

## Factors influencing expanded use of urban estuarine habitats by foraging wading birds

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Urban estuarine habitats are often utilized by wildlife for foraging and other activities despite surrounding anthropogenic impact or disturbance. However little is known of the ecological factors that determine habitat value of these and other remnant natural habitats. We examined the use of urban estuarine habitats in a northeast US estuary to try to elucidate the factors driving enhanced foraging activity at these sites. Using a bioenergetic model, we compared energy intake to energy expenditure and examined differences in behavior and foraging success of great egrets *Egretta ardea* at six urban and rural salt marshes in Narragansett Bay, Rhode Island USA. Mean per site available nekton energy averaged  $4.44 \pm 0.97$  GJ site<sup>-1</sup> and was significantly higher at urban than at rural sites. While energy expenditure by birds was similar across all sites, mean strike and prey capture rate were significantly greater at urban sites, and  $70.1 \pm 12.2\%$  of strikes by egrets at urban sites were successful. Egrets foraging at urban sites consumed significantly more energy ( $23.2 \pm 6.62$  W bird<sup>-1</sup>) than those at rural sites. Model results indicated a net energy gain by egrets foraging at urban sites, versus a net energy loss at rural sites. Our results may help explain previously observed increases in the numbers of egrets foraging at urban estuarine habitats, and help provide input into decisions about the extent to which these areas should be considered for restoration or protection.