Habitat selection of Mallards and American Black Ducks on eastern Long Island

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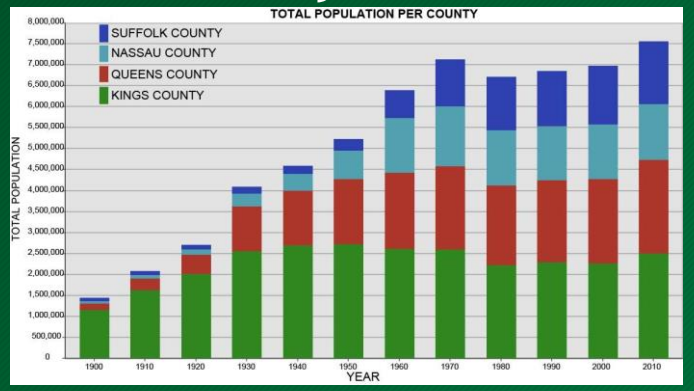
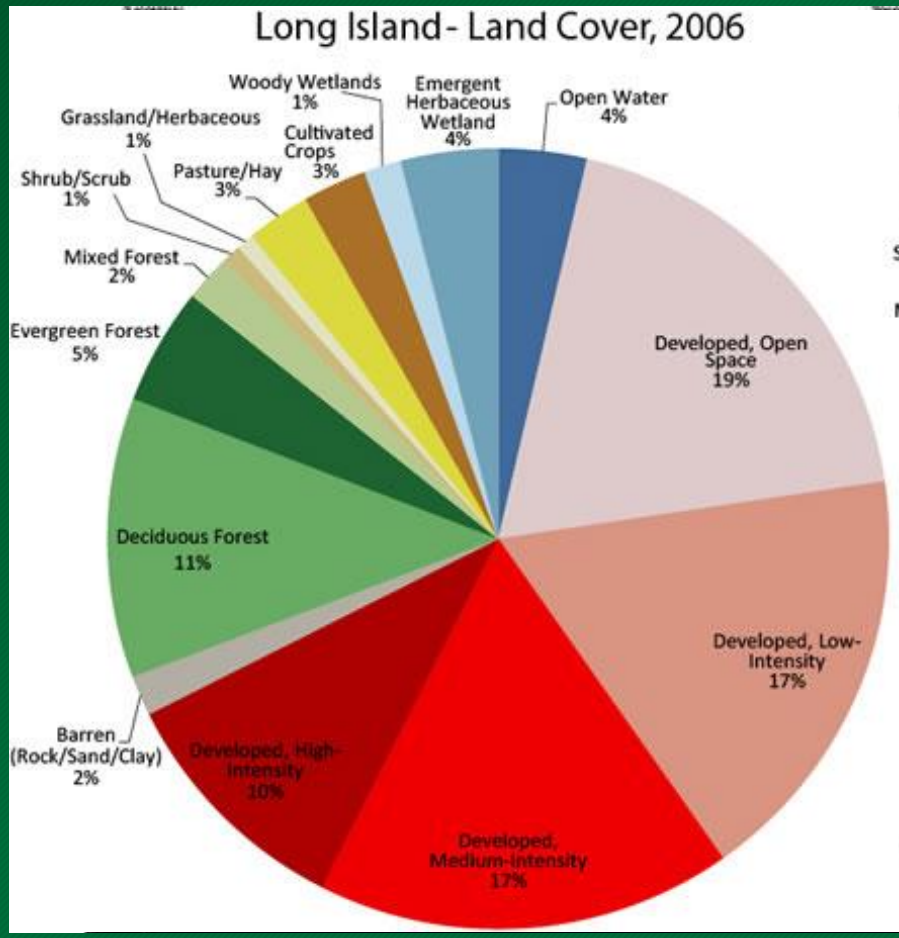
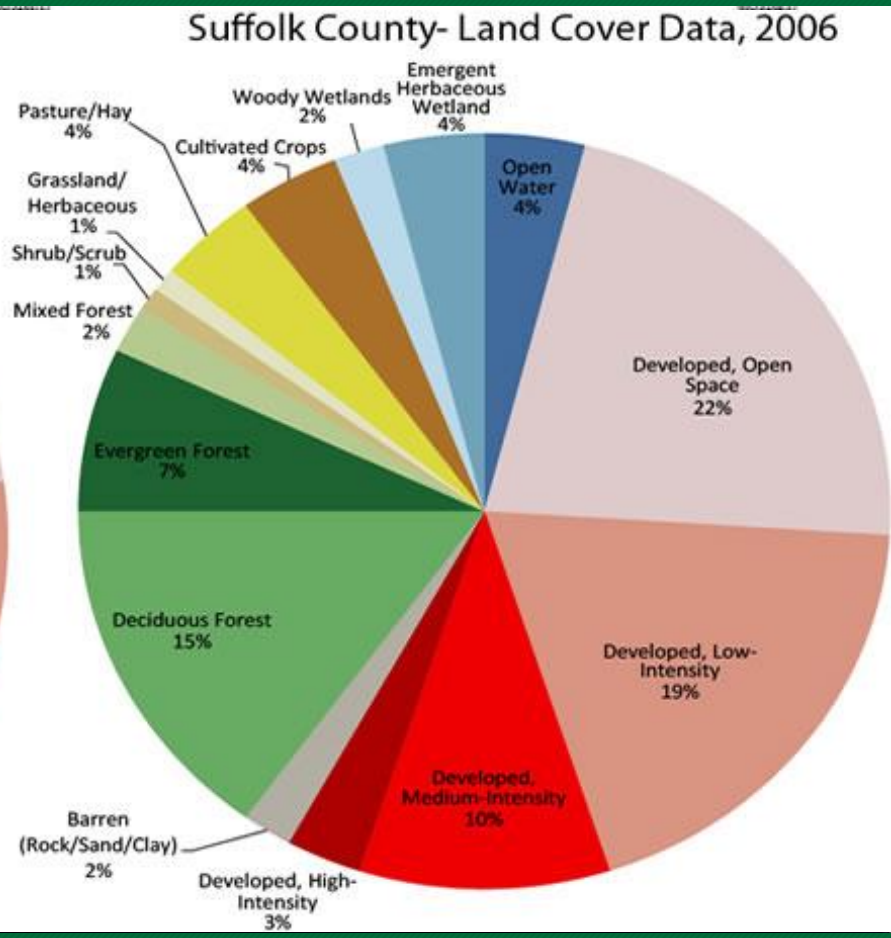
Urbanization on Long Island

