Invasive Catfish Symposium

VCU Rice Rivers Center

November 6-7, 2017

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Native Range Blue Catfish Movements

- Most migratory of all Ictalurid species
- Results vary by study and habitat type (reservoir vs. river)
- Long-range movements, both upstream and downstream, are common for large individuals as they seek spawning sites.
- Movement patterns related to environmental variables such as water temperature and discharge

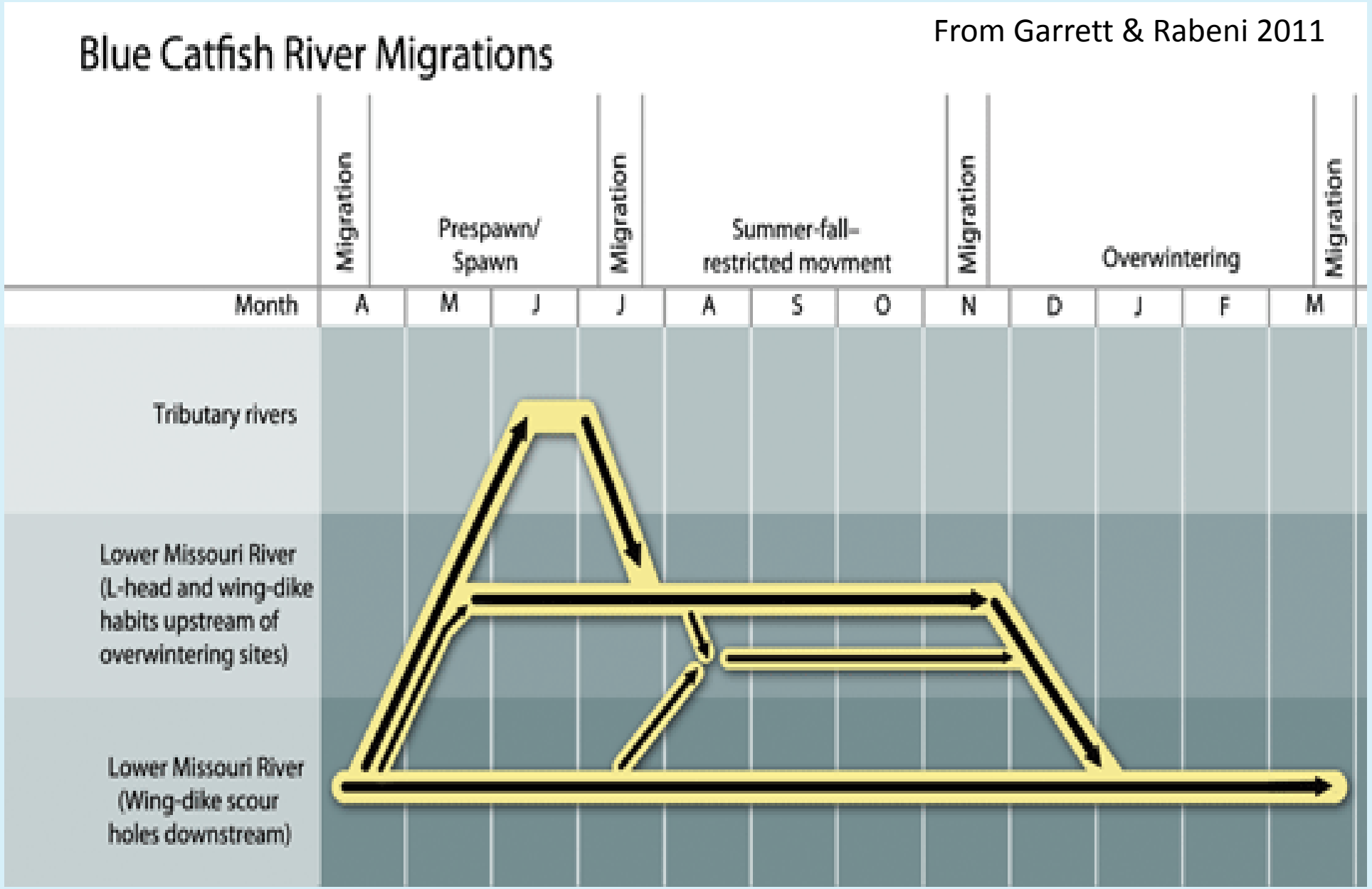
Graham 1999; Garrett & Rabeni 2011

Native Range Blue Catfish Movements

- High site fidelity, limited movements occur in some fish
- Distinct periods of movement separated by brief migrations.
- Movement greatest during the Pre-spawn to Spawn Period

