

Sturgeons in the Piscataqua River System

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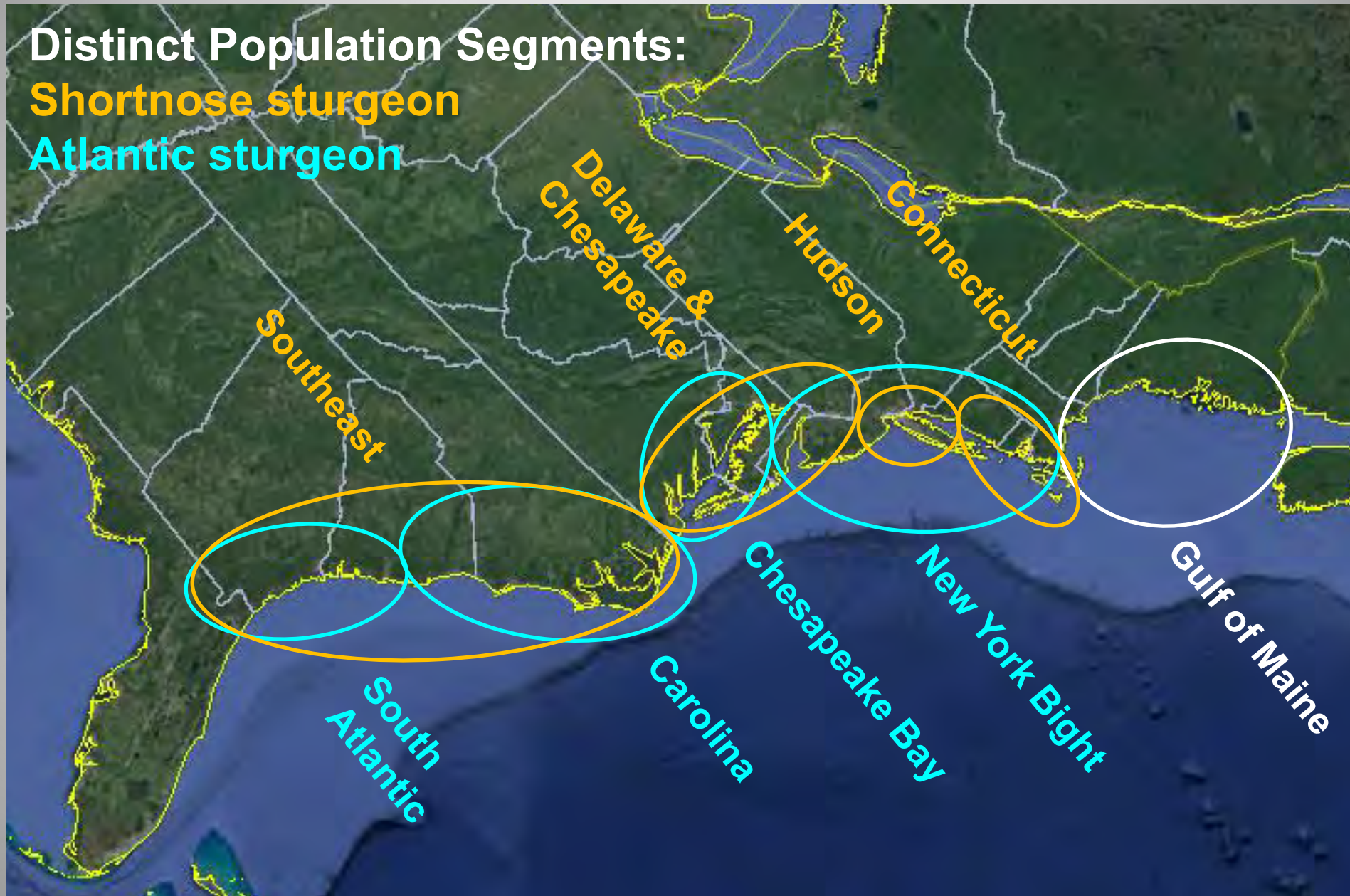
Piscataqua sturgeon investigation administrative support



Distinct Population Segments:

Shortnose sturgeon

Atlantic sturgeon



Gulf of Maine Sturgeon Research Collaboration



Penobscot

Kennebec

Saco

Piscataqua

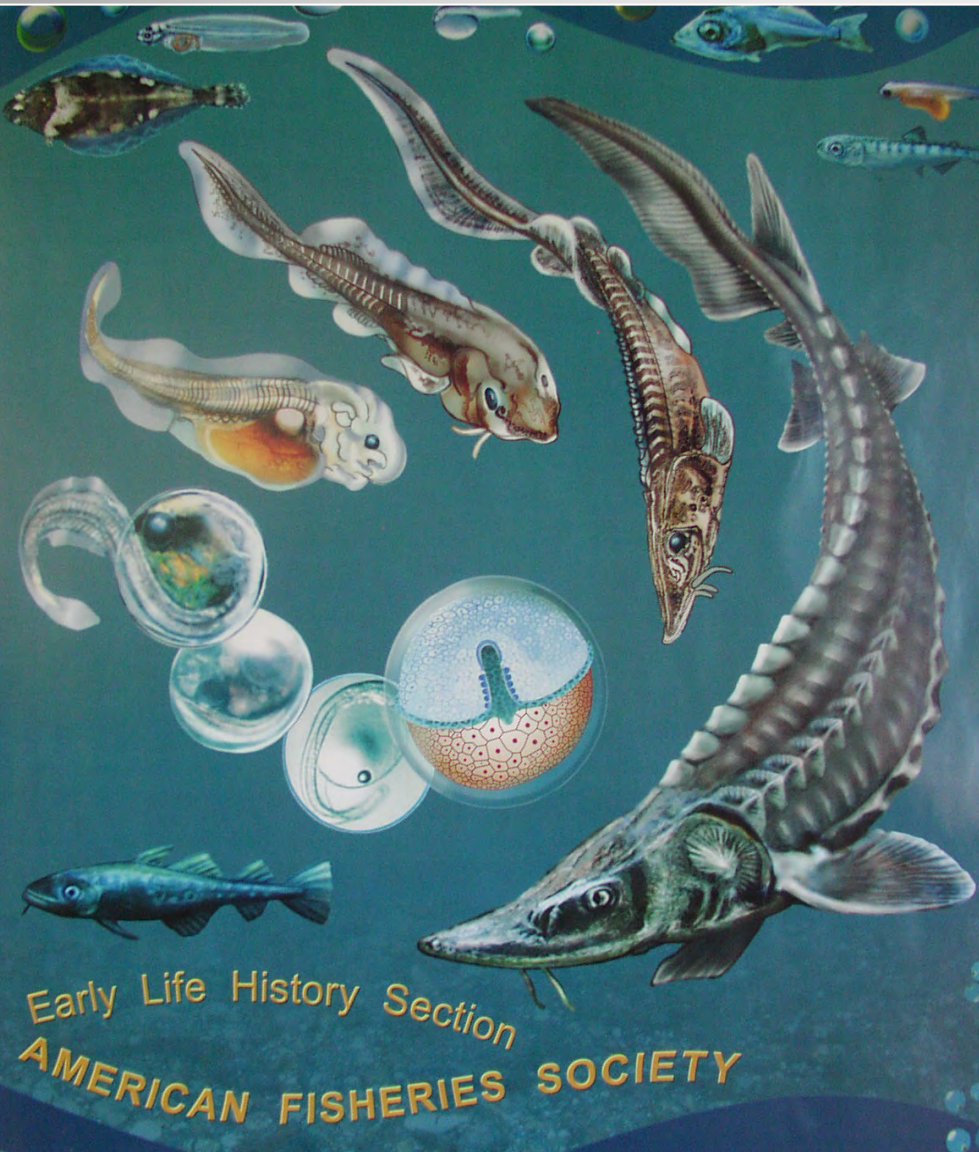
Merrimack

Gulf of Maine

Critical physical/behavioral characteristics

- Ancient: 100-200 million years
- Long-lived: decades
- Wide adult size range: 2-20'
- Migratory: anadromy, potamodromy
amphidromy
- Lengthy migrations: up to 1,500 km
- Late maturation: 10-20 years
- Infrequent spawning: 2-10 year periodicity
- Discrete spawning sites: limited ability to use
alternate sites
- Federal and state protected status

General spawning behaviors



Iteroparous spawning
Broadcast spawning
Adhesive eggs
Photo-negative free embryos
Clean rock-rubble substrate
Early life-stage migration
Juvenile migration

