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Lower Monumental Dam passage route and survival

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Outline

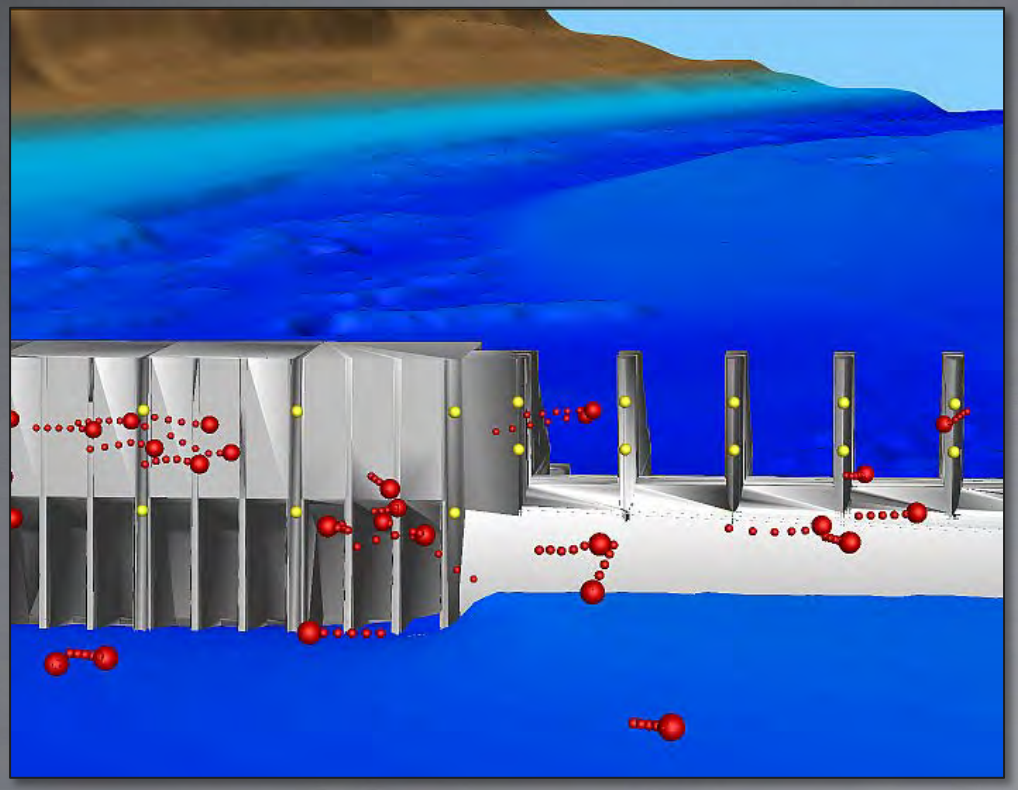
- Methods
- Results
  - By species/stock
    - Yearling Chinook salmon
    - Steelhead
    - Subyearling Chinook salmon
  - Within each species/stock
    - Route of passage
    - Route-specific survival
      - JBS outfall
    - Comparison to previous findings
- Summary

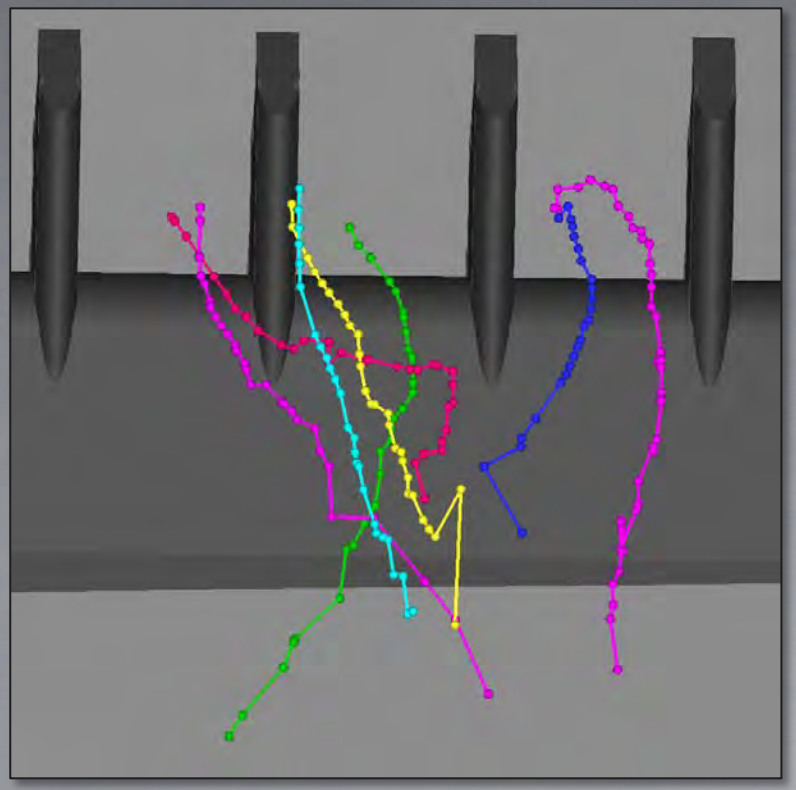
Bypass outfall

- Moved downstream ~650 m
- Extended into the channel ~110 m

Methods

- Route of passage assignment
  - Location of last detection and 3-D track of each fish compared
- Survival estimate
  - Virtual paired release used to estimate survival for each route

