

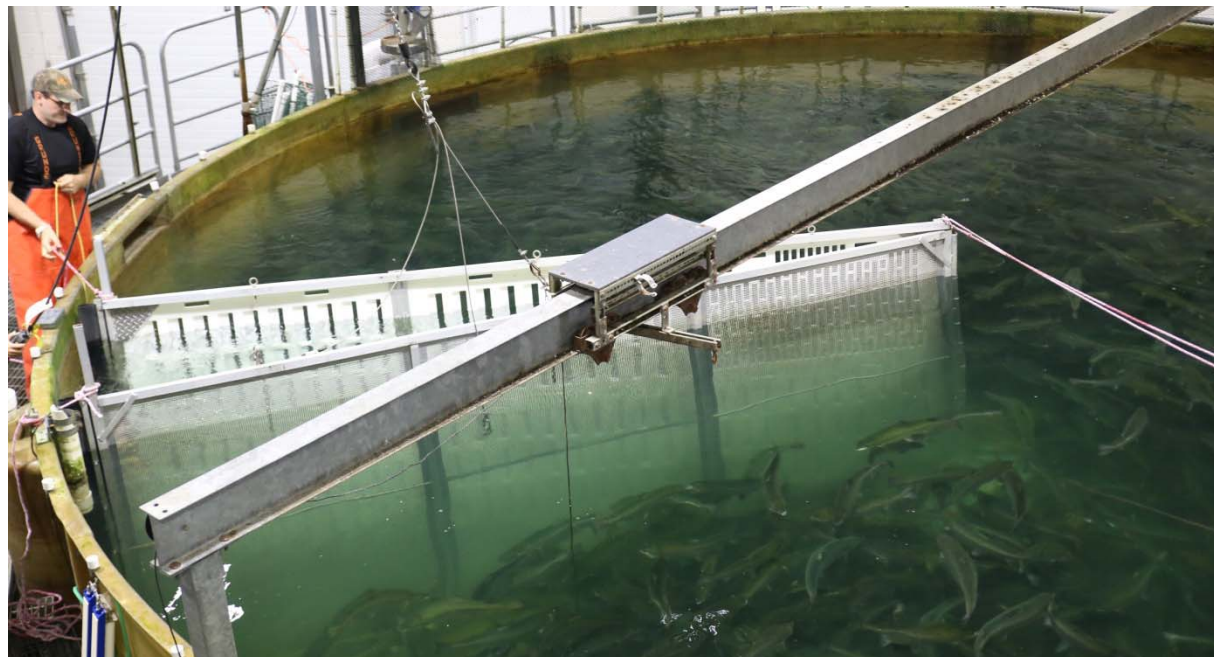
# Salmon Transfer: Options for Moving Fish with Air or Water, Part I

Steven Summerfelt, Freshwater Institute



# Salmon Transfer Research at the Freshwater Institute

- Clam-shell grader crowds fish to sidewall harvest box
- Fish dewater
  - Option 1: Fish slide to finishing purge tank
  - Option 2: Fish are moved with air using Whooshh™



