Bald Head Island Deer Herd Management Methods Bald Head Island Conservancy, March 2025

The examples below are with imaginary deer numbers, but patterns are valid. We do not know exact rates of fawn recruitment, so rates of population increase are not known, but we do know that population will increase when there is no birth control because each doe has >1 fawn per year.

Immunocontraception Only Example

If the population is already above target, it is not possible to bring the population below target using immunocontraception alone. Immunocontraception will reduce the rate of pregnancy, but not completely stop it. Over 5 years of annual immunocontraception operations, we do not expect the population to decrease, and by having two years of unmanaged population growth at the beginning of the example, the population becomes far above target size. There is more uncertainty with immunocontraception because the success rate could change based on both biology and operational logistics. Logistically, it may only be possible to capture 50 deer per season, and this rate of pregnancy reduction may not be able to keep up with population growth. If population growth continues at the same rate, the island may have >150 does when immunocontraception begins.



Cull Only Example

It is possible to reduce the population size as much as is needed through culling. It is not as time-intensive as immunocontraception, and >50 deer could be removed from the population per year (or as many as are needed). However, because pregnancy rates are not impacted, the population would be expected to "bounce back" each year, so culling would need to be repeated to keep the population below target. The population size will decrease as long as the number of animals removed from the population is greater than the recruitment rate.



Cull + Immunocontraception Example

For immunocontraception to have a chance at maintaining the population size below (or near) target, an initial cull or removal of animals from the population is necessary. The initial cull brings the population significantly below target, and then immunocontraception will reduce pregnancy rates over the next two years. Immunocontraception could begin the same year as the cull, or the following year. This is the method that was used at the beginning of the first immuno project in 2014.



Estimated Costs

We have calculated the cost of immunocontraception based on the Conservancy conducting operations with a team of a supervisor + seasonal technicians, and are fairly accurate. Costs of culling are based on estimates from the NC Wildlife Resources Commission for similar projects, and are not as exact. Although costs for only three years are estimated here, both methods would need to be continued nearly indefinitely to keep the deer population under control.

Immunocontraception only - 50 does per year

Year 1 \$100,000 Year 2 \$83,000 Year 3 \$85,000

Cull only - 50 does per year Years 1-3 \$35,000 (estimate)

Cull + Immunocontraception Year 1 \$35,000 (estimate) Year 2 \$100,000 Year 3 \$83,000