

Creative Solution for Passage

- **Watz et al. 2017** -> Trap from Sweden (Karlstad Uni)

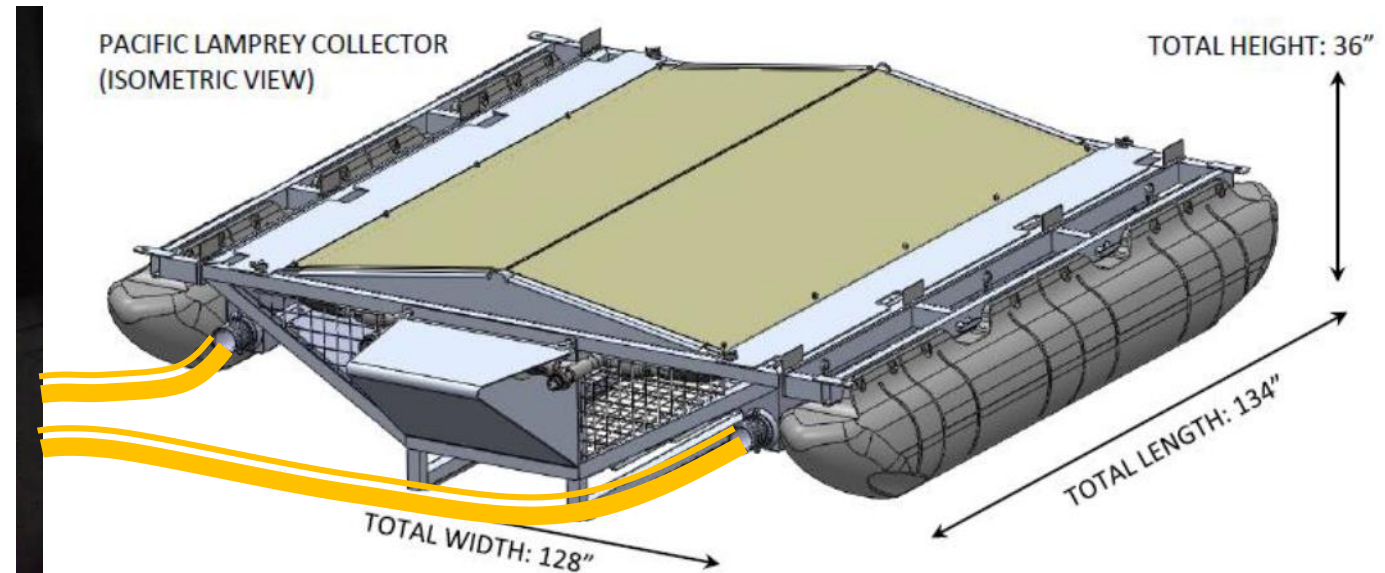
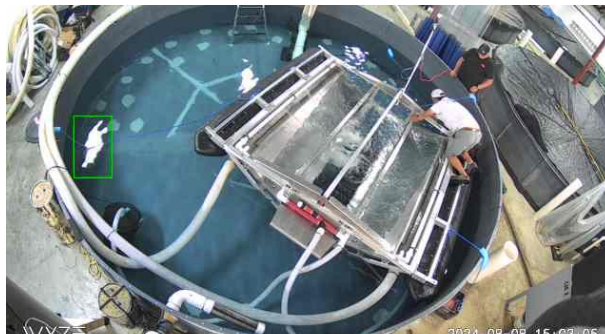
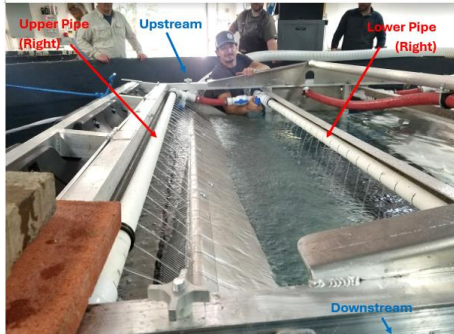
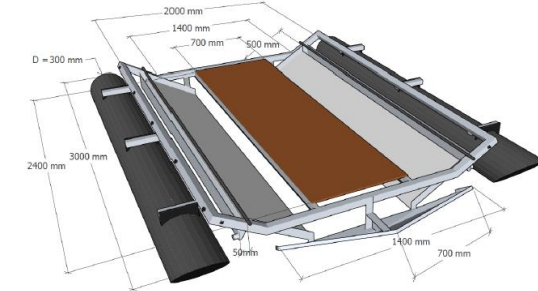
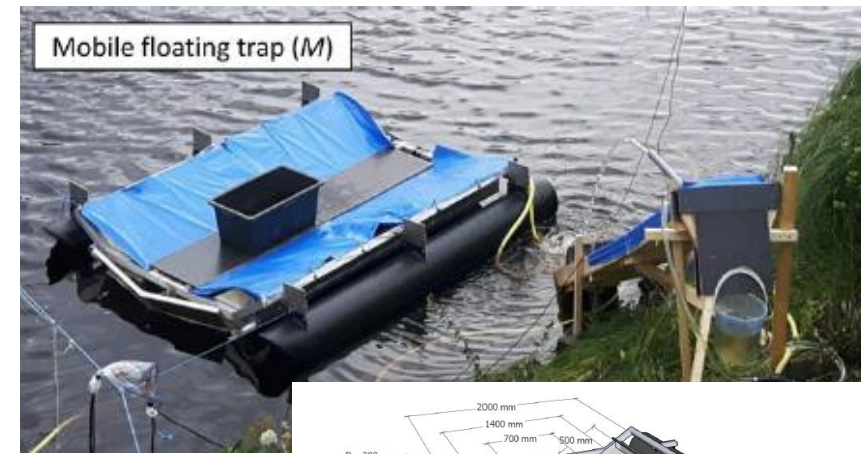
MANAGEMENT AND ECOLOGICAL NOTE

