

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

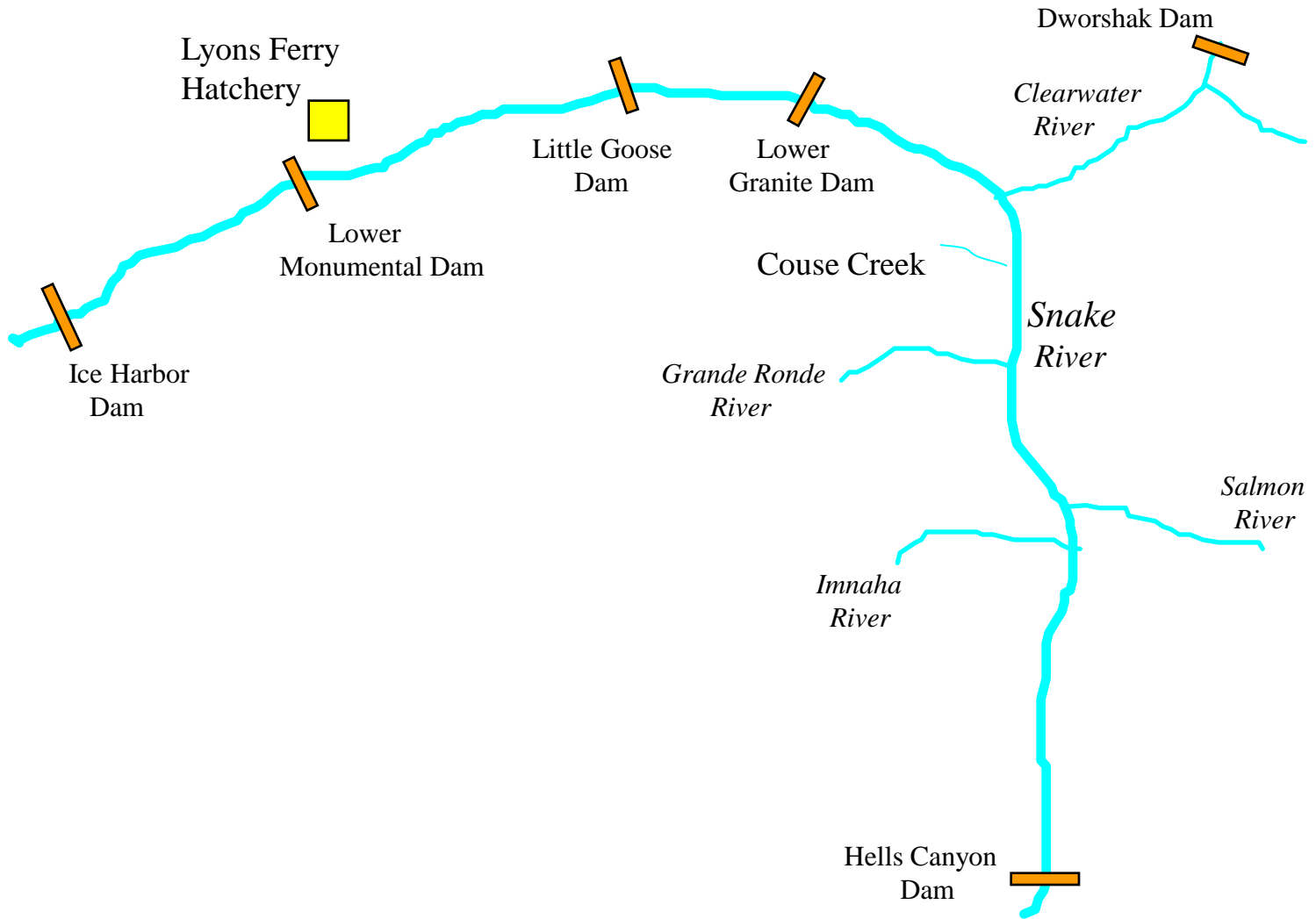
- Tag fish and release above LGR
- Set PIT-tag diversion systems to transport 80% of PIT-tagged fish collected
 - 20% returned to river for survival estimates
- Use Sandford and Smith methods to estimate the number of non-detecteds
- Compare SARs of transported and non-detected fish