**Endangered Species Act protection,
including critical habitats**

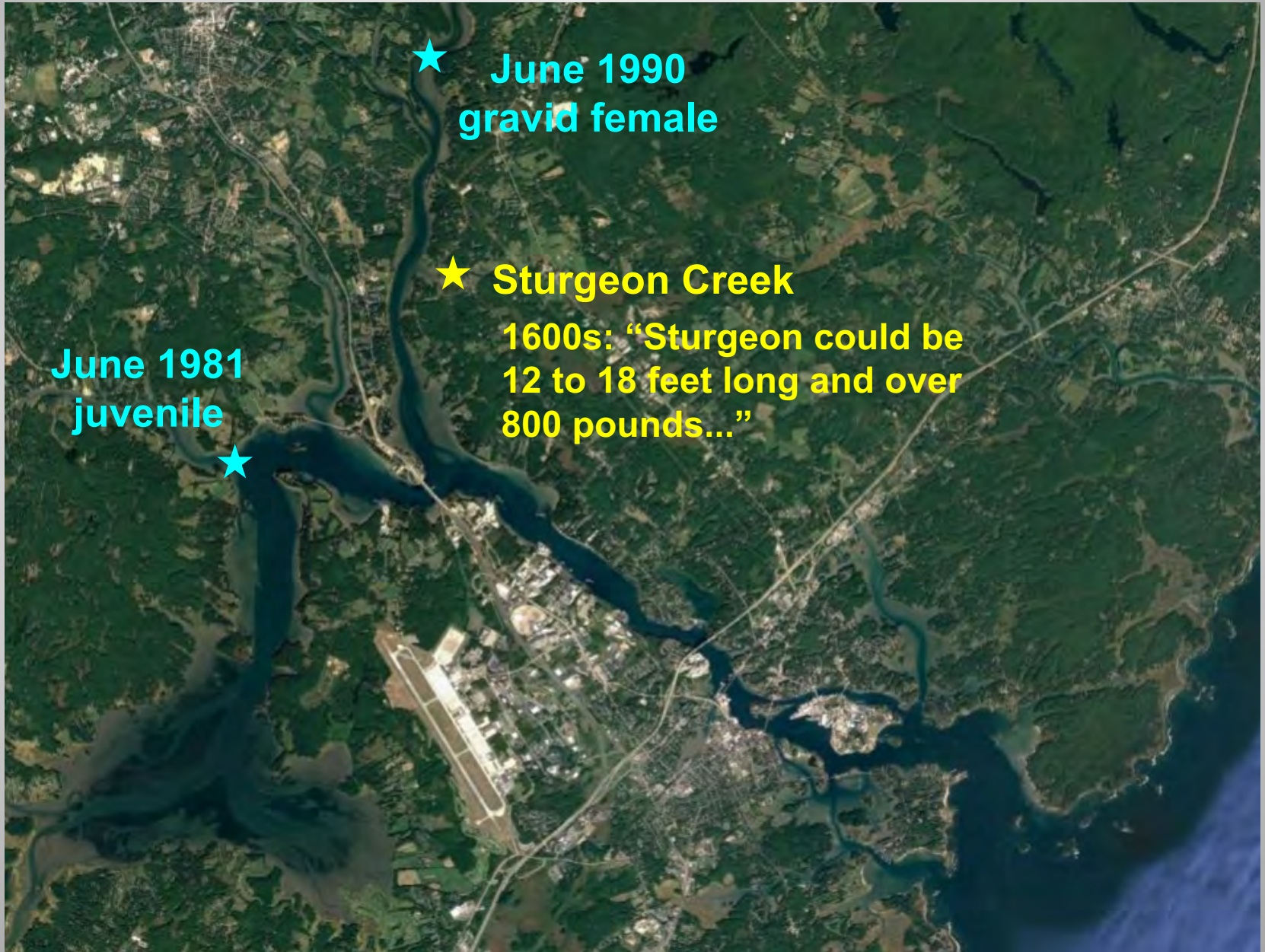


Shortnose sturgeon
Acipenser brevirostrum
ESPA listing 1967
ESA listing 1973

Atlantic sturgeon
Acipenser oxyrinchus oxyrinchus