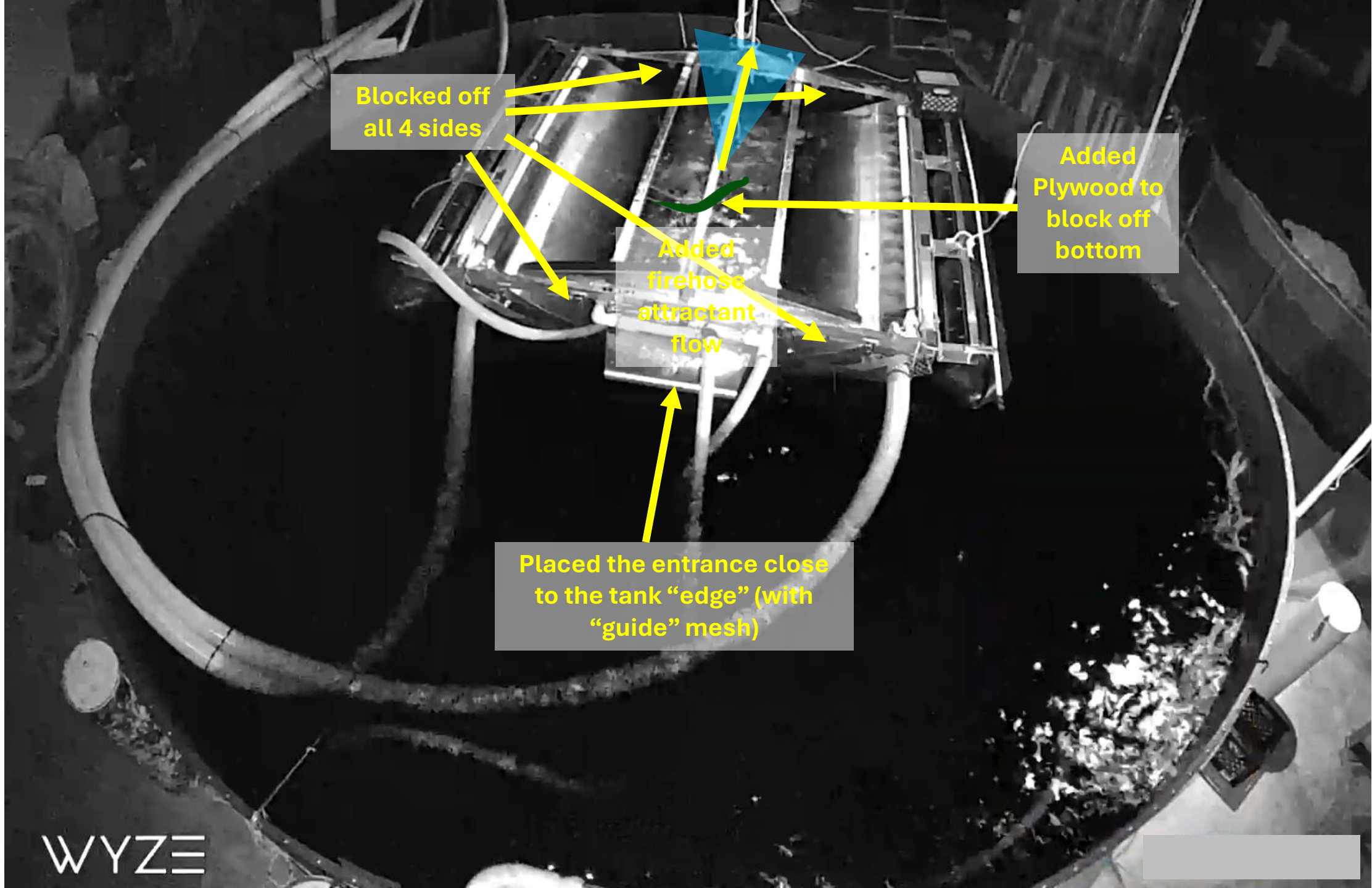
WILEY Fisheries Management and Ecology

Evaluation of a novel mobile floating trap for collecting migrating juvenile eels, *Anguilla anguilla*, in rivers

J. Watz¹ | J. Elghagen² | P. A. Nilsson^{1,3} | O. Calles¹

- Whooshh Innovations (patent)
-> CRITFC Tribes input for lamprey
