

University of Georgia
CATOCTIN MOUNTAIN PARK COOPERATIVE DEER RESEARCH PROJECT
PROGRESS REPORT

April 1988

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Dr. Robert J. Warren and Charles R. Ford, School of Forest Resources, University of Georgia, arrived at CATO on 26 January 1988 to begin work on this deer research project. Preliminary meetings were held with CATO and Center for Urban Ecology staff. Dr. Warren gave a presentation on an immunosterilization technique that may be applicable to deer on CATO.

Field work began on 27 January to evaluate the status of the deer herd and to try to determine if an immunosterilization technique as described in Dr. Warren's presentation may be suitable given the physical and political constraints of CATO. Work so far has concentrated in five main areas: 1) capture and radio-collaring of deer by trapping--through the use of drop net and Clover traps, 2) capture and radio-collaring of deer with immobilization drugs, 3) development of radiotelemetry survey route and schedule, 4) necropsy of deer for evaluation of herd condition, and 5) securing additional funding for next fiscal year's work.

Capture and radio-collaring of deer by trapping

The goal of this part of the project was to capture and radio-collar 8 adult does to evaluate their movements in and out of the CATO boundaries. The first step was to locate a site large enough to set up our 70'x70' drop net. One site was tried near Misty Mount, the

largest site found, but it was not large enough. A suitable area should be free of trees and other obstructions for at least 100 feet square. We had hoped to use this net as both a labor and time-efficient method to achieve multiple captures of deer for each drop of the net. However, this technique is not feasible for use at CATO at this time.

The next step was to borrow five additional Clover type traps to use with the two traps already set at CATO. These traps were borrowed from Doug Cottam, a Pennsylvania State University graduate student working at Gettysburg National Military Park. Three of these traps were reparable, giving us a total of five traps. Due to time constraints, we were unable to prebait the usual 2-3 weeks prior to setting a trap, and to set traps only in areas of deer use. Instead we set the traps in areas that appeared to be high use areas by deer and hoped that the deer would be attracted to the bait and be trapped. All traps were baited with apples and/or pears donated by Catoctin Mountain Orchard. Shelled corn also was tried but was not taken by deer.

The five Clover traps were set out in scattered locations to capture deer from different areas of the park. Traps were checked twice daily, morning and evening and rebaited as necessary.

Four deer were eventually captured in 82 trap nights, 29 January - 15 February. One adult doe, which was fitted with a radio collar and released, 2 buck fawns, which were released, and one doe fawn, which died from injuries received in the trap. The doe was captured near the Brown's Farm site in a stand of white pines.

We experienced several problems with trapping: 1) deer did not start taking bait and/or approaching or entering the trap in most areas until about 7-10 days had elapsed since baiting/trapping began, 2) snow,

sleet, and cold temperatures prevented the trigger mechanism from operating properly, and we did not catch deer that entered traps on at least 3 occasions, 3) traps were tripped on at least 5 occasions by raccoons and squirrels.

The following are a list of recommendations that may help increase future trapping success on CATO:

- 1) Prebaiting for 2-3 weeks prior to trapping is essential. Rebait areas as needed every other day and use bait that can be obtained easily.
- 2) Set traps on those areas that show constant use by deer as determined by amount of bait removed.
- 3) Set traps within a 5-minute walk from roads that will be open in all weather conditions.
- 4) Modifications need to be made to make traps operable under all weather conditions and triggered in a manner that will not be affected by raccoons or other pests.
- 5) Locate traps away from camping areas and other areas that may already attract raccoons; free-ranging dogs may also be a problem.

Capture and radio-collaring of deer with immobilizing drugs

Three does were captured and radio-collared by Dr. John Hadidian and associates prior to our arrival. We subsequently captured and radio-collared two does. Two additional does were killed during the darting process by excessive penetration of the Pneu-Darts due to equipment problems. One of the does captured by Dr. Hadidian was seen commonly for about 3 weeks after capture. She has not been seen nor signals received from her radio collar since then, and it is assumed

that she has been poached and removed from the area. Attempts to locate the radio signal by driving many of the county roads within an approximately 10-mile circle from CATO have failed. Therefore, we currently have five deer with radio collars transmitting on CATO at this time.