Graham 1999; Garrett & Rabeni 2011

From Garrett & Rabeni 2011

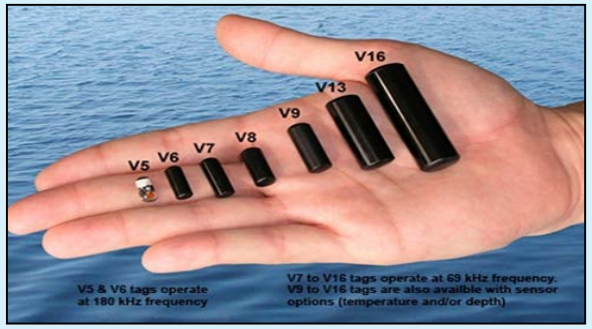


Objectives/goals – VDGIF Blue Catfish Movement Study

- Evaluate spatial and temporal movement patterns in Blue Catfish
- Determine if movement varies by fish size
- Understand factors influencing movement

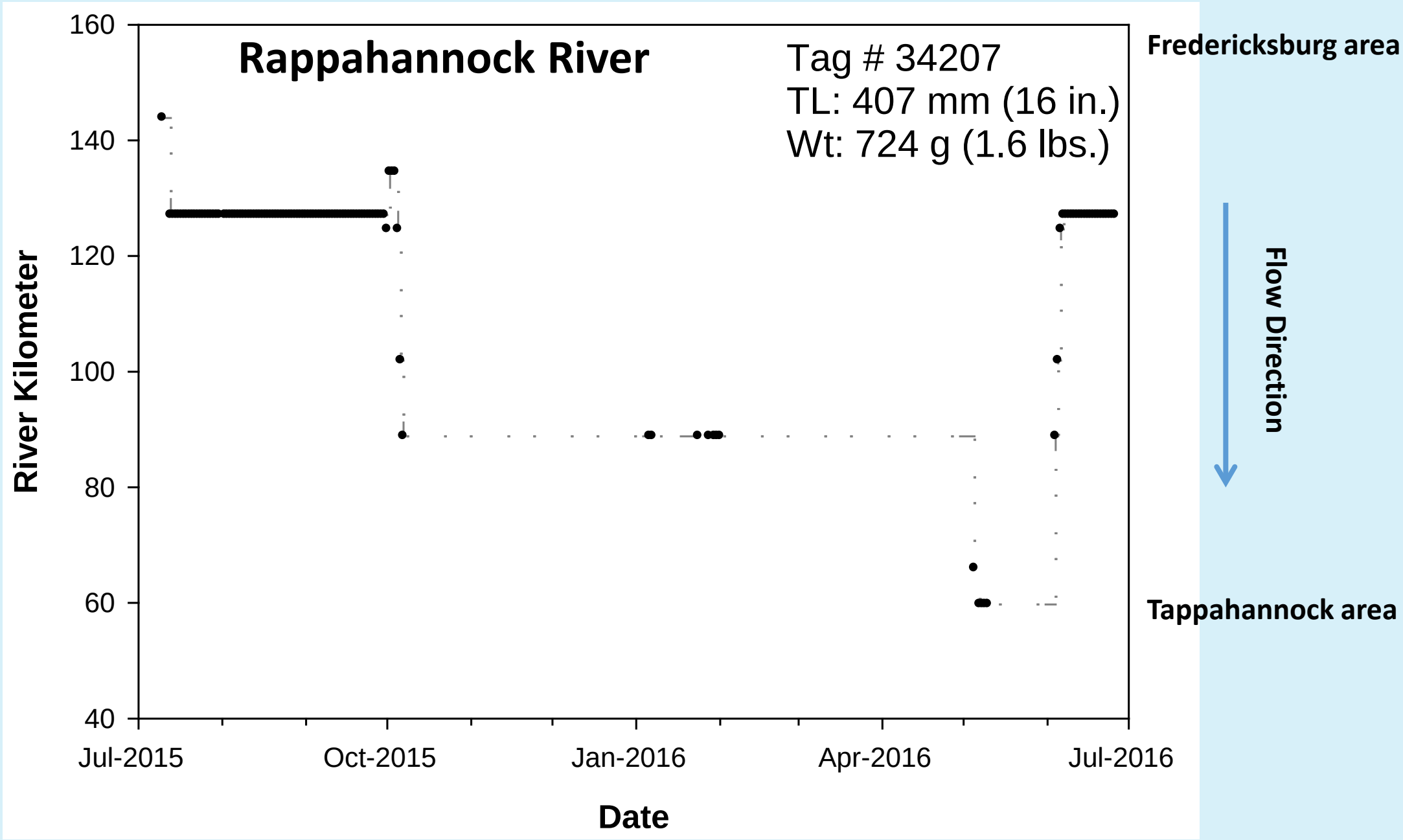
Methods

- Low-frequency electrofishing used to collect fish
- 30 Vemco acoustic tags (V9 or V13) surgically implanted per river (N=60 total) – all released in upper tidal sections
- 356-1152 mm TL
- Secondary tags (Floy tag and ADP clip)

