Ashland, MO Natural Resources Science and Management (Fisheries and Wildlife Sciences)

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Diet Composition of Juvenile Blue and Channel Catfish During Different Seasons in the Lower Missouri River

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Blue and channel catfish are important sportfish that inhabit large, turbid rivers like the Missouri River. Both species coexist as adults in similar habitats by consuming different prey species, but little is known about the diet of juvenile catfish (0-200 mm). Our goal was to quantify and compare diet composition of juvenile blue and channel catfish throughout the summer to assess diet partitioning in early life stages. We opportunistically sampled catfish captured during pallid sturgeon sampling June-August on the lower Missouri River from river mile 130-212. Blue and channel catfish were classified into small (0-100 mm) and large (101-200 mm) size classes. To investigate seasonal diet, catfish were classified as early, mid, and late seasons of the summer. Stomachs were dissected and contents were identified as fish, crustaceans, plants, terrestrial insects, unidentified, and order for aquatic insects. We used regression analyses to understand the relationship of discharge and stomach fullness. We found significant differences in diet composition across both size classes and seasons for both species. Stomach fullness and discharge were statistically significant for small channel catfish. Diets between blue and channel catfish differed significantly for each size between seasons. Channel catfish are highly omnivorous compared to blue catfish and consume more plant material. Blue catfish consume more aquatic insects at small sizes than channel catfish. In the future, larger sample sizes of catfish across broad discharges will create higher accuracy for stomach fullness and discharge relationships. Based on the results, diet partitioning likely assists coexistence of juvenile channel and blue catfish in the Missouri River. For management implications, reduced competition for prey between blue and channel catfish increases the recruitment of age-0 catfish to the population through increased survival. Controlled dam releases allow access to the floodplain for increased food and habitat availability.