One doe was captured at the intersection of Manahan Road and Park Central Road and the other was captured about 0.5 mile west of Hog Rock Parking Area on Park Central Road.

We experienced several problems with the darting operation: 1) we had excessive penetration of 3 cc Pneu-Darts due to the close range (20-25 m) of deer and the inability to regulate the power selector on our gun; 2) the cold weather we experienced during these attempts caused the Rompun/Ketamine mixture to precipitate requiring constant attention to keep the darts warm until just prior of shooting. The precipitation of the drugs may have caused problems in the absorption of the drugs by deer after injection. The Rompun/Ketamine mixture was used because its effects could be reversed by using the antagonist Yohimbine hydrochloride, which would shorten the down time of the deer and hopefully reduce the effects of capture during the very cold weather; 3) we had some extremely long periods of time, > 1 hour after injection, before the deer was immobilized. This may have been a result of the drugs precipitating or we were underdosing the deer; 4) we had problems with darts bouncing out of deer without injecting the immobilizing drugs.

The following are a list of recommendations that may help improve the success in capturing deer with a tranquilizer gun.

- 1) Wait until warmer weather to try to dart deer. The use of bait sites near the road also may help.
- 2) We plan to use darts with 1-inch needles and plastic barbs to prevent the darts from bouncing out.
- 3) The drug dosage should be increased approximately 20%.
- 4) All equipment is being modified and repaired as needed.

Development of radiotelemetry survey route and schedule

A radiotelemetry route was developed to monitor the five does currently radio-collared on CATO. A 17 station, 21-mile route that completely encircled the park was tested first. However, signals were not received at 9 of these stations so the route was modified. Stations were selected in areas that would be relatively safe to use and were at least 0.1 mile apart. A map has been prepared with these stations.

Data collection will be on a monthly basis for 7 consecutive days. There will be two runs made each day, one beginning 1 hour after sunrise and the other, 1 hour before sunset. Charles Ford ran the route several times with Bill Smith and with John Hadidian and Dianne Ingram in February. They were checked out thoroughly on the proper data collection technique and equipment use and care. They will be responsible for training other assistants.

A schedule has been set for further monitoring: A 7-day period beginning 11 April, 16 May, 13 June, 11 July, 15 August, and 12 September are the dates for the next six monitoring periods.

All location data will be used with the XYLOG and TELEM programs to map and study the movements of these deer.

Necropsy of deer for evaluation of herd condition

Examination of deer carcasses and collection of biological samples are necessary to best evaluate deer herd health. A necropsy and sample collection protocol was developed for CATO deer and Dr. John Hadidian was trained thoroughly in the procedure.

To date, six deer have been necropsied and samples collected and returned to the lab at the University of Georgia where they are undergoing analysis at this time. The six deer include: 3 road kills, 2 does killed by the Pneu-Darts and 1 doe fawn that died due to trapping injuries.

We have secured the necessary permits from Maryland Forest, Park, and Wildlife Service to collect and utilize these and future samples. Arrangements have been made for Dr. Hadidian to return to CATO as needed to conduct necropsies of all dead deer found or deer donated from crop damage permittees.

Ongoing Research and Future Plans

The radio-collaring and capture of deer is continuing as we have at least four available collars scheduled for use at CATO at this time. Work is occurring on trap design modifications for the Clover trap and evaluation of different baits at this time. Plans are being developed and sites selected and prepared on the Whitehall Forest, a University of Georgia School of Forest Resources research area for use with a new corral/drive net that may make multiple captures of deer easier and more cost effective. These plans are moving slowly and will not be able to proceed much farther until we have 1 or more nets to work with.

Preparations are being made to test the current batch of immunosterilants on 2 or more captive adult does on site at the University of Georgia, School of Forest Resources Captive Deer Facility. Also pen modifications are underway to house 30 or more doe fawns for future evaluation of immunosterilants.