

# Live-Transport of Hybrid Striped Bass: Harvest, Holding and Hauling



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# Live-Transport

- Definition: “Movement of fish from one environment to another”
- Goal: Consistently provide healthy fish in good condition
- Objective: **Limit stressors!!!!**
  - Chemical (D.O., pH, NH<sub>3</sub>)
  - Physical (scale abrasion, fining)
  - Biological (confinement, social stress)

# Harvesting Strategies

- Purge 1-3 days before Harvest
- Harvest in cool morning periods
- Pull net slowly/uniformly
- Net -free from “pockets”
- Electric ties trimmed
- Use KNOTLESS mesh netting



# Harvesting Strategies

- 4 acre pond= 5000 lbs in 1 “pull”
  - 8000 lbs+ in winter
- Keep ½ in live car and ½ in seine
- Don't overcrowd!
  - Check DO every 5 min.
  - Use salt, O<sub>2</sub>/air
  - Monitor stress signs





# Harvesting Strategies

- Concentrate fish slowly in net
- Don't overcrowd!
  - Check DO every 5 min.
  - Use salt, O<sub>2</sub>/air
  - Monitor stress signs
- May use tank/tarp to maintain environmental conditions



# Harvesting Strategies

- Fish removed with scooping action of basket and assisted with dip nets
- Don't exceed:
  - 50-100 lbs per net foodfish
  - 25-50 lbs phase IIs
  - 20-25 lbs fingerlings



# Harvesting Strategies: Phase II

## Grading

- Work fish slowly to pescilator/grader
- Move fish in cool weather
- Don't overcrowd!
  - Check DO every 5 min.
  - Use salt, O<sub>2</sub>/air
  - Monitor stress signs





# Harvesting Strategies

- Truck equipped with boom crane
- Tanks filled with pond water = no acclimation
  - 4-8 ppt salt
- Liquid O<sub>2</sub> tanks, D.O. above saturation
- Sufficient Labor
- Working equipment





# Holding Systems

- Pre-conditions Fish to Withstand Stress of Live Hauling
- Provides opportunity to:
  - Acclimate to High Density (Toughens Fish)
  - Purge waste and off-flavors
  - Grade fish
  - Treat with approved therapeutics
  - All-weather access = market flexibility

# Holding Systems: Circular Pools

- Grain bin “ring” with liner
  - 20’ dia. x 4’ height
  - Easy to repair, affordable
  - Self cleaning center drain
- CO<sub>2</sub> stripping with aeration (agitation)



# Holding Systems: Circular Pools

- Oxygen injection via an “O<sub>2</sub> saturator”
  - 5-8 ppm
- Single pass system
  - approximately 4 complete exchanges every day
  - Check NH<sub>3</sub>
  - Keep Salt at 4-8 ppt for 12 hours



# Holding Systems: Circular Pools

- Acclimate to pool
  - Fill pool in advance to warm /cool, saves time
- May hold as much as 5000 lbs foodfish in summer (~ 0.5 lbs /gal)
  - Temperature and size dependent
  - Phase II's 2500-3000 lbs
  - Fingerlings 2000-2500 lbs





# Handling Techniques After Purging

- Crowding  
screen/grader
- Isolate size required
- Easily select quantity  
needed for market
- **Slow crowding,  
conditions fish for  
transit**



# Handling Techniques After Purging

- Weigh fish, record stocking rate
- PII's .75-1 lb/gal.
- Foodfish-1.25 lbs/gal (Winter 1.5-1.75)
- Adjust to situation, i.e. duration of haul, equipment type, tanks, etc



# Handling Techniques After Purging

- Loading smaller quantities reduces stress and physical damage
- Acclimate slowly (5 min/2°C change in temp.)
  - Use tank water if possible
  - Always check D.O. levels >6 ppt



# Handling Techniques After Purging

- Place, not pour, fish into receiving water
- Cautious handling will result in few sites of infection (pulled scales, punctures)
- Use knotless mesh nets and smooth, clean surfaced baskets





# Live Hauling

- Many truck/tank designs
- Use fiberglass or aluminum tanks
  - insulated
- Use liquid O<sub>2</sub>
- Drivers responsible for fish from farm to market
- Have all state transport permits



# Live Hauling

- Outlet on side of tanks for ease of unloading
- Internal baffles reduce H<sub>2</sub>O movement
- Haul at 4-8 ppt NaCl
- Check O<sub>2</sub> every 1-3 hours
  - Note behavior, fin color
- Acclimate to receiving facility before release





