

# Improving Montana AIS Hatchery Inspections

Stacy Schmidt  
AIS Specialist

CRB Meeting– June 2020



# Work In Progress...

- AHAC (Aquatic Health Advisory Committee) review:
  - In-state facilities
  - Out-of-state facilities
- Each facility assessed individually
  - Frequency of inspection
  - Intensity of inspection





# AHAC Committee Includes

- Fisheries Division Administrator
  - Fish Management Supervisor
    - Regional Fish Manager
  - Hatchery Section Chief
    - Hatchery Manager
  - Fish Health Coordinator
- Native Species Coordinator
- Geneticist
- Aquatic Invasive Species Bureau Chief/Early detection and monitoring Coordinator
  - AIS Specialist



# Hatchery Risk Assessment Form

- Water Source
  - Temperature
- Rearing Structures
  - Settling Ponds
- Fish Species
  - Sizes, sources, fish or eggs
- 3 years of fish health and AIS testing results
- Downstream waterbody
- Biosecurity measures



# Hatchery Inspections based on Biosecurity: Criteria

- Water Source
- Infrastructure
  - Holding Structures
  - Fencing (people)/Netting (animals)
- Public accessibility
- Proximity to known AIS populations
- Other/Miscellaneous

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# Criteria Point System

- Water Source

- Secure (high) = 0
- More Secure = 1
- Median = 2.5
- Less Secure = 4
- Unsecure (low) = 8

- Infrastructure

- Holding Structures

- Fiberglass/Cement (high) = 0
- Dirt, lined (low) = 3
- Dirt, unlined (low) = 5

- Fencing (people)/Netting (animals)

- Indoors (high) = 0
- Fence/Netting (medium) = 1
- Fence only (low) = 2
- Netting only (low) = 2
- No fence, no netting (low) = 3

- Public accessibility

- Closed to public (high) = 0
- Restricted access (medium) = 1
- Open access (low) = 2

- Proximity to known AIS populations

- None (High) = 0
- Within the same drainage upstream (medium) = 1
- Adjacent upstream or downstream (low) = 2
- No known testing in the area = 2

- Other/Miscellaneous

- Any other factors that could add points to a facility that aren't included in this list but are noteworthy (+1 point for each factor)



# Criteria Guiding Inspections

Category	Biosecurity	Risk	Point Range
1	High	Low	0 - 5
2	Medium	Medium	5 - 10
3	Low	High	10 - 20 +



# AIS Inspection Techniques

## Biosecurity/Risk Category

	Biosecurity/Risk Category		
	1	2	3
Filter Screens Checked	X	X	X
Microscopy Plankton Samples Effluent	X	X	X
Microscopy Plankton Samples Intake		X	X
Microscopy Plankton Samples Settling Ponds			X
Microscopy Plankton Samples Raceways			X
Kicknet Effluent	X	X	X
Kicknet Intake		X	X
Kicknet Settling Ponds		X	X
Kicknet Raceways			X
Plants Effluent	X	X	X
Plants Intake		X	X
Plants Settling Ponds		X	X
Plants Raceways			X
Artificial Substrate Intake			X
Artificial Substrate Effluent			X
Artificial Substrate Settling Ponds			X
eDNA (species TBD) effluent		X	X
eDNA (species TBD) intake			X
eDNA (species TBD) Settling Ponds			X
eDNA (species TBD) Raceways			X
Benthic Core Sampling			
Dredge Sampling (ponar, sled, other)			
Other:			



# Additional Measures

- Dedicated sampling equipment
- Sampling within the facility
- Requiring inspectors to be trained and experienced in AIS techniques
- Fish stomachs
- eDNA



# Using eDNA for hatchery inspections

- All hatcheries are different – singular approach won't work
- Species would be rare because adult searches wouldn't find them
- So what is the minimum?:
  - 4-5 replicate samples at each location to be sampled
  - Minimum 1 location – outflow of system
  - Volume – as much as you can get
  - Nets or hand grabs of water
  - If water, filter and preserve in field (dna degradation) – harder to do at private hatcheries
  - Positive controls
  - Negative controls
- Response plan?



# Communication

- Many years in the making
- Lots of warning
- Clear, written explanations
- Biosecurity can be improved
  - i.e. category status can change

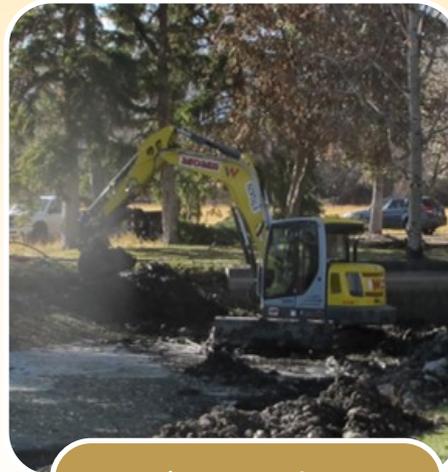


# Case Study: Bitterroot Fish Hatchery Follow up



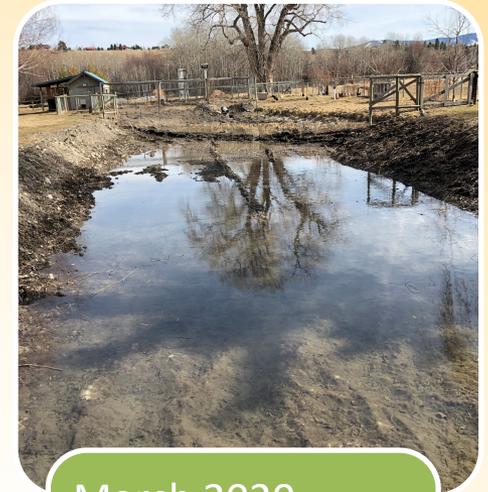
Nov 2019

- Decon with hot H2O
- Shut off water
- Excavation



Nov '19 - Feb 2020

- Dewatered
- Hopefully some freezing
- Excavation
- Copper/bleach



March 2020

- Re-watered
- Re-inspection
- No live snails found
- Re-permitted



November, 2019



March, 2020



# Finding new source of fish for Bitterroot Fish Hatchery

- Pickings were slim
- Potential donor hatcheries
  - FWP couldn't get permission to inspect for AIS
  - Red tape and legal jargon from hatchery
  - Too risky
  - AIS inspections by veterinarians
  - Unsolicited eDNA test results



Found Some!



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# Ongoing BFH

- Continue with hatchery inspections
- Continue with inspection of private ponds stocked with fish from this hatchery
  - About 30-40 have been done out of about 200



# The Future

- Implementation by 2021
- Private Ponds?
- What to do with any private ponds found positive NZMS
- Private hatcheries positive for AIS?

## Study Could Help Wildlife Managers Predict Illegal Fish Introductions

By AARON BOLTON • JUN 9, 2020



# Time to act now

- Regional plan
- Federal plan

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## Zebra mussels discovered in upstate trout hatchery water supply



Bill Conners, Outdoors

Published 7:00 a.m. ET Feb. 19, 2020

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# Contact Us

Craig McLane

Early Detection and Monitoring  
Coordinator

[cmclane@mt.gov](mailto:cmclane@mt.gov)

406-444-1224

Stacy Schmidt

Monitoring Specialist/AIS Lab  
Manager

[sschmidt@mt.gov](mailto:sschmidt@mt.gov)

406-444-5228