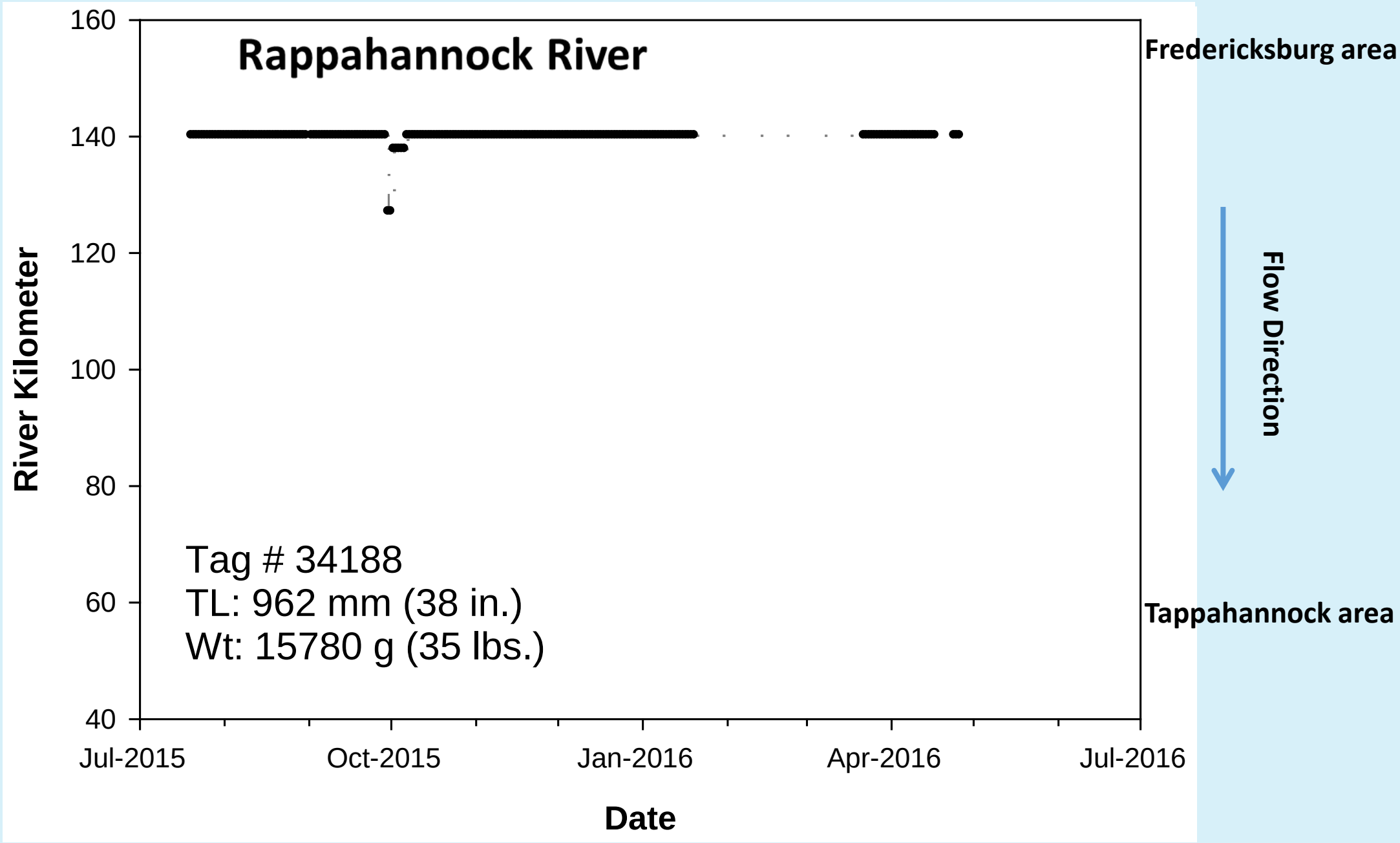


Methods

- <u>Passive tracking</u>
  - Supplemented existing arrays: Pamunkey = 30, York = 11, Rappahannock = 9
- <u>Active tracking</u>
  - Weekly tracking using Vemco VR100 unit w/ directional & omnidirectional