



Sonic Tag Testing – Preliminary Results

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In cooperation with:

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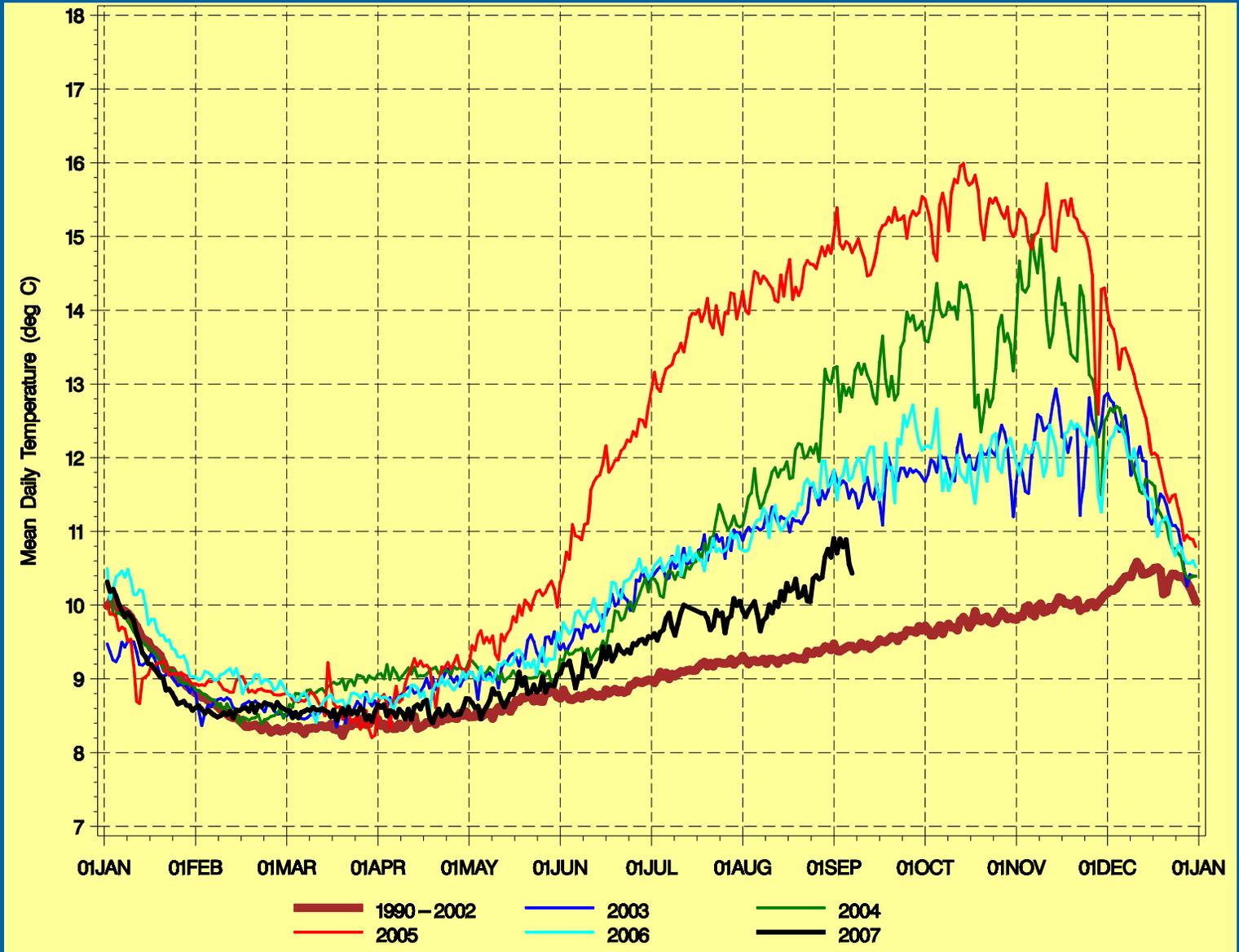
U.S. Department of the Interior
U.S. Geological Survey



