

VDGIF Catfish Monitoring



Aaron Bunch

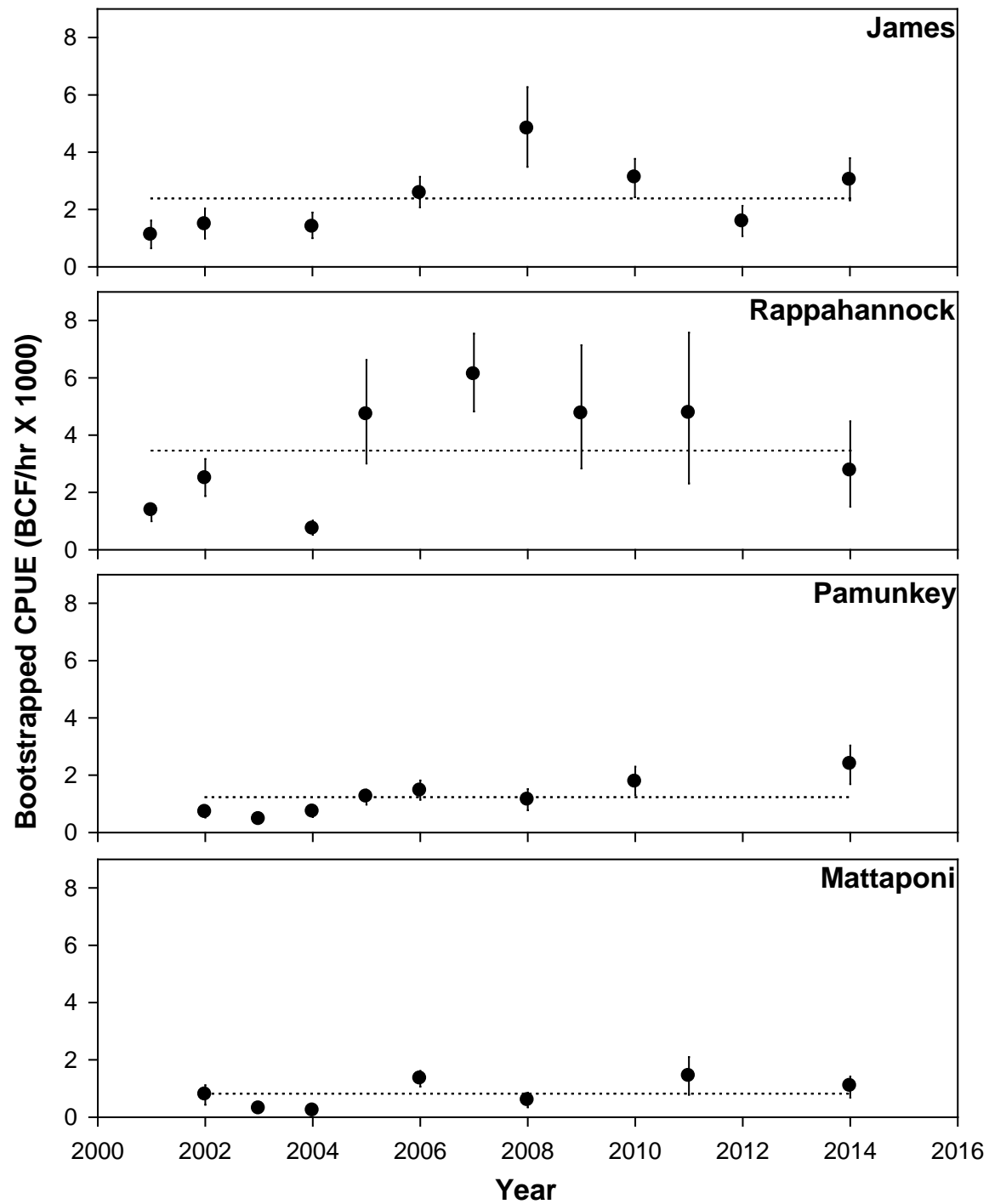
Sustainable Fisheries GIT; June 2, 2016