# Fish Transfer

- Clam-shell crowder & sidewall harvest box

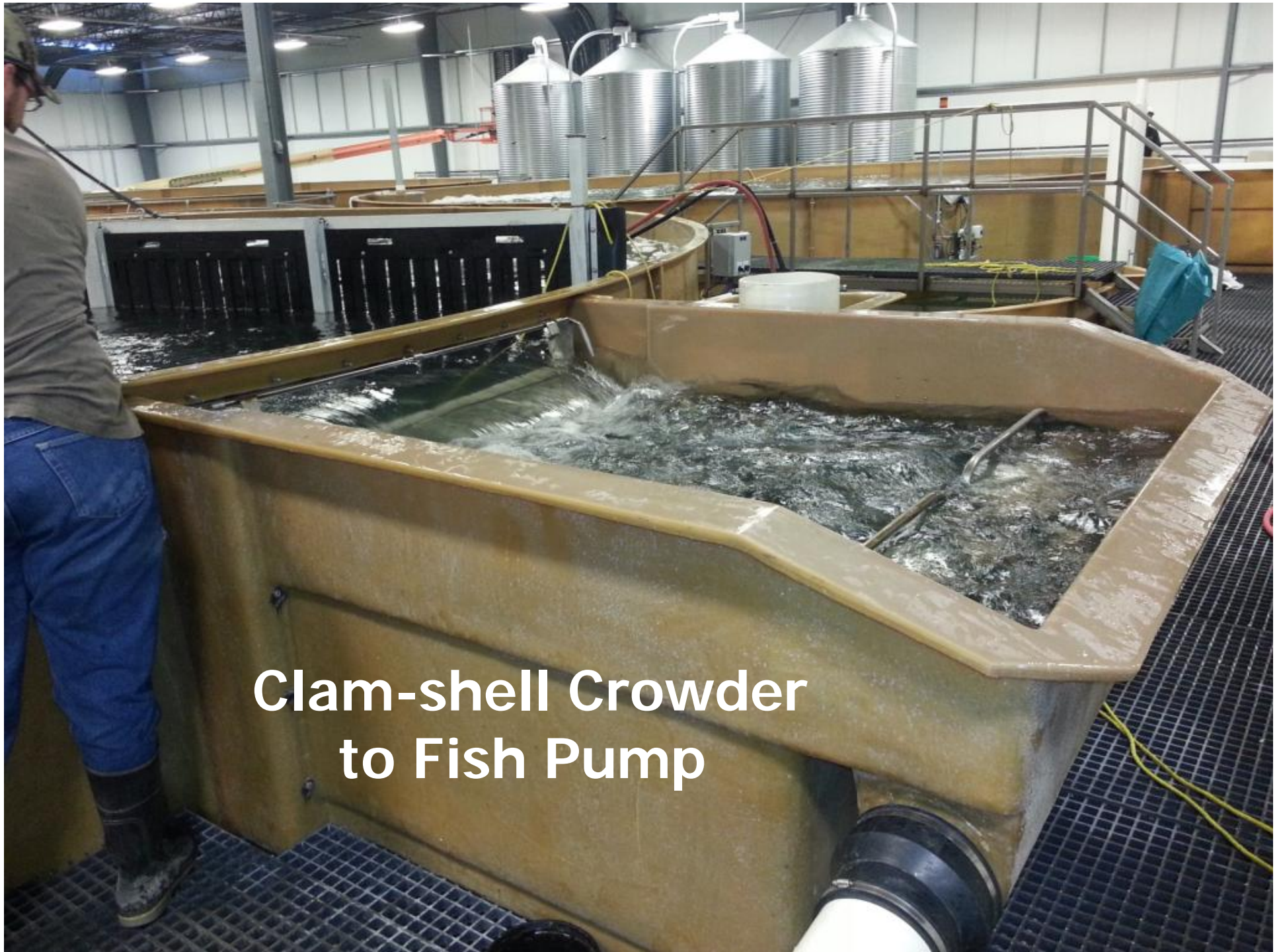




# Fish Transfer

- Fish slide from sidewall box through 30 cm  $\varnothing$  pipe to finishing tank
- ~50 L/min is pumped from finishing tank to flush through pipe to promote slide