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
 - Tailrace

3,617

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

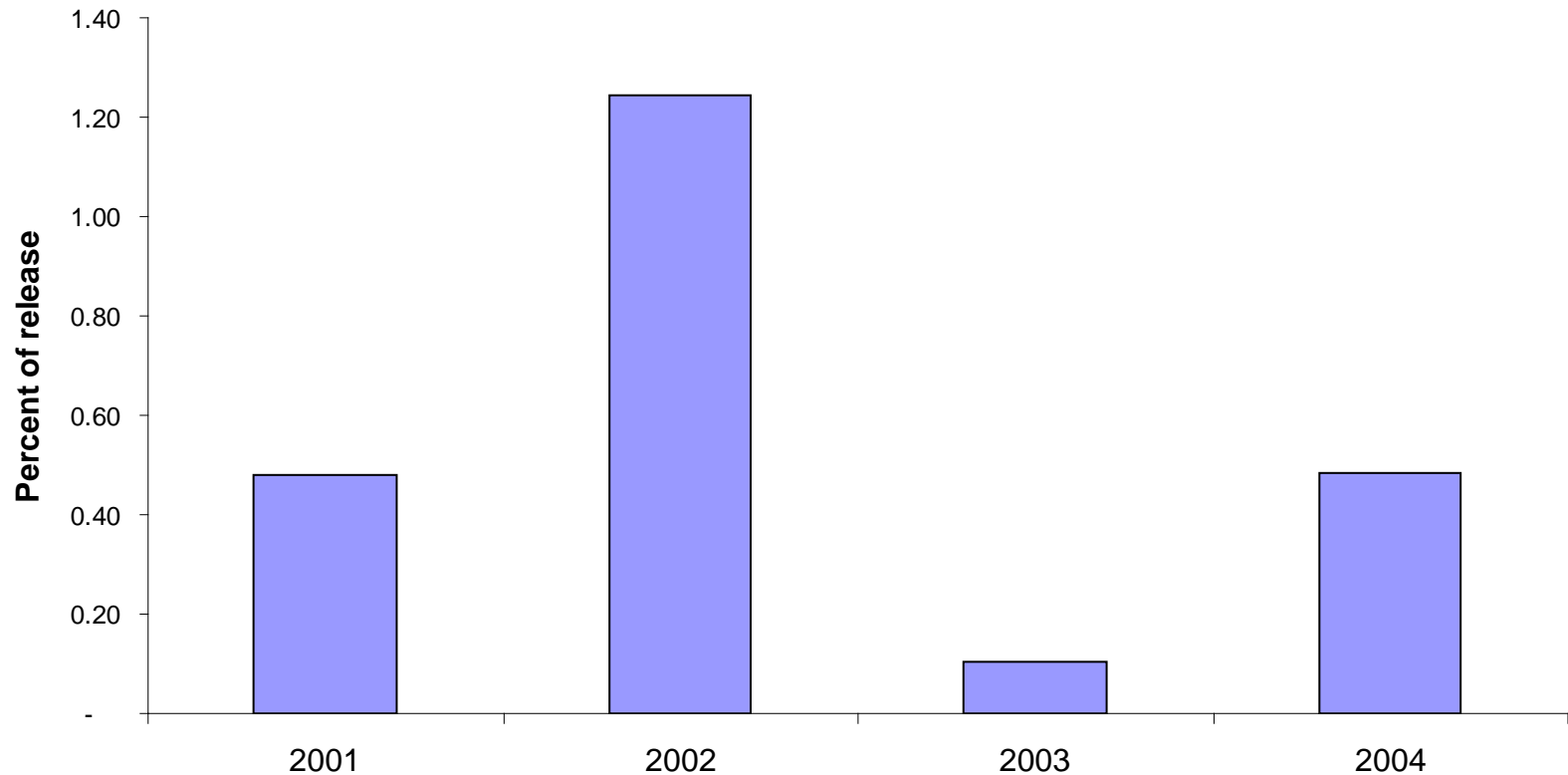
Tagging year	Number tagged	Returns by age-class					SAR
		Jacks	2-ocn	3-ocn	4-ocn	5-ocn	
2004	2,544	13	14	16	5	—	1.89
2003	2,552	34	28	29	7	—	3.84
2002	2,500	42	47	24	9	—	4.88