hydrophone for first 2 months, then monthly thereafter
  - Moved w/ tide every 300-600 meters; listening for 5 minutes



*Preliminary Data Subject to Further Analysis



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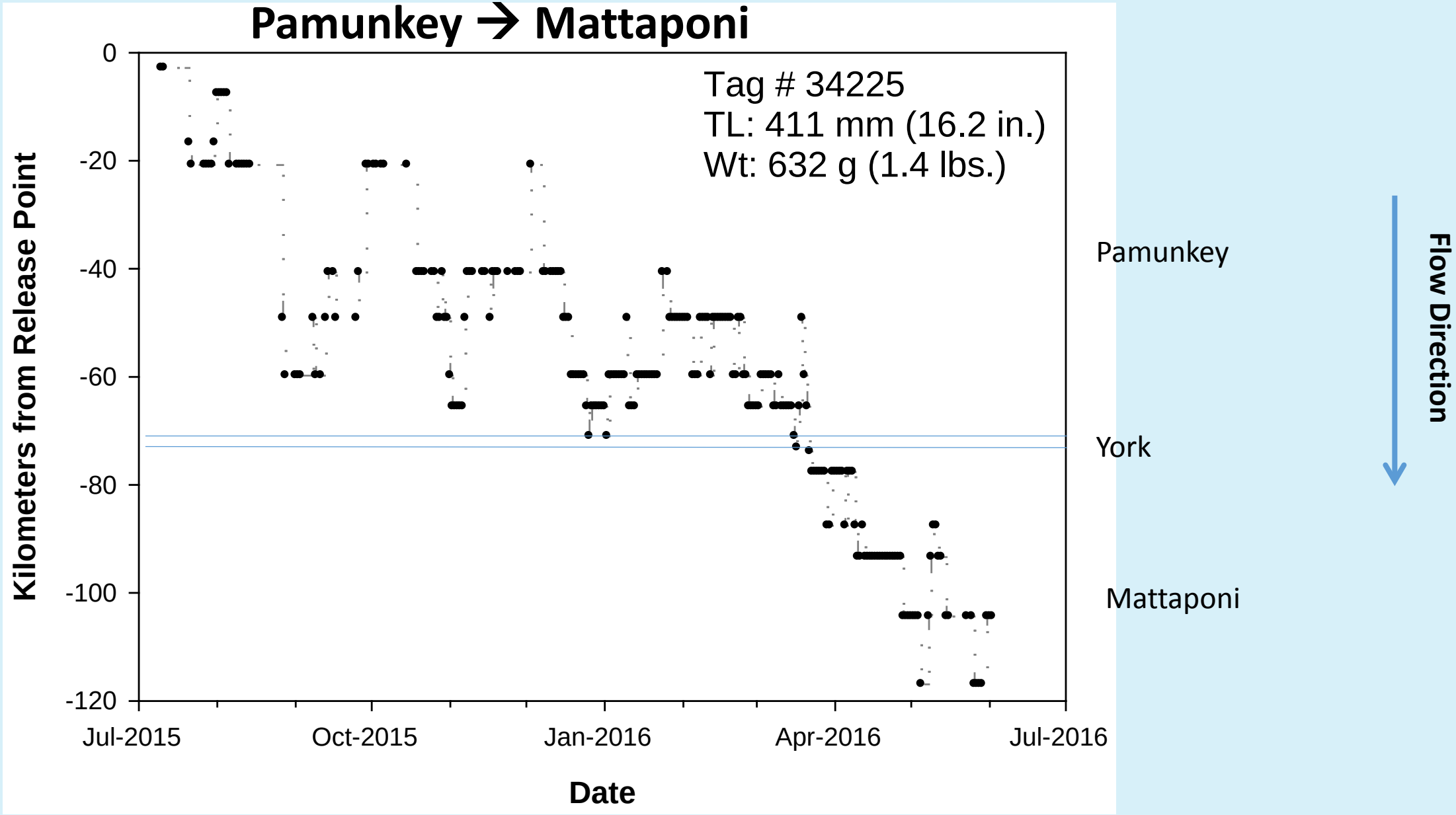