- **Floating Adult Lamprey Collector (Operation Nocturnal) [FALCON]**





Blocked off
all 4 sides

Added
Plywood to
block off
bottom

Added
firehose
attractant
flow

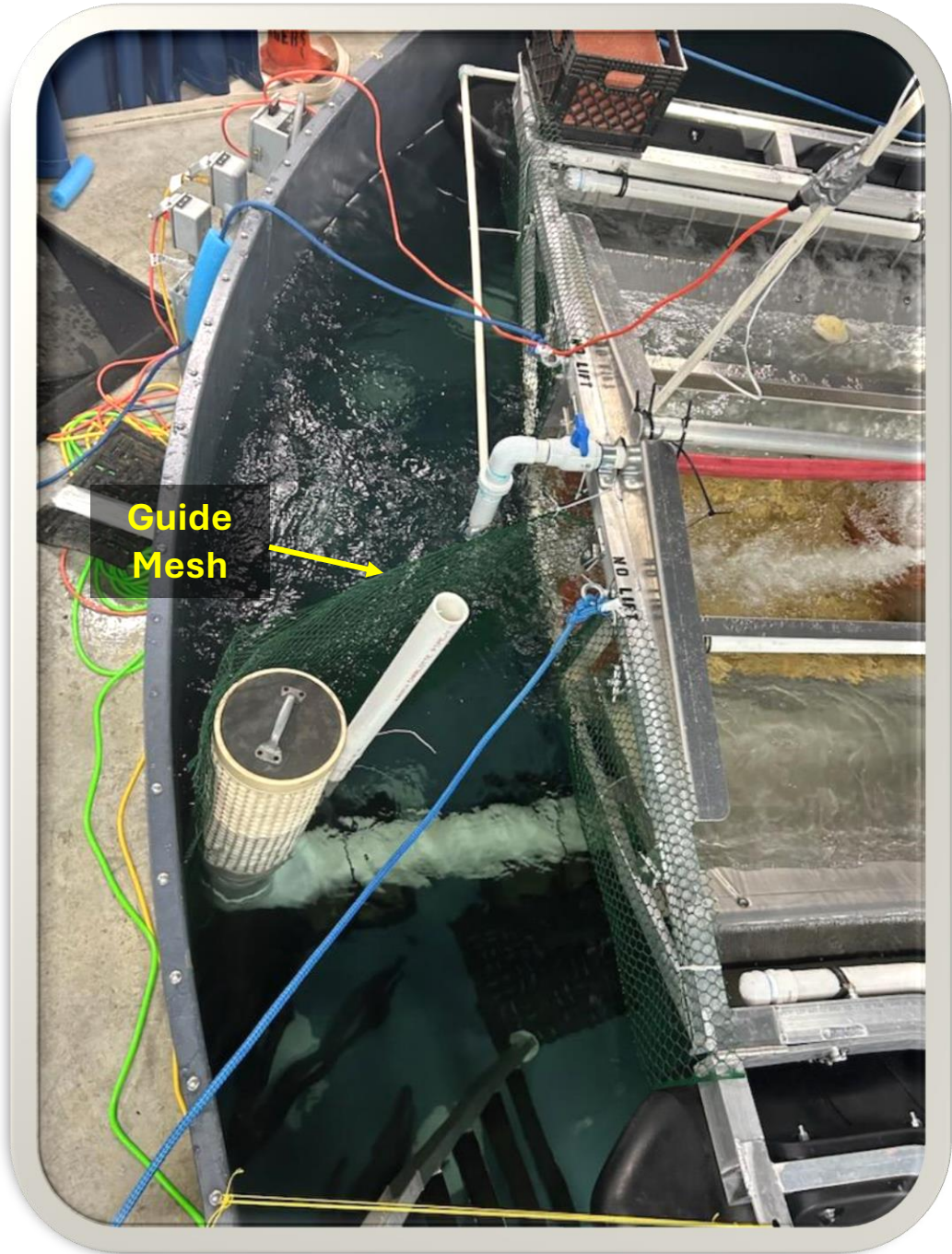
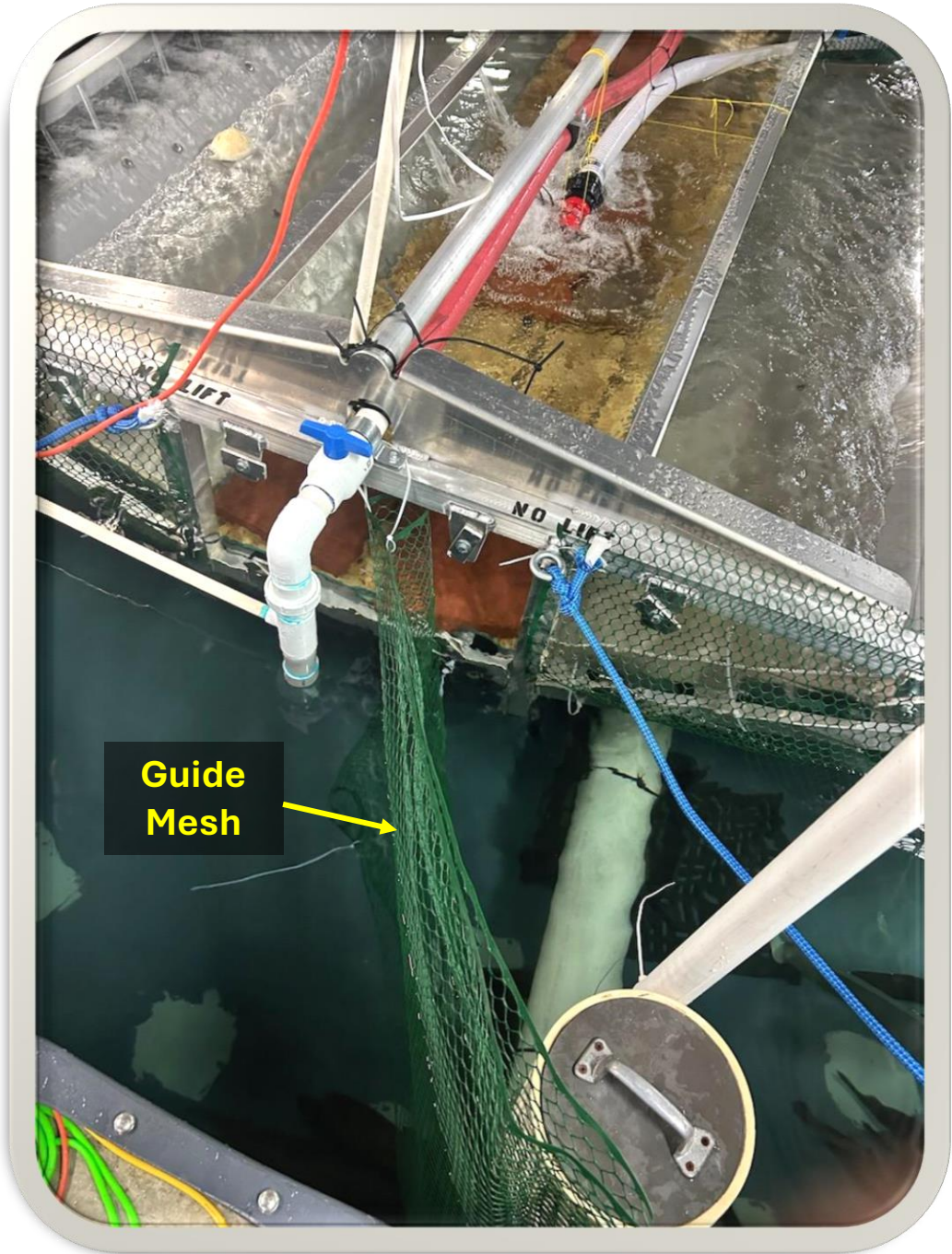
Placed the entrance close
to the tank "edge" (with
"guide" mesh)