ESA listing 2014



Historic observations



★ June 1990
gravid female

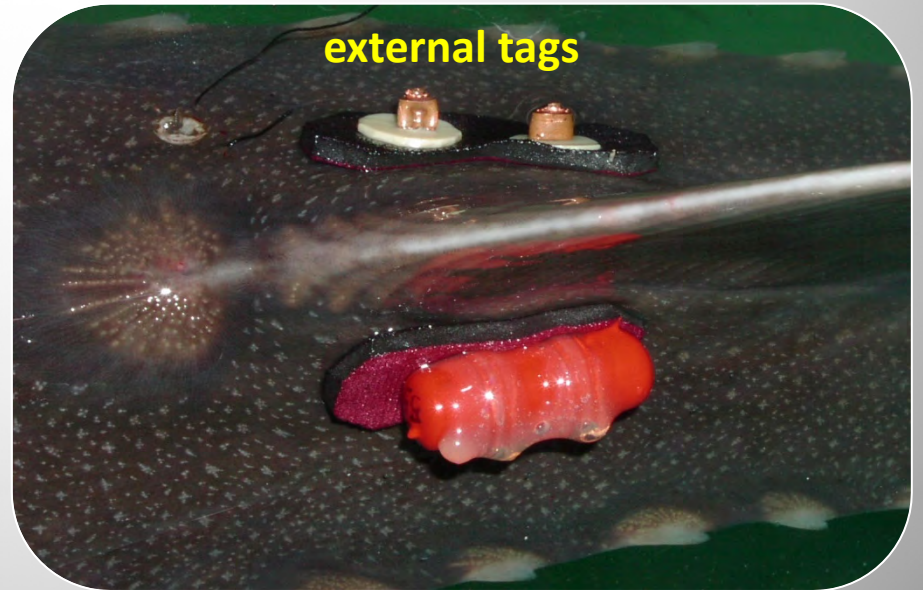
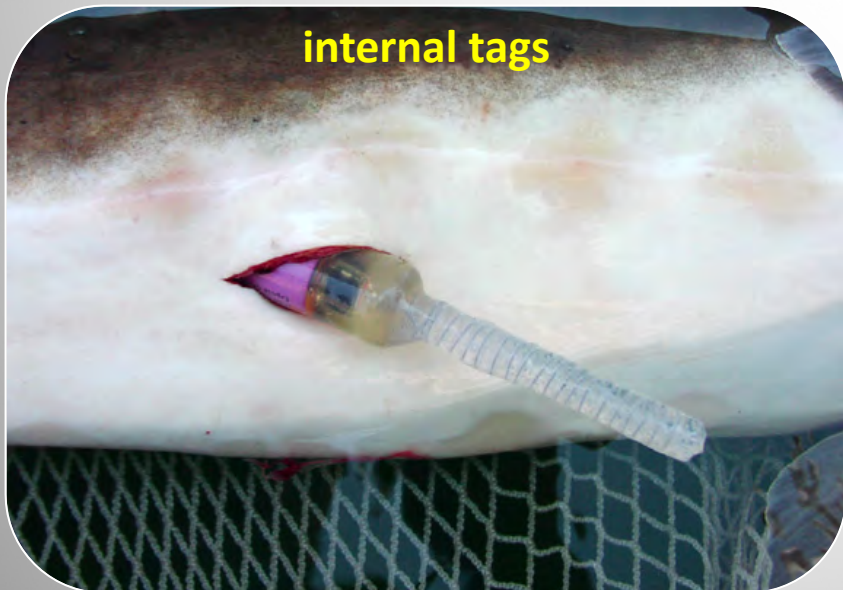
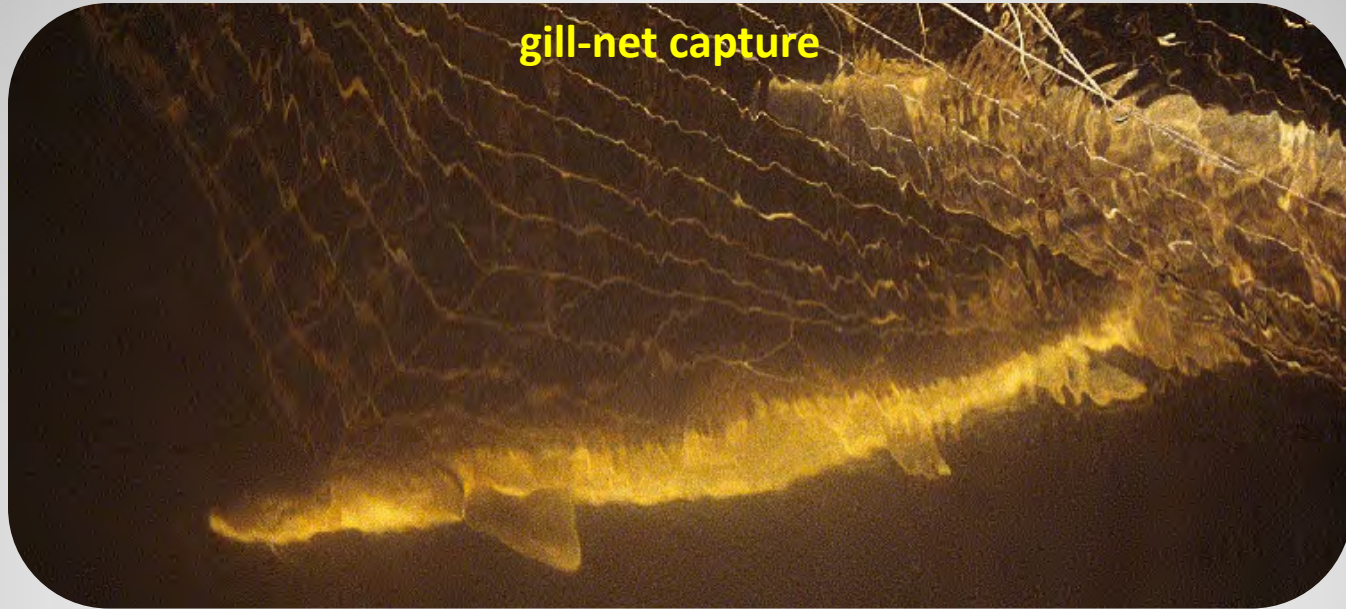
★ Sturgeon Creek