- LI Population: 7.56 million (2010)
- Substantial cost and red tape on restoration
- Complete habitat loss
- Decreasing food availability







2010

Efforts on Long Island

- Decreasing Mallard population
- Goals to keep Black Ducks on Long Island
- Suffolk County = 5.1% farm (2010)
- Energetic needs
  - Chopping corn post-season
  - 3,600 – 7,800 kg/ha
  - Supplementary diet
- Conservation of green-space may show greater support

Goals

- Selection between and importance of agricultural fields, freshwater wetlands, and saltmarshes
- Wintering habits vs. Migration habits

Mallard and black duck habitat selection

Ornitela OrniTrack-20 GPS/GSM transmitters with accelerometer

Position every 15 minutes

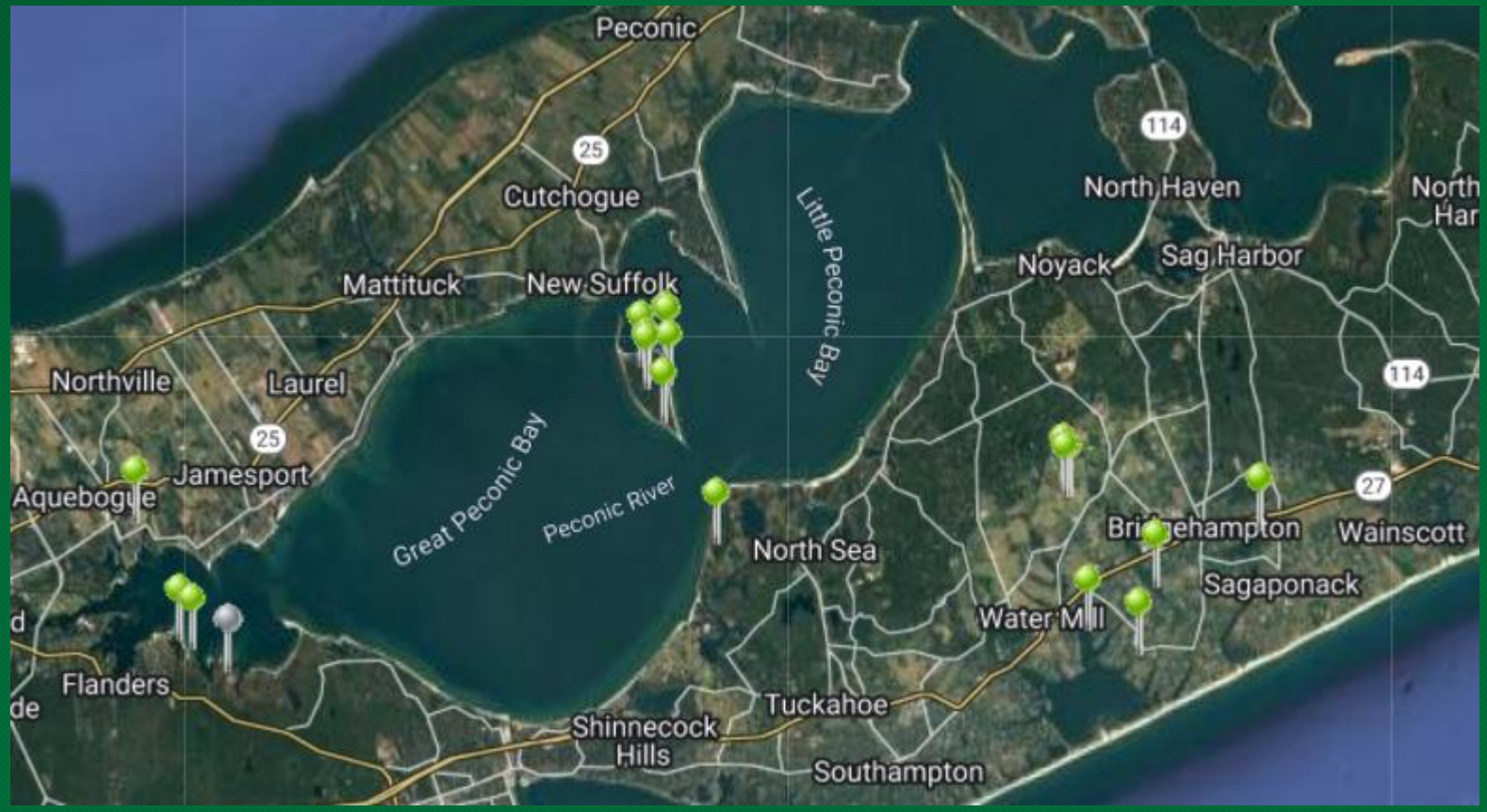
Behavior* every 10 minutes

Solar powered

Mallard and black duck habitat use

20 units in 2022

50 planned for 2023
pending available funding



Corn Field Counts

- Duck species that use corn fields
  - ✓ Mallards
  - ✓ American black ducks
  - ✓ Northern pintail
  - ✓ Green-wing teal
  - ✓ American wigeon
  - ✓ Wood duck
- Evening feeding trip counts

Baldassare and Bolen 1987

Capture Methods

- Pneumatic Cannon System
- Agricultural fields

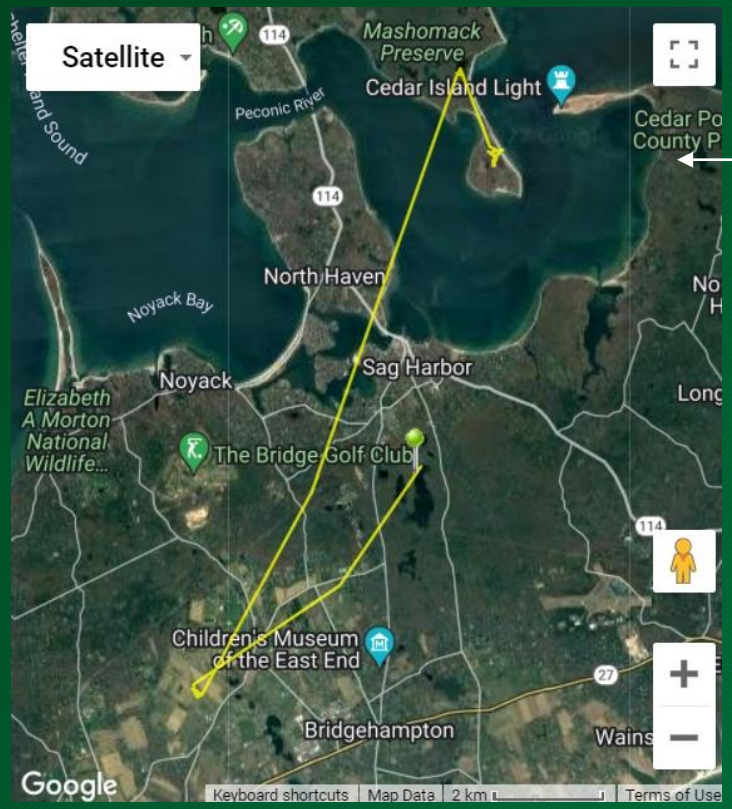
- Walk-in/Swim-in Traps
- Fresh/Salt water

