

Parasite Blitz: a valuable approach to gain knowledge of global parasite diversity

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Parasites are typically neglected in biodiversity surveys and consequently, global parasite diversity is vastly unknown. To address this deficit, parasitologists can adopt the concept of a BioBlitz and take a ‘moonshot’-like approach to identify parasite diversity in targeted localities. As a team of parasitologists with complementary and methodologically aligned expertise, we examined parasite diversity at a previously unexplored preserve in coastal South Carolina. Over two weeks in April 2023, we intensively sampled fishes and invertebrates, and collected sediment and water from four physically connected wetland habitats: a forested wetland, freshwater pond, brackish impoundment, and tidal creek. Parasites collected from hosts were preserved for both morphological and molecular analyses; sediment and water were preserved for subsequent DNA metabarcoding and high-throughput sequencing. Analyses and identifications are ongoing. To date, traditional collections revealed the presence of multiple species from 11 major parasite taxa infecting fishes, 9 infecting invertebrates, and 2 cases of hyperparasitism. At least one myxosporean species needs description. Here we present results from fish examination only. A total of 122 fish of 17 species were examined, of which 93 individuals (> 76% infection) of 16 species were infected with at least one parasite taxon. At the fish species level, 88 fish-parasite combinations were observed. Although limited by gear, collection permits, seasonality, and time constraints, the BioBlitz approach was fruitful overall and should be encouraged among the parasitologists’ community, moreover because metabarcoding results are expected to fill gaps in biodiversity missed by traditional methods.