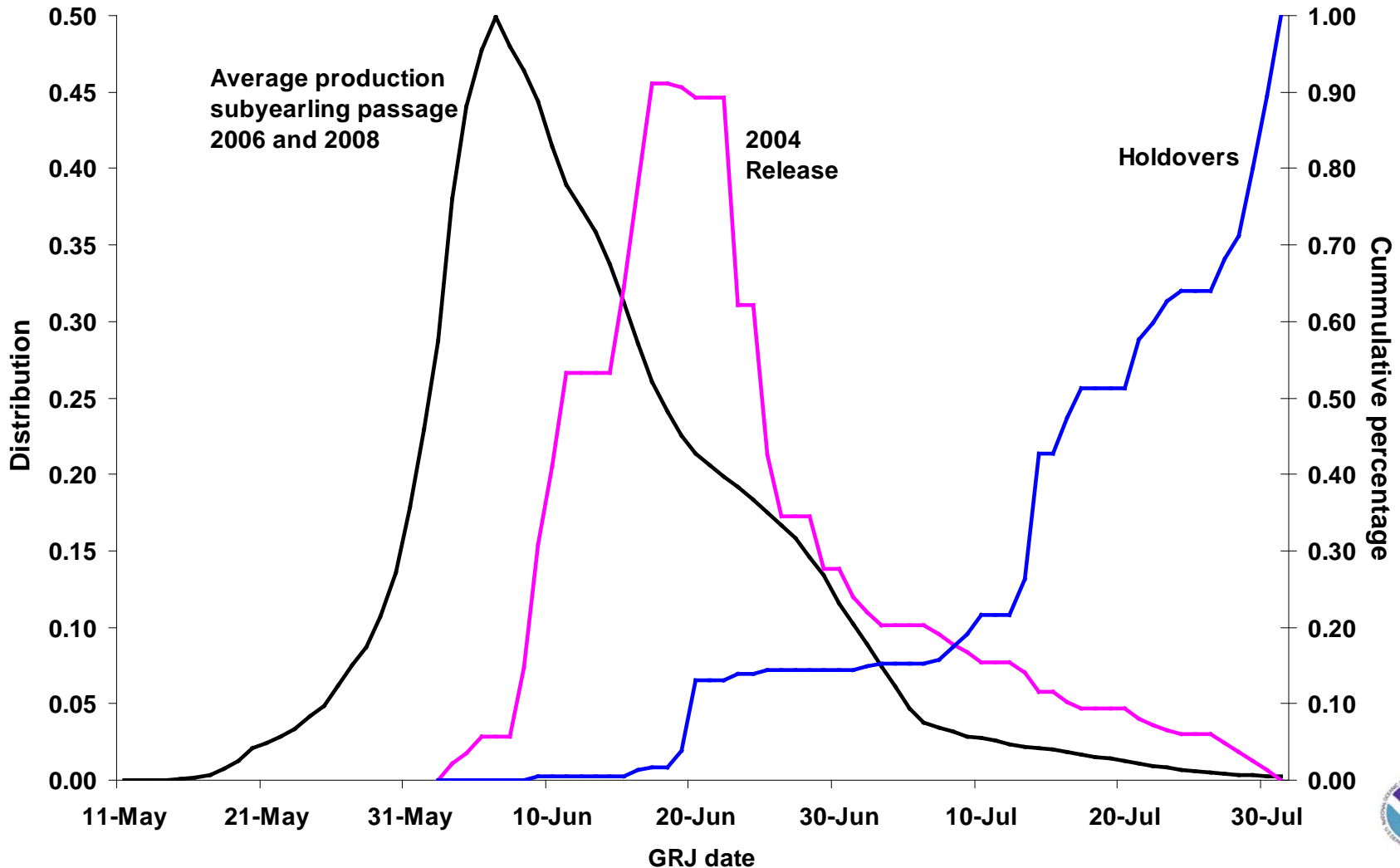
Problems found with study design