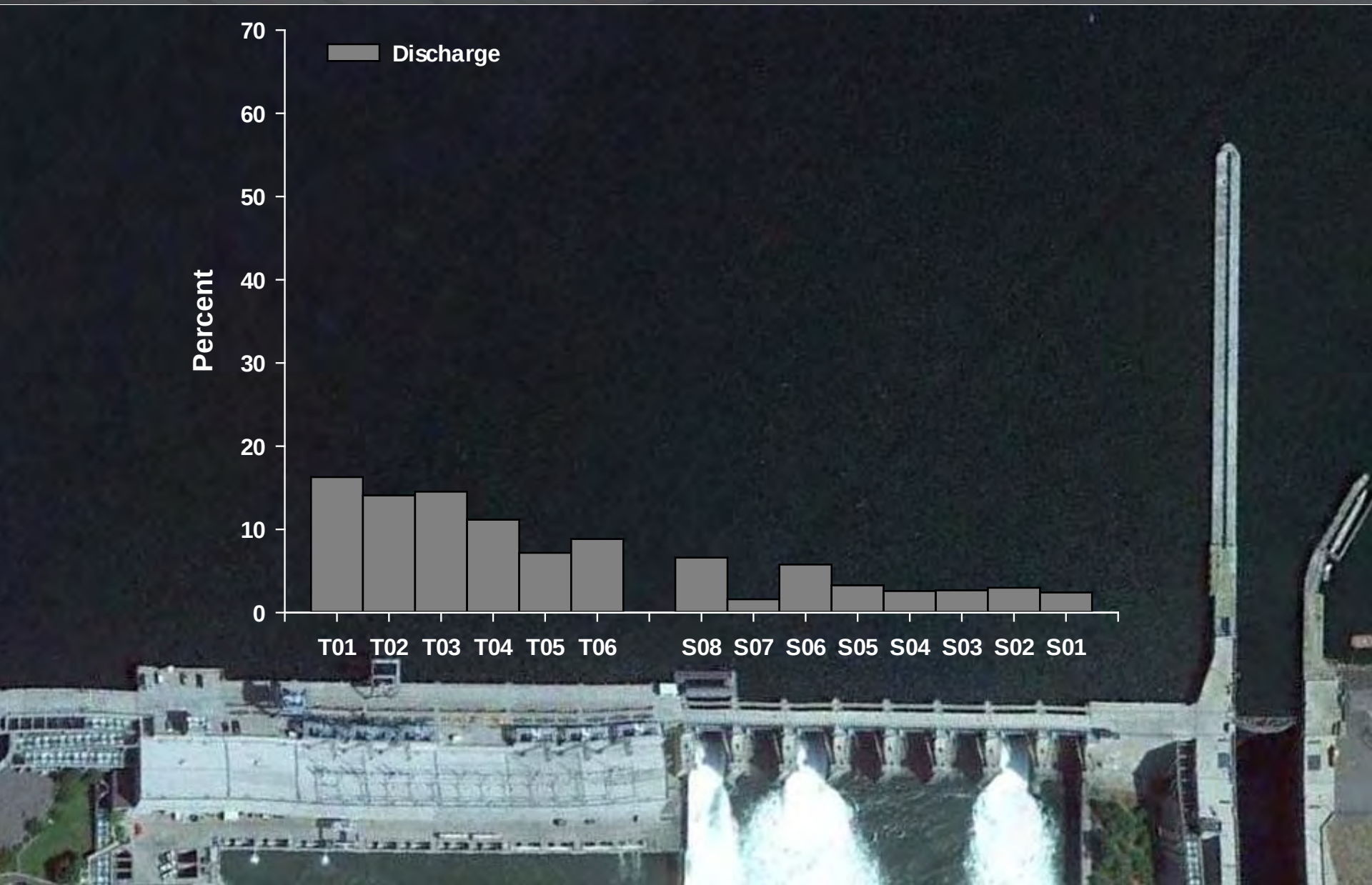




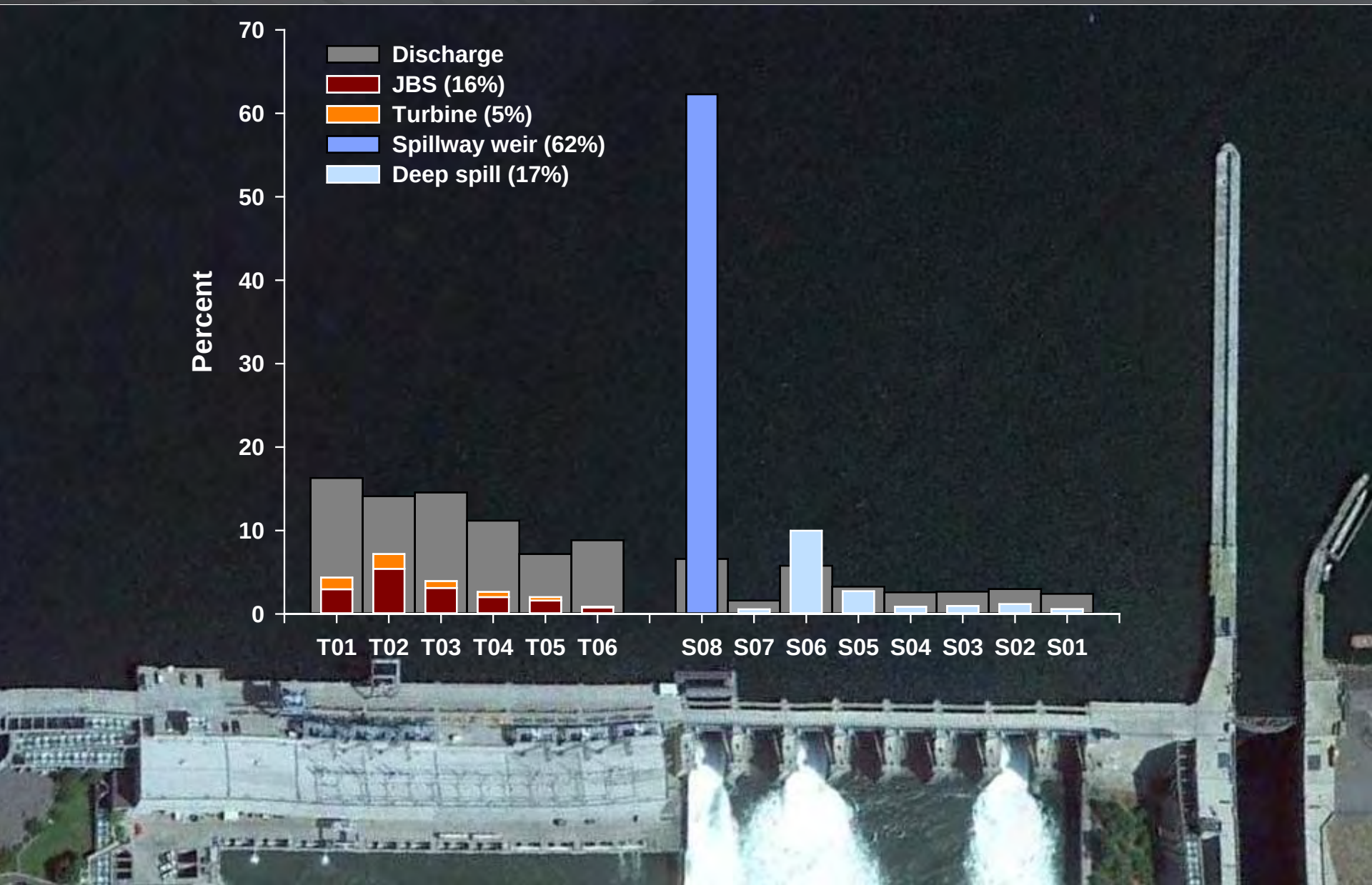
Yearling Chinook salmon (CH1)

Photo: Greg Kovalchuk

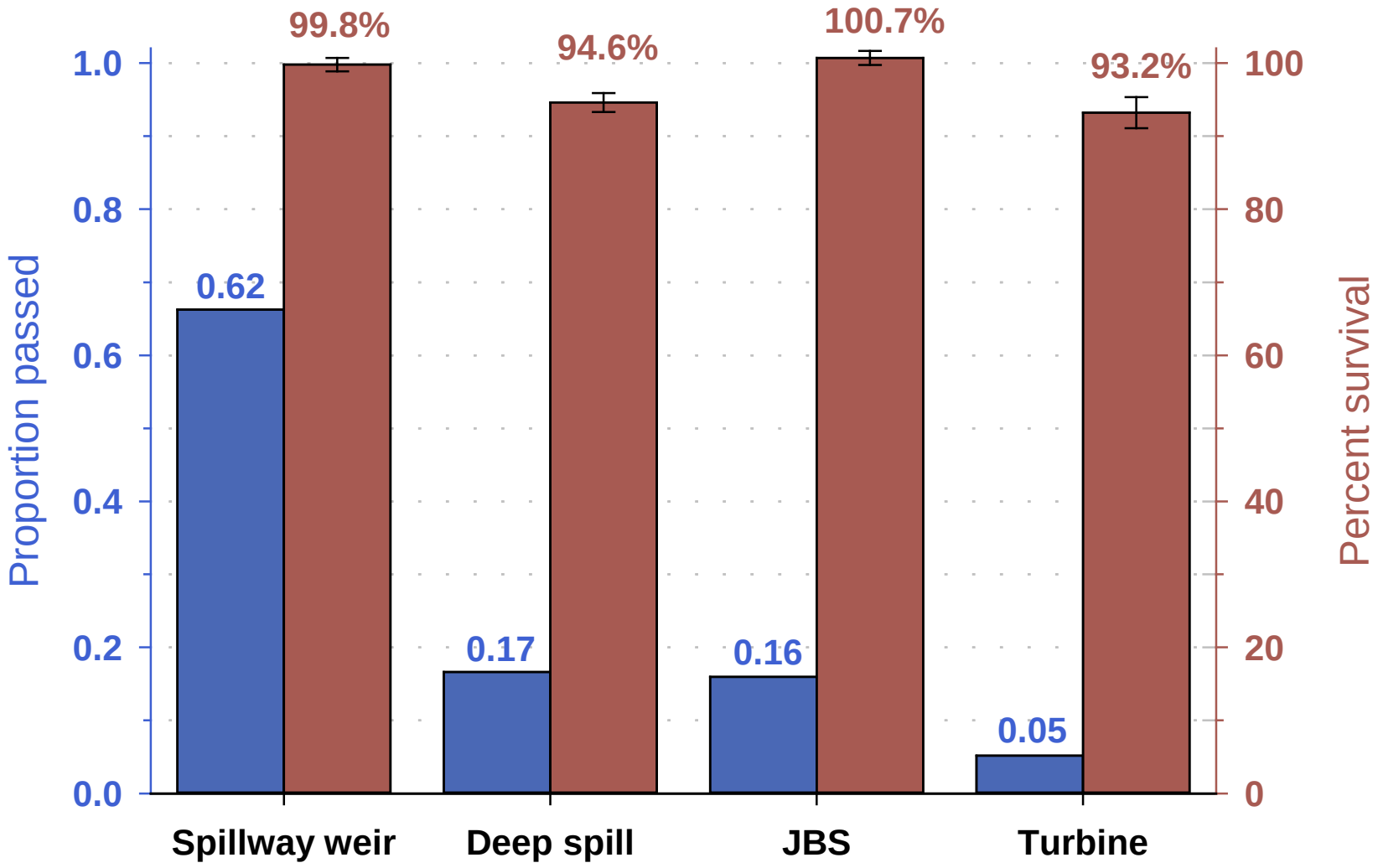
Yearling Chinook salmon: discharge



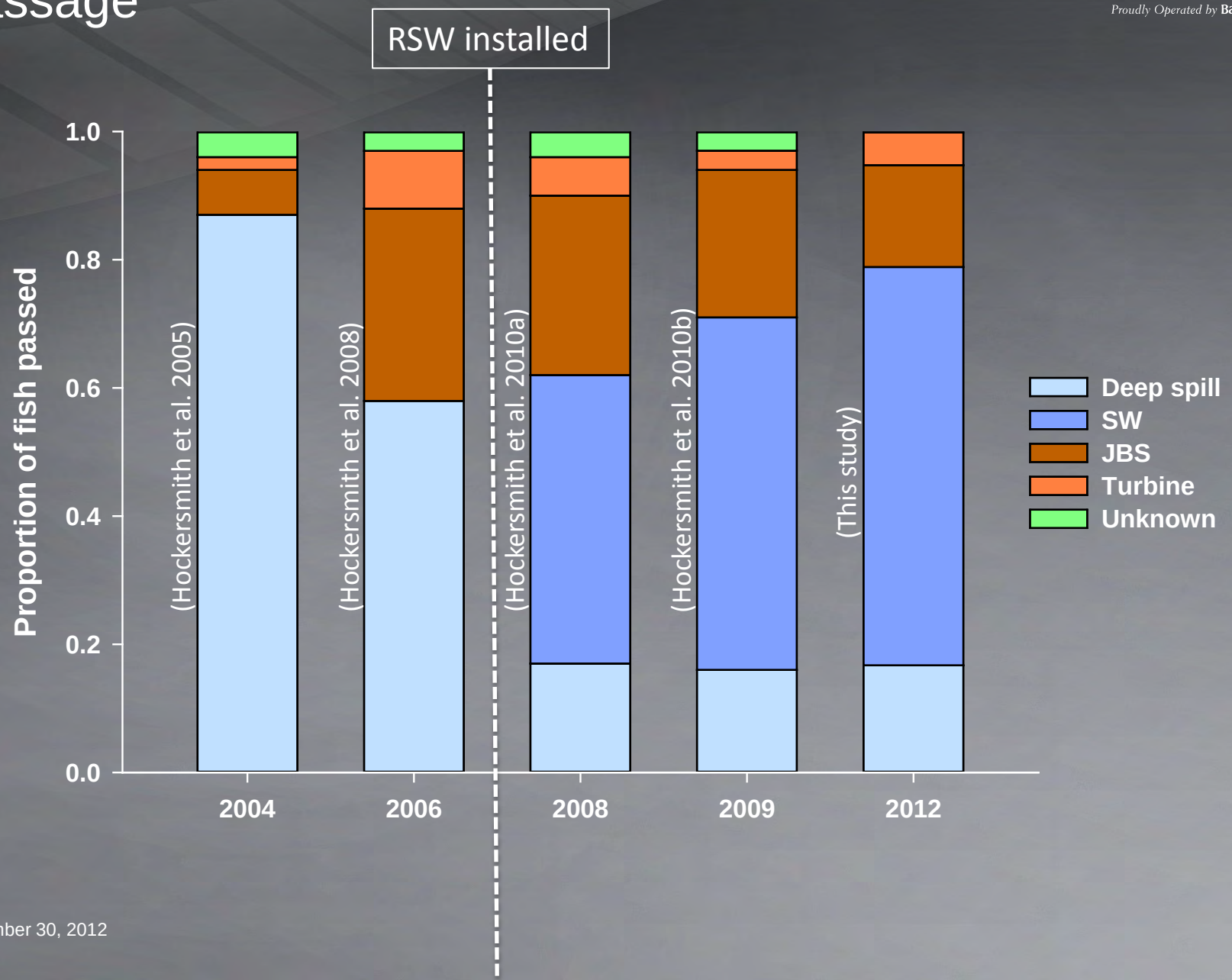
Yearling Chinook salmon (*N* = 4,026)