Clover-leaf trap with baited funnel

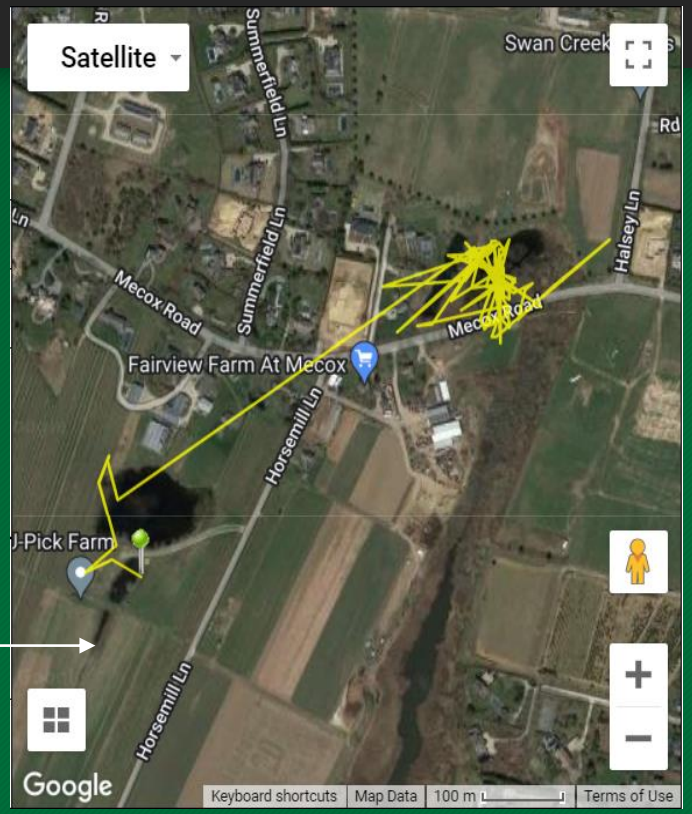
Pneumatic Cannon System

- Prototype – Dave Fronczak (FWS)
- 4 cannon set-up
- 12 x 18 meters
- Camouflaged cannons and fake cannons
- Trial and error