1600s: "Sturgeon could be
12 to 18 feet long and over
800 pounds..."

June 1981
juvenile



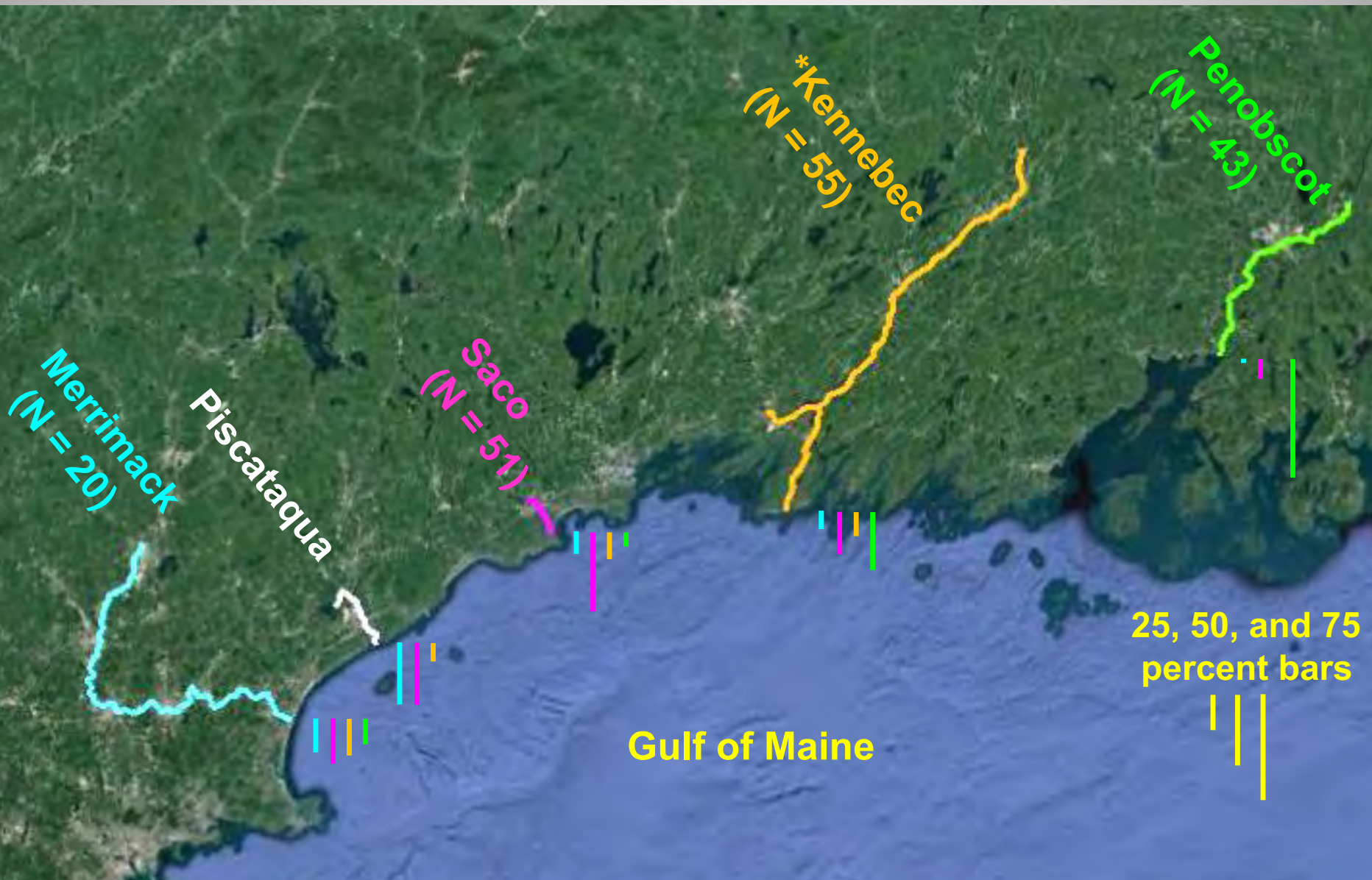
Capture and tracking



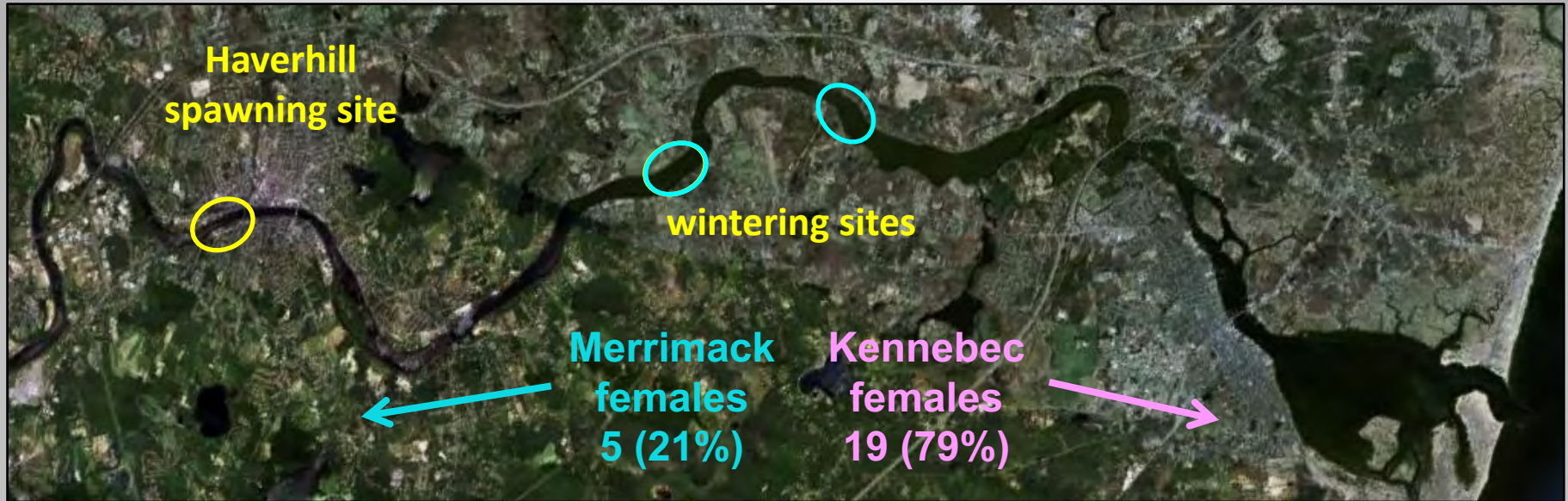
Field tracking