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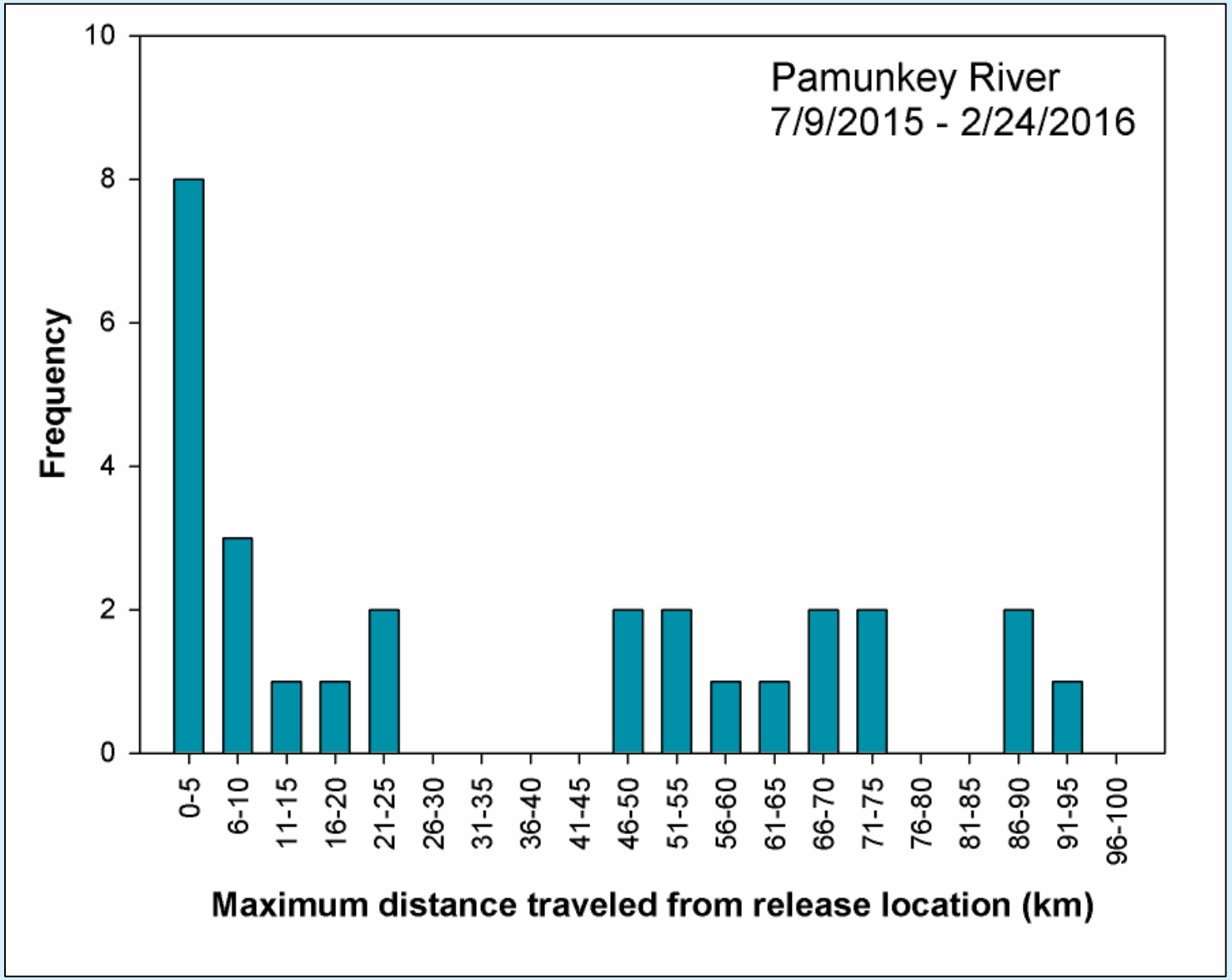