Winter Tracking and Counts

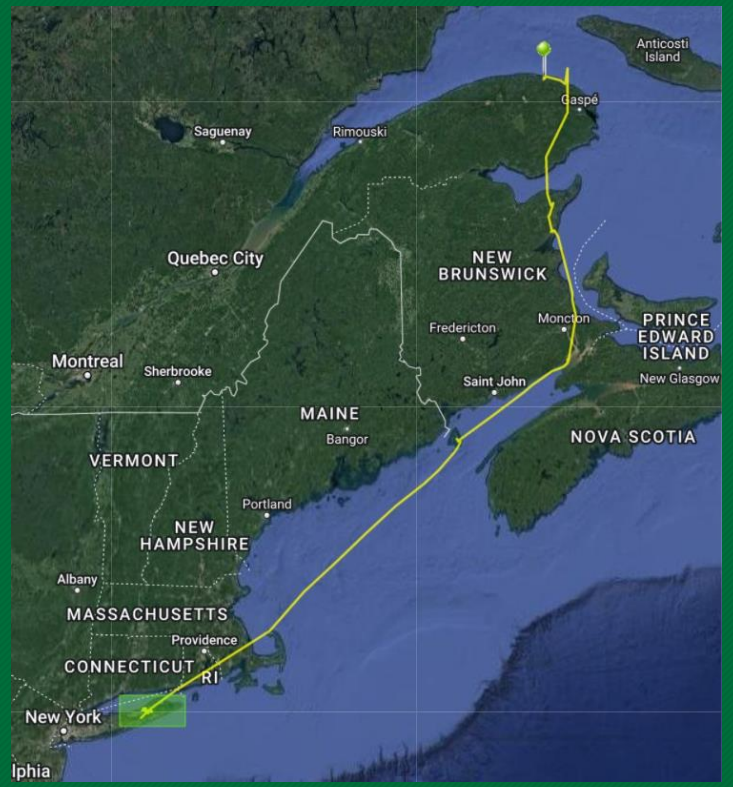


Black Duck

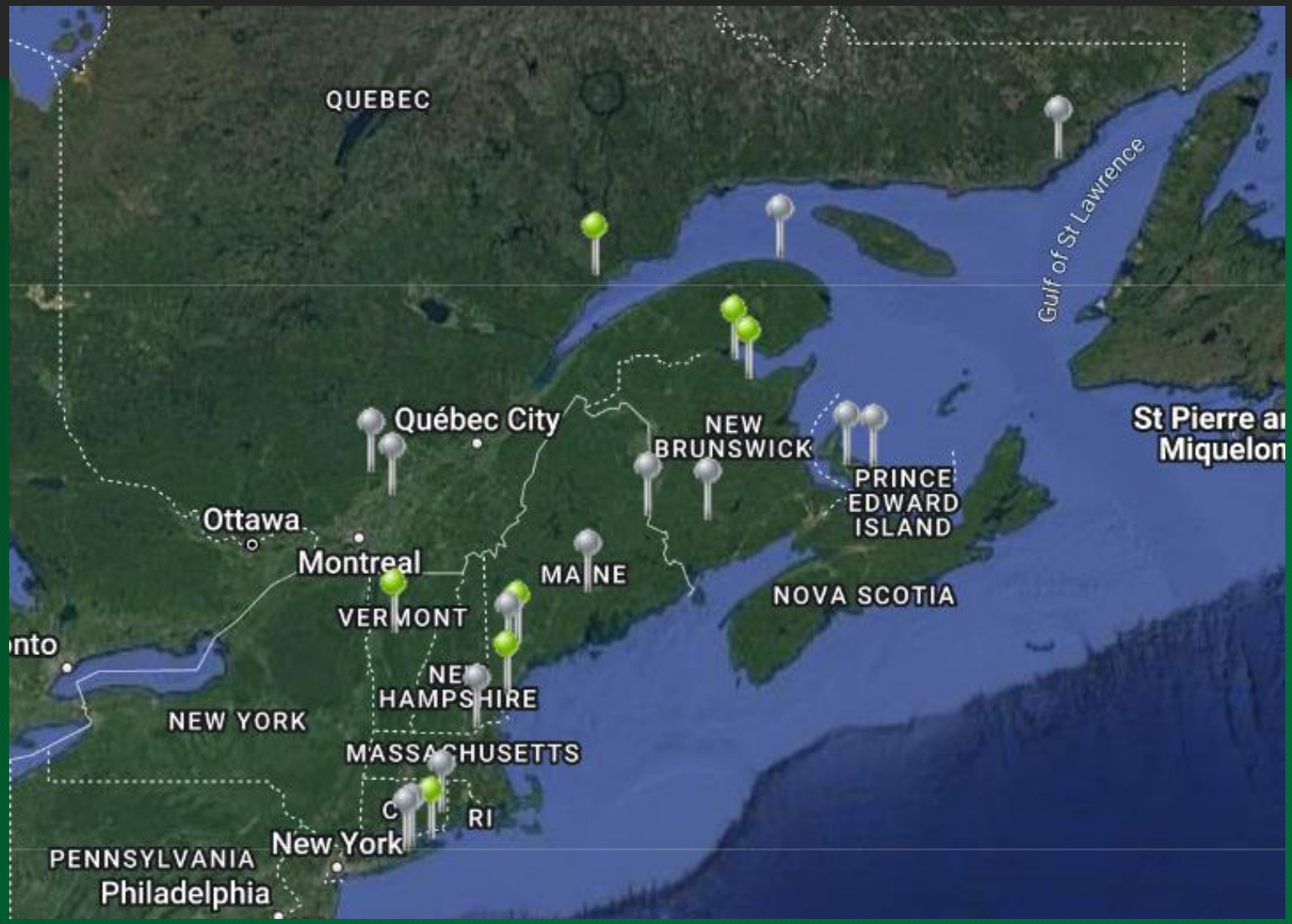


Mallard

Migration information



