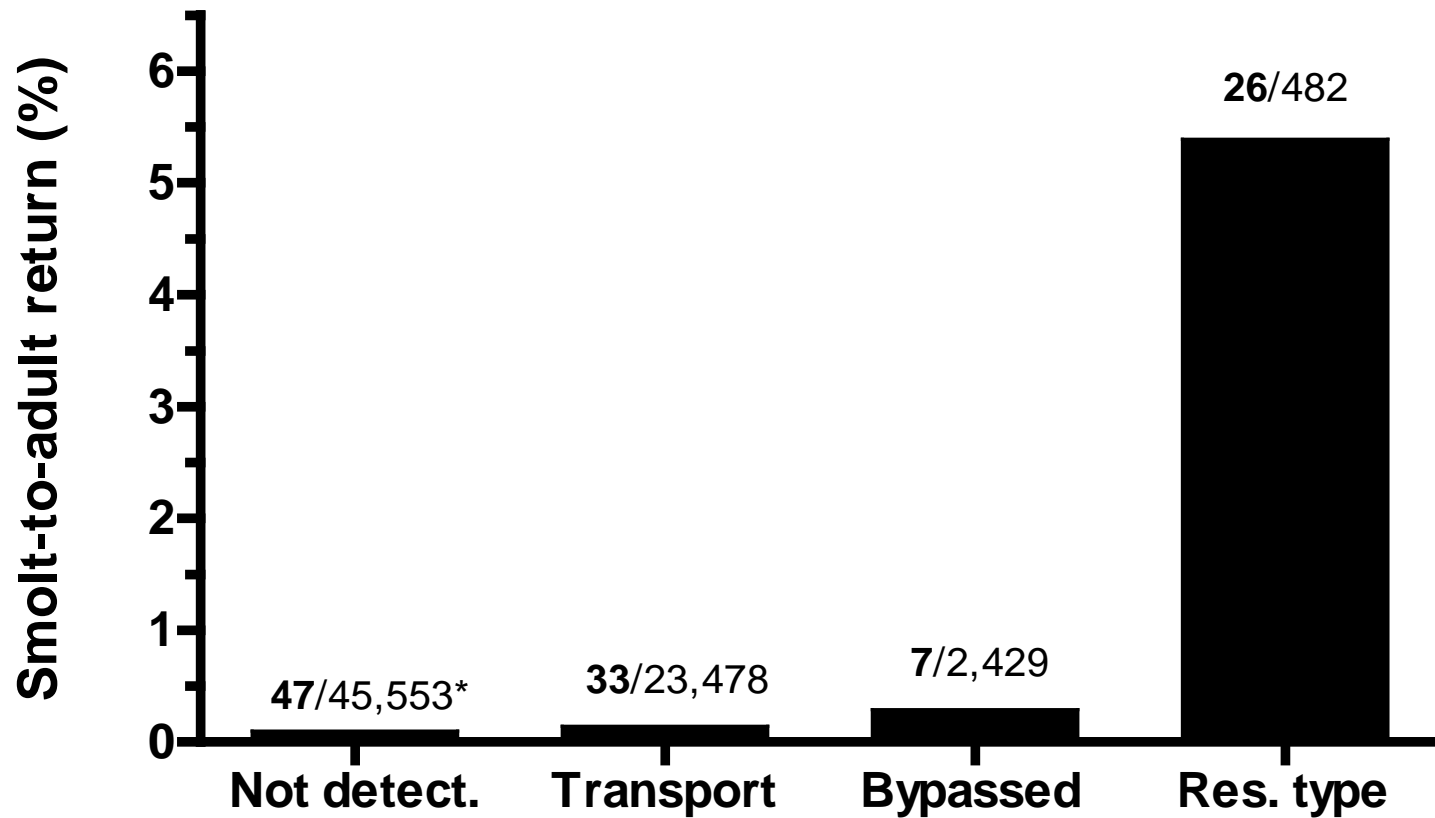


# Migration timing vs. (SAR)





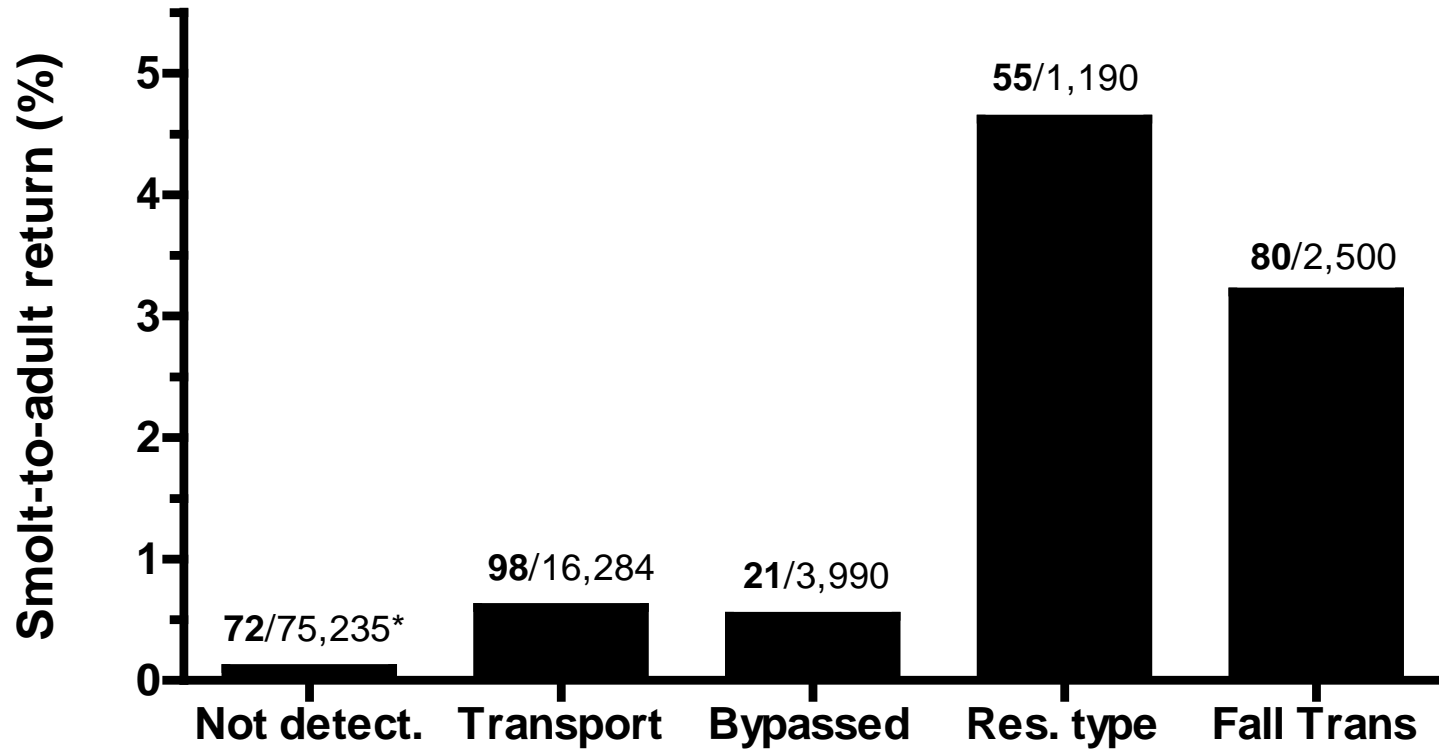
## 2001 Transport Study



\* Includes mortalities above Lower Granite Dam

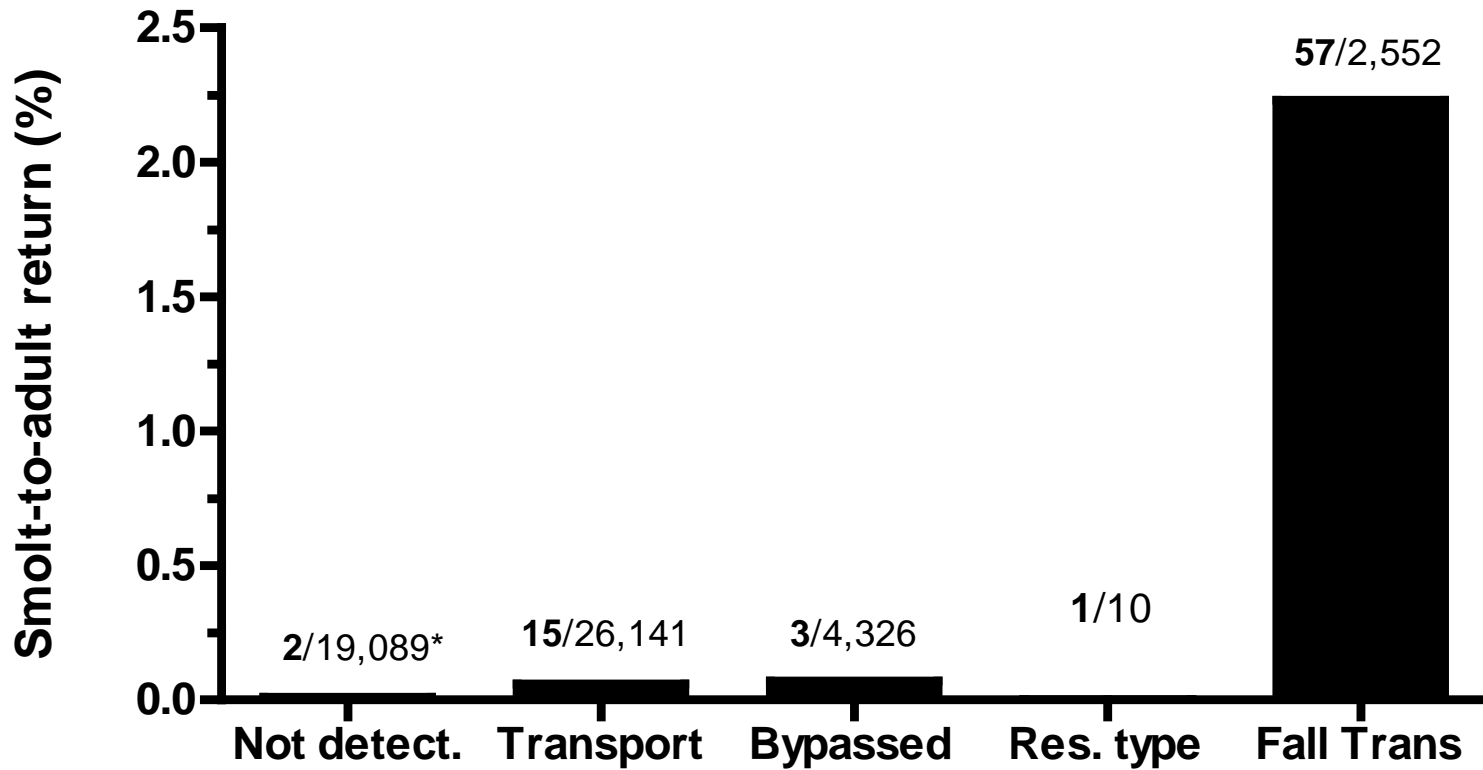


## 2002 Transport Study



\* Includes mortalities above Lower Granite Dam

## 2003 Transport Study



Adult returns through 2006

\* Includes mortalities above Lower Granite Dam



# Conclusions

- Cannot use undetected category without some way to sort out true undetected fish from mortalities
- Because of significant winter passage when PIT detectors are not operated, this is infeasible
- Undetected fish contribute a large proportion of the returning adults
- This led to the new consensus study proposal design