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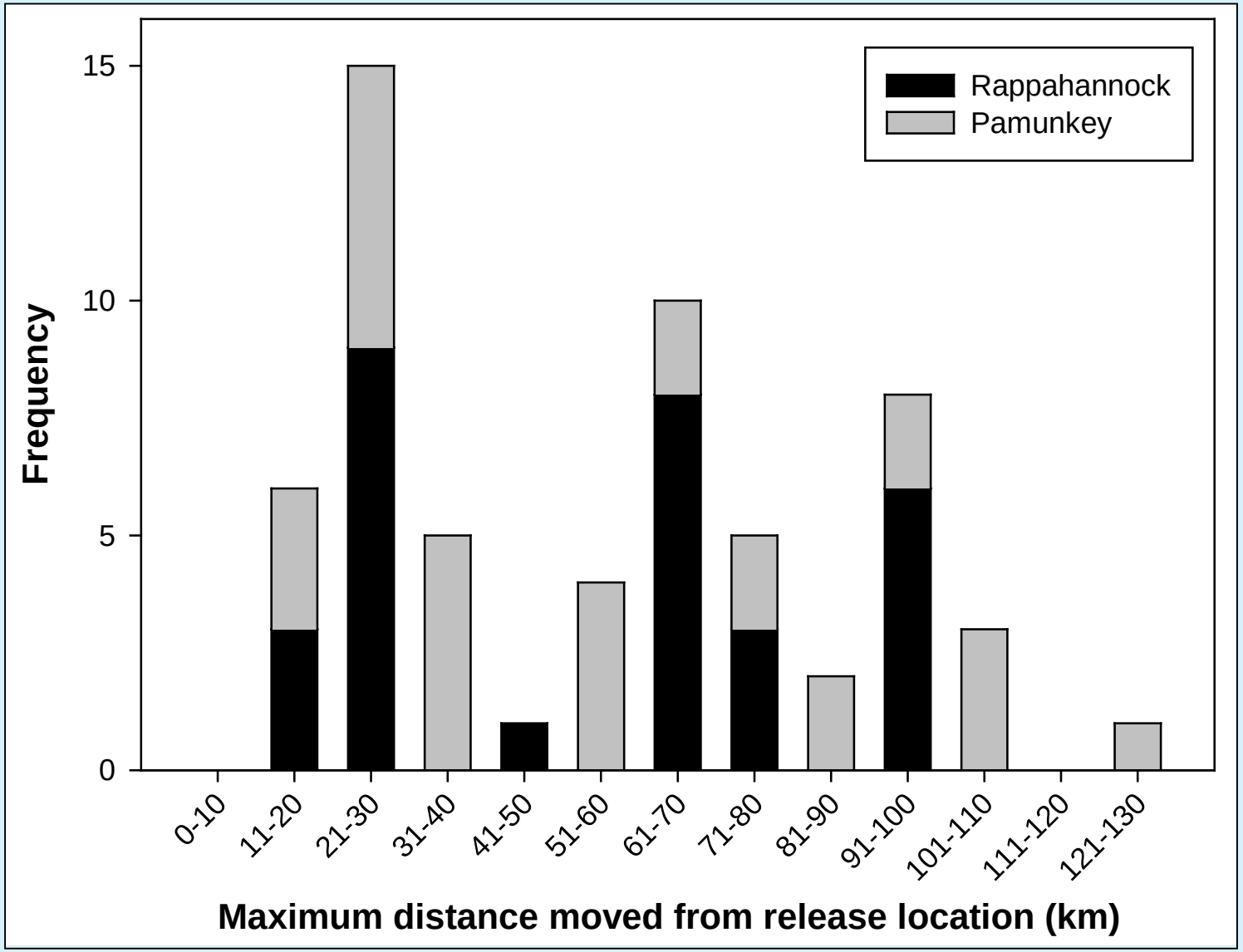
Maximum Distance by River