Migration Information

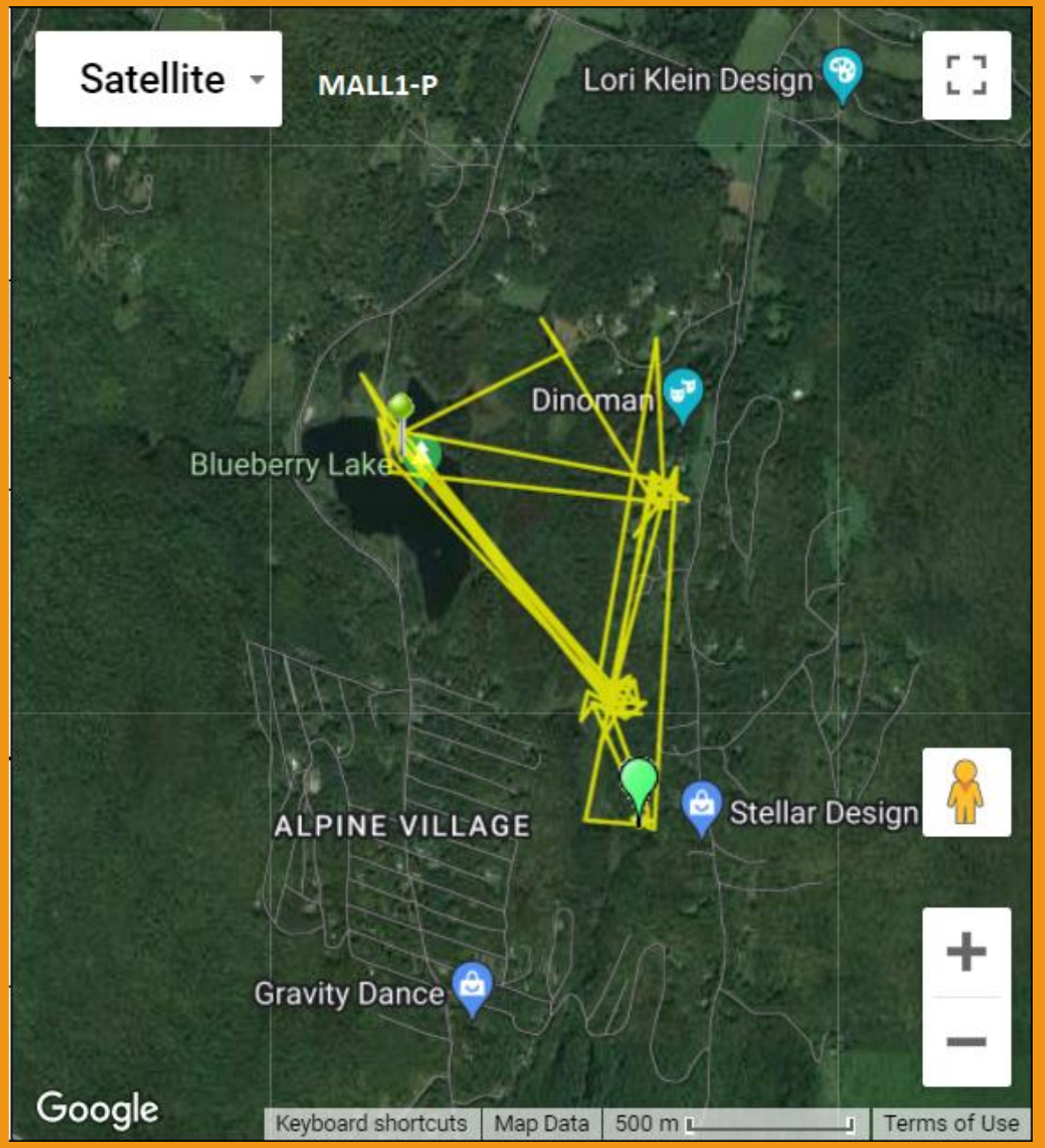


- Habitat selection during/after migration
- Stop-over sites
- Truncating data analysis for initial migration