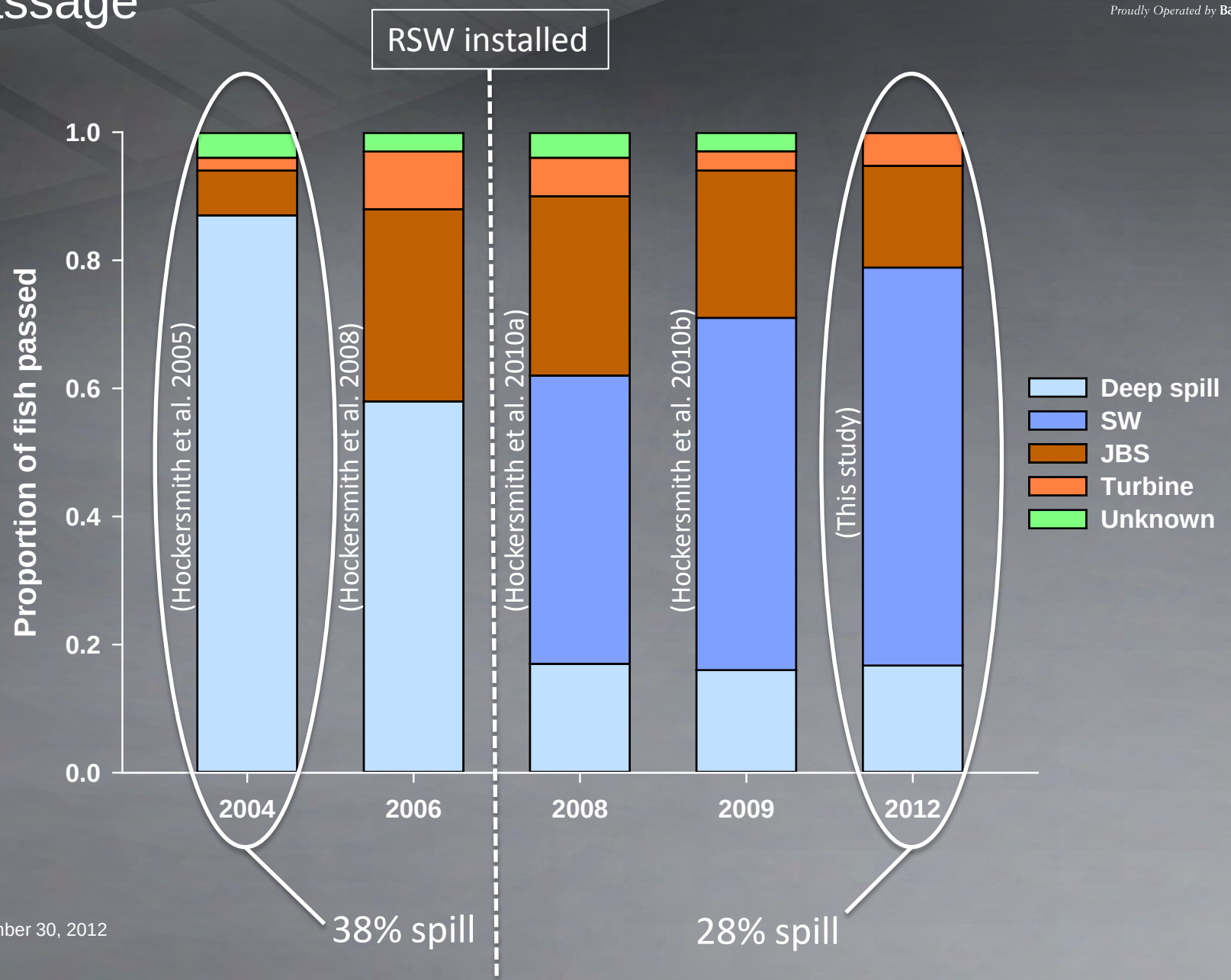
Yearling Chinook salmon (*N* = 4,028)



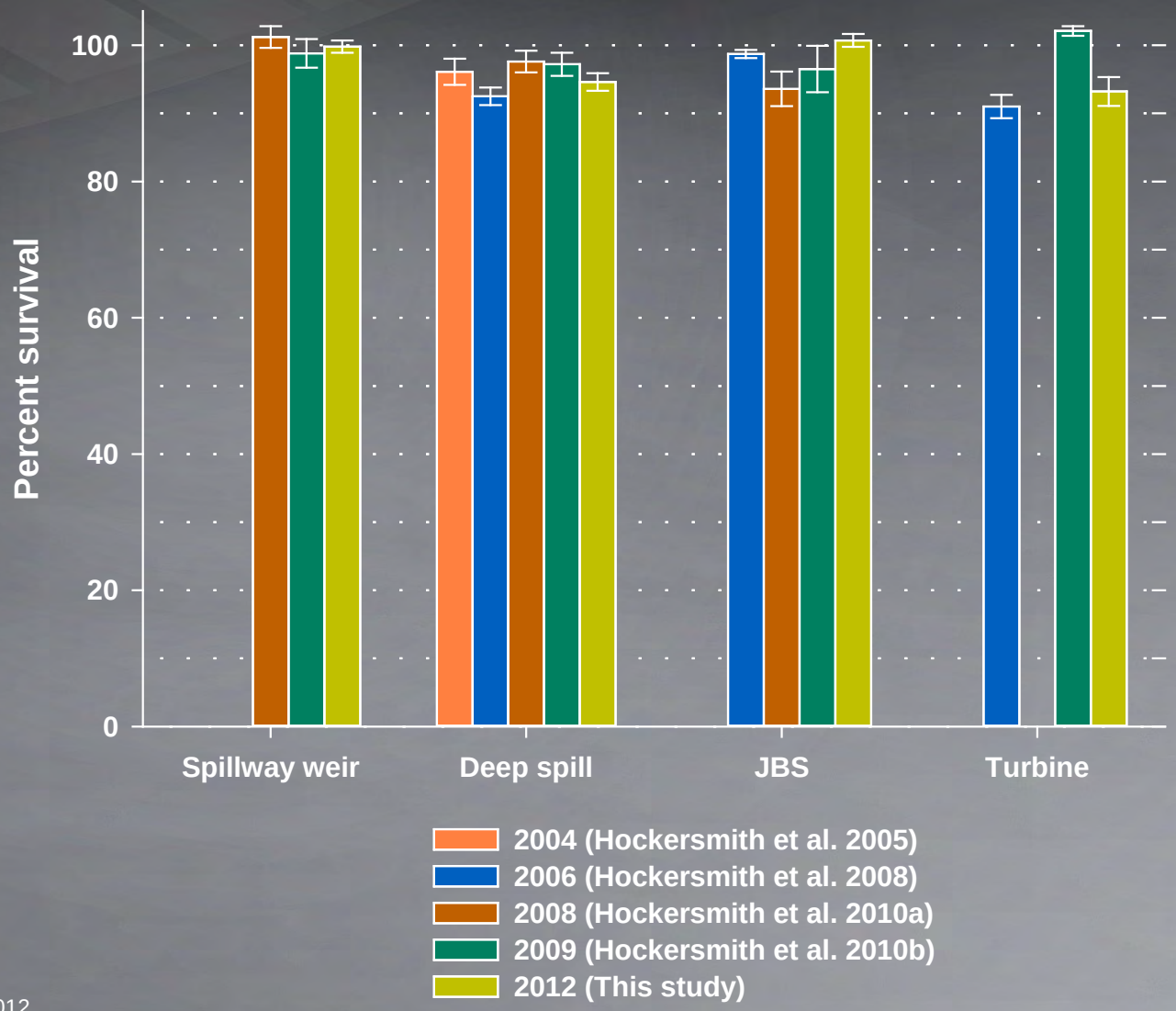
Yearling Chinook salmon: Historic route of passage



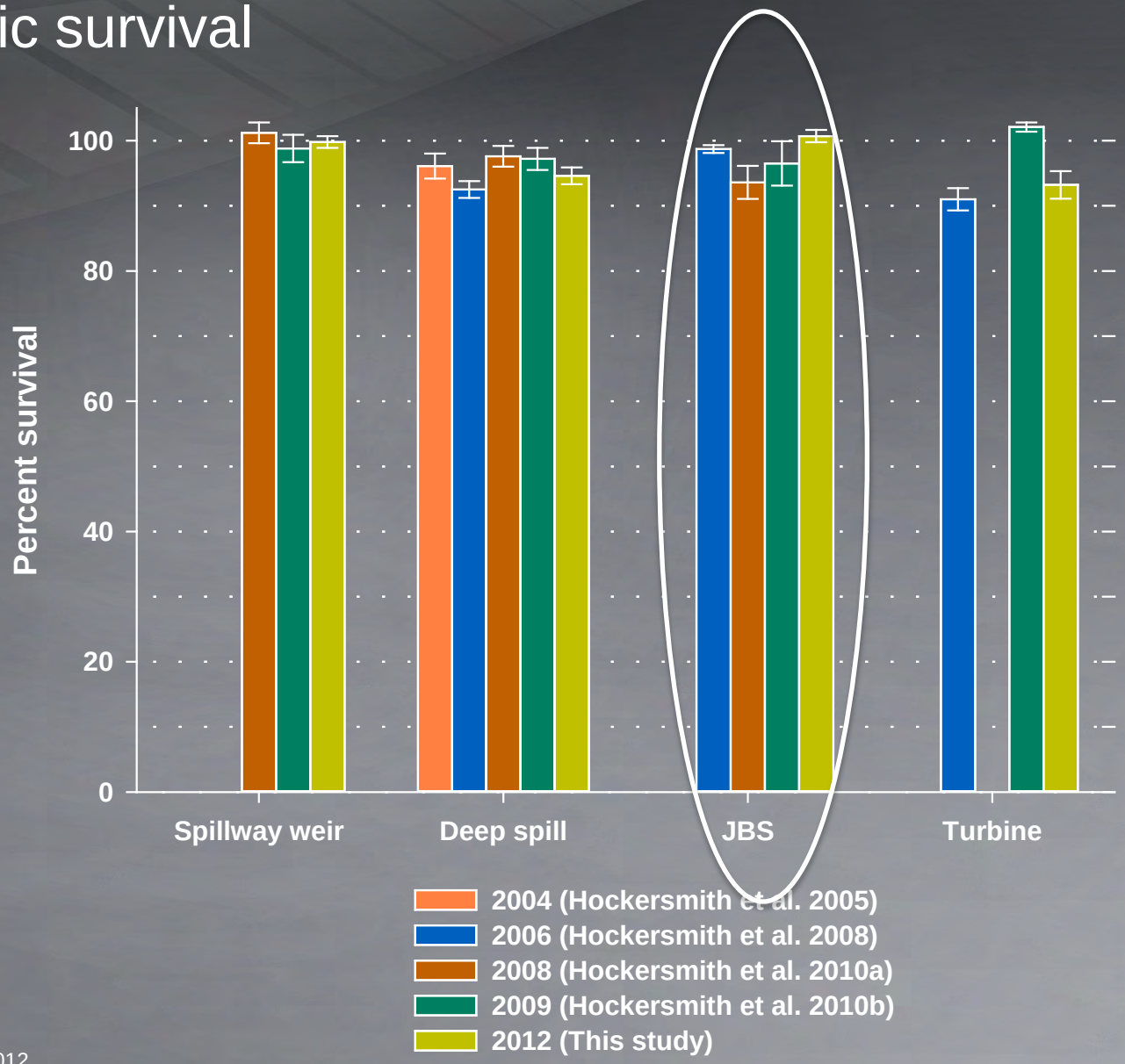
Yearling Chinook salmon: Historic route of passage



