From the Desk of

Jeff Peters, Director

State Game Land – Hunting License Division

MAT 3310 Class:

I heard you are looking for good problems to work on. Perhaps you can help me.

Every year my office is responsible for establishing the length of regular deer season (during which only mature males may be hunted) and unrestricted deer season (during which any deer except a fawn may be hunted) in the state game land. We also want to be sure that our forests are healthy, and so limiting the number of deer can help with reduction in tree damage. The state has also indicated that we cannot exceed 5 days of unrestricted hunting due to pressure from a local ecological group.

We have information from our annual survey of the deer population, during which we estimate the number of mature males and and other deer (females, yearlings, fawns, etc.). This year’s survey revealed an estimated 12000 mature males and 33600 other deer in the state game land.

We also have the following information, which we have high confidence in from past years.

* For each day of regular season, 150 mature male deer are killed and hunters spend $18000 at businesses near the game lands for hunting licenses, motels, meals, and other expenses.
* For each day of unrestricted season, 85 mature males and 400 other kinds of deer are killed and hunters spend around $20000.
* During one year, each mature male will cause $5 worth of damage to young trees and other deer do $2 worth of damage each.
* We need to be sure that there remain 10000 mature males and 27000 other deer for breeding stock for next year.
* Our goal is to set the number of days so that we maximize the net revenue for the businesses in the county minus the cost of tree damage.