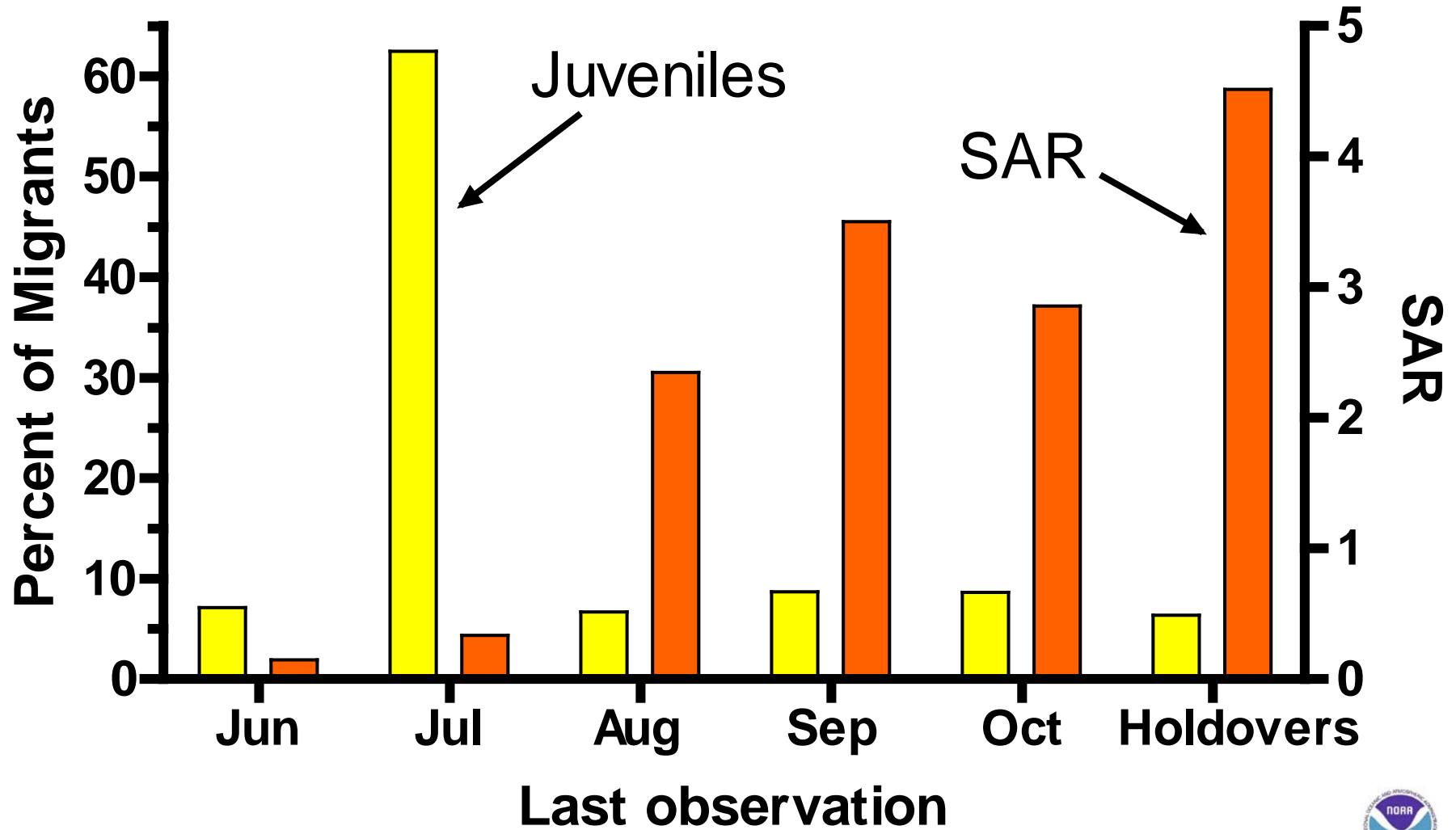
Problems found with study design - Holdovers



