

Addition to 04Trematode Lecture Notes

- F. Trematode-Killifish-Bird Interaction (Lafferty & Morris, 1996)
1. Life-cycle
 - a. Metacercariae in killifish, *Fundulus*
 - b. Predatory wading birds get infected when they eat killifish
 2. Parasitized killifish exhibited conspicuous behavior
 - a. Parasitized fish spent more time at surface than did unparasitized fish
 - b. Parasitized fish underwent behaviors such as “flashing” and “shimmying”
 - c. The higher the intensity of parasites in a fish, the more conspicuous behaviors it exhibited (Fig. 1)
 3. Differential predation experimental design
 - a. Two large cages built
 - (1) One covered to prevent bird access to fish
 - (2) Other uncovered, birds could feed on fish
 - b. Stocked each cage with equal numbers of parasitized and unparasitized fish
 - c. Ran experiment for 20 days and then sampled fish to determine relative numbers of parasitized and unparasitized fish
 - d. Results (Fig 2)
 - (1) Enclosed pen (no bird predation, but natural mortality)
 - (a) Unparasitized fish went from 53 to 50
 - (b) Parasitized fish: 95 to 91
 - (2) Open pen (bird predation and natural mortality)
 - (a) Unparasitized fish: 53 to 49
 - (b) Parasitized fish: 95 to 44
 - e. Conclusion:
 - (1) Parasitized fish were 31 times more likely to be eaten than unparasitized fish in the same habitat.
 - (2) Heavily parasitized fish were more likely to be eaten than lightly parasitized fish (Fig. 3)
 - f. Implications
 - (1) Trematode parasites might benefit birds by acting as a delivery system that enables birds to eat fish that are otherwise difficult to capture
 - (2) Parasites might allow the persistence of a predator in areas where one could not previously exist.