Sonic Tag Testing – Preliminary Results

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Presentation Overview

- 2007 pilot project goals
- 2007 pilot project implementation
- Preliminary results
Water temperatures below Glen Canyon Dam
2007 species focus: channel catfish

- Currently in Grand Canyon
- Warm water expansion potential
- Current capture methods ineffective
Pilot project objectives

- Test sonic tag technology in Grand Canyon
- Evaluate three gear types for capture of channel catfish in Grand Canyon
- Investigate change detection capabilities for channel catfish
Methods

- Sonic tags tested at Lees Ferry December ‘06
- June ’07: RM 241.46 to 242.82 (downstream of Separation, upstream of Spencer Cr.)
- Implant 21-day sonic tags
- Deploy SURs (Submersible Ultrasonic Receivers); monitor detection
- Attempt detection with hydrophones
June '07 reach segregation & detection

Sampling Reach

SUR

Hydrophone

SUR

RM 242.82
Subreach 3
Hoop netting

RM 242.34
Subreach 2
Electrofishing

RM 241.96
Subreach 1
Angling

Flow

RM 241.46
Results

- Lees Ferry (Dec. ’06) tag detection
  - SUR: >160 m
  - Boat-mounted hydrophone: > 500 m
Results

- Below Separation (June ’07)
  - SUR: no tags detected, 1 unit damaged
  - Boat-mounted hydrophone: 16 tracking days
    - 15-50% of 60 tags located per day
    - 3 days ≥50%
    - 53 of 60 tagged fish located at least once, 30 consistently
    - No mortality recorded
    - Located at 70-90 m
    - Tracking was best on descending limb of hydrograph
Channel catfish June ’07 detection locations
Discussion

- SURs work well in clear water conditions, poor performance in high turbidity
- Boat-mounted hydrophones performed well in clear and turbid conditions
- Hydrophones allow for correlation of individual capture with habitat
- Test in additional habitats, conditions
June 2007 capture near Spencer Creek

Last captured Dec. 10, 1991 by ASU in LCR