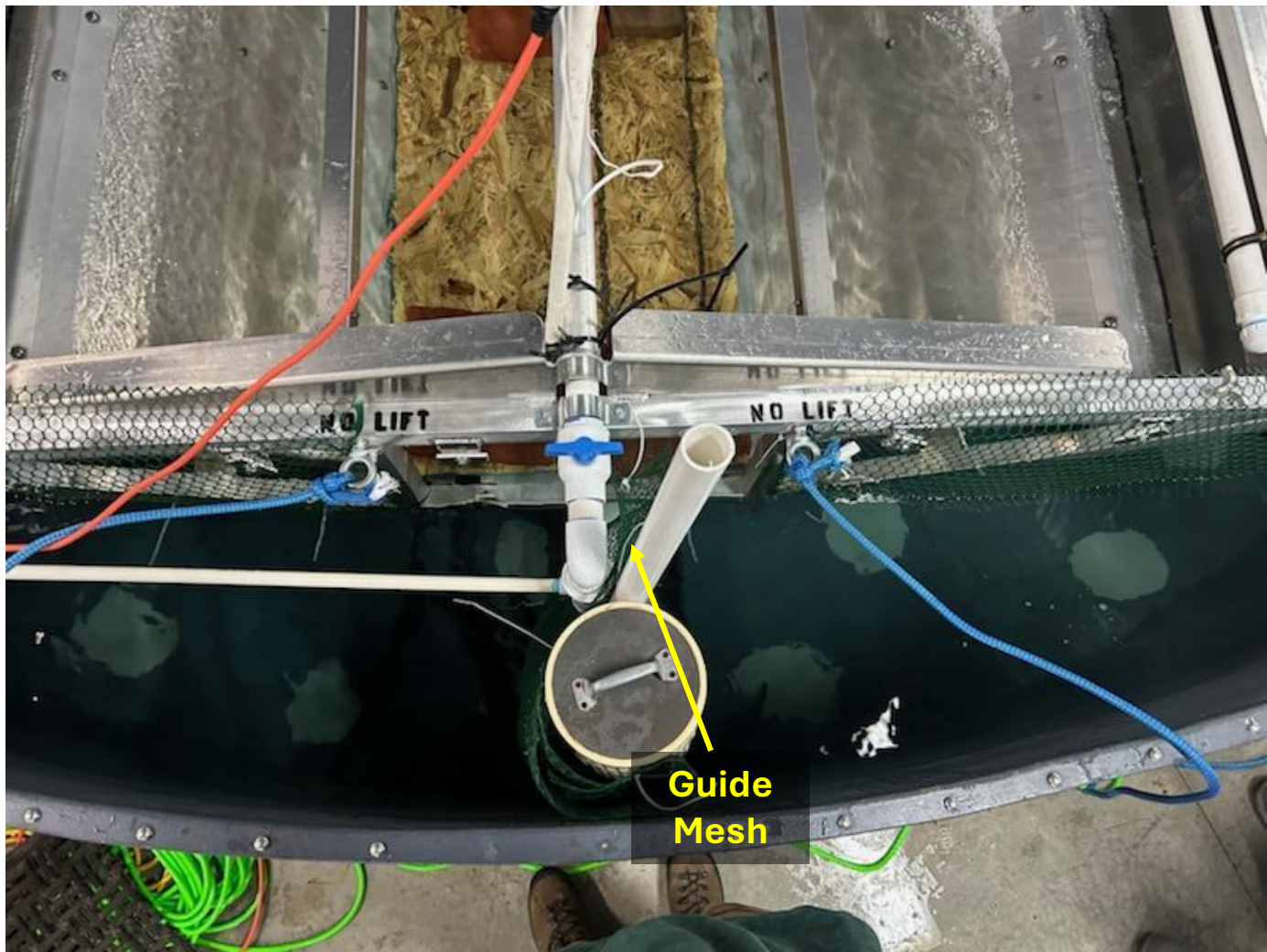
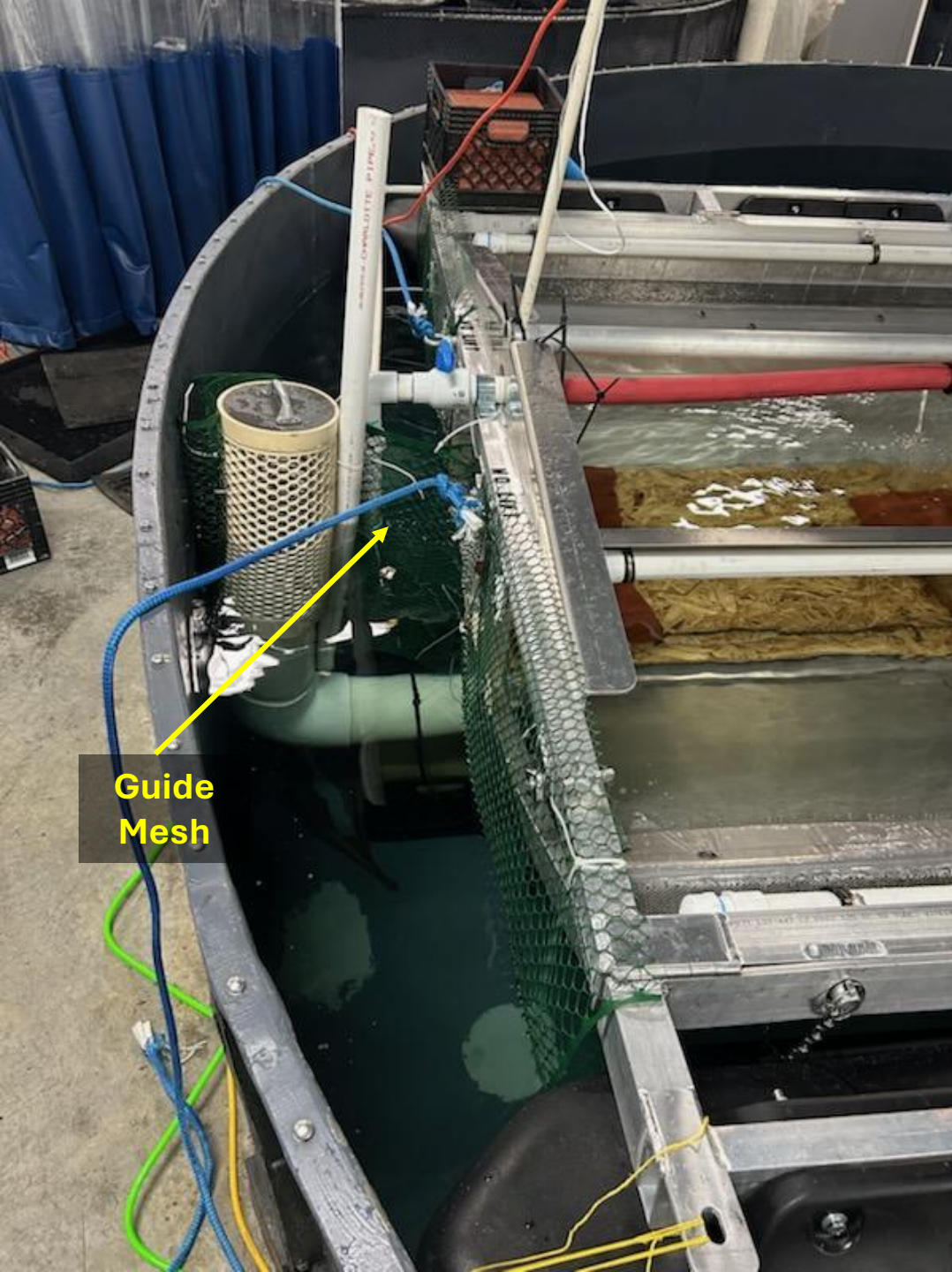
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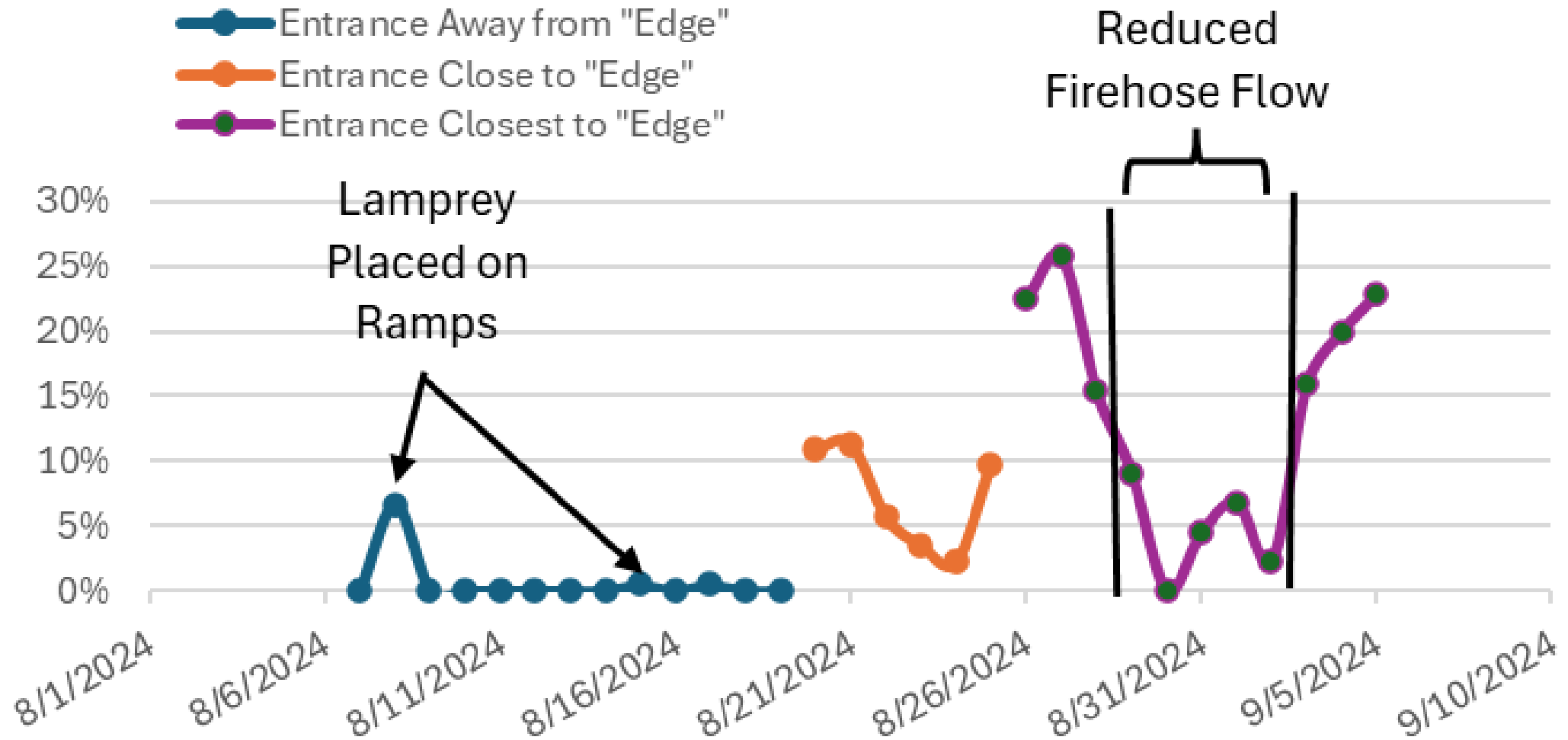
8/20/24 – Structure Entrance “Closer” with a Guide Mesh



