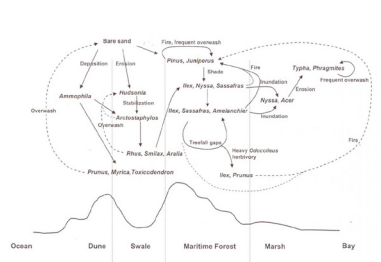# Conservation of Rare Vegetation Communities
of the Atlantic coastal Barrier islands

- ***The Challenge:*** A synthesis of the role of disturbance, in all of its manifestations, on the establishment and development of the American Holly forest is required to guide future conservation measures. Because many forest fragments have already endured >30 years of chronic deer herbivory, a legitimate question of how much more impact by deer can be tolerated and still conserve the essential type and character of the maritime forest remains unanswered.

- ***The Science:*** Over 30 years of accumulated research exists for Fire Island National Seashore and Gateway National Recreation Area. These data will be synthesized in the form of a computer simulation model, with emphasis on the effects of chronic herbivory caused by native white-tailed deer on this globally rare vegetation community. A successful model will recreate observed gap and seed bank dynamics, and emulate several important canopy disturbance forces including overwash from winter storms, acute wind-throw from tropical cyclones and responses to deer herbivory. The goal is to calculate the long-term (>50 yr) probability of persistence of the forest type under two scales of canopy disturbance and two levels of herbivory.
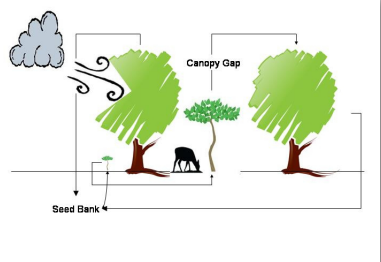
- ***The Future:*** Future work will address related changes to the forest herb-layer, and what, if any, measures need to be taken to propagate species that have dwindled in number due to decades of chronic herbivory in the maritime Holly forest.

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