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

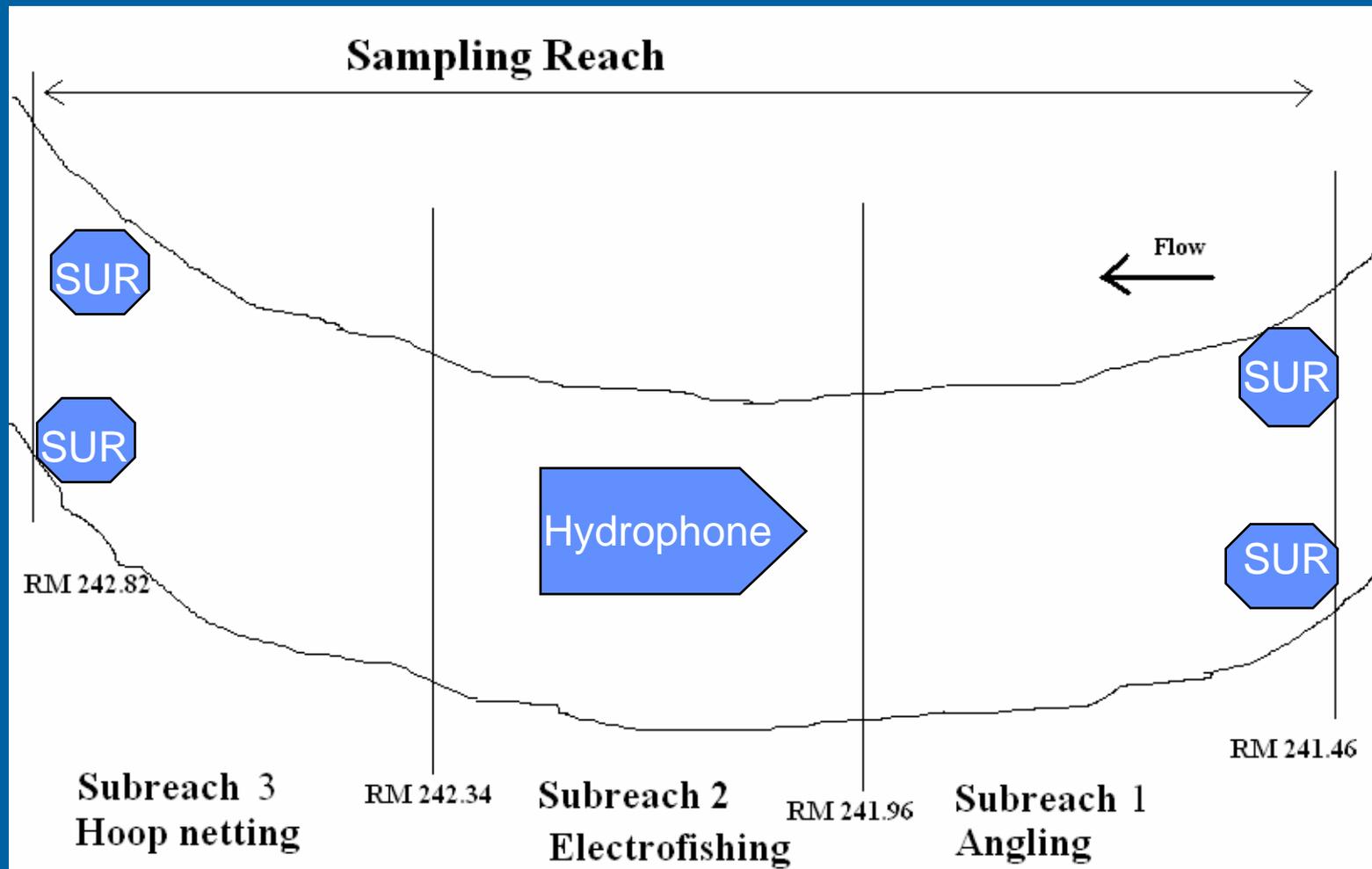
- **Test sonic tag technology in Grand Canyon**
- Evaluate three gear types for capture of channel catfish in Grand Canyon
- Investigate change detection capabilities for channel catfish

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



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 \geq 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