Yearling Chinook salmon: Historic route-specific survival



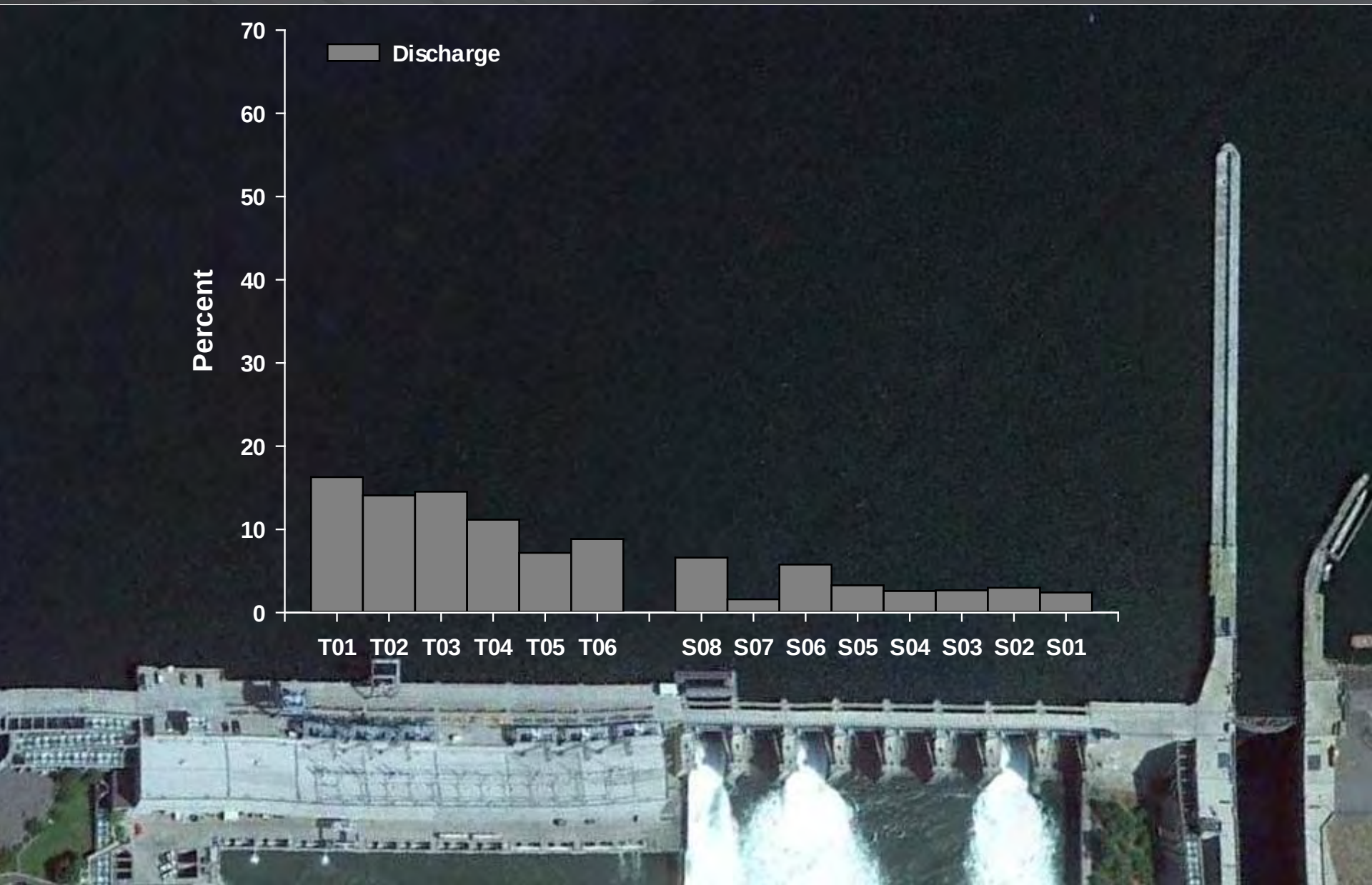
Yearling Chinook salmon: Historic route-specific survival



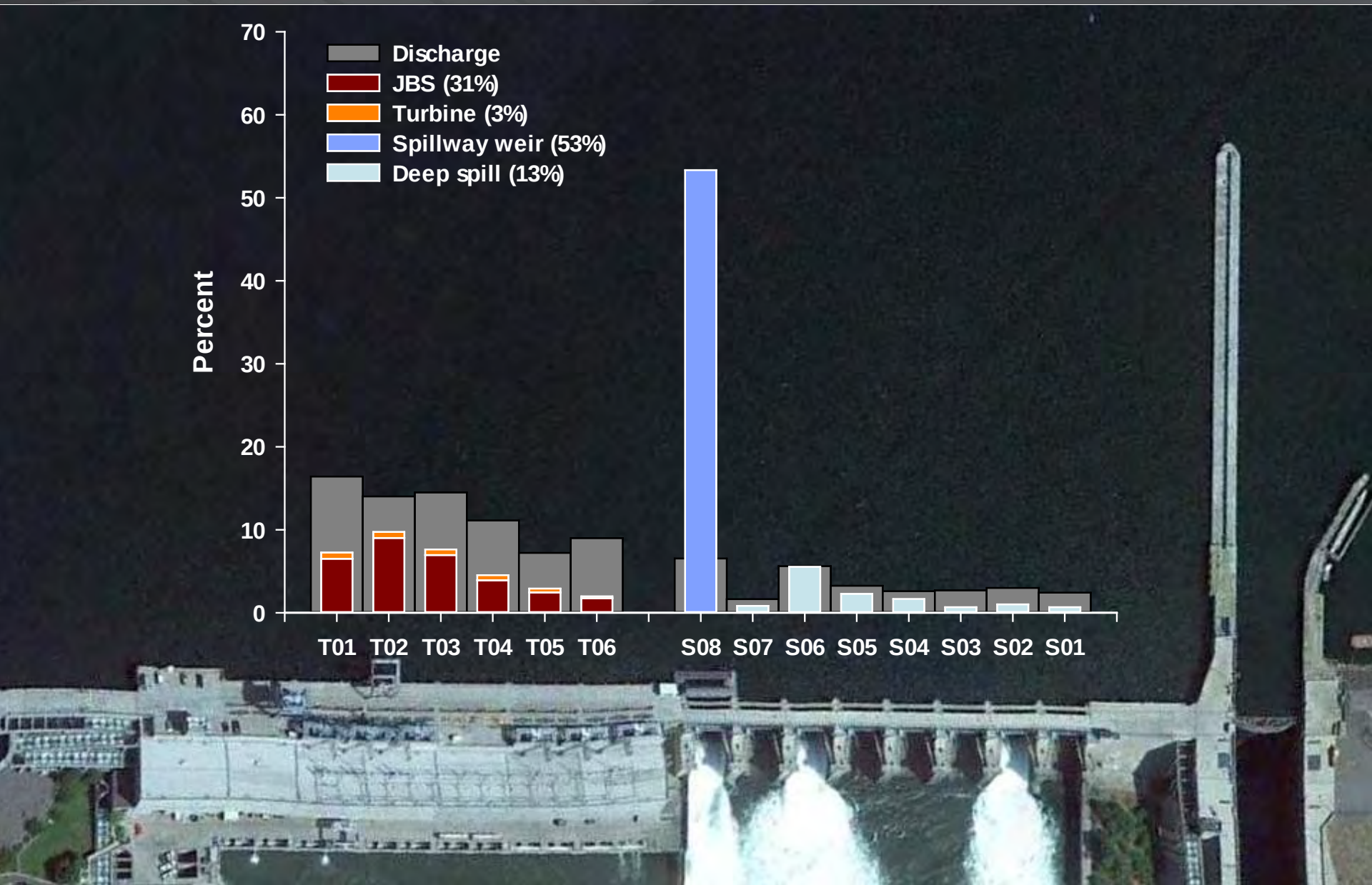
Steelhead (STH)