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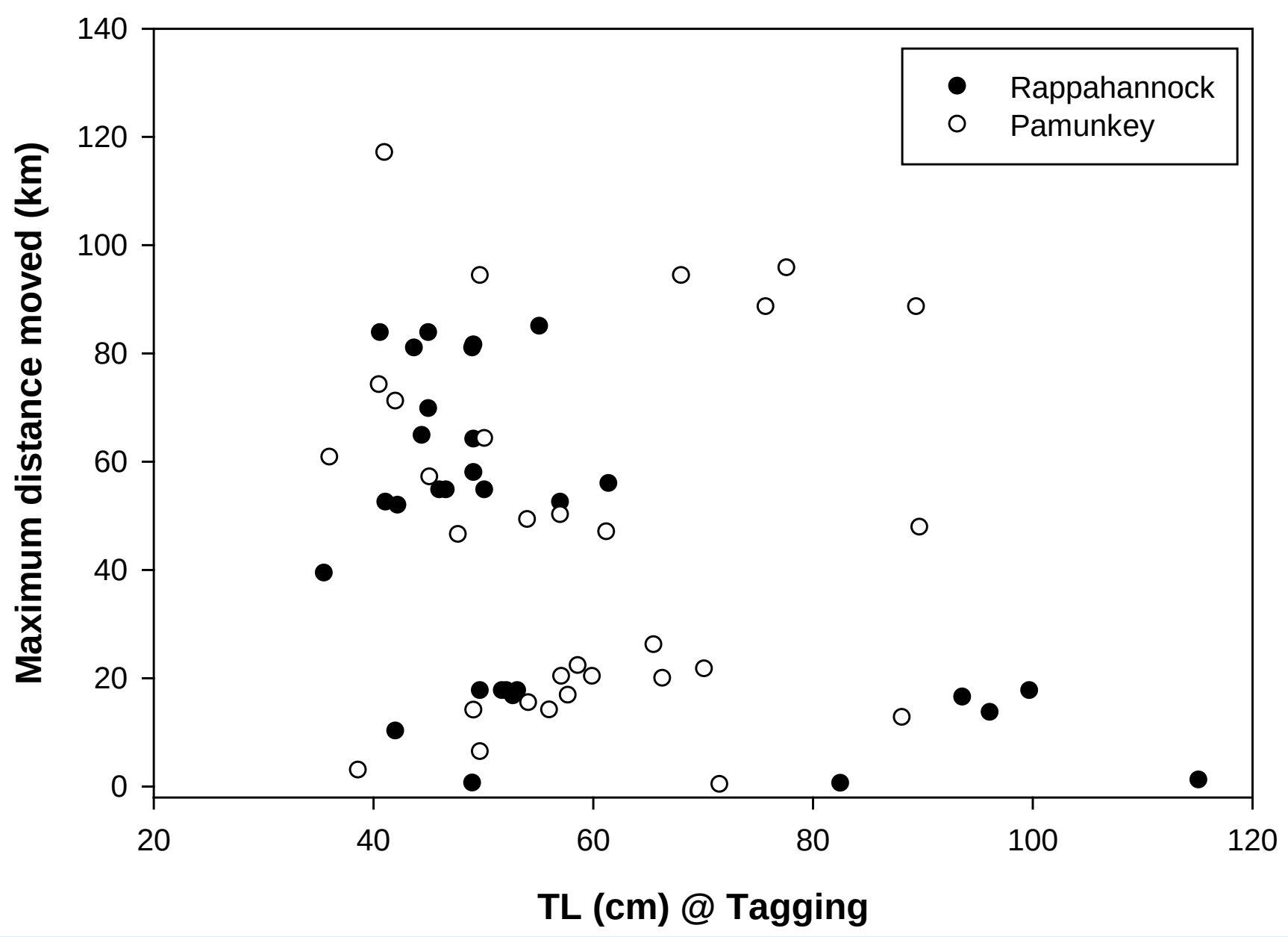
Fish size at tagging not an indicator of large movements



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Discussion Questions

- What is the value of this research to fishery managers?
- How do you foresee the results being used?

  - Fish can move throughout these river systems. Both large and relatively small fish moved large distances.

  - Explains why population distribution has occurred, and will help to predict further expansion – in association with habitat tolerances (e.g., salinity)

  - Blue Catfish also use Bosher's Dam fishway each year – not bound to tidal waters in Richmond on the James.

Discussion Questions

- What modifications should we make to current management strategies?
  - Consider consumption advisory designations – fish don't follow boundary lines
- Where are there still data gaps?
  - This was broad view. Further investigation of tributary usage, or smaller scale movements could be evaluated.
- What should be the next steps?