Migration Information

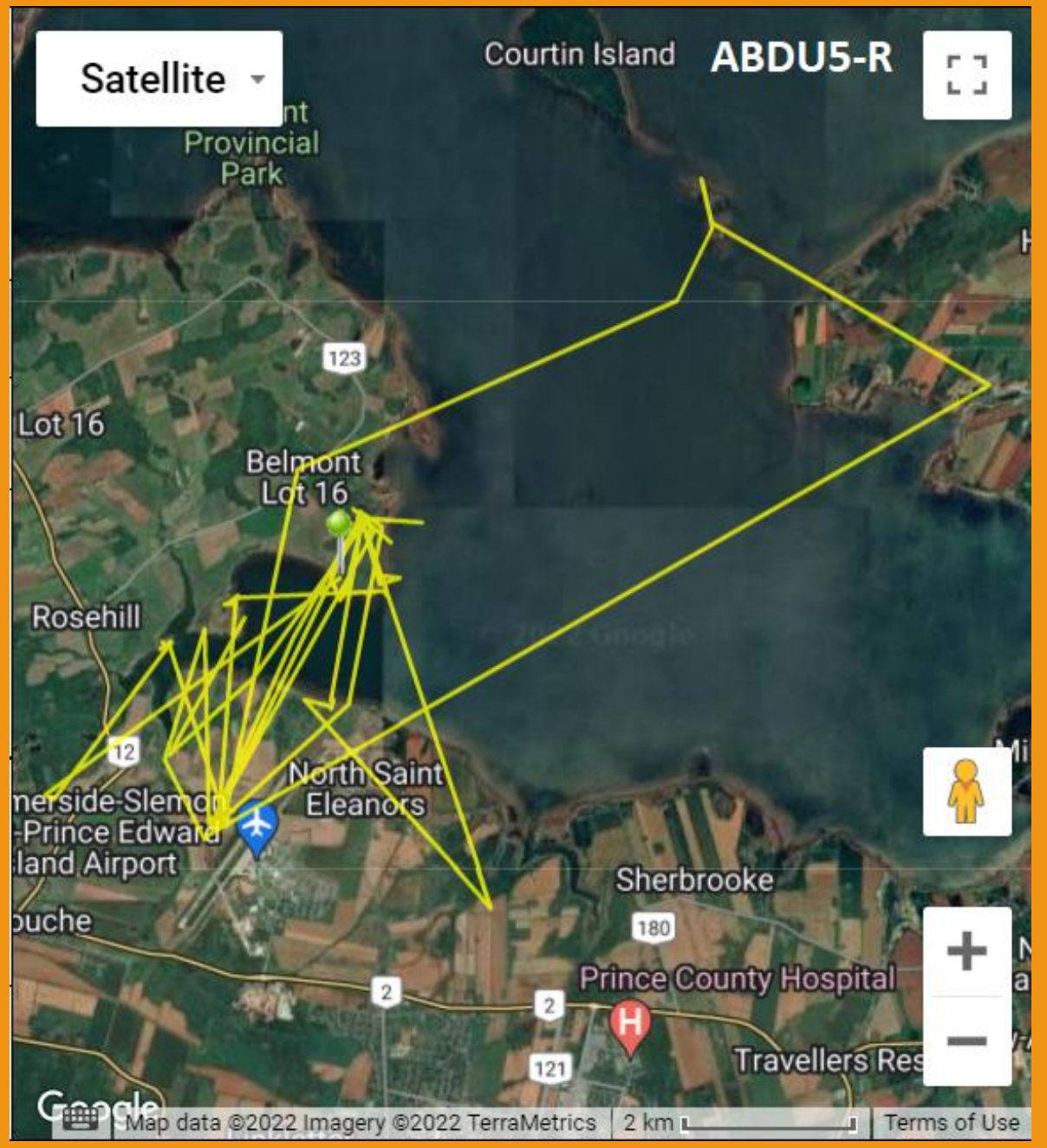
Utilizing real-time satellite imagery to determine habitats

- Freshwater ponds
- Rivers/streams