Photo: Greg Kovalchuk

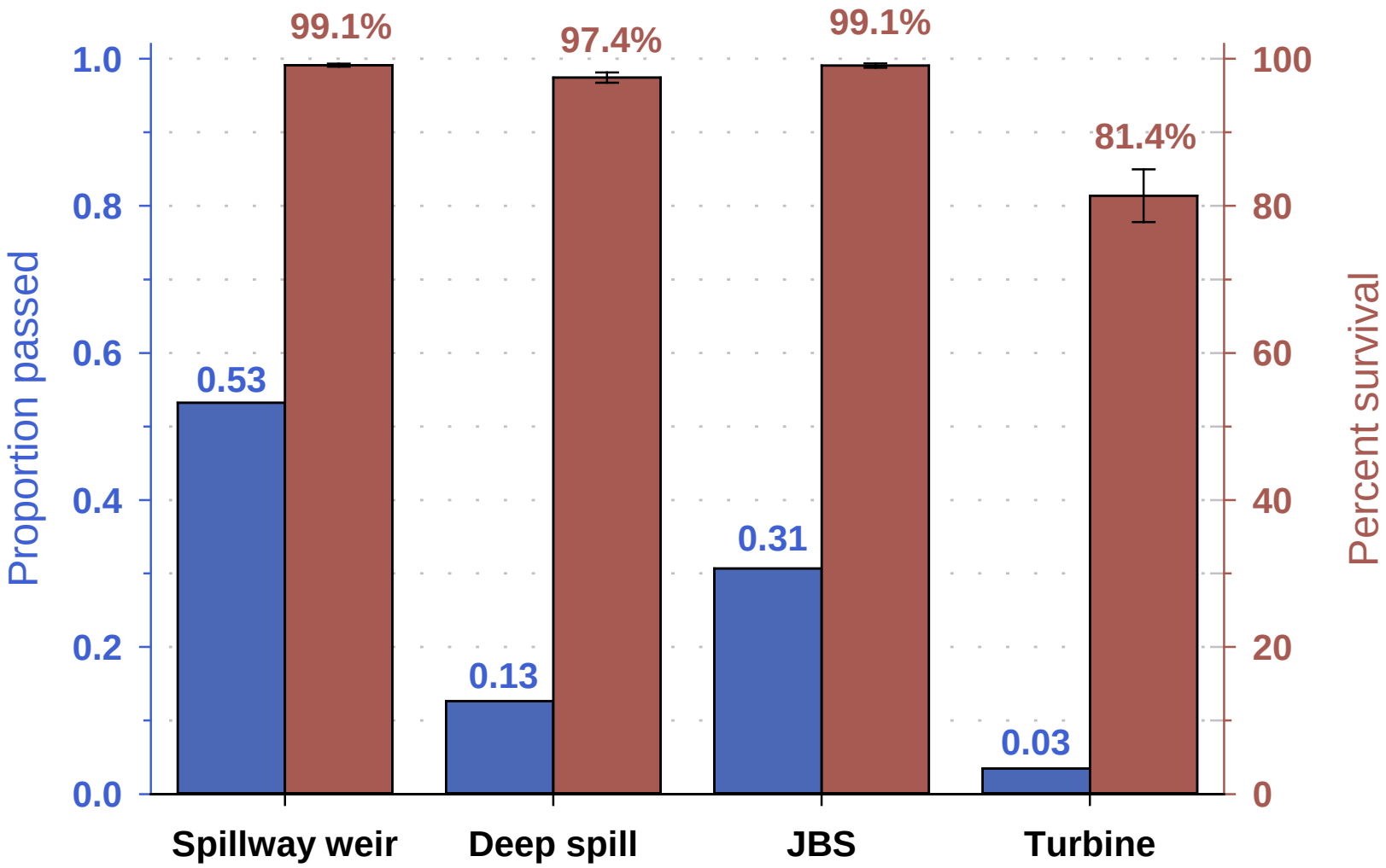
Steelhead: discharge



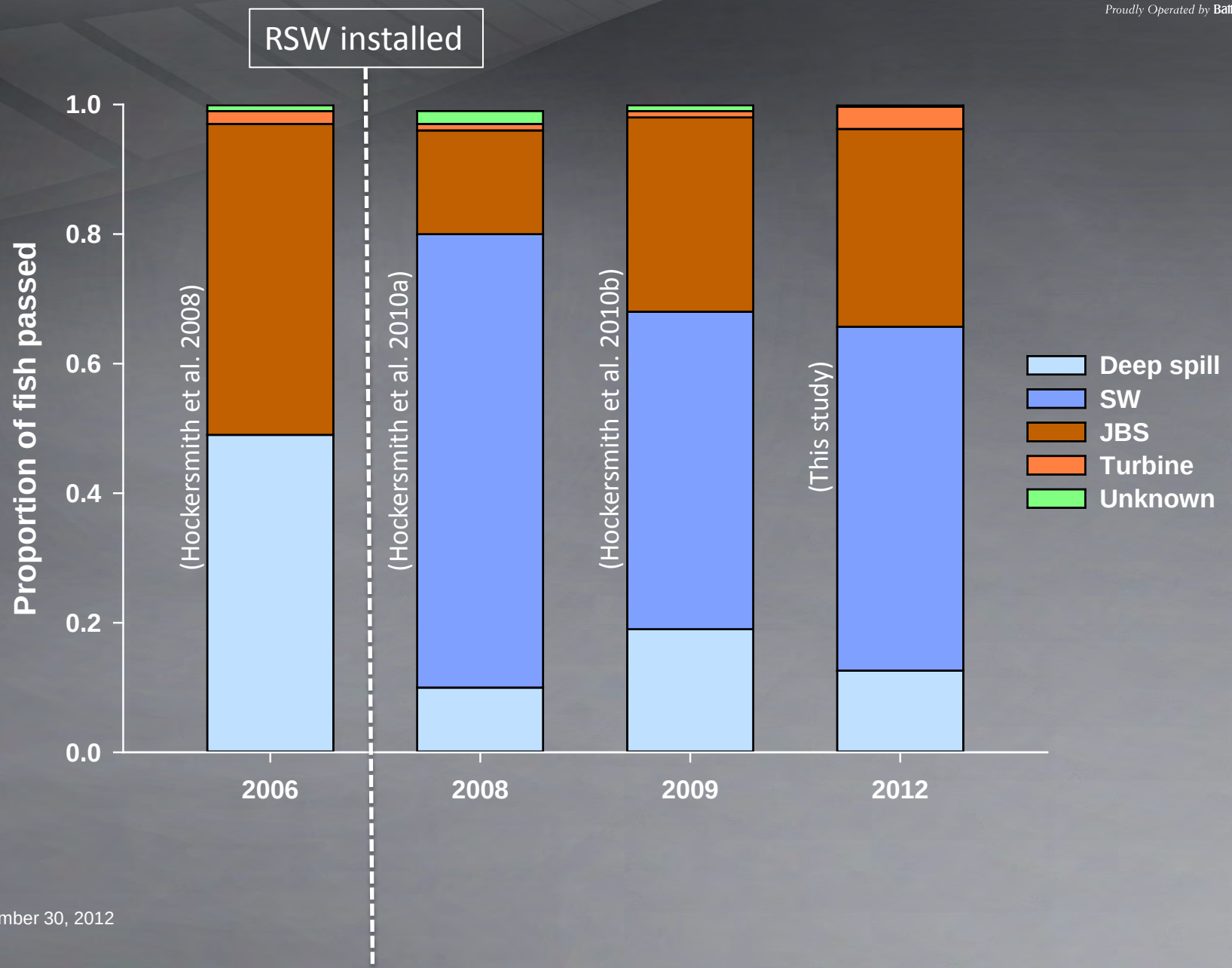
Steelhead: (*N* = 3,997)



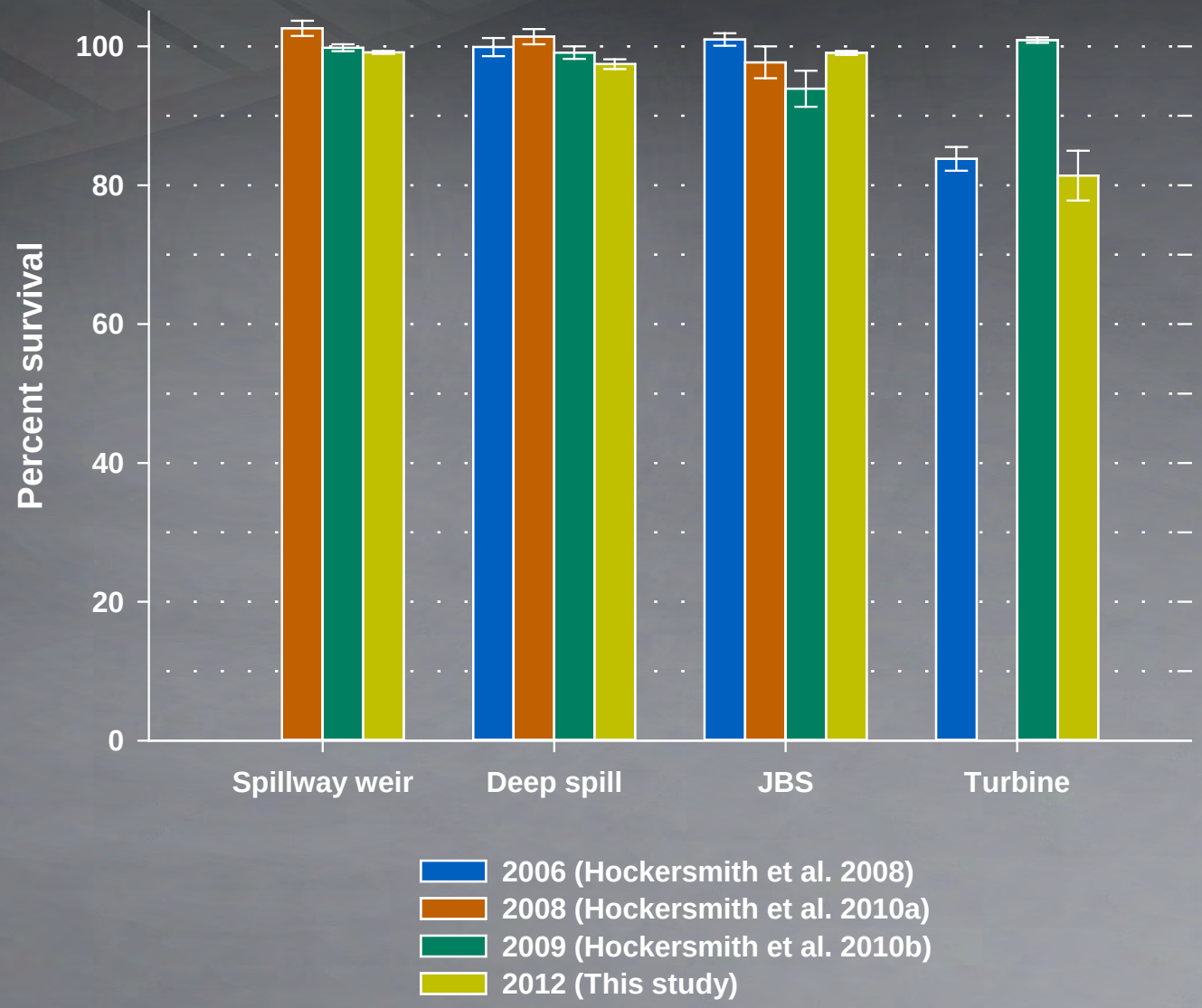
Steelhead (*N* = 3,998)



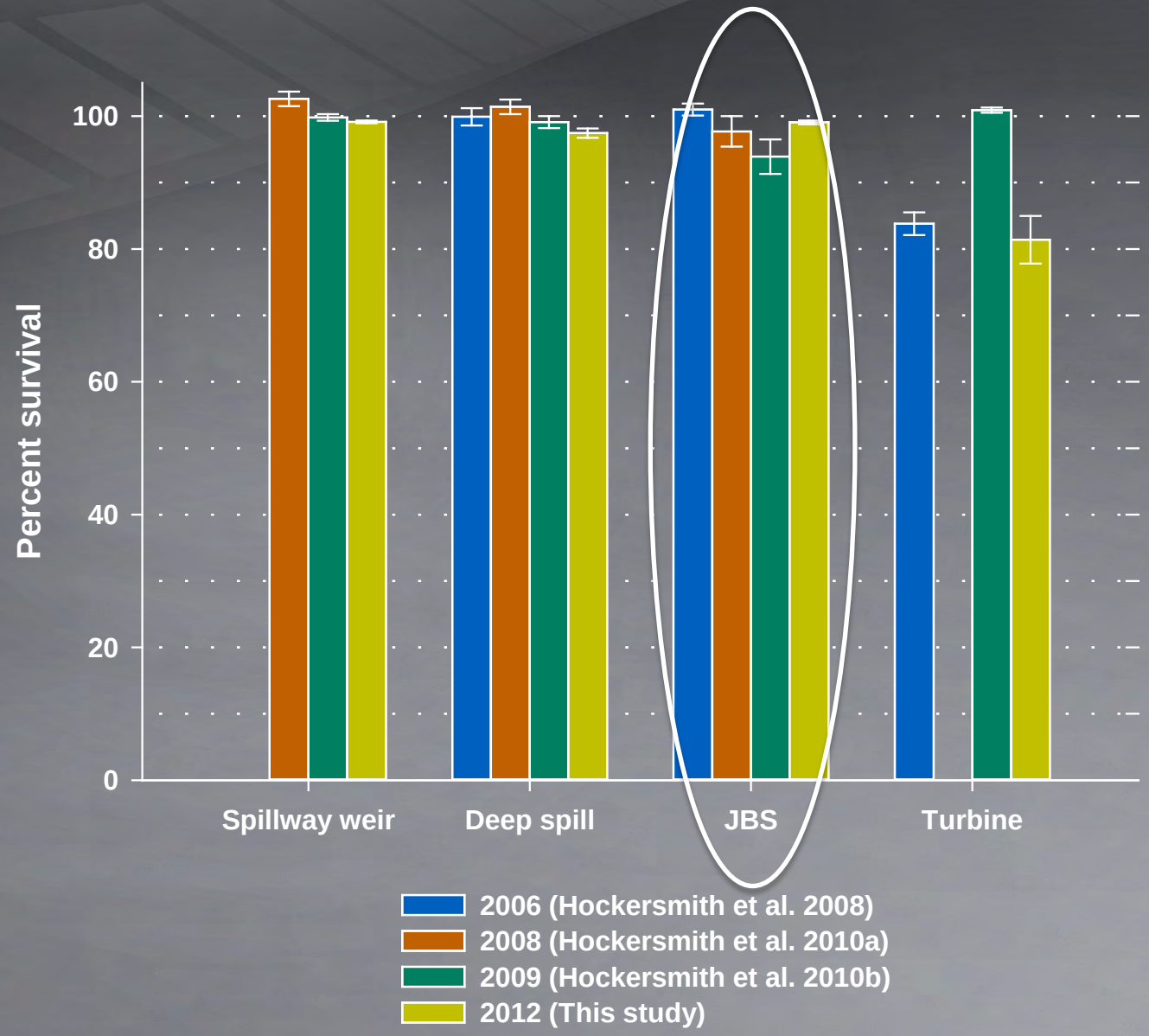
Steelhead: Historic route of passage



Steelhead: Historic route-specific survival



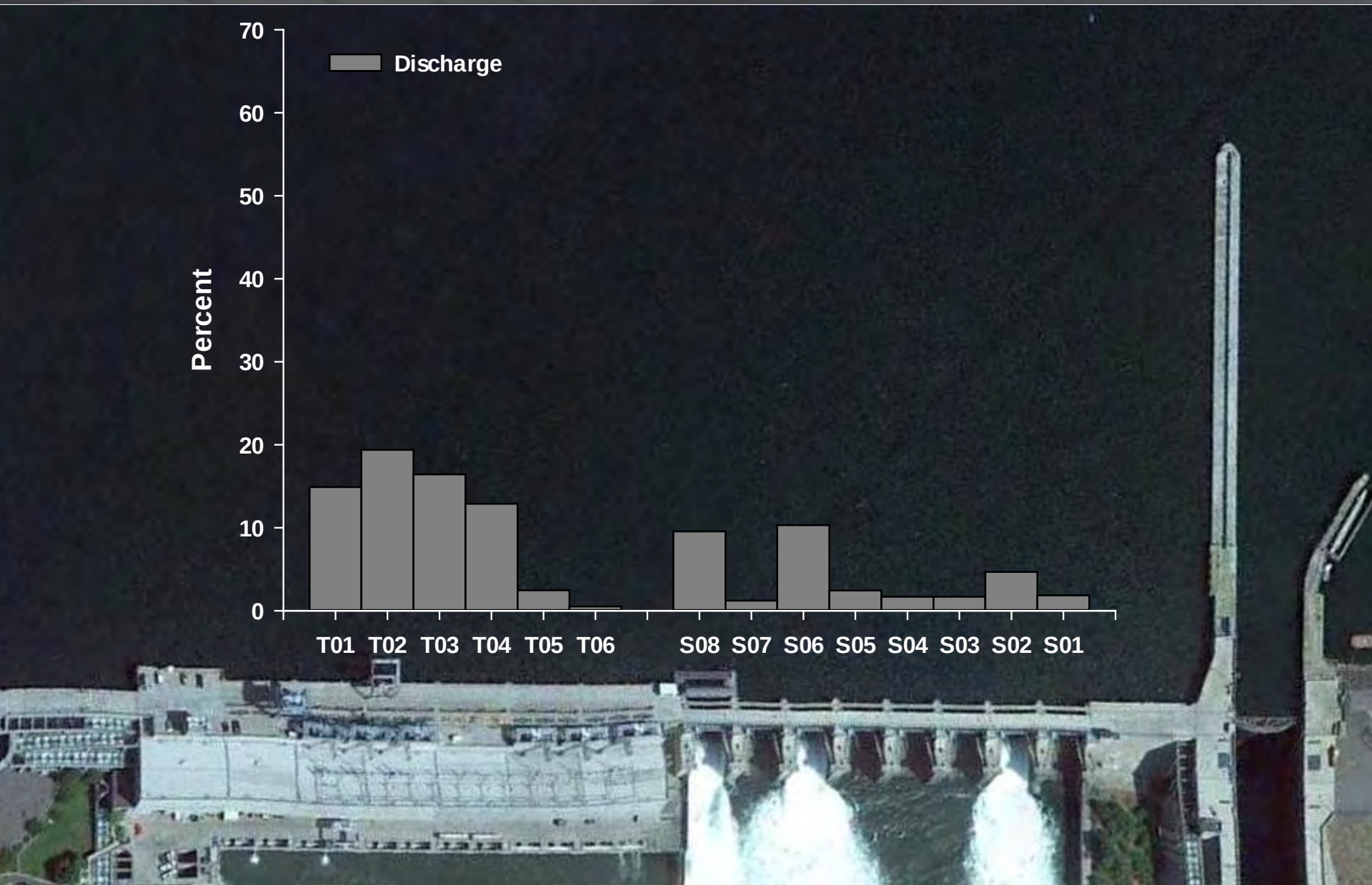
Steelhead: Historic route-specific survival



Subyearling Chinook salmon (CH0)

Photo: Greg Kovalchuk

Subyearling Chinook salmon (*N* = 6,269)



Subyearling Chinook salmon (*N* = 6,269)

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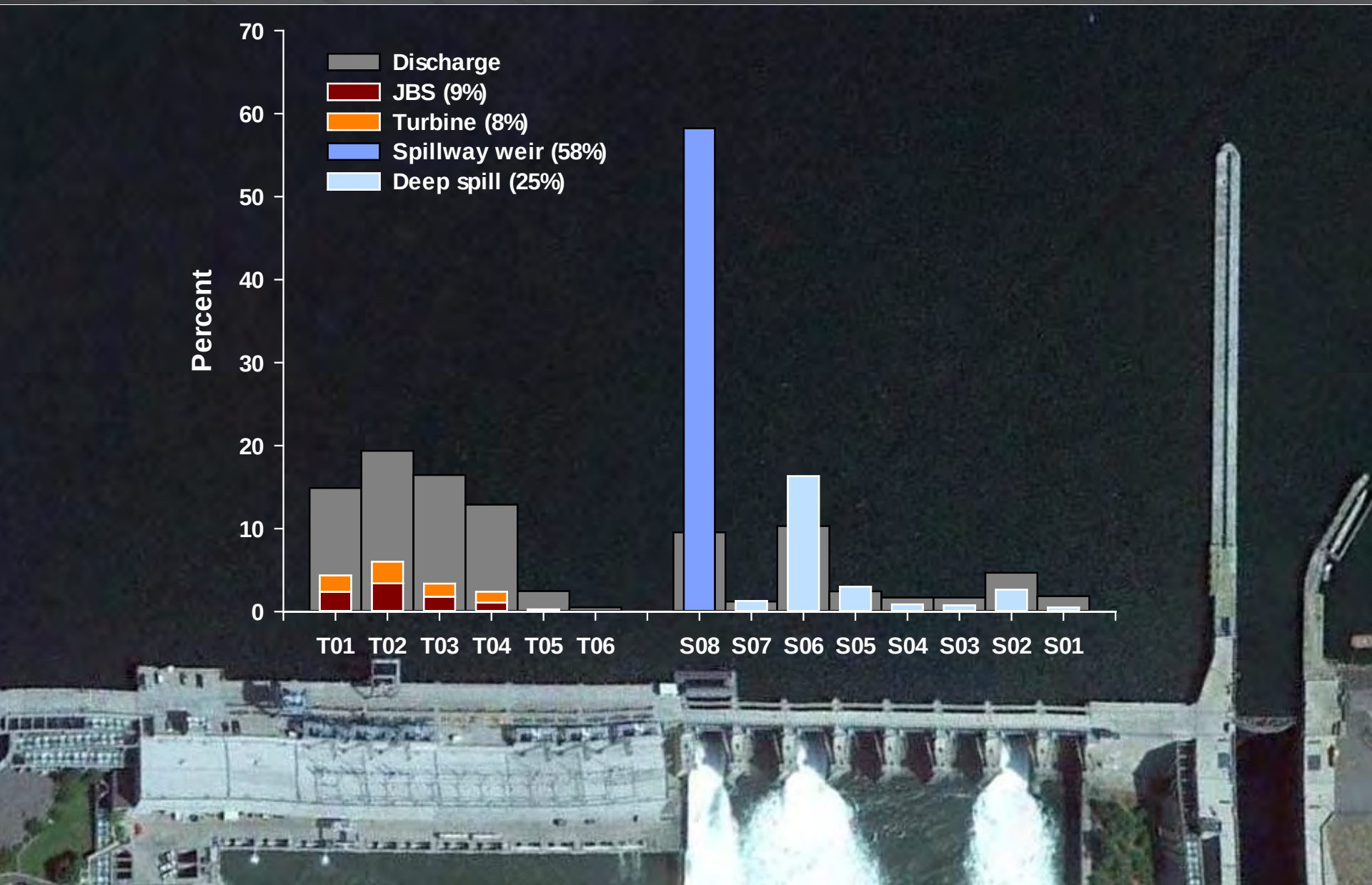
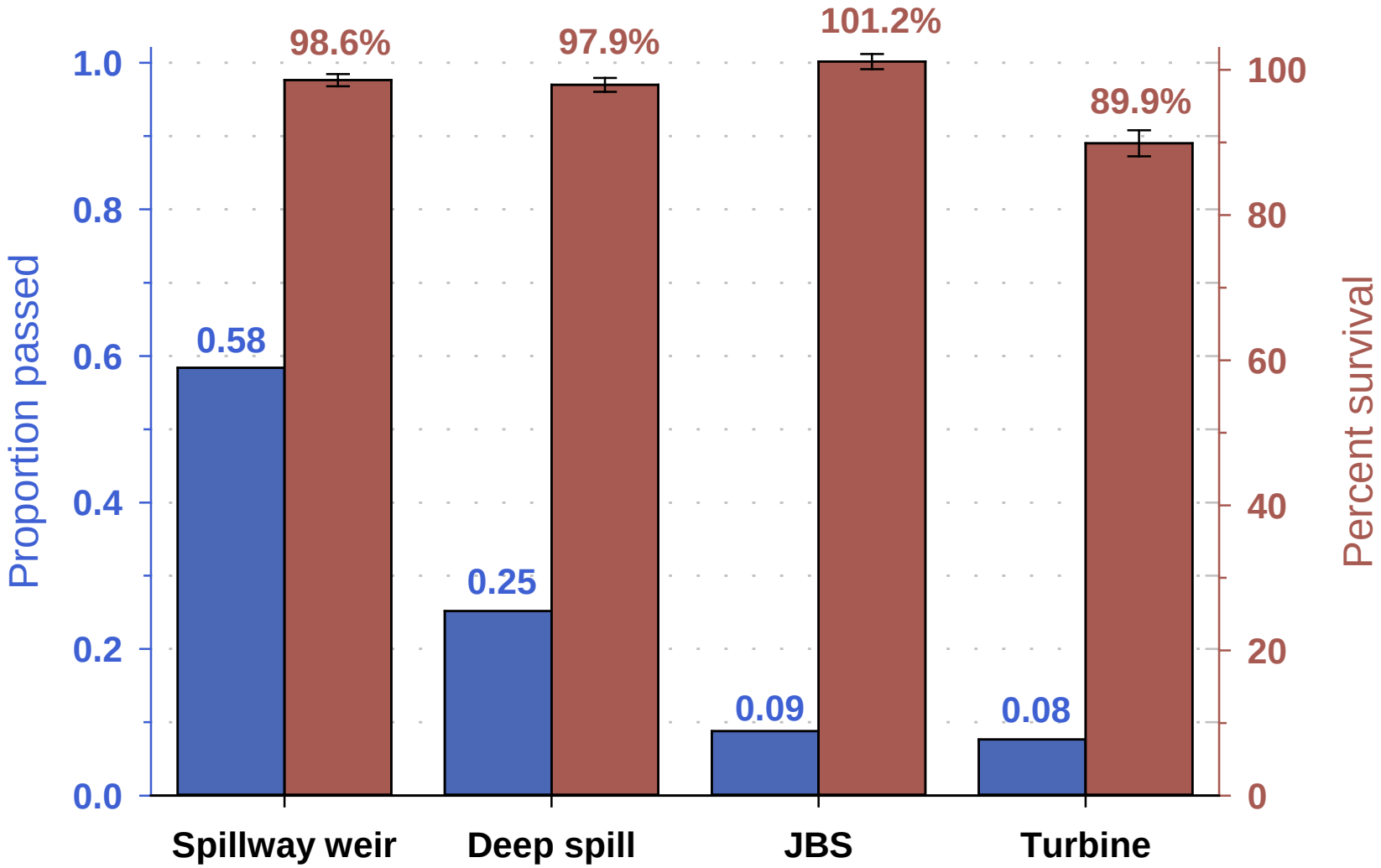
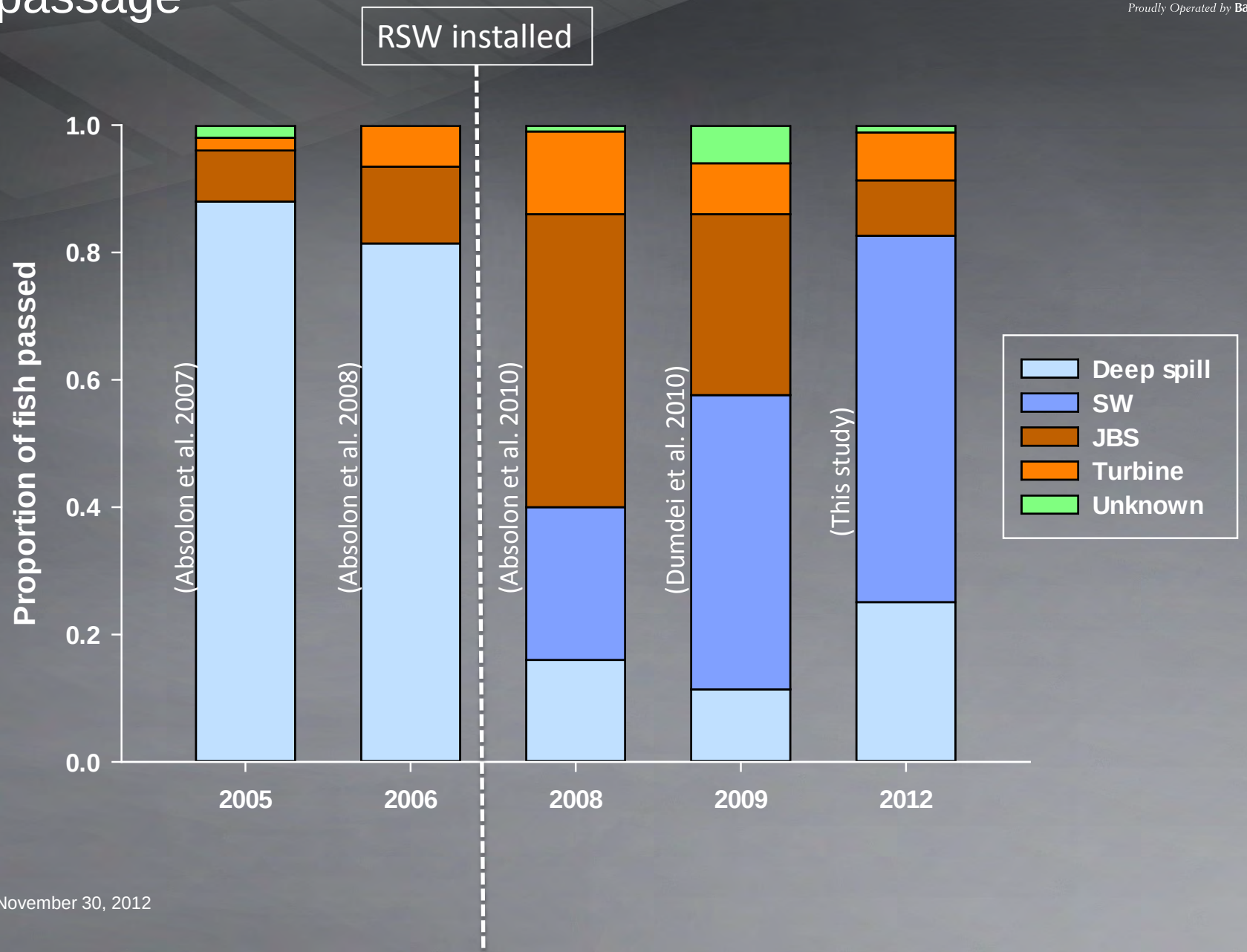


Subyearling Chinook salmon (*N* = 6,269)



Subyearling Chinook salmon: Historic route of passage



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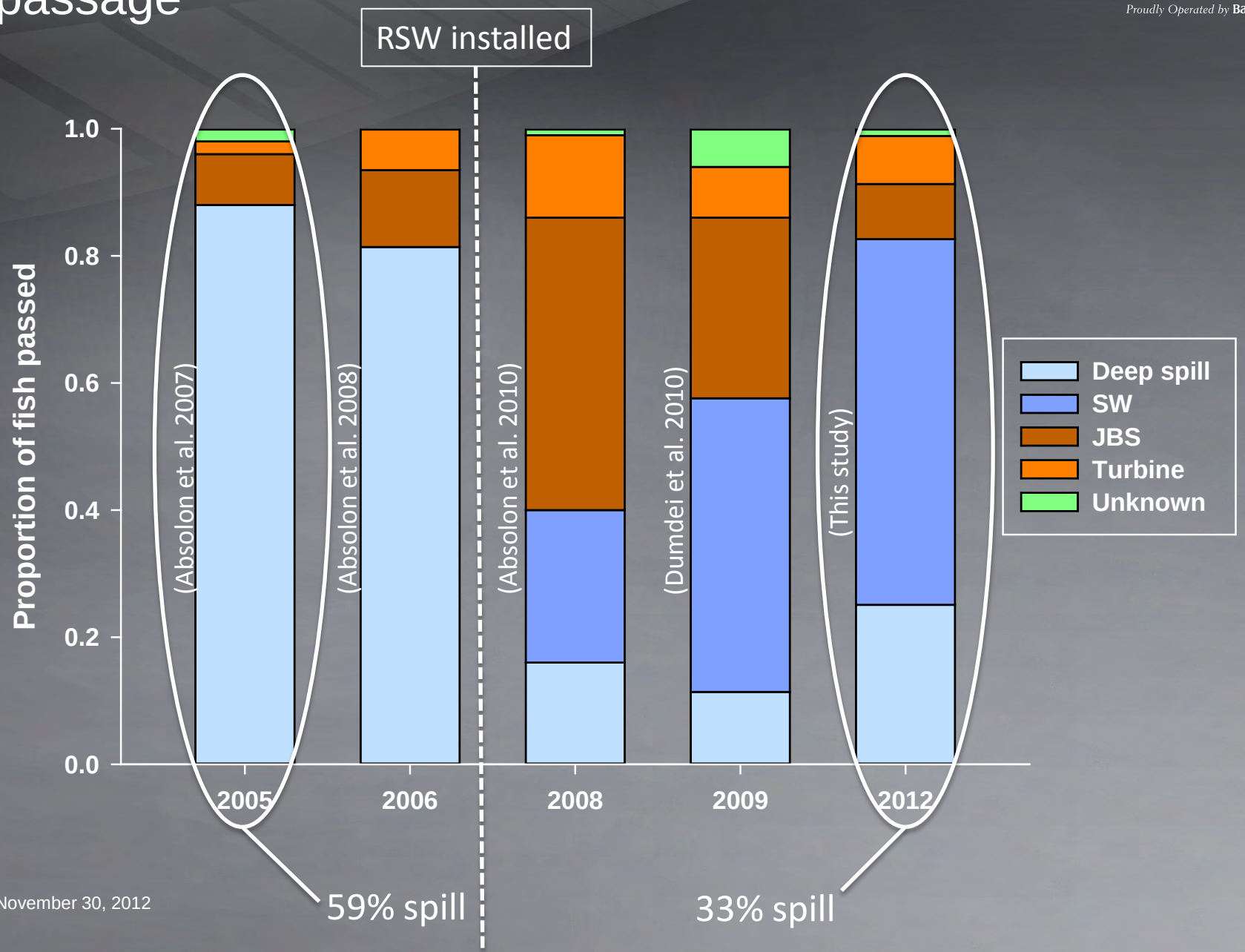
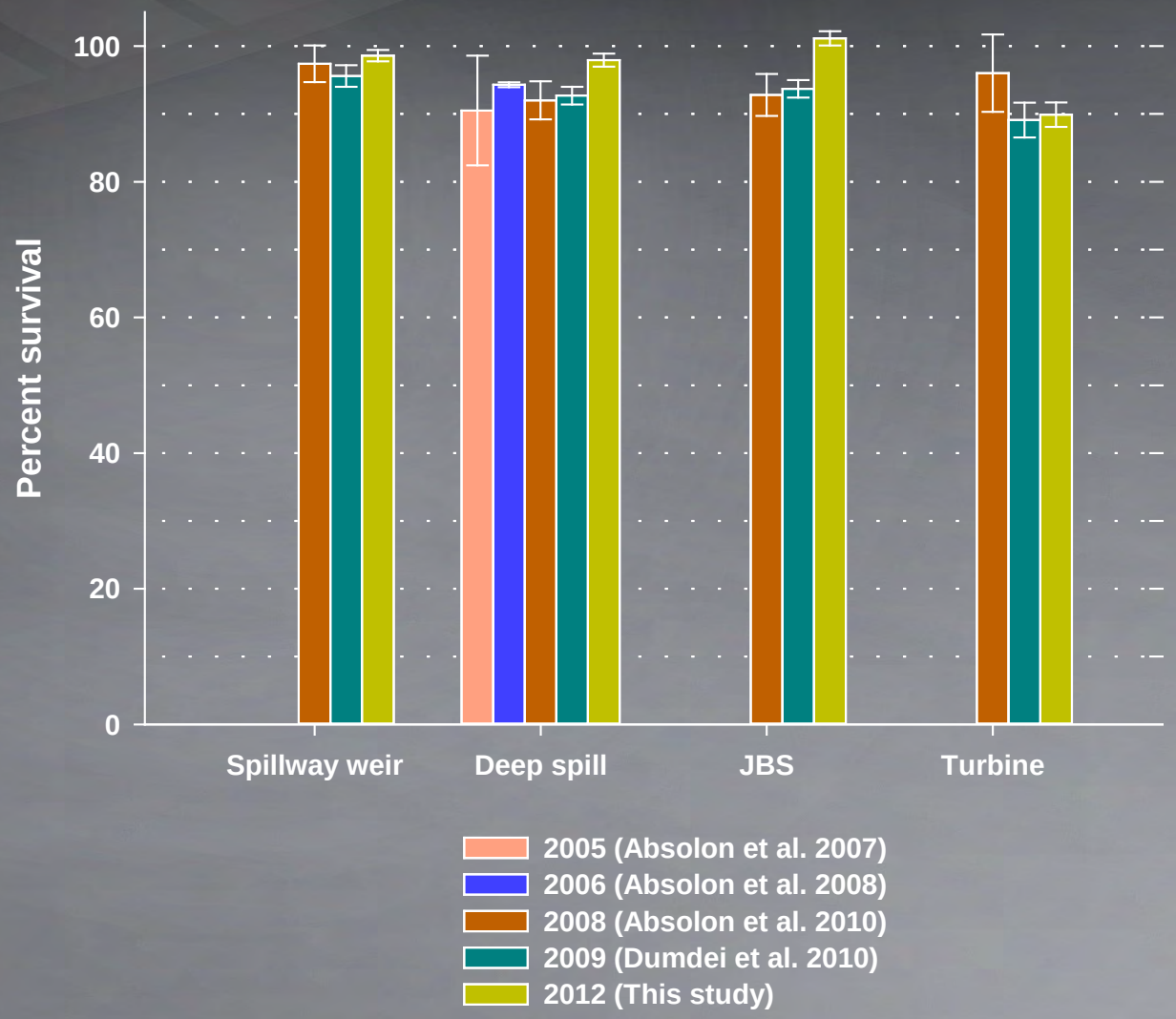
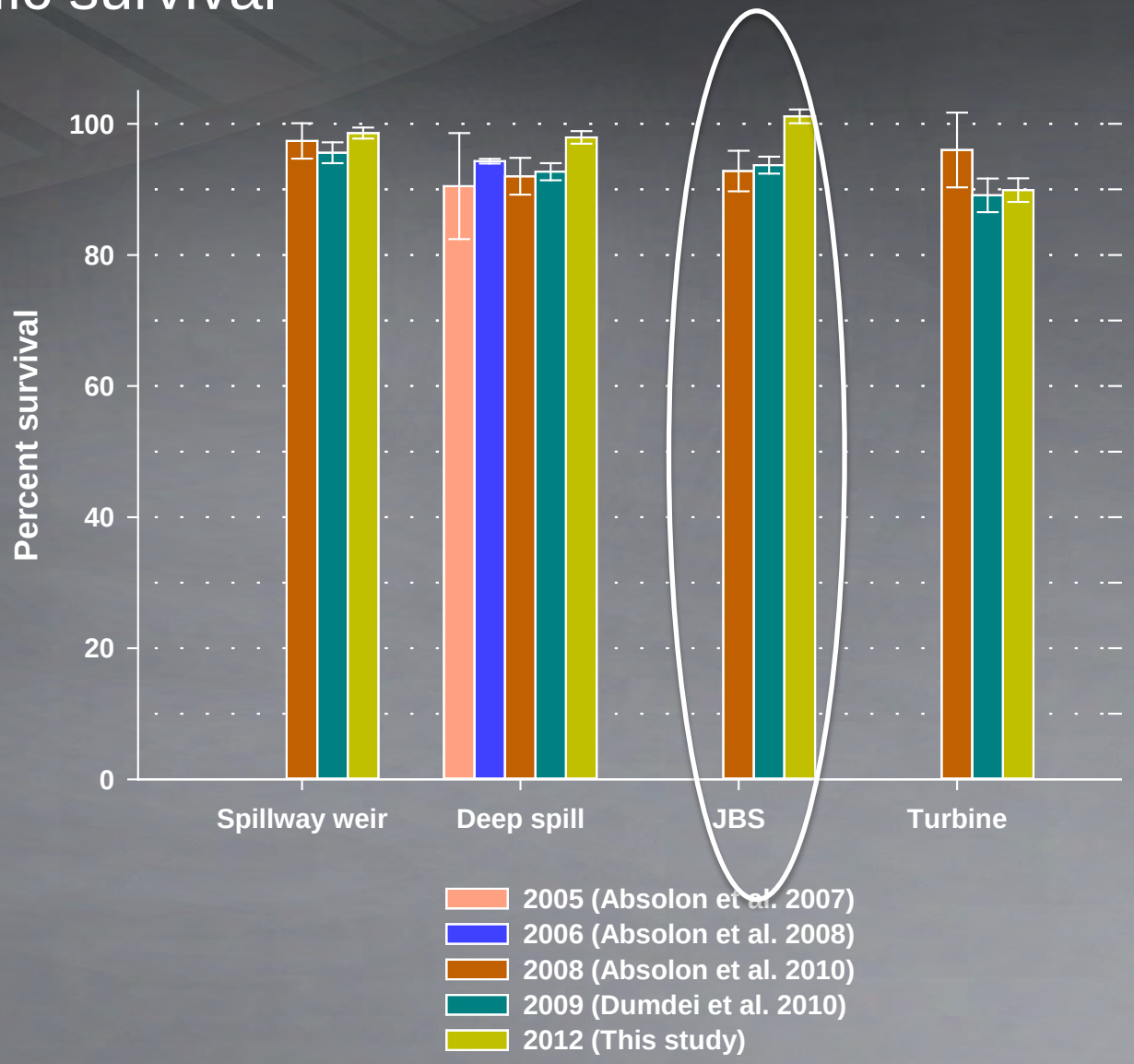


Subyearling Chinook salmon: Historic route-specific survival



Subyearling Chinook salmon: Historic route-specific survival



Summary

- Spillway weir: majority of smolts (53-62%) passed LMN through RSW
  - Survival = 99-100%.
- Deep spill: 17–25% of smolts passed LMN through deep spill
  - Survival = 95-98%.
- JBS: 9-31% of smolts passed LMN through JBS
  - Survival = 99-100% with new outfall pipe.
    - 2-7% higher survival than average from previous studies.
- Turbines: <8% of smolts passed LMN through turbines
  - Survival was low (81-93%).

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