8/26/24 – Structure Entrance “Closer” with a Guide Mesh



Floating Adult Lamprey Collector Operational Nocturnal Capture Efficiency



Spray bar added
to test lamprey
response

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**One Hypothesis:
Lamprey Pheromone /
Scent on Edge
Environment!**

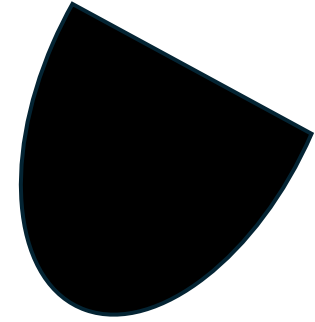


Summary of Recommended Modifications

1. Add a smooth fyke between trough and tube (easy fix) & take off the attraction valve
2. Close off the 4 sides (3/4 inch perforated plates)
3. Close off the bottom (or elevate it slightly so there is 1.5 inch opening) using a perforated plate (1/8" thick, 1/8" hole x 3/16" staggering centers)
4. Create a frame for the placement of the attraction fire hose in the center of the structure (to create the entrance flow. Bring it closer (& keep it near water surface)

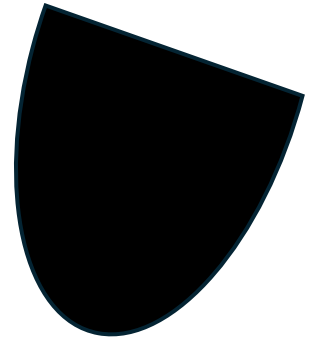
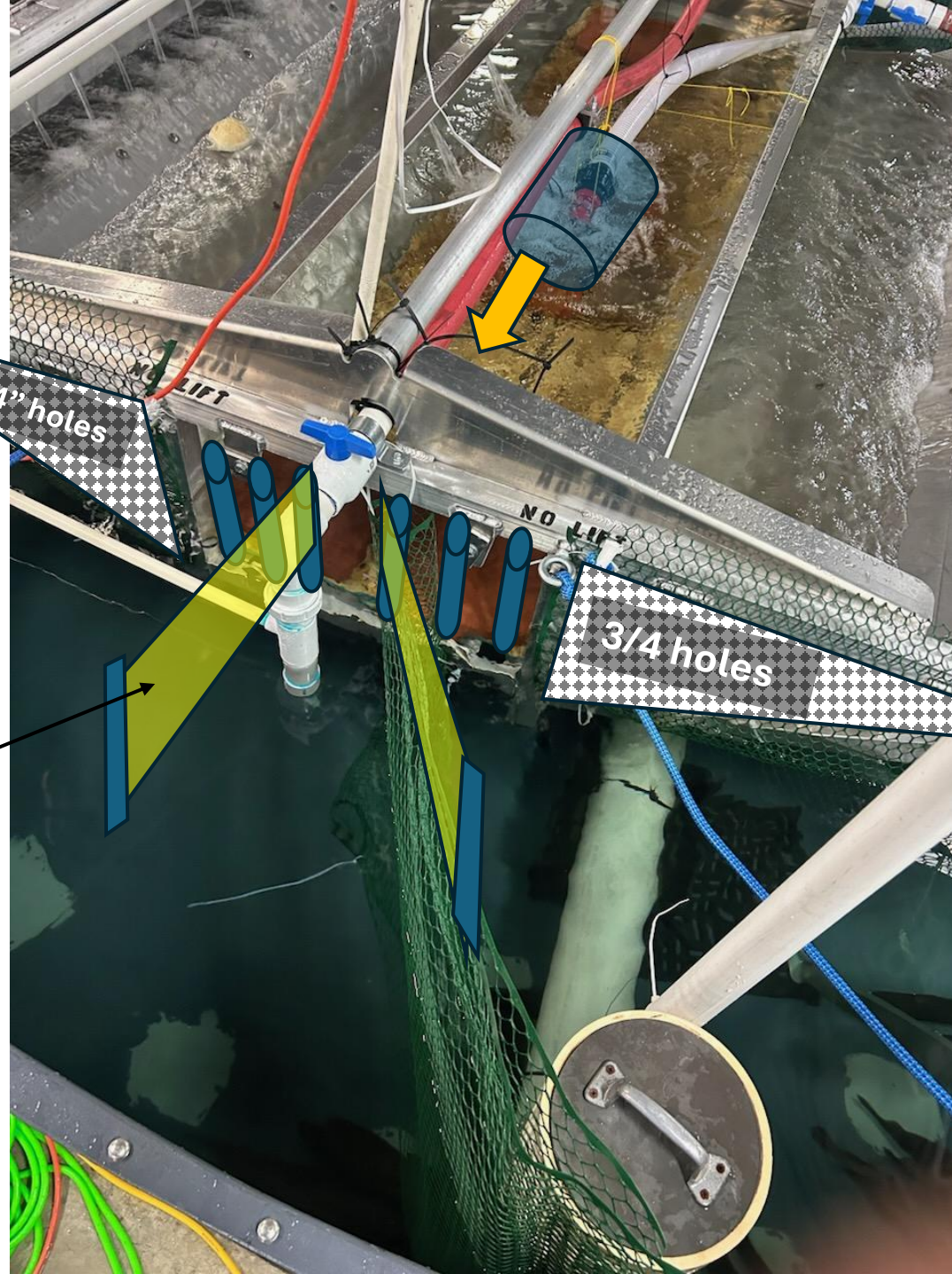
Summary of Recommended Modifications (continued)

5. Add a media that connects the entrance to the wall that the structure is facing (I envision two short triangle plates with rubber at the end, so it touches the wall). Close off the 4 sides (3/4 inch perforated plates).
6. A rectangle slot all across the PVC seems to work well.
7. Ensure the structure is level even with the 4" tube connections (we had to add weight to make it level).
8. Modify valve to splash water on the triangle plates (which will attract more lamprey to move this direction).
9. The lower spray PVC pipes can be removed.
10. Dual Tracking System