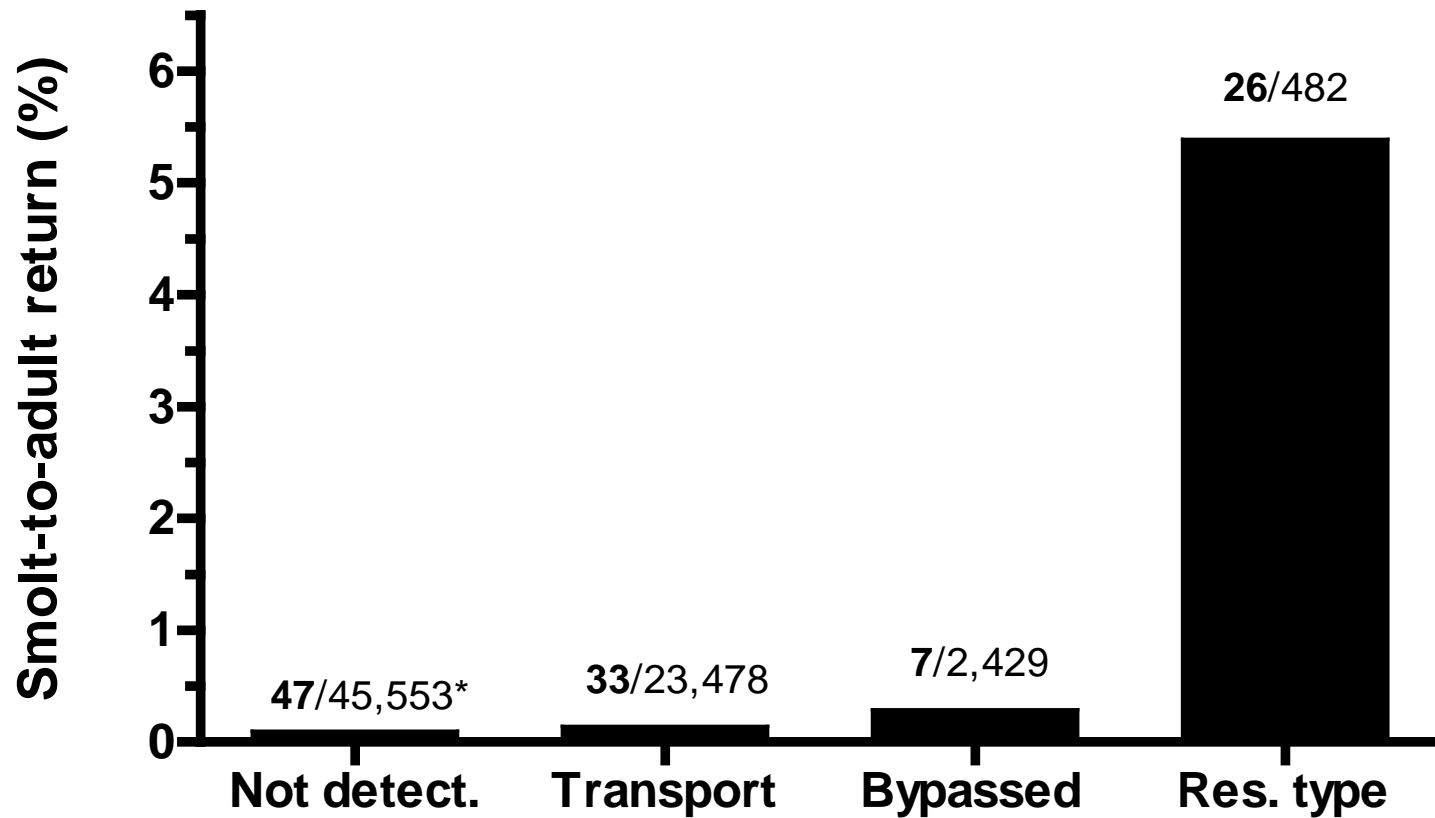
Problems found with study design - Passage and Tagging at LGR