- Marsh wetlands



Migration Information

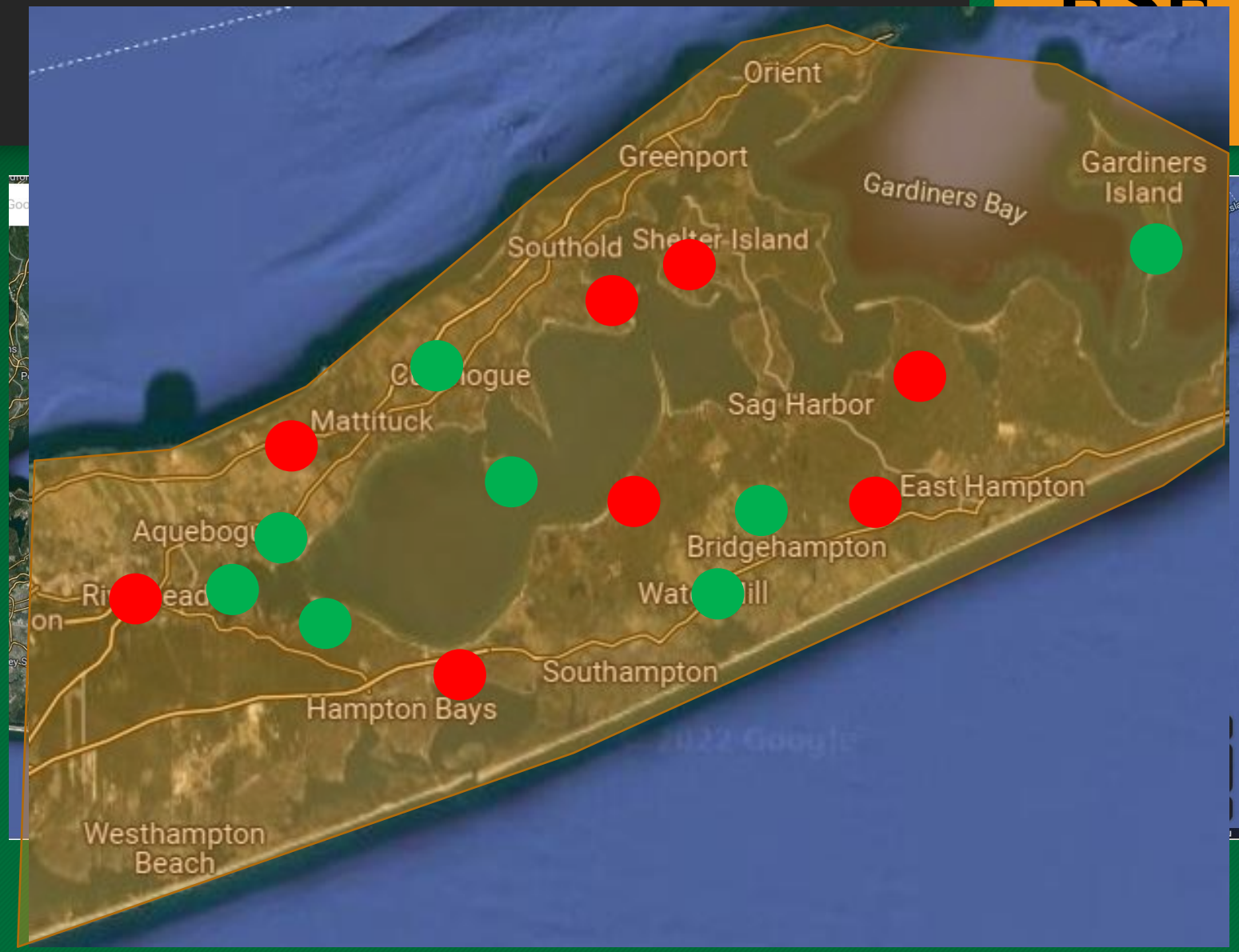
- Agricultural fields
- Saltwater bays
- Marsh wetlands
- Freshwater ponds