**2. Close off the 4 sides
(3/4 inch perforated
plates)**

**5. Add a media that
connects the entrance
to the wall that the
structure is facing (I
envision two short
triangle plates with
rubber at the end, so it
touches the wall).**

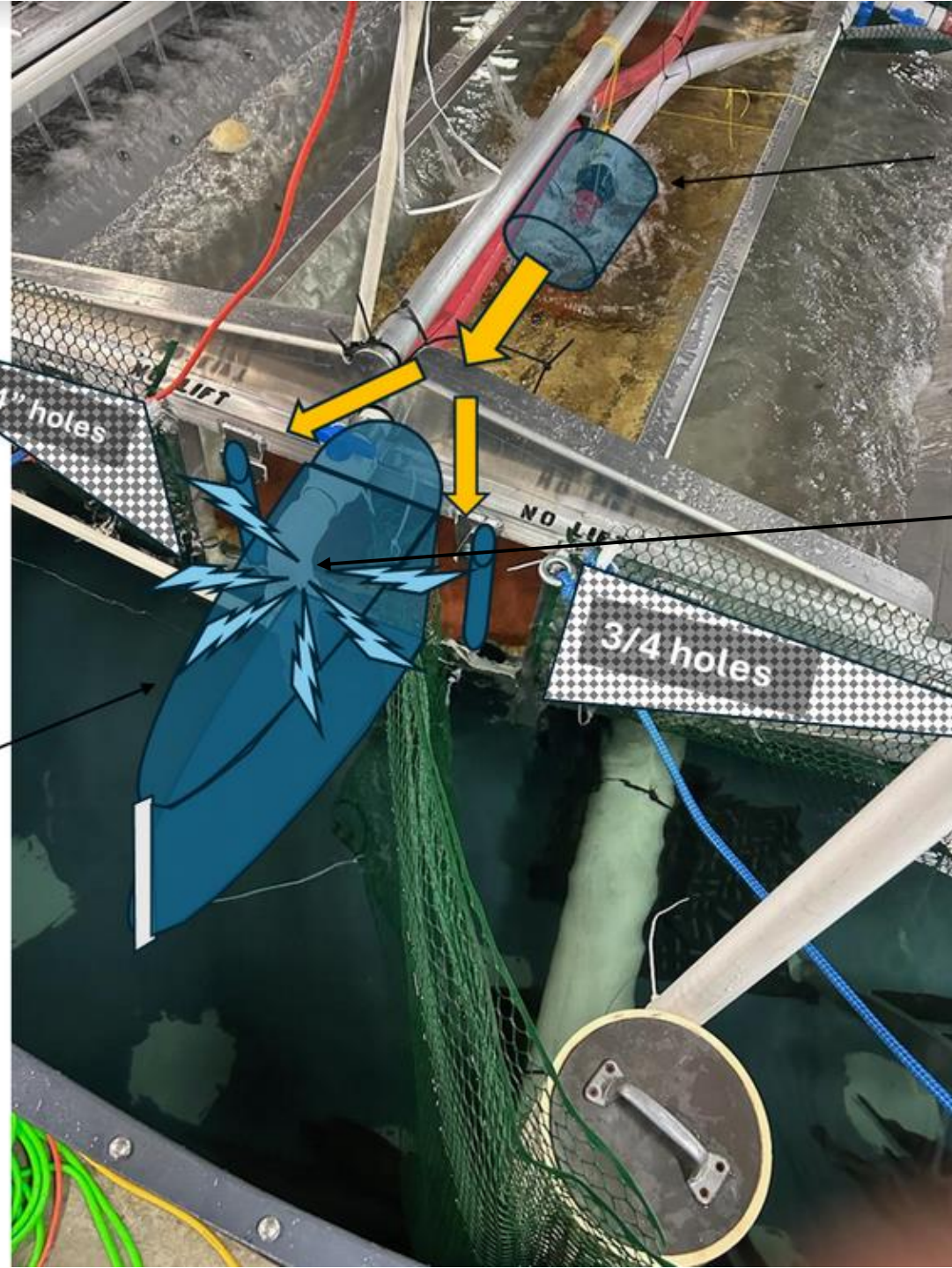


Alternative Design



2. Close off the 4 sides (3/4 inch perforated plates)

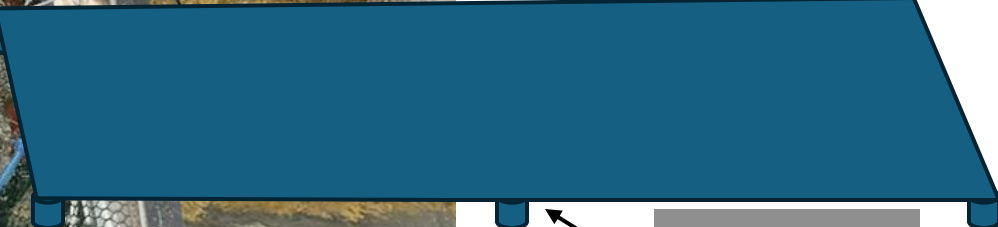
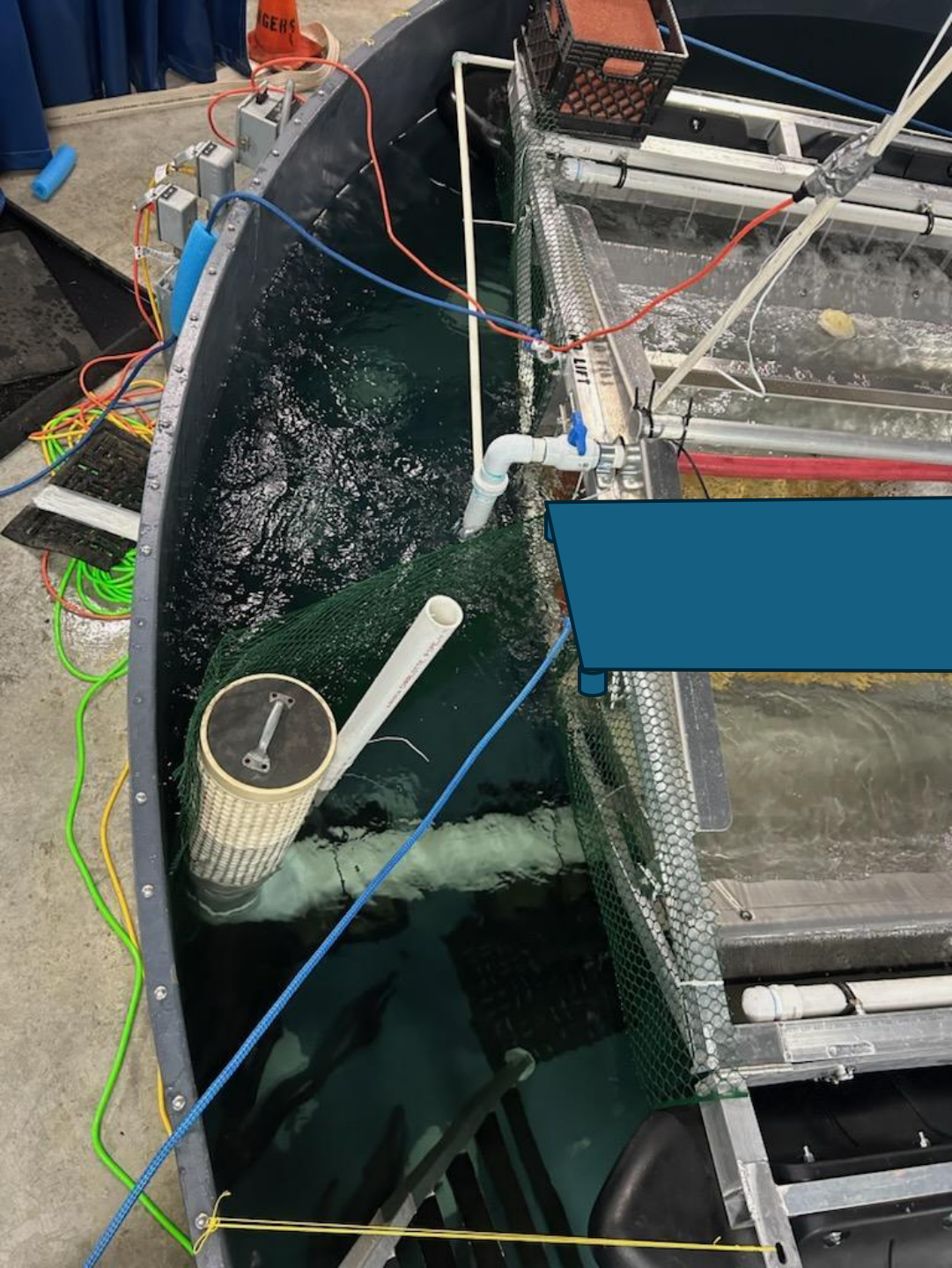
5. Add a media that connects the entrance to the wall that the structure is facing (I envision two short triangle plates with rubber at the end, so it touches the wall).