Migration timing vs. (SAR)



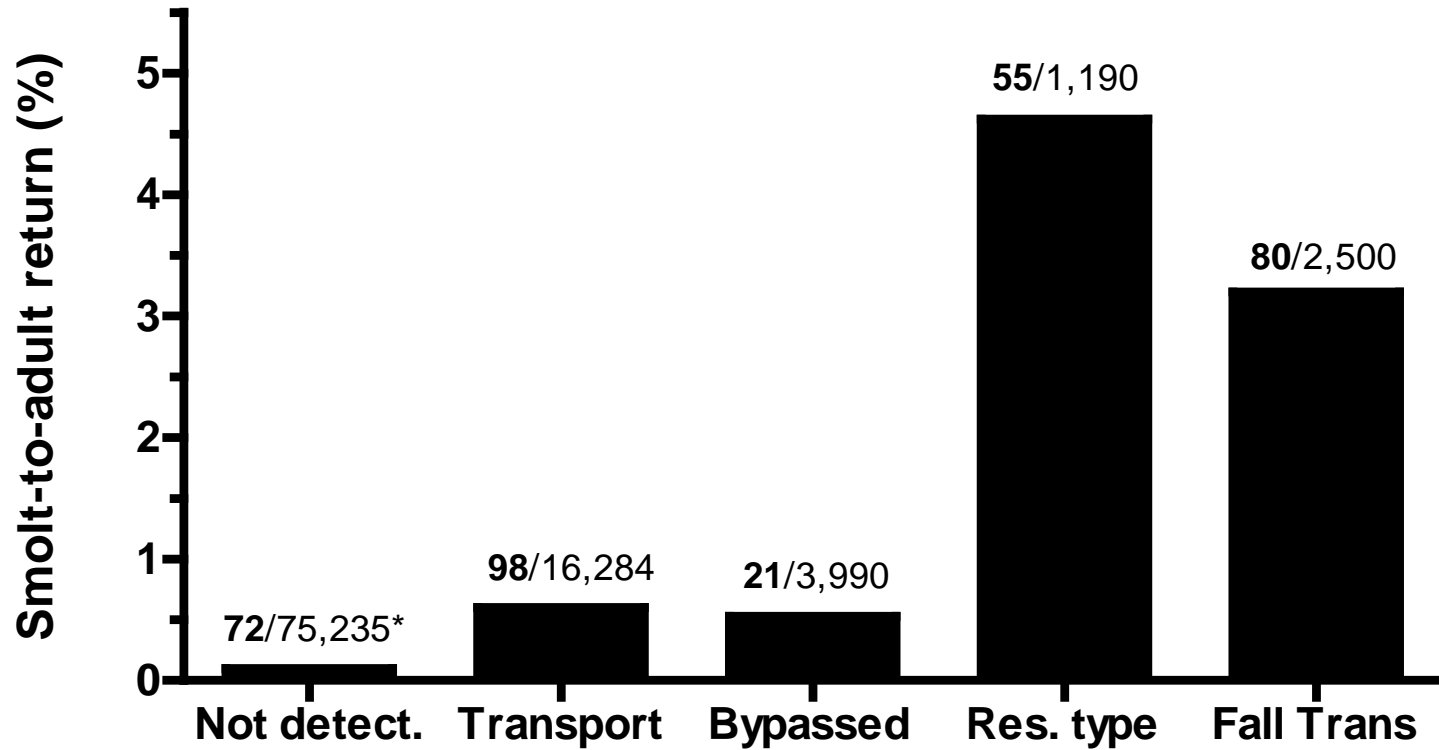
2001 Transport Study



* Includes mortalities above Lower Granite Dam