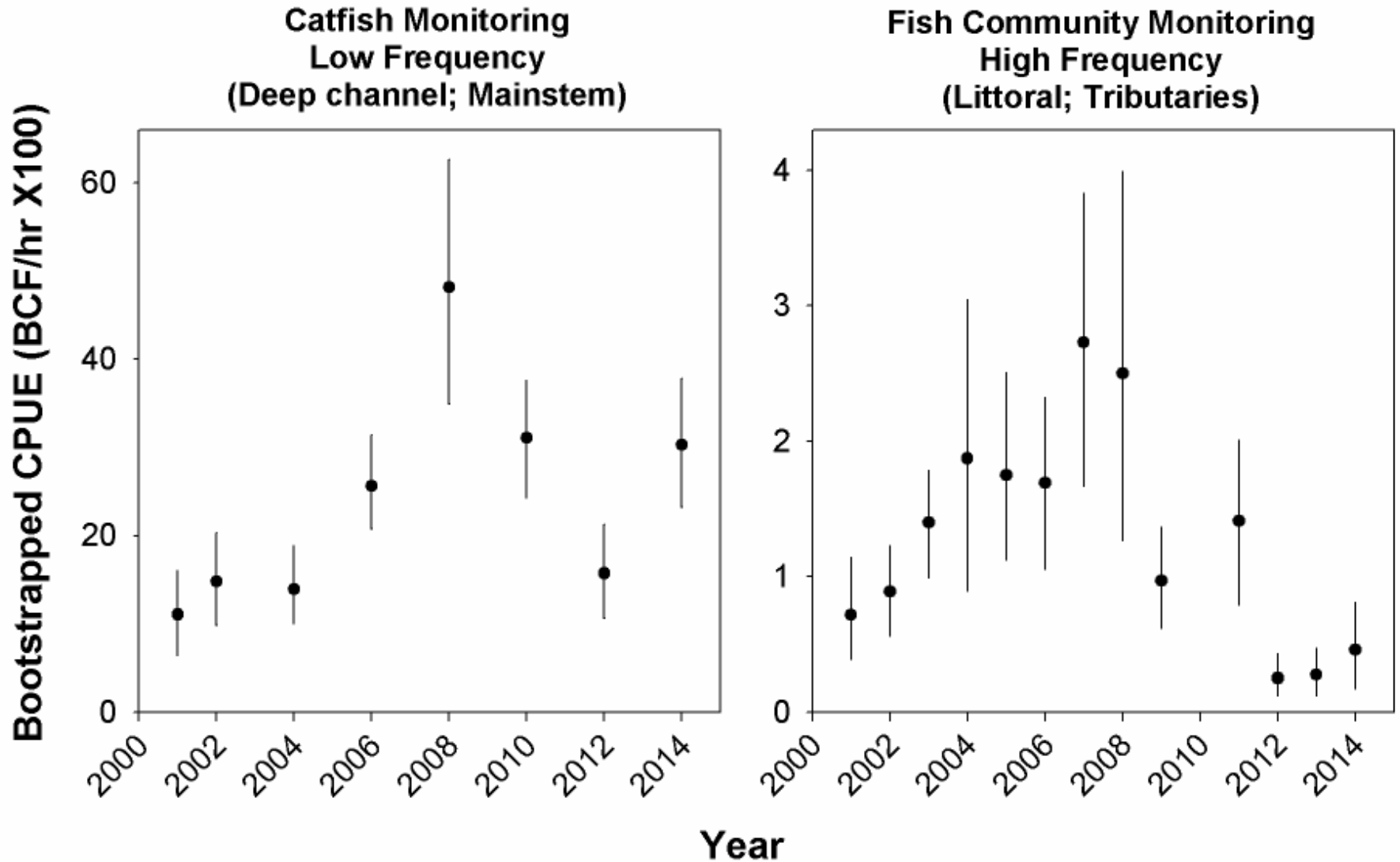
Standardized Low-Frequency



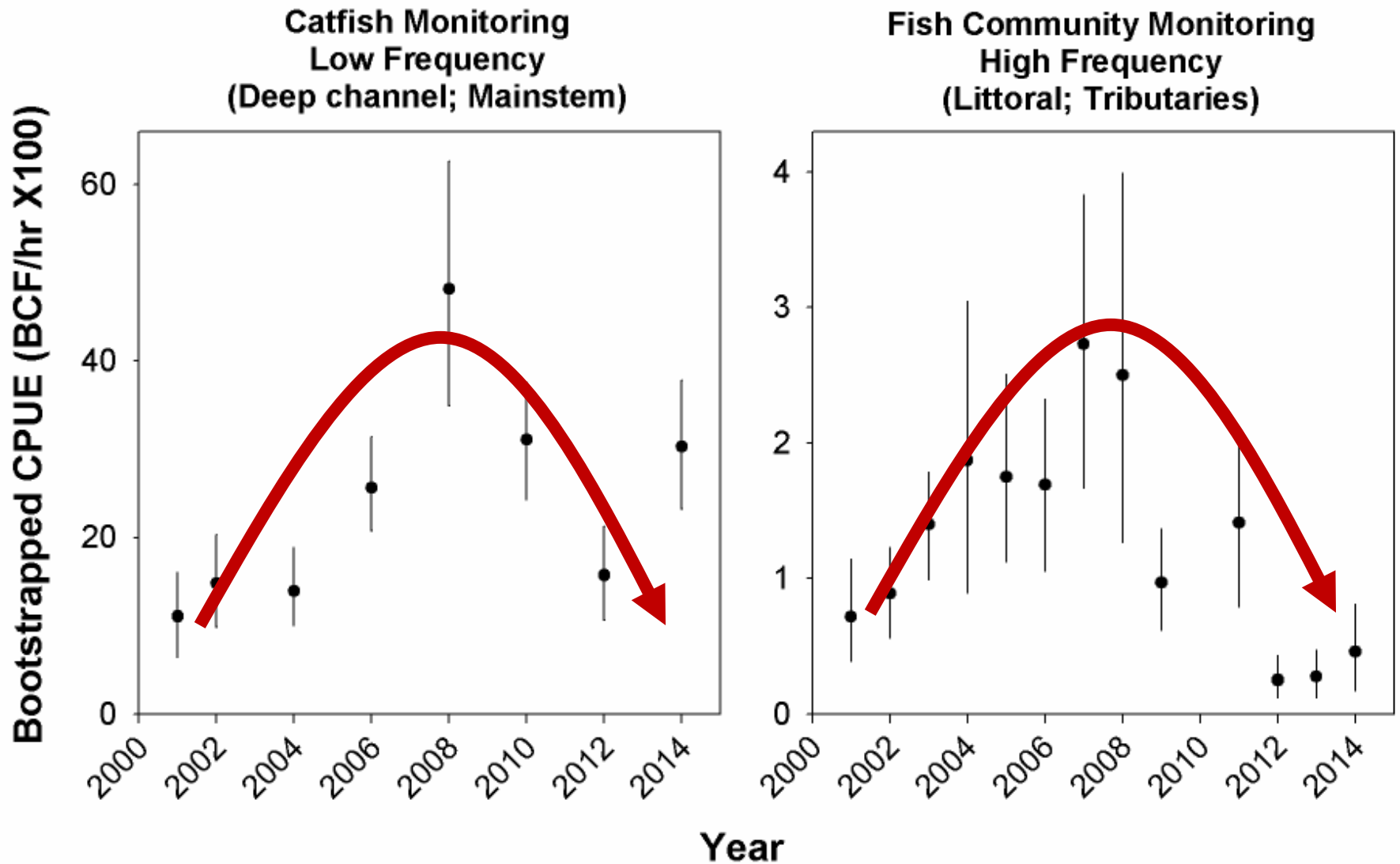