**Clam-shell Crowder  
to Fish Pump**



# Grilse Harvest

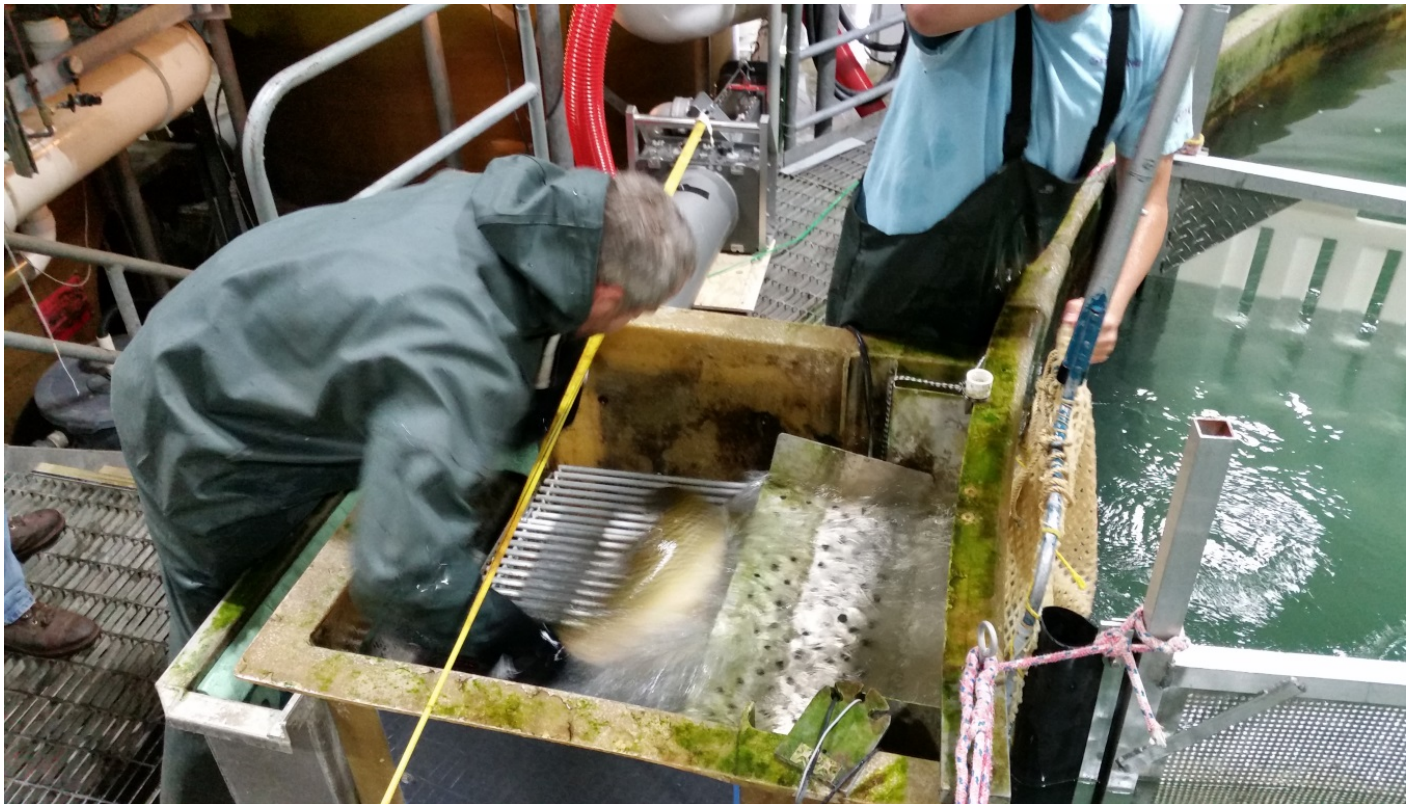
## Hand sorting & slide to finishing tank