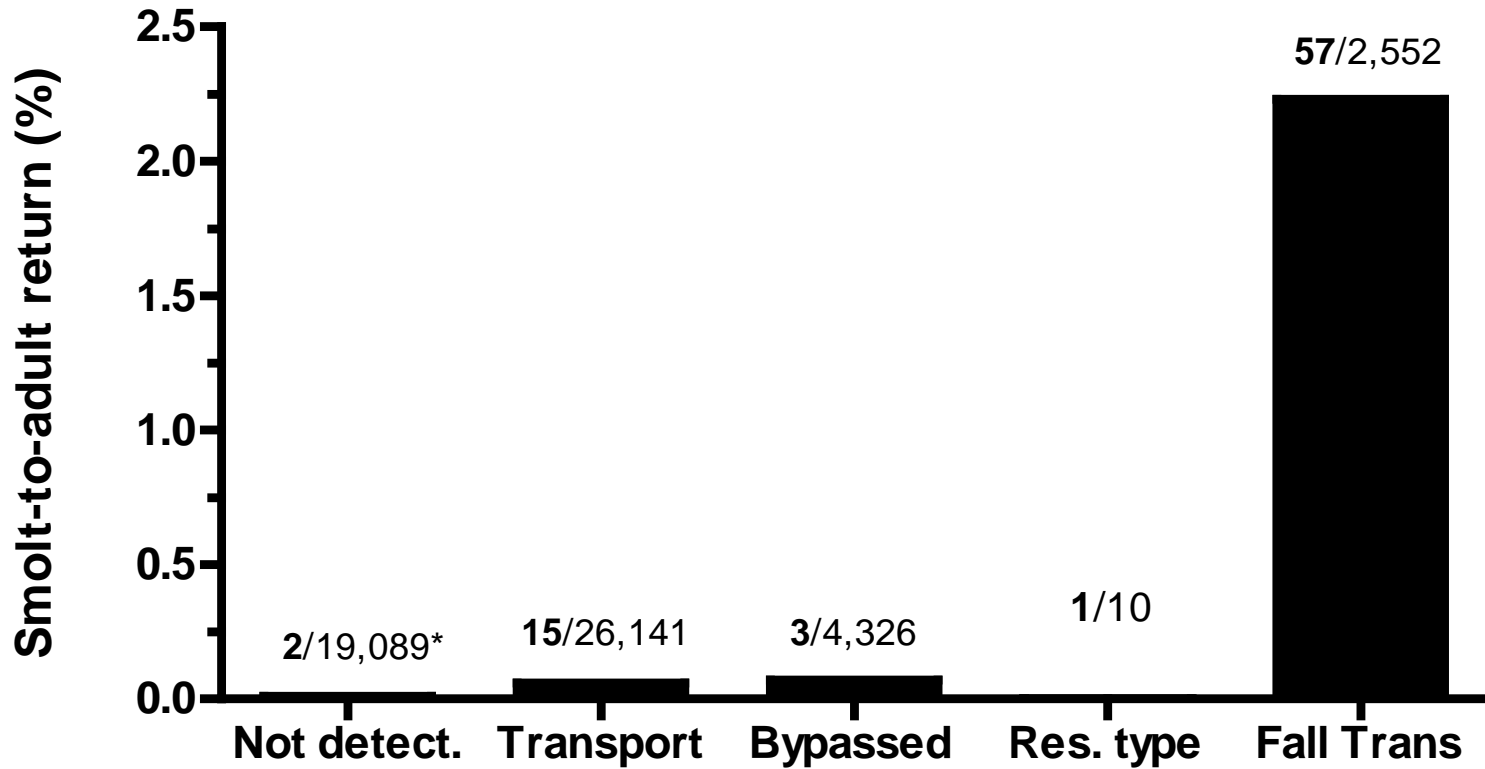


2002 Transport Study



* 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