Statistical Analysis

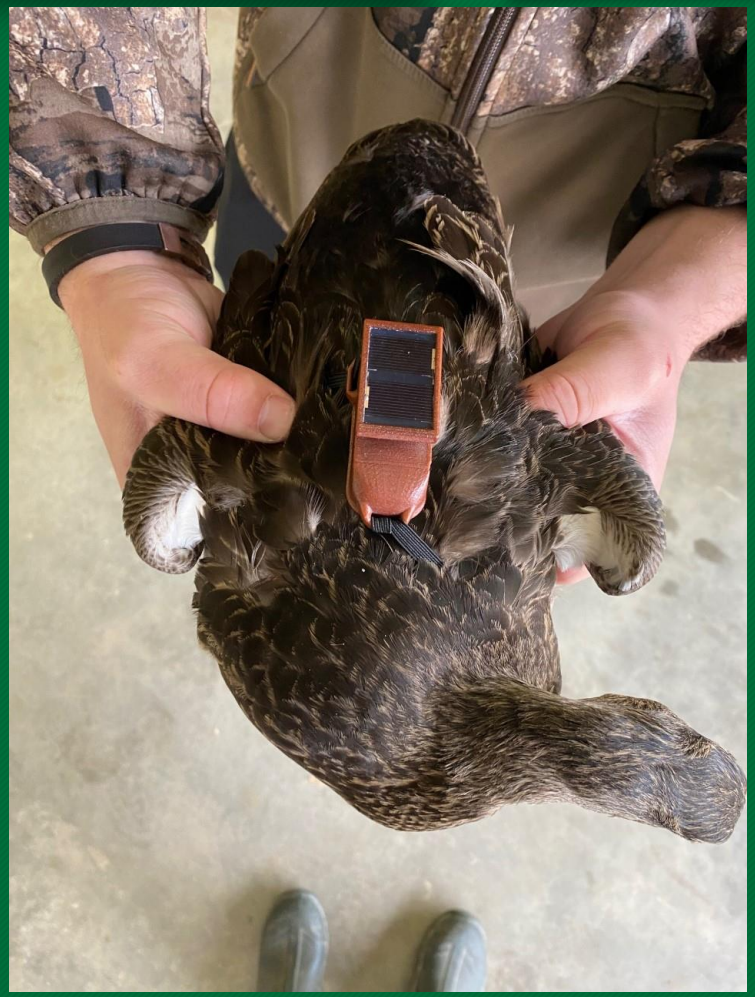
Resource Selection Function

- Relative probability of use
- Use-availability design
- Sub-sampling and random effects to eliminate autocorrelation and independence violations



Results?

- What habitats are selected?
- What activities are happening where?
- What is the seasonal use of agriculture?
- Differences between Mallards and Black Ducks?



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