

Excerpts from:
FINAL REPORT

**2019 DEER MANAGEMENT PROGRAM
FOR
ESSEX COUNTY, NEW JERSEY**

SOUTH MOUNTAIN RESERVATION
HILLTOP RESERVATION

by

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July 25, 2019

Results

“Based on spotlight counts conducted on May 3, 2018, the Program Guidelines for the 2019 Essex County Deer Management Program set goals for the removal of 132 deer from South Mountain Reservation in 6 half-day sessions, and 107 deer from the Hilltop Reservation in another 6 afternoon sessions. In actuality, the 6 half-days of hunting yielded 101 deer from South Mountain. Ninety-nine deer were taken out of the Hilltop Reservation in the other 6 half-days.” (p. 13)

Deer Data

“Fifty-seven of the 85 females, or 67%, were pregnant, which is an increase from the 62% rate in 2018, but still lower than the 80% rate in 2017 and the 75% rate in 2016. That number includes 52 of the 56 adult females and 5 of the 29 female fawns. The 57 pregnant females were carrying a total of 100 fetuses, for an average of 1.75 each. That average is consistent with the 1.7, 1.75 and 1.79 averages in 2018, 2017 and 2016, but less than the 1.94 average in 2015. Thirty-nine does (75%) were carrying twins (a 15% jump from last year) and two bore triplets.” (p.19)

Program Costs

“As shown, the total direct program costs amounted to \$104,288.56. With 200 deer having been removed, this expense equates to a cost of \$521.44 per deer, which is a 9% decrease from the cost of \$571.65 in 2018, when only 139 deer were harvested. And the cost is 30% lower than the \$736.10 per deer cost in 2015, when inclement weather resulted in a low harvest, and fixed costs were spread out over less deer.” (p.20)

Subsequent Census Data [Boldface added.]

“Spotlight counts of deer were conducted in South Mountain Reservation, Eagle Rock Reservation and the Hilltop Property on April 23, 2019...

“In the 2019 spotlight count, 32 deer were observed in the 3.2 square mile South Mountain Reservation, with about 35% of the total land area having been accessible to spotlighting. Therefore, the number of deer observed (32) was divided by .35 to include the non-viewable area, and the corrected figure was divided by 3.2 to determine density on a per square mile basis. **That calculation yielded a Spring, 2019 deer population estimate of 29 deer per square mile, or a total of 92 deer in the 2,047-acre park...**

“Likewise, a total of 25 deer were counted by spotlight in the **265-acre Hilltop Property**. The spotlights reached about 50% of the total land area. Using the formula described above yields a Spring, 2019 population estimate of 50 deer, or **114 per square mile**...

“And lastly, at Eagle Rock Reservation, 5 deer were observed in the 408-acre park during the spotlight count. Approximately 25% of the land area was accessible to viewing by spotlight. These numbers result in a population estimate of 20 deer, or 29 deer per square mile.” (p.21)

Recommendations [This section is unredacted. Boldface added.]

“The results of the 2019 deer management program and the subsequent spotlight counts show that the population of deer in three Essex County parks is greatly reduced since deer management activities were first undertaken in 2008. However, that population, especially in the Hilltop Reservation, is still considerably higher than it should be.

“Forest ecologists recommend a deer density no greater than 20 deer per square mile in a healthy forest ecosystem. **In a forest that is damaged by overbrowsing by deer, as is certainly the case at South Mountain and Hilltop Reservations, the density might need to be reduced to as low as 5 deer per square mile in order for forest regeneration to succeed.**

“In order to gauge the likelihood of that success, we must project the deer population estimates ahead to the winter of 2019-20, after factoring in new births from Spring/early summer of 2019. We will assume conservatively, based on an average of the last 3 years, that 46% of the deer population is female. We will also assume, again based on 3-year averages, that 70% of the females are pregnant, and that the pregnant females will deliver an average of 1.73 offspring each. The number of deer will be reduced by 15% to account for loss to natural or accidental mortality.

“Running out those numbers for **South Mountain Reservation**, we calculate an overwintering population for 2019-20 of 122 deer (38 per square mile), which is 2 times the recommended population of 64 deer (20/square mile x 3.2 square miles) for this park, if this park had a healthy ecosystem. At the 5 deer/square mile density recommended for an impaired ecosystem, there is an excess of 106 deer. [Note: This deer density estimate is 7.6 times the level recommended to aid forest regeneration in an impaired ecosystem.]

“Essex County has invested considerable resources to establish 41 [42] fenced enclosures throughout South Mountain Reservation, in which native plantings have been installed to jumpstart the forest’s recovery from the impacts of deer. In theory, as the deer population is incrementally decreased in size by the deer management program, the native plantings will have an increasing chance of repopulating themselves as they spread their seed beyond the fenced enclosures.

“**Therefore, reduction of the deer population in South Mountain Reservation should be continued.** Though the Deer Population Estimator (see Appendix I) calls for removing 106 deer over the course of 5 shifts, **I recommend repeating a 6-day season to ensure that the density is finally pushed as low as possible.** It is recommended that hunting occur at 14 baited sites. Based on past experience, hunting should be limited to afternoon shifts only.

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“The estimated 2019-20 overwintering population of deer for the **Hilltop Property** will be 66 deer (150/sq. mi.), or 64 deer more than the 2 deer recommended for this 0.44 square mile area. Therefore, the effort at the Hilltop Property should be continued in earnest. The extremely high density in and around the Hilltop Property needs to be cut drastically for the safety and welfare of park neighbors and the motoring public. However, it is not practical, fiscally responsible or socially acceptable to extend the hunting season across the 13 shifts recommended by the Deer Population Estimator. Therefore, in 2020, hunting should again occur on 6 afternoons, at 8 baited sites, with a goal of removing 40 deer.

“The 2019-20 overwintering population at Eagle Rock will be 26 deer, which is 23 more than the recommended population of 3 deer for this 0.68 square mile park. Removing that relatively small number of deer is still not warranted, in light of the manpower that would be required to accomplish it and the costs associated with securing that park during hunting. Therefore, it is not recommended that hunting be resumed at Eagle Rock Reservation in 2020.

“However, it is likely that in 2021, the population densities will be such as to allow 3 to 6 of the hunting shifts to be allocated to Eagle Rock Reservation, rather than South Mountain Reservation.

“Spotlight counts should be conducted as soon as possible after the 2020 deer removal concludes. They are important to determining the success of each harvest and in guiding continued deer removal efforts.” (pp.22-23) [Note: The Conservancy is recommending that a complementary infrared drone survey be used in 2020 to corroborate the spotlight data.]