CPUE, Age & Growth, Size Structure



James River CPUE

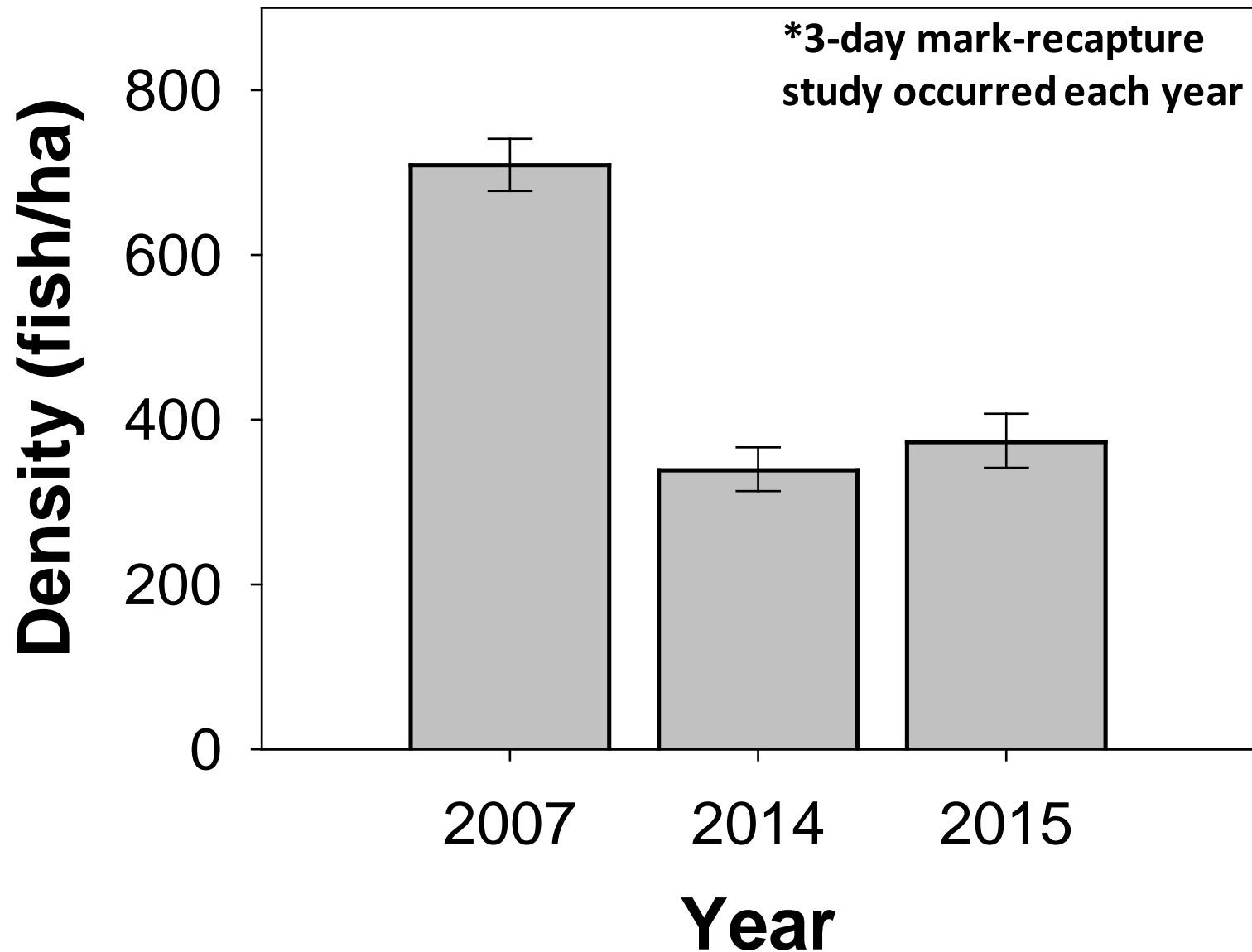


James River CPUE