8. Modify this to splash water on the triangle plates (which will attract more lamprey to move this direction)



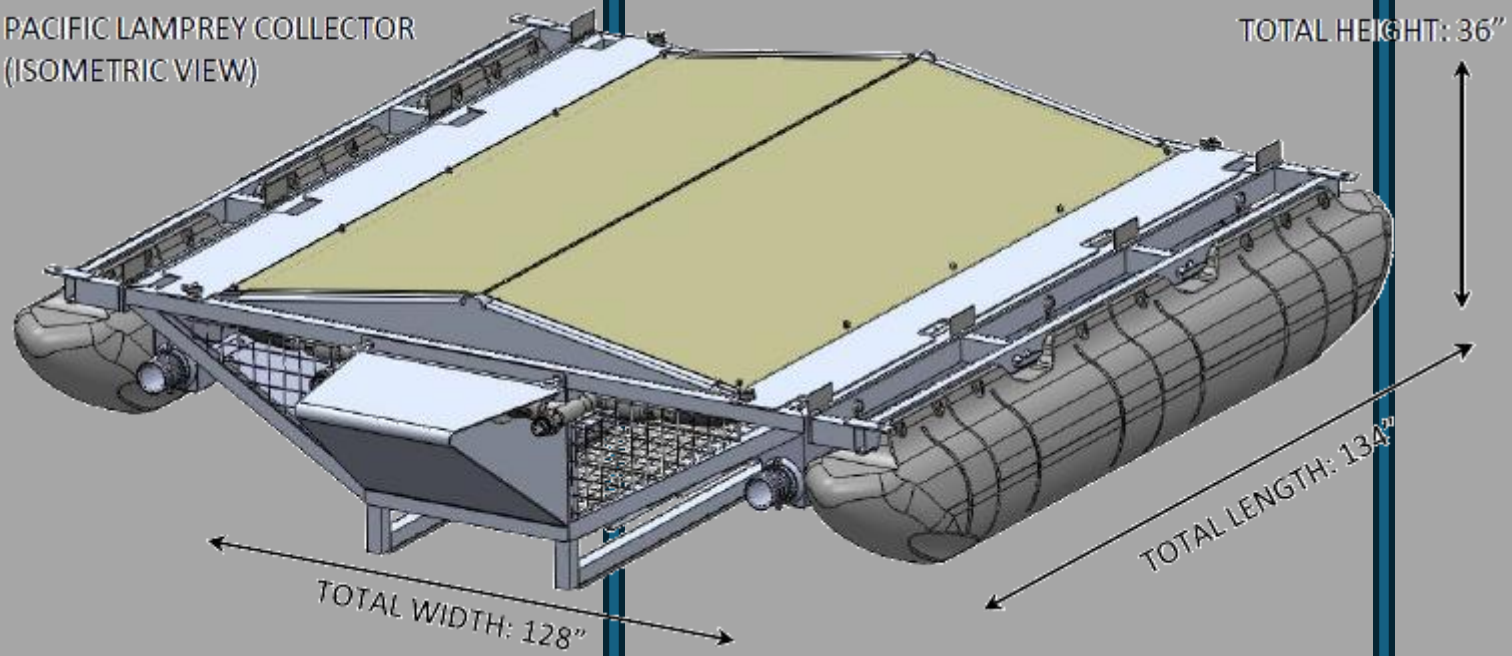
**3. Close off the bottom
(or elevate it slightly so
there is 1.5 inch opening)**



**1.5”
elevation**

Dual Rail System

PACIFIC LAMPREY COLLECTOR
(ISOMETRIC VIEW)



TOTAL HEIGHT: 36"

Entrance Flow

TOTAL WIDTH: 128"

TOTAL LENGTH: 134"

Key Needs for an Ideal Test Site

1. A high abundance of adult lamprey moving through
2. A pinch point that forces lamprey to search the wall/bank for alternative passage
3. A wall/bank that the structure can adhere to as close as possible
4. Some type of protection from high flow and debris moving through

3 Key Potential FALCON Field Test Sites (re-evaluating currently - alternative matrix)

1. Bonneville Dam WA Shore Fish Ladder Entrance
(Columbia R.)
2. The Dalles Dam East Fish Ladder Entrance
(Columbia R.)
3. The Dalles Dam Juvenile Bypass Outlet

