A faint, light blue map of the Great Lakes region (Superior, Michigan, Huron, Erie, and Ontario) is visible in the background of the slide.

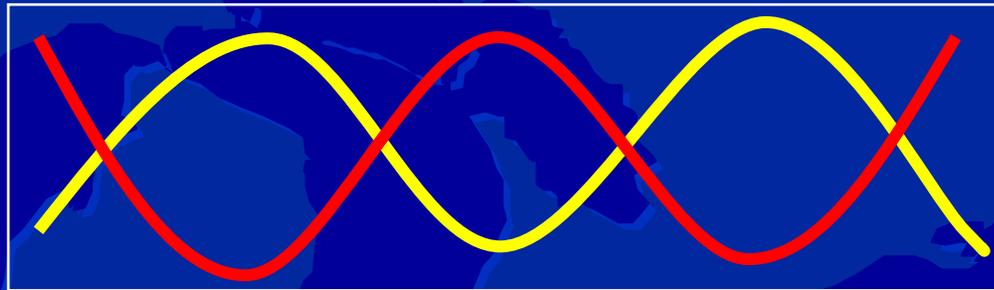
**Additional potential for PIT  
technology in lake sturgeon  
management  
or  
What Else Can You Do With PIT Tags?**

**Lisa O'Connor and Tom Pratt**

# Types of PIT Tags

Full Duplex:

transmit  
receive



Half Duplex:

transmit  
receive



# Half Duplex Tags:

## Pros:

- lower cost
- lower power consumption
- larger antenna size
- less sensitive to interference

## Cons:

- larger tag size
- antennae reader technology not compatible between tag types

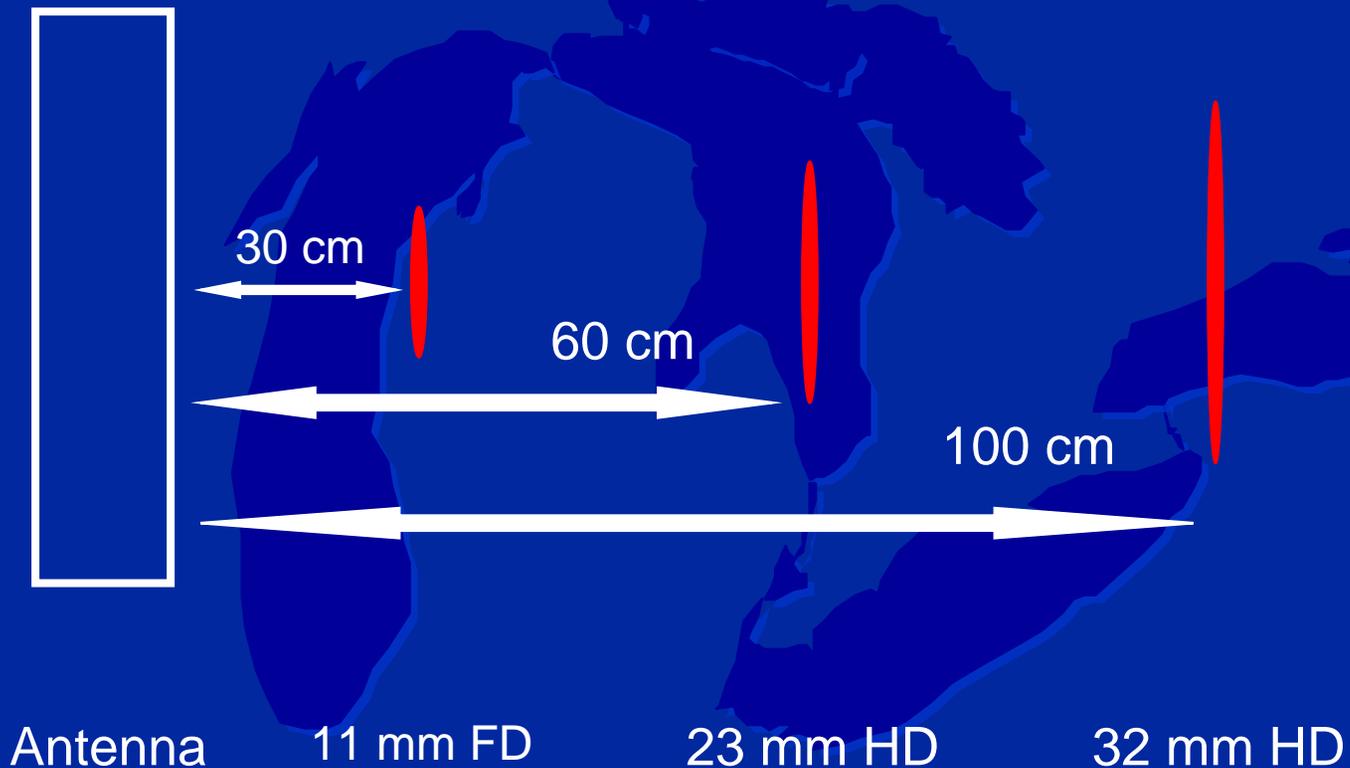
# Tag Size Comparison:



**11 mm Full Duplex vs. 23 mm Half Duplex**

Image by Warren Leach, Oregon RFID

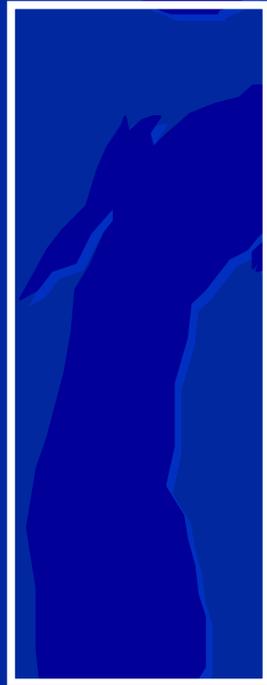
# Read Distance for Tags:



# Half Duplex PIT Tag Uses:

- In-stream antennae stations
  - Spawning frequency
  - Stream fidelity
  - Mortality
  - Spawning locations
  - Time of spawning
  - Long term monitoring (individual/population)

# Swim Through Antennae:



# Flat Plane Antennae



# Field Antenna Designs:



# Field Antenna Designs:



Photo Credit: DFO GLLFAS

# PIT Reader Equipment

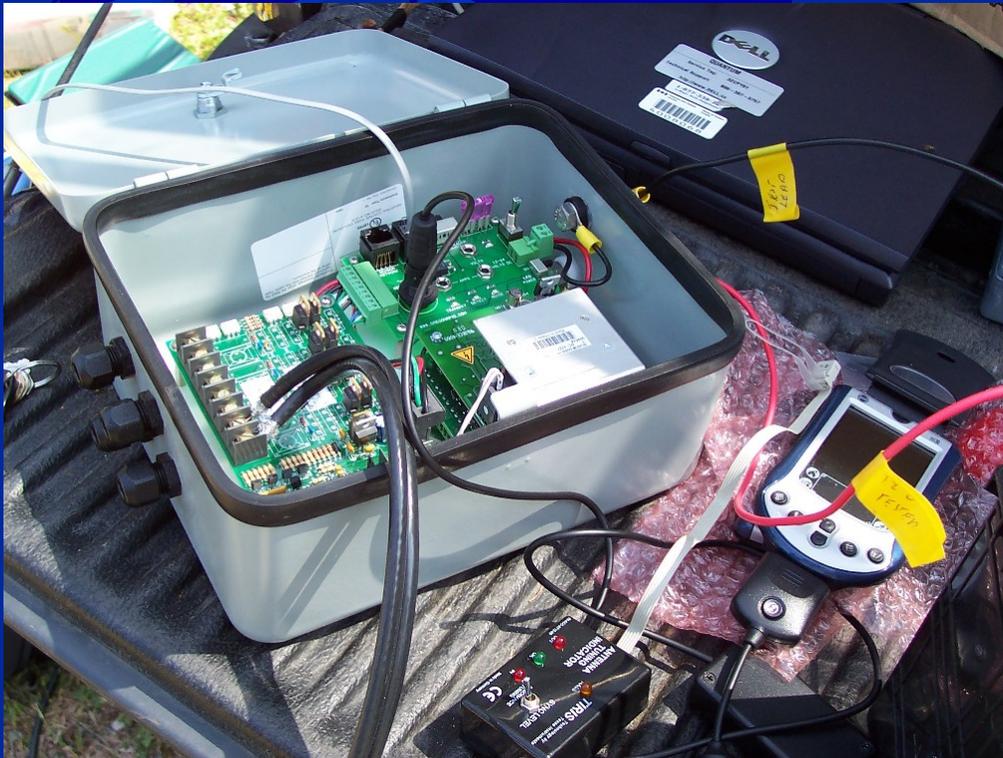


Photo Courtesy of M. Chase, OMNR, Thunder Bay ON

# DFO – GLLFAS PIT Examples

- Big Carp and Cobourg Brook Fishways – multiple species, multiple antennae
- Cypress, Little Cypress and Jackpine – Coaster brook trout rivers, multiple antennae
- Lake Ontario – 7 rivers with and without barriers – multiple species, multiple antennae



Questions?