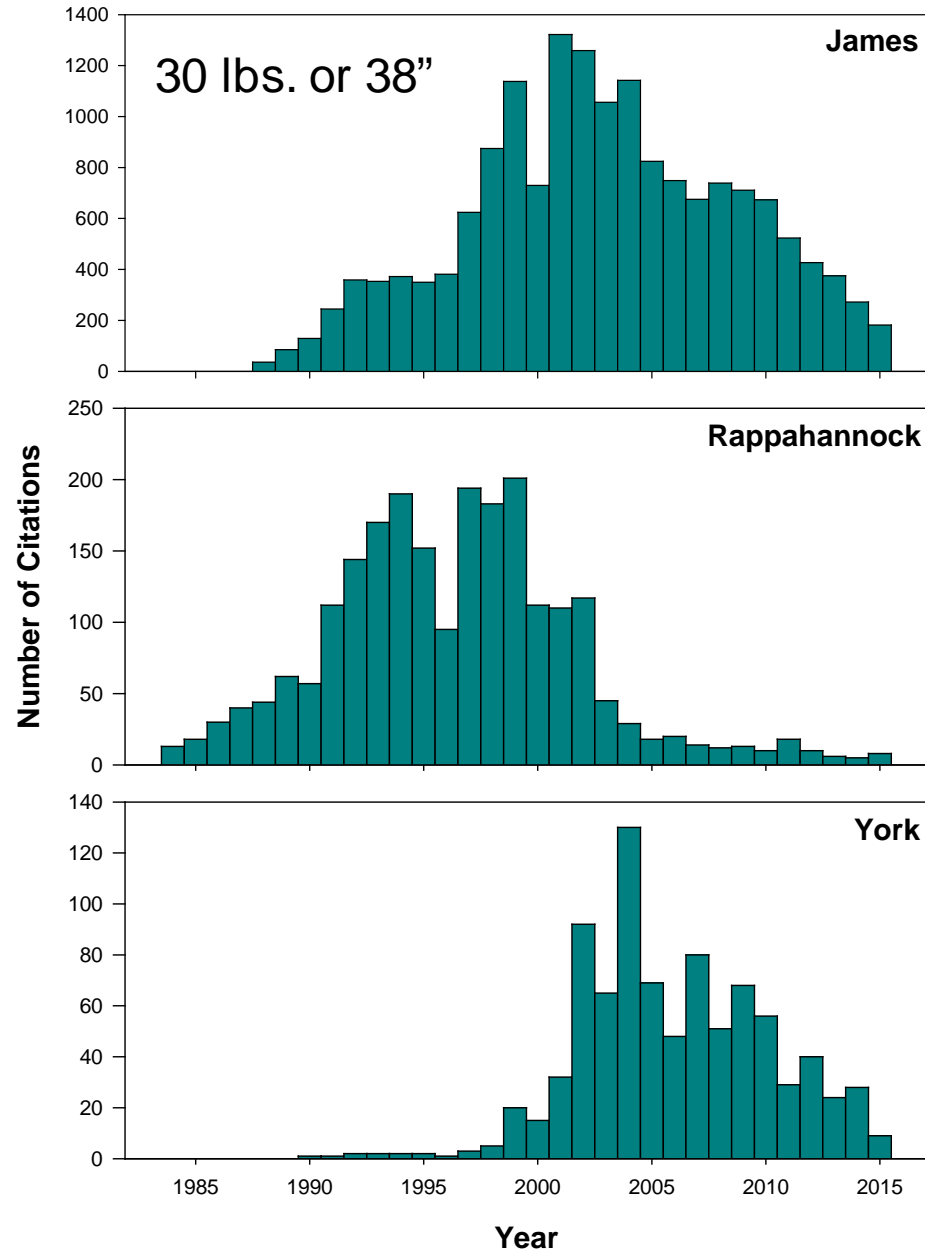


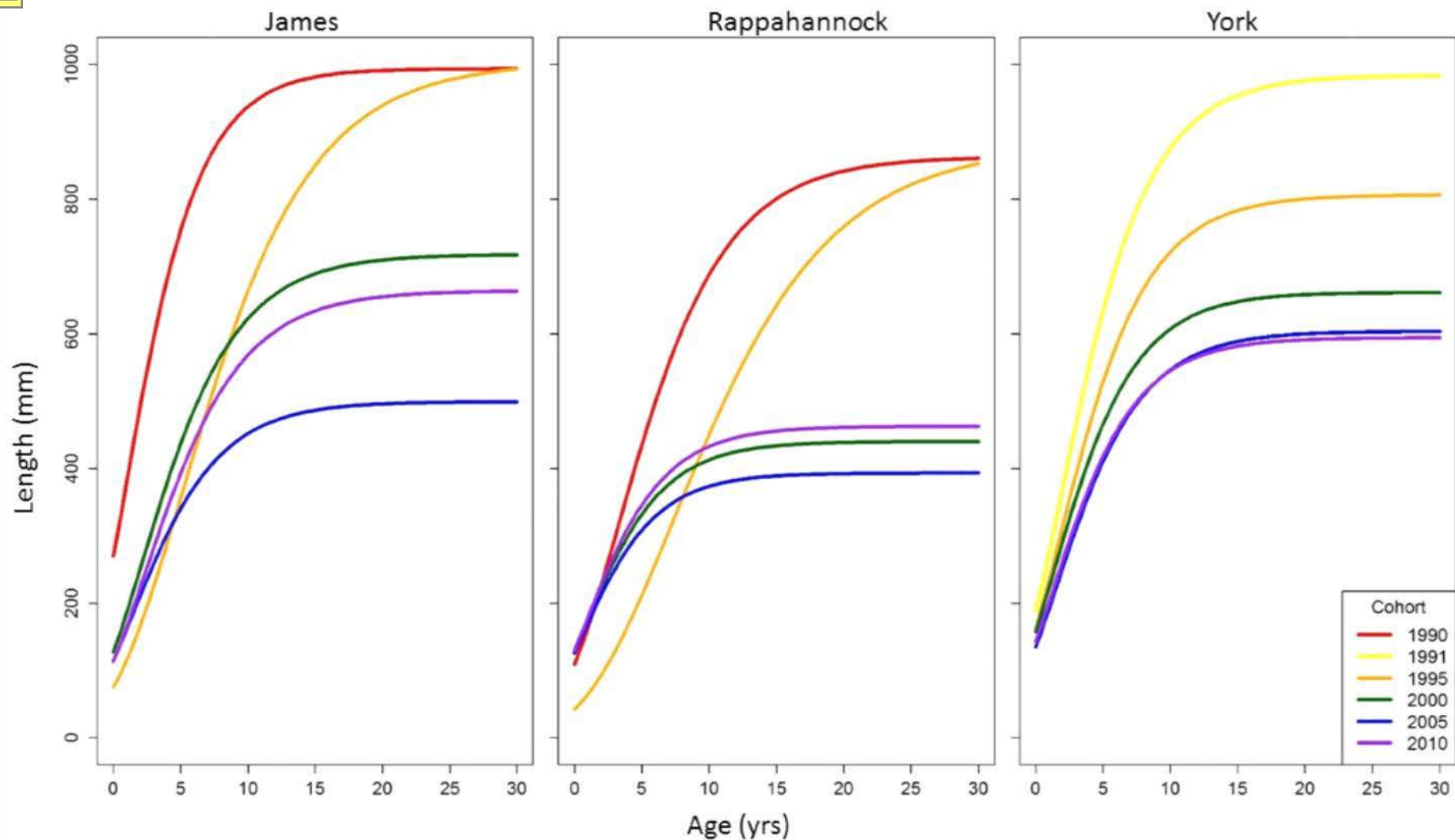
Powell Creek (Trib to James River)