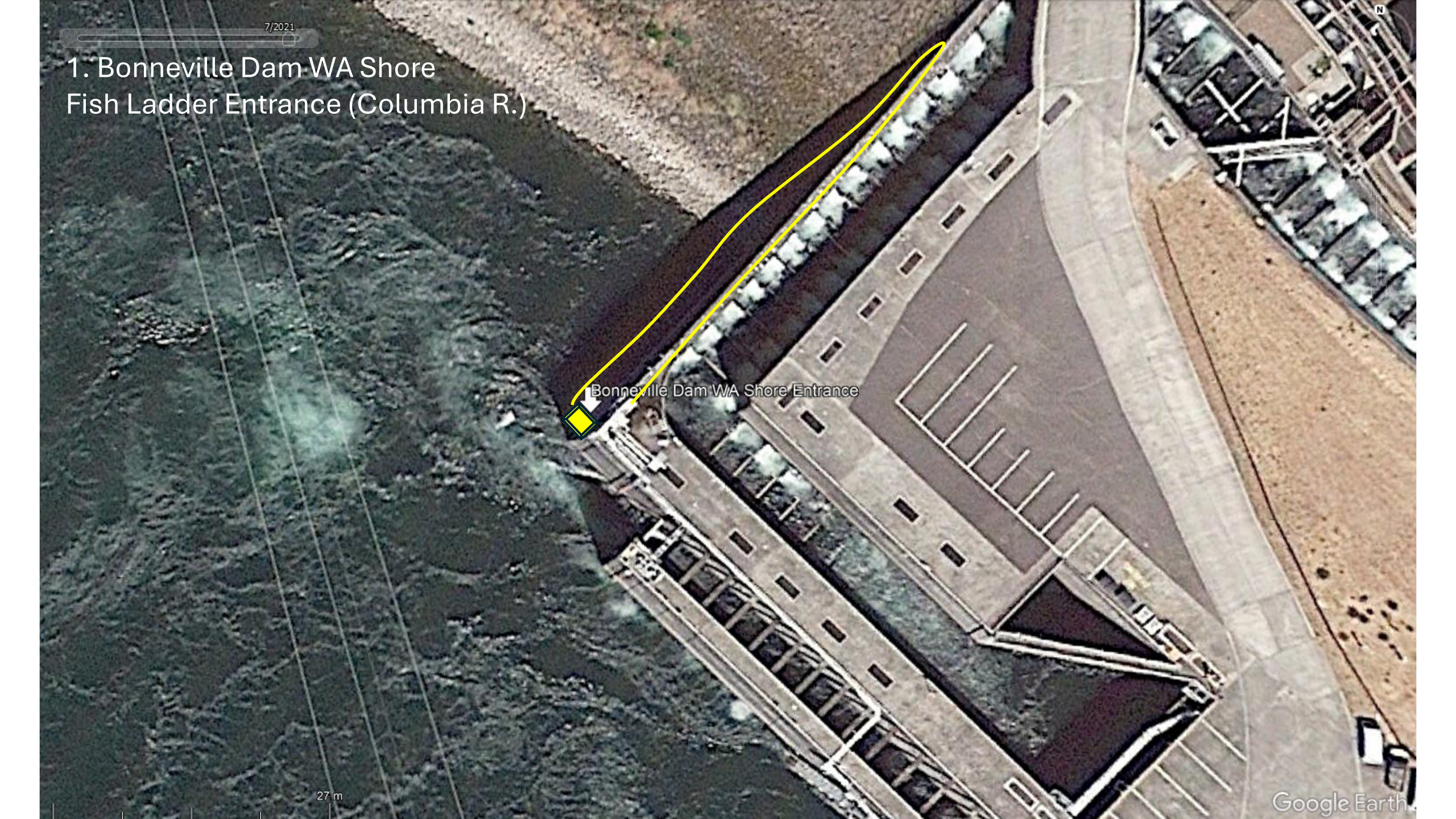
7/2021

1. Bonneville Dam WA Shore Fish Ladder Entrance (Columbia R.)

Bonneville Dam WA Shore Entrance

27 m

Google Earth



2. The Dalles Dam (East Fish Ladder Entrance)



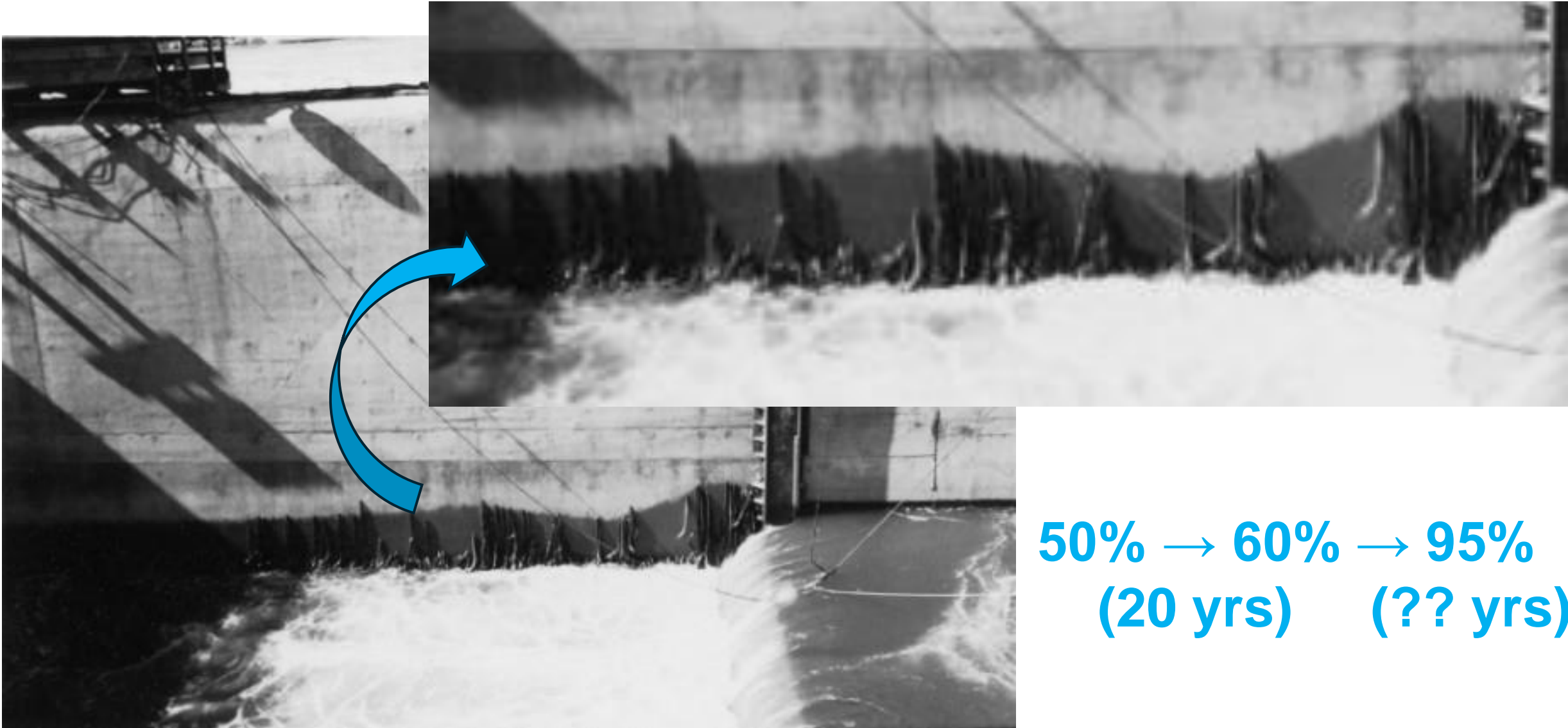
2. The Dalles Dam (East Fish Ladder Entrance)



3. The Dalles Dam (East Fish Ladder Entrance)



Bonneville Dam Temp. Fish Ladder (7/2/1937)



50% → 60% → 95%
(20 yrs) (?? yrs)