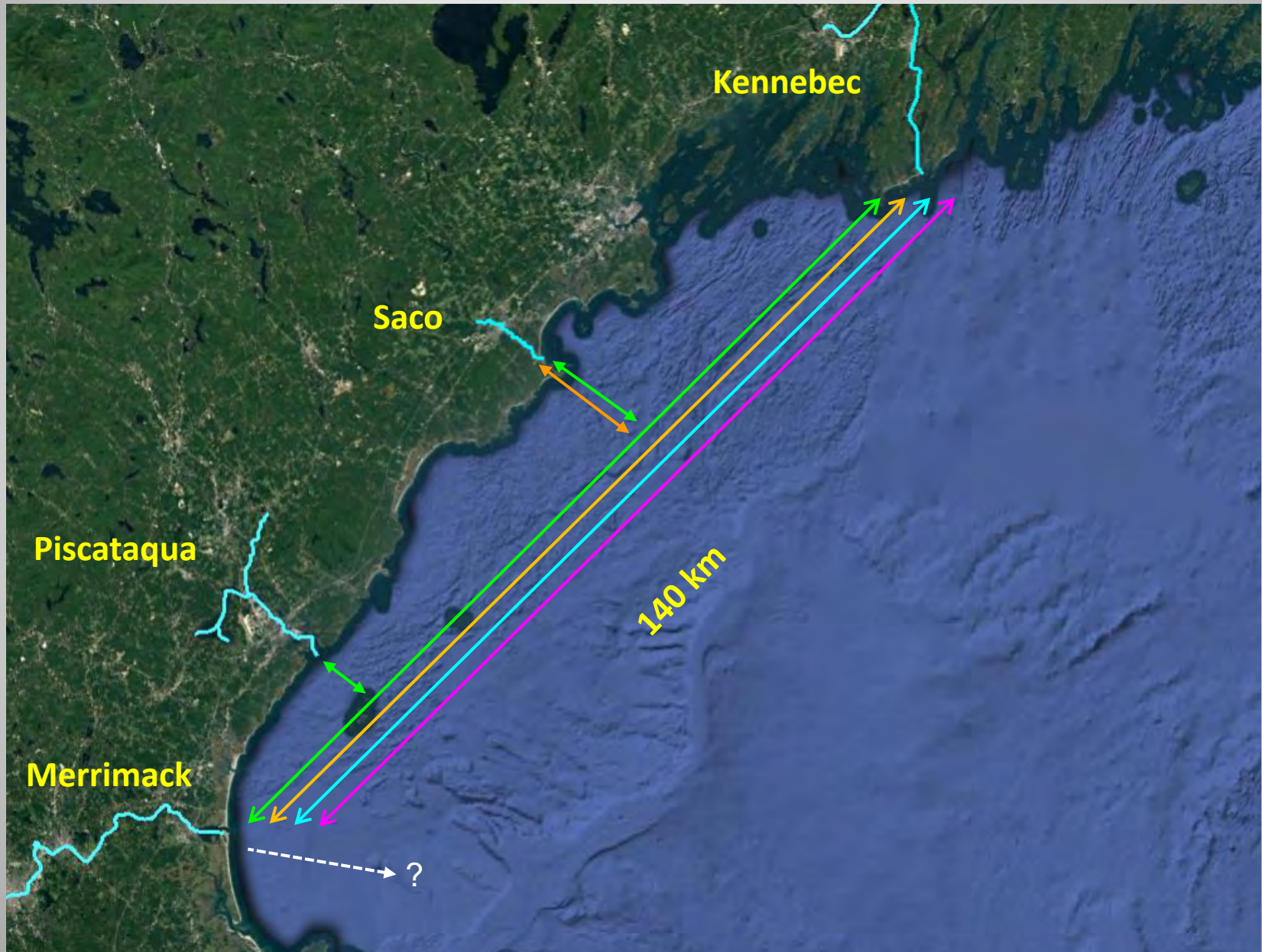
Atlantic sturgeon distribution among major Gulf of Maine rivers