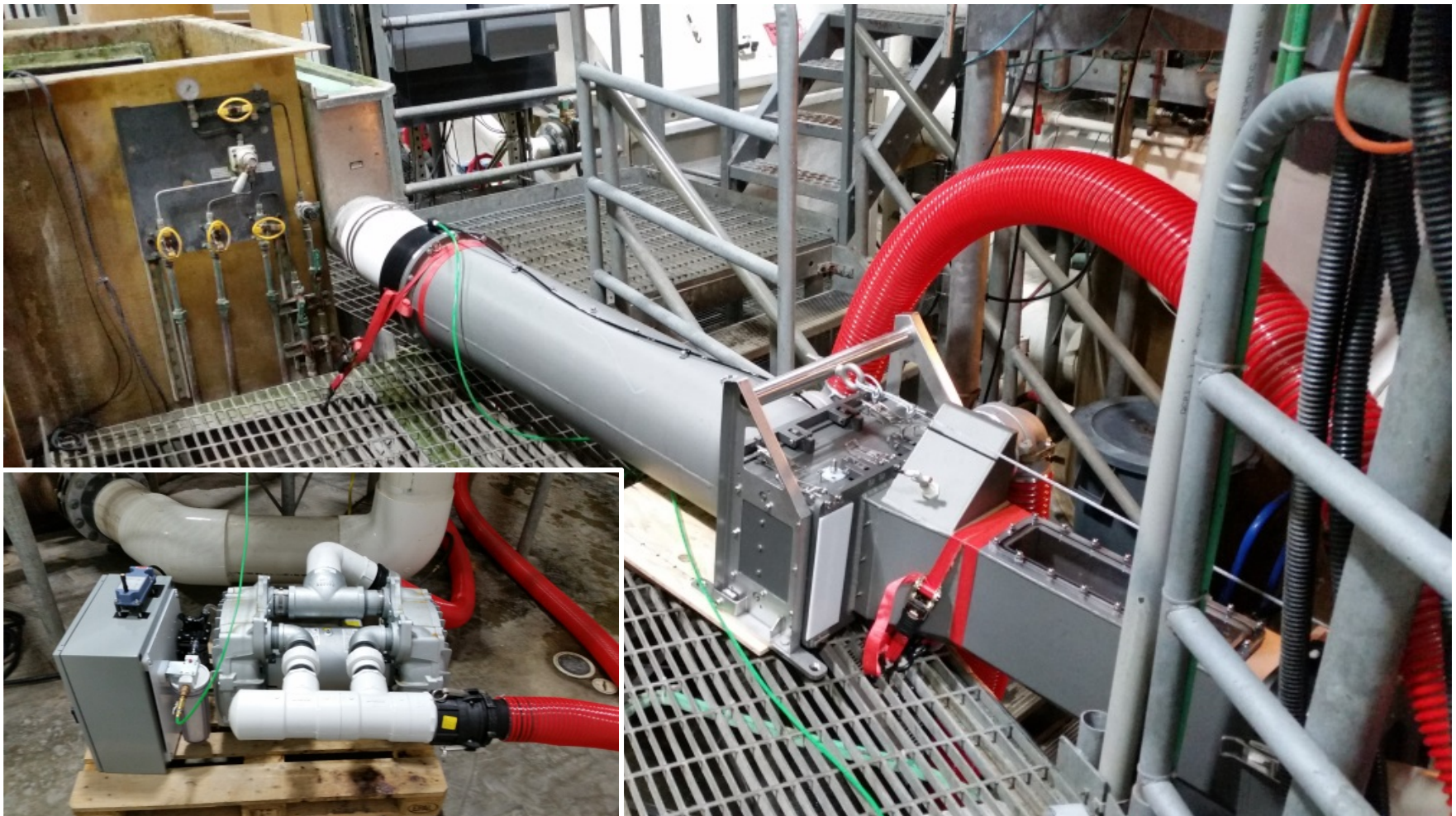
# Moving Large Salmon with Air

- Dewatering salmon at tank
- Salmon slide into Whooshh intake



# Moving Large Salmon with Air

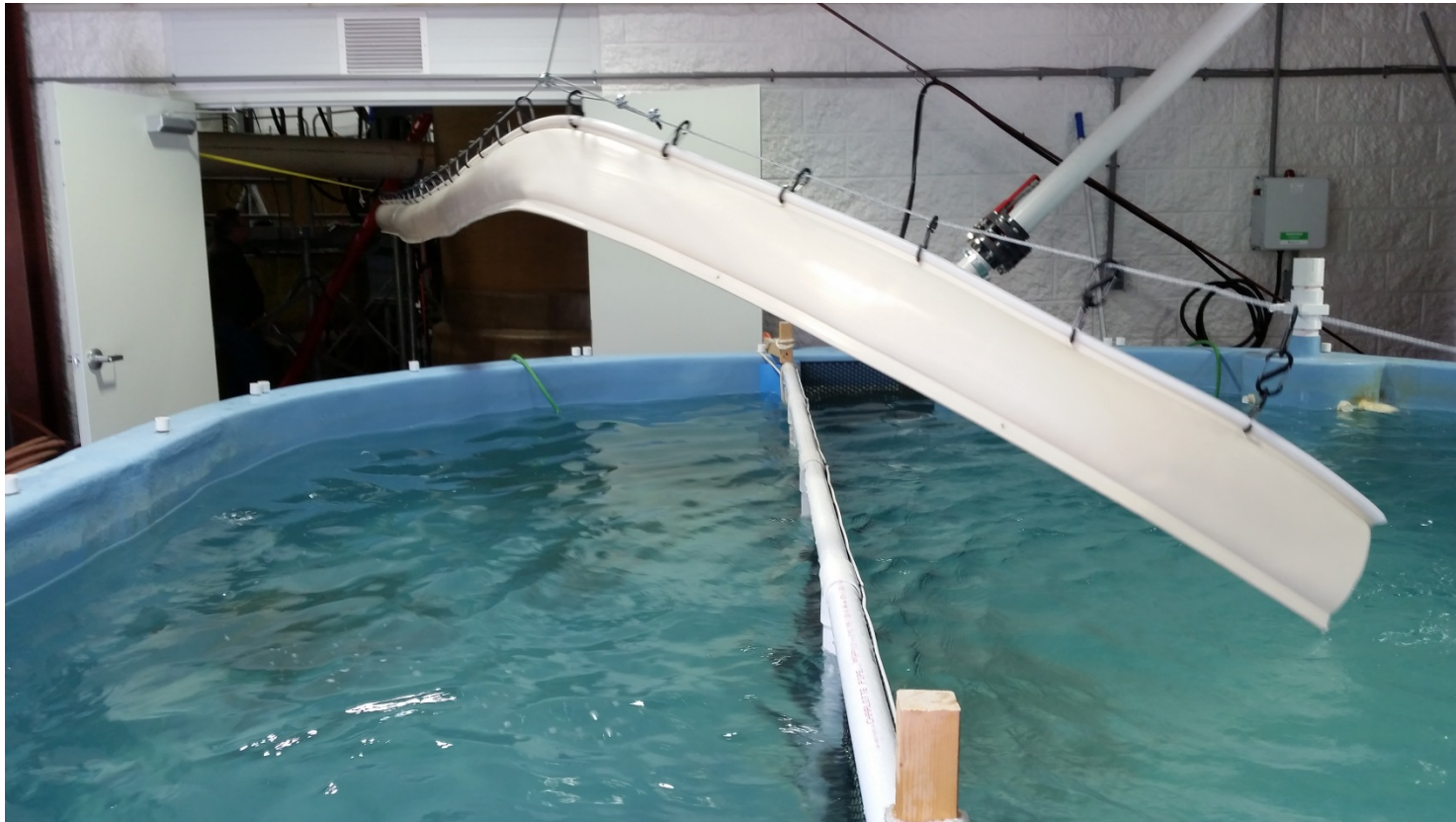
- Whooshh fish transport system





# Moving Large Salmon with Air

- Flexible & disinfectable plastic tubing moves fish over and around obstacles to finishing/purge tank



# Moving Large Salmon with Air

- Video of Whooshh™ fish transport system



whooshh with little faster fish.mp4



# Overall Conclusions

- Success requires much more than RAS design
  - Plan for fish transfer & purging during design
  - Be proactive, not reactive



# Acknowledgements

USDA



CtrlAQUA

SalmoBreed



Gordon and Betty  
**MOORE**  
FOUNDATION



**HERRICK**  
FOUNDATION



Atlantic Salmon Federation



**Tides Canada**



# Salmon Transfer: Options for Moving Fish with Air or Water, Part II

Cathal Dineen, Kuterra

