



ng/ml (SE = 0.6). Baseline plasma corticosterone levels in adult warblers did not vary significantly in relation to neighbor density (Table 4; Fig. 5). Interestingly, second-year birds did have significantly higher corticosterone levels compared to after-second year birds (Table 4).

## CONCLUSIONS

Despite our experimental approach in which we more than doubled conspecific neighbor density for some pairs, we did not find strong overall evidence that increased density negatively impacted Prothonotary Warbler behavior or reproductive output in our study system. Males showed increased

## Figures And Tables

Figure 1. Proportion (%) of prey attack maneuvers by type and stage made by male Prothonotary Warblers during summer 2010. See Table 1 for definitions.

Figure 2. Male Prothonotary Warbler foraging movement rates in relation to neighbor density and nest stage during behavioral observations in 2010. Movement rates were calculated by counting the number of times a male hopped and walked during an observation period, then dividing that count by the total length of time he was observed during that period. To control for other variables that were important in the model, least square means estimates and standard errors are shown.

Figure 3. Hatching success of Prothonotary Warblers in southern Illinois in relation to conspecific neighbor density and year. Least square means estimates and standard errors are shown.

Figure 4. Total number of nestlings produced per Prothonotary Warbler female per year in relation to conspecific neighbor density from 2008-2011. Only females who successfully raised a first brood and attempted a second brood are included in this analysis. Least square means estimates and their standard errors are shown.

Figure 5. Concentrations (ng/ml) of plasma corticosterone in adult Prothonotary Warblers in relation to conspecific neighbor density from 2008-2011. Least square means estimates are shown.