Coastal spawning migration of shortnose sturgeon



Coastal movements of shortnose sturgeon

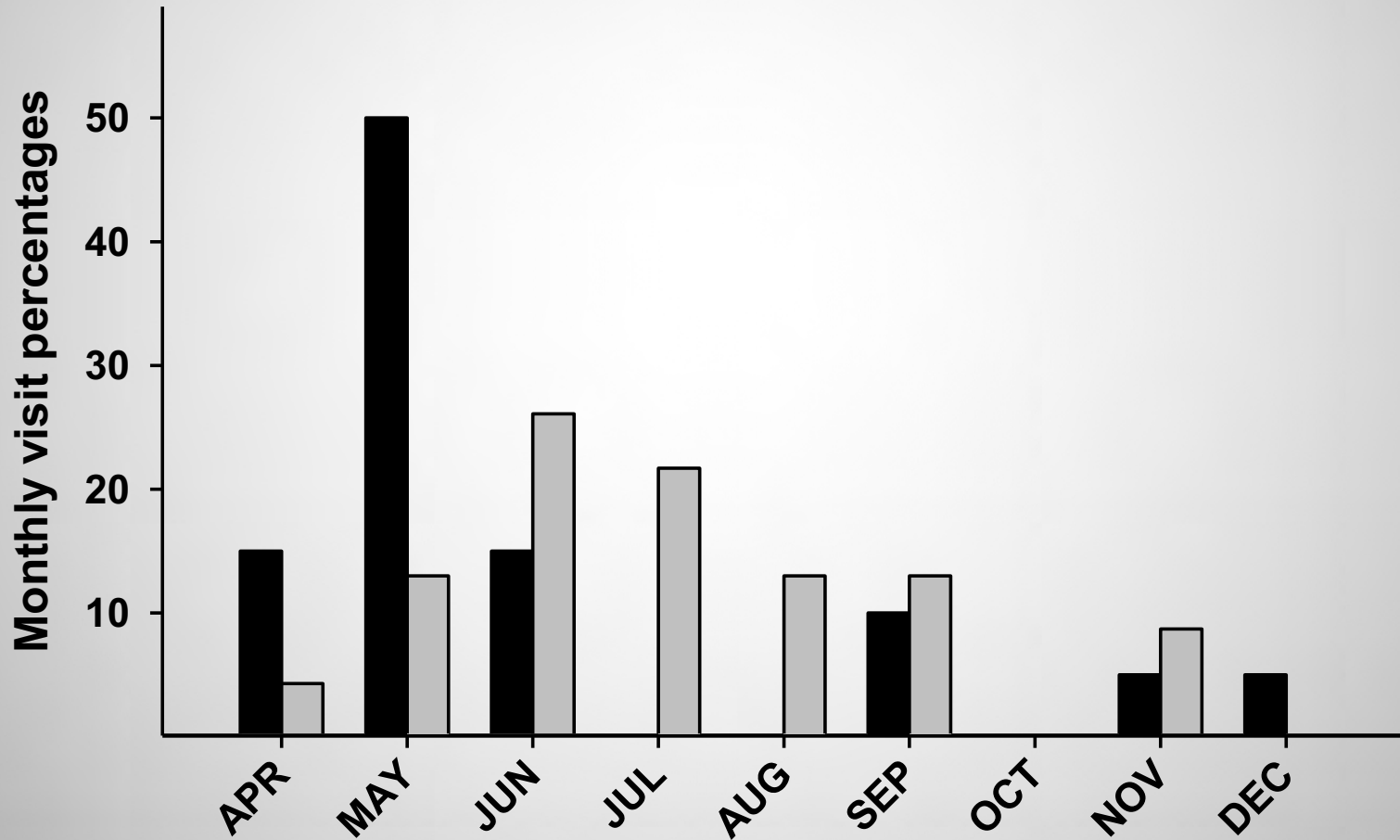


Acoustic array and detections



Sturgeon visits by month

■ Shortnose (N = 20): max 3.7 d; \bar{x} = 0.8 d
□ Atlantic (N = 23): max 3.8 d; \bar{x} = 0.7 d



Finding's significance:

**Routine annual use by two protected species
Part of pre-spawning migration corridor
May indicate rising trend in abundance**



Future investigations:

**Coastal movement corridors
Critical habitat (wintering, foraging sites)
Tributary use**