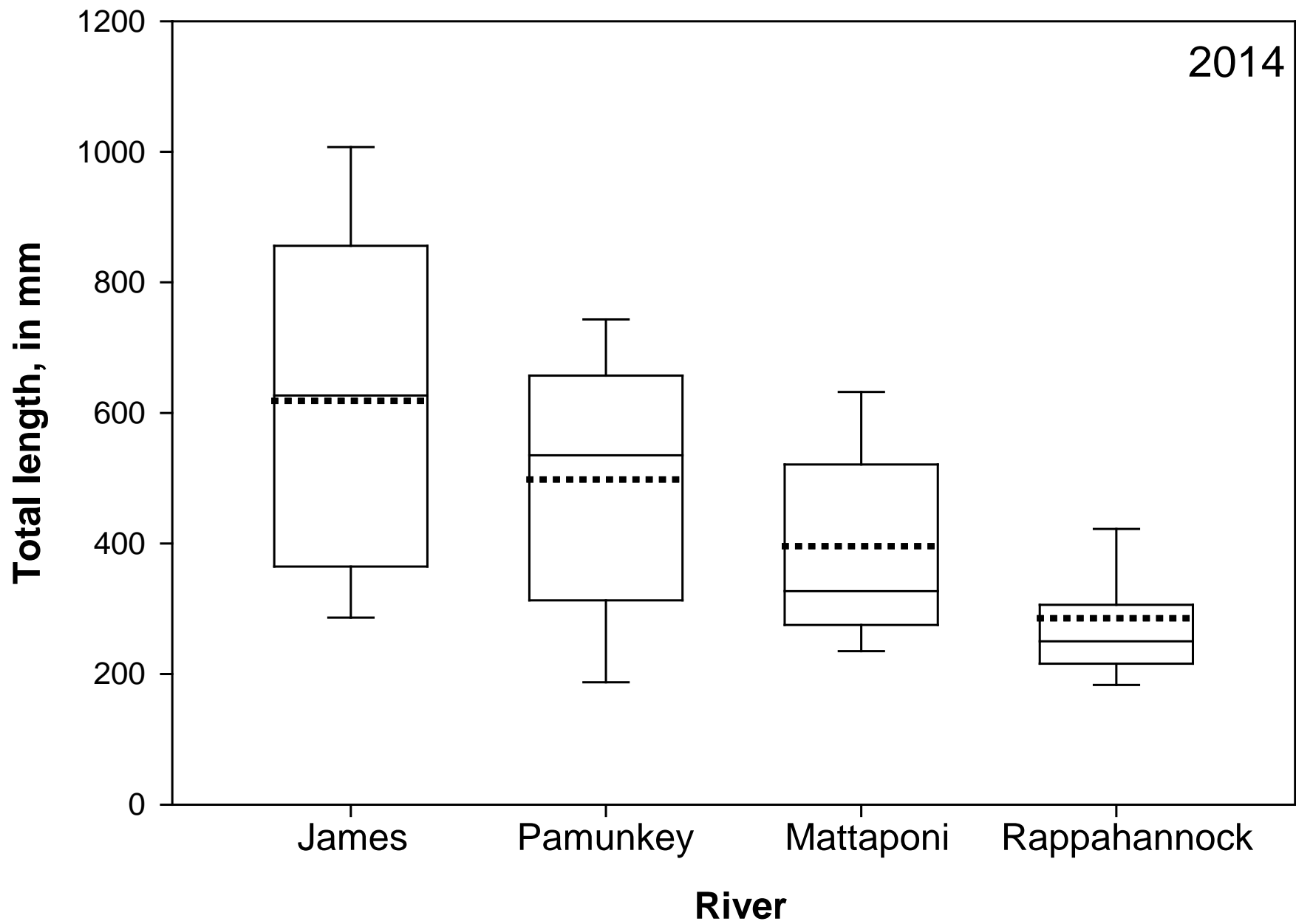


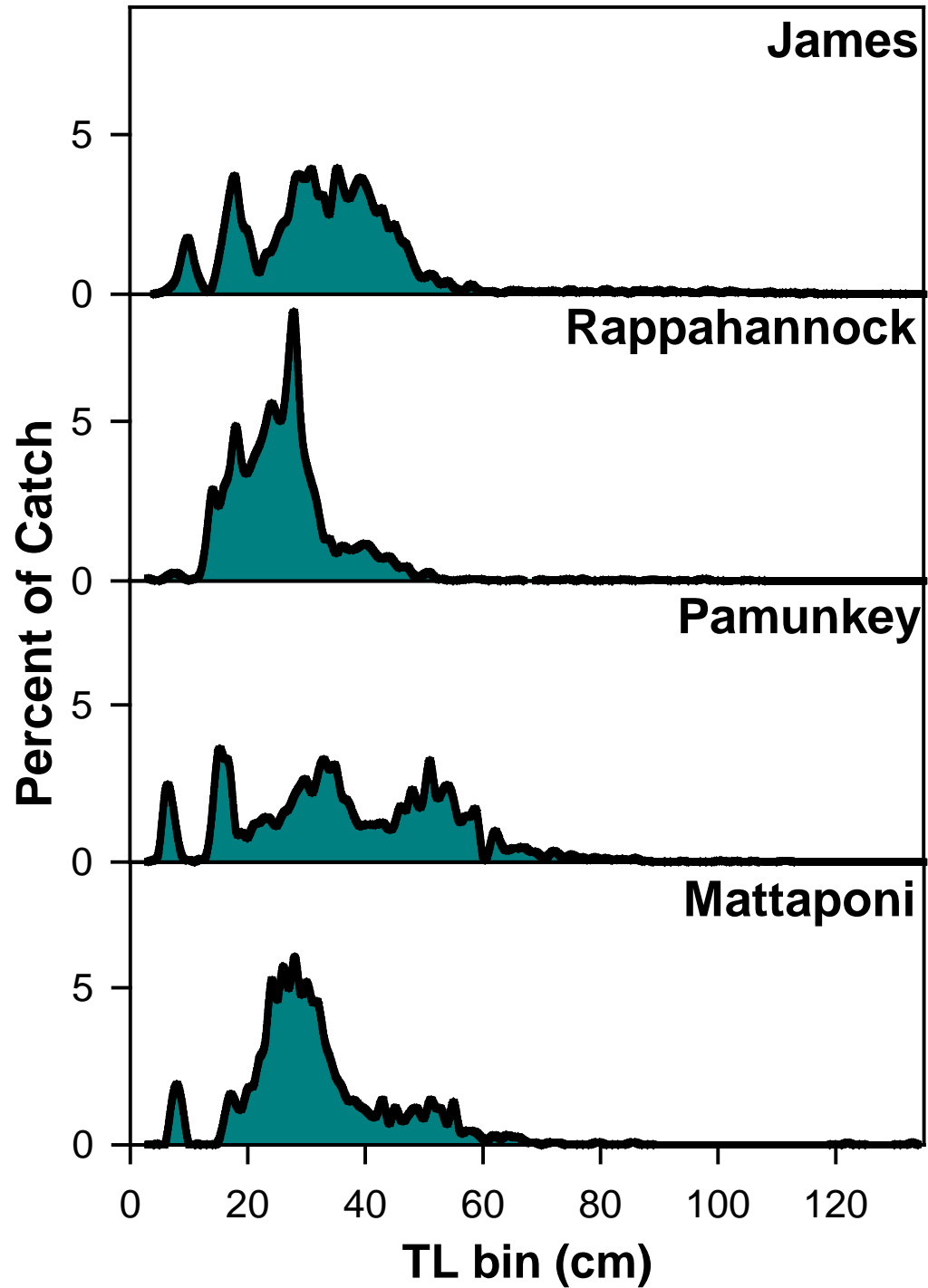
Citations Data

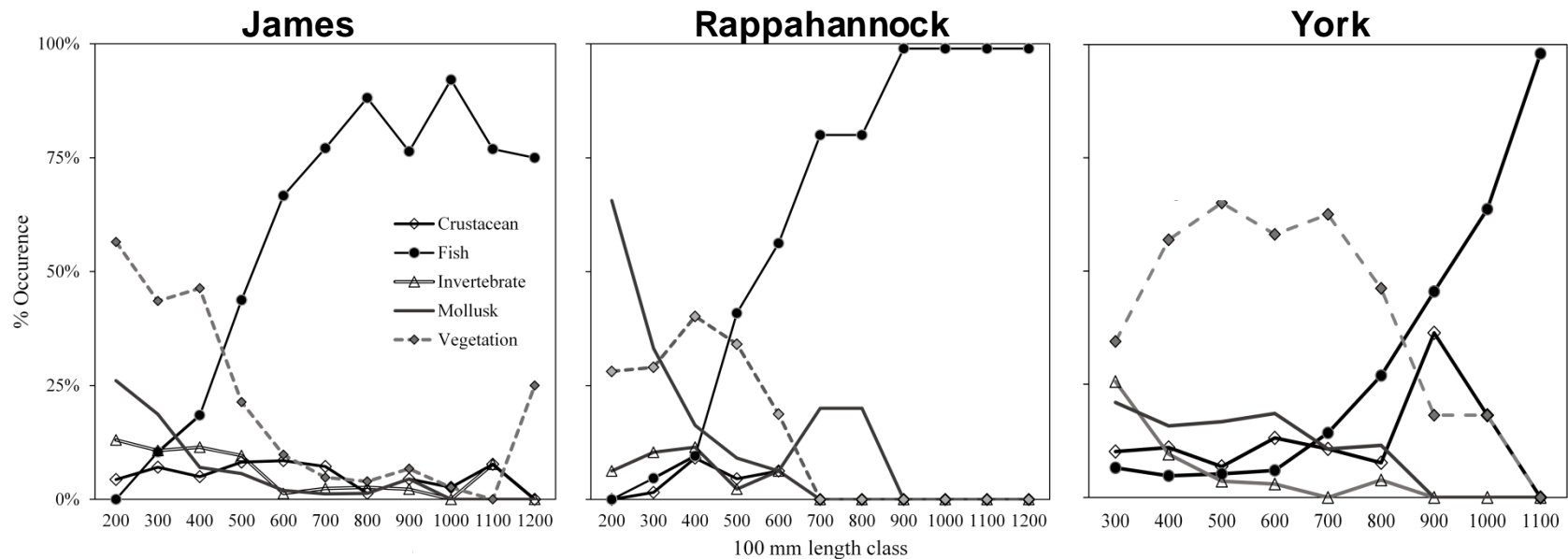




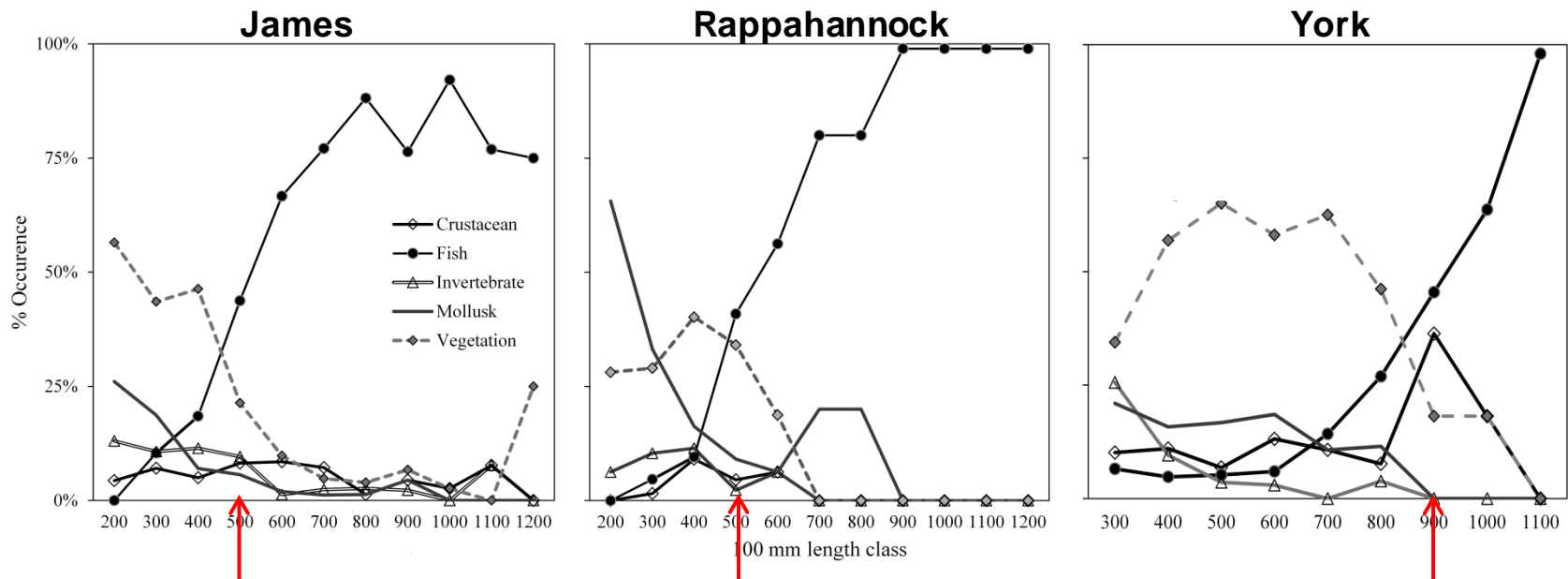
Predicted growth patterns from a von Bertalanffy growth function extended to a non-linear mixed effect model with random effects of river system and collection year. Cohorts are depicted by color (source: C. Hilling, VT).





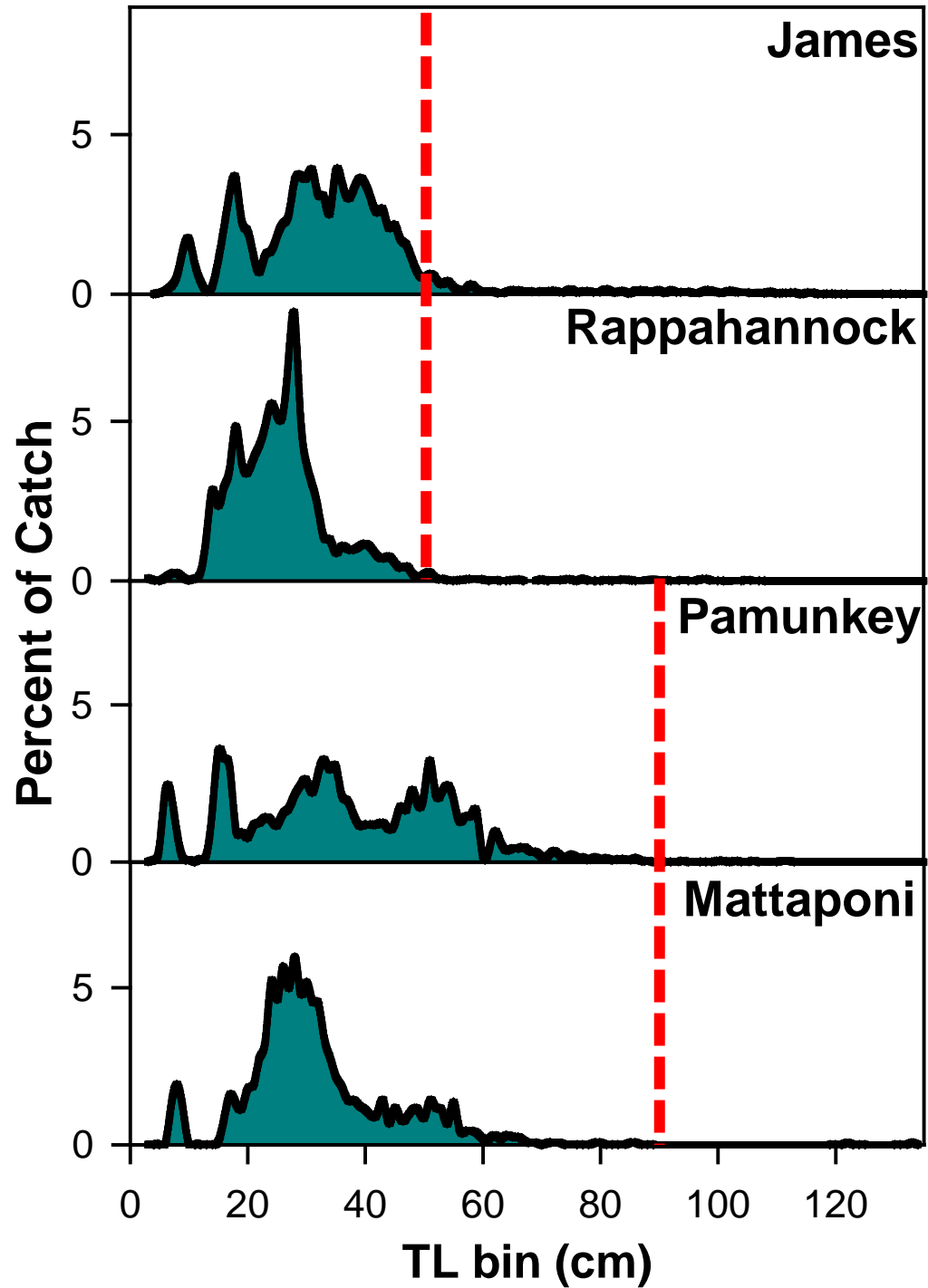


Percent occurrence of major food groups by 100 mm size bins from 2012 & 2013 stomach collections (n=10,000) across all seasons (Source: J. Schmidt, VT).



Ontogenetic shift towards fish prey items (varies by river system)

Percent occurrence of major food groups by 100 mm size bins from 2012 & 2013 stomach collections (n=10,000) across all seasons (Source: J. Schmidt, VT).





Take home

- Populations are still NOT in equilibrium.
- Highest abundance in James, Rapp – with declines since mid-2000s.
- Drop in James abundance demonstrated by 4 data sources (LF, HF, citations database, Powell Creek mark-recapture).
- Pamunkey population shows slight increasing trend and supports a high proportion of market sized fish.



Take home

- Strong shift toward slower growth evidenced by robust age and growth data, but magnitude varies by river.
- High proportion of fish are NOT piscivorous based on size structure and ontogenetic shifts.
- Standardized monitoring will continue in August 2016.
- More to come from Virginia Tech study.