

Video Monitoring of Juvenile Lamprey on Guidance Screens

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Lamprey studies build on prior findings

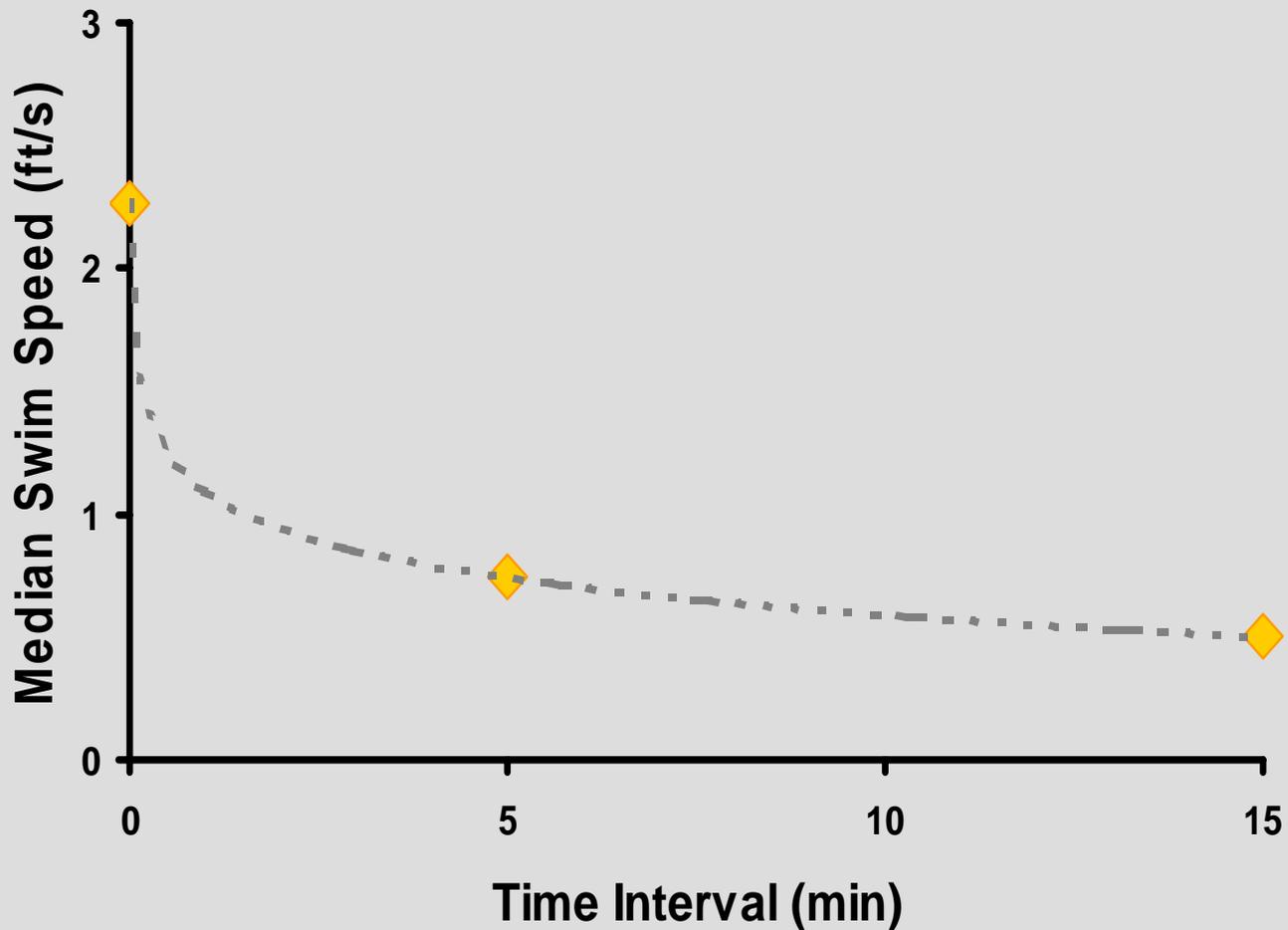
▶ Laboratory studies

- Velocity and duration of exposure
- Screen material type
- Orientation of bar screen
- Phototactic response
- Effects of pressure

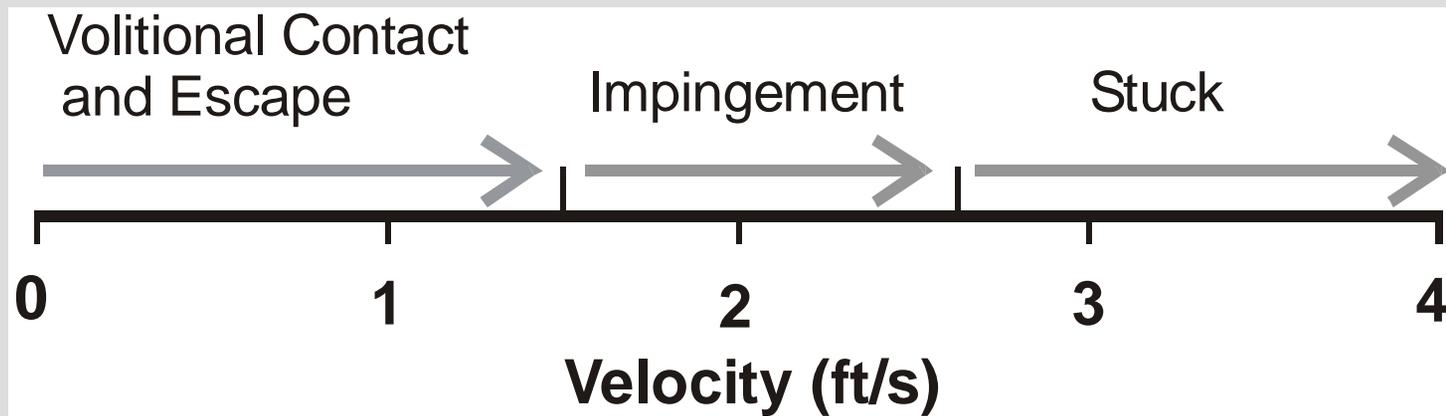
▶ Field observations

- Screen interactions
- Guidance into Juvenile Bypass System
- Pit Tag feasibility and application

Lamprey are not Strong Swimmers

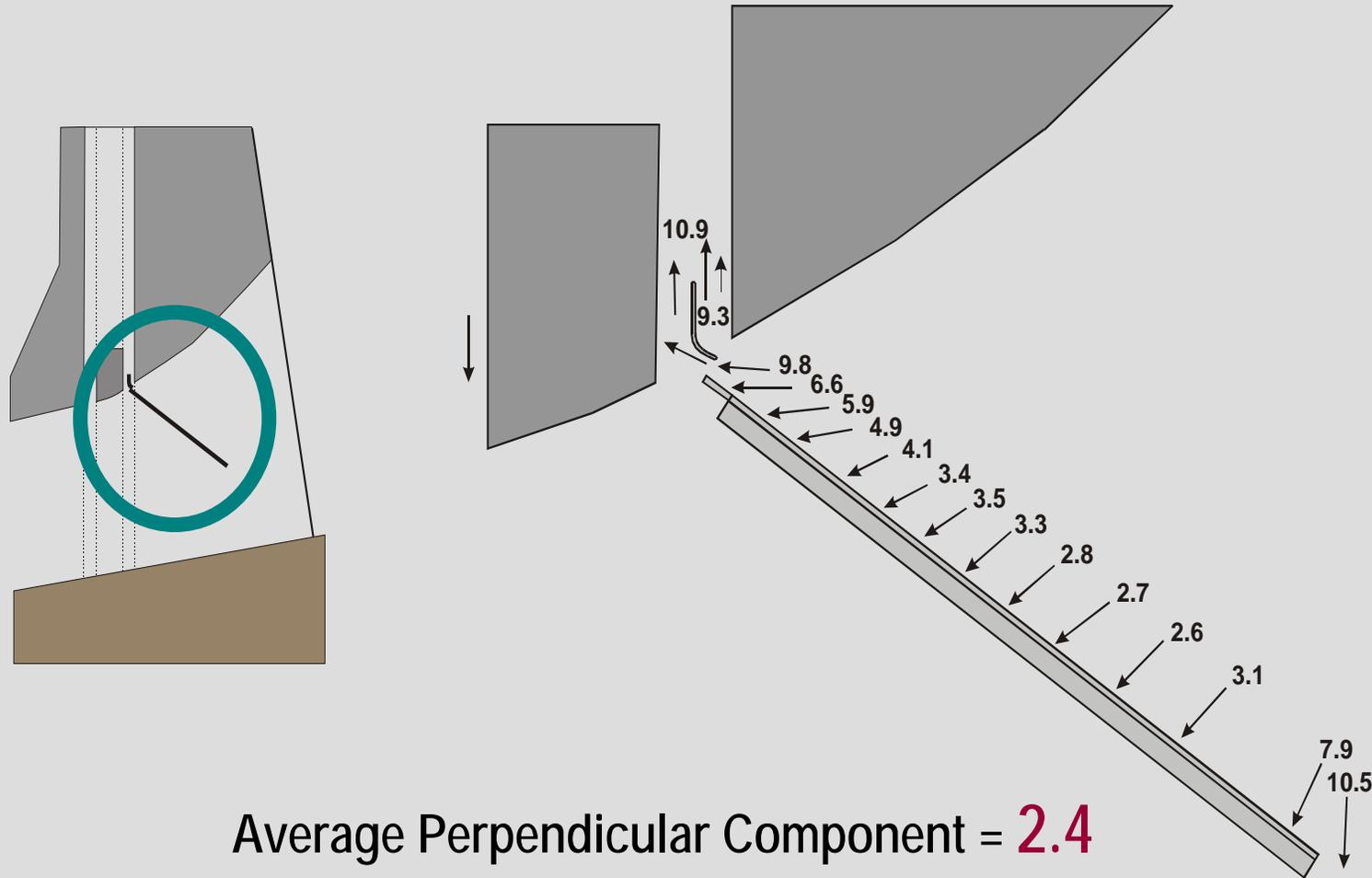


Lamprey-Screen Interactions Depend on Water Velocity



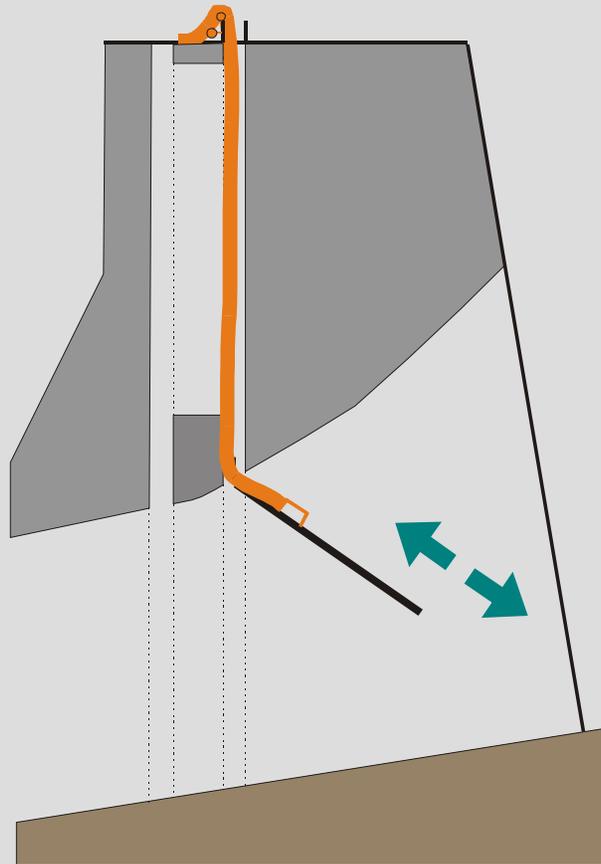
- Summary of both laboratory and field observations

Flows at Screens Often Exceed Lamprey Swimming Ability



Average Perpendicular Component = **2.4**
ft/s

Seeing is Believing (on Video)

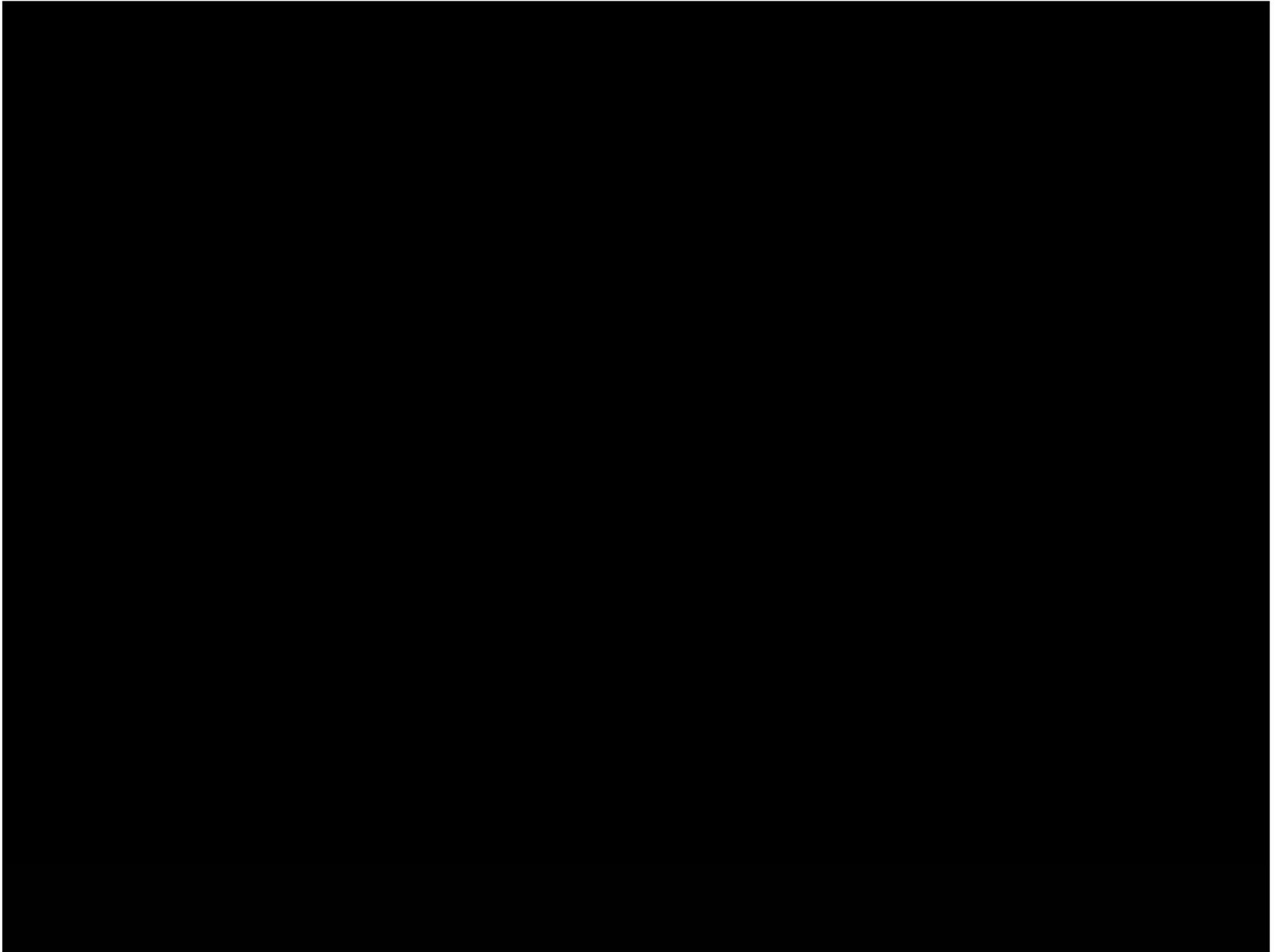


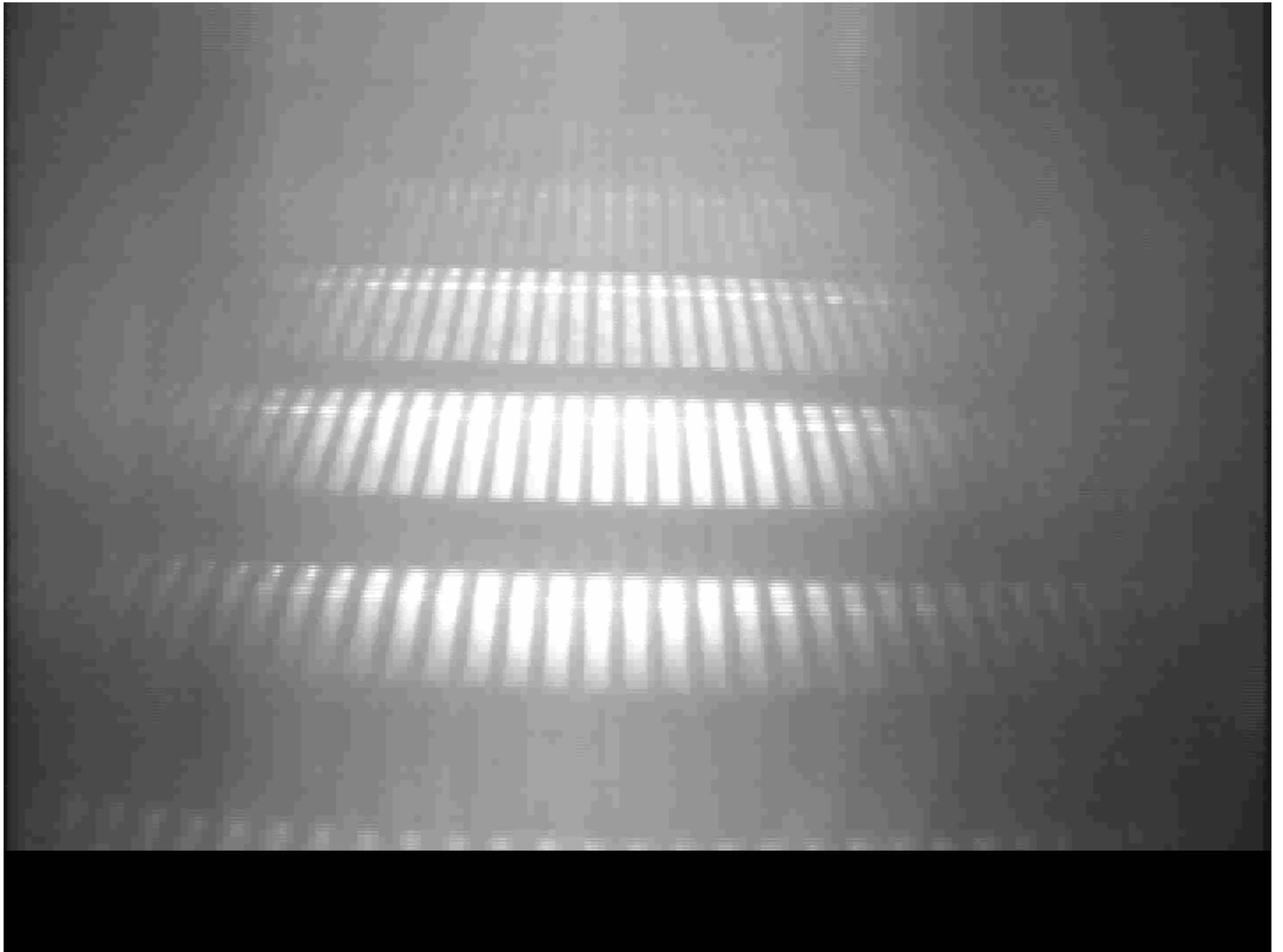
- 4 Cameras and IR light bars mounted to brush bar
- Lamprey and smolt behavior on ESBS screen face

Video Reveals Why Juvenile Lamprey are Sometimes Impinged or Stuck on Screens



- ▶ Demonstrated feasibility of underwater cameras and infrared lighting (video from June 2, 2000 at 4:55 AM)





Video Monitoring Helps Understand Lamprey-Screen Interactions

- ▶ Video monitoring in the field corroborates lamprey screen interactions seen in laboratory
- ▶ Extended monitoring quantitatively demonstrated screen improvements reduce number of lamprey stuck

Lamprey Pit-Tagging Update

- ▶ 1836 Juvenile lamprey tagged
- ▶ 745 detected, most near release
- ▶ Some detected the following year
 - 51 from 2001 MCN release (JDA)
 - 0 from 2002 JDA release
- ▶ 1 released in march 2002 at JDA found in predator at Columbia River Mile 8 in Feb 2004
- ▶ None detected in adult ladders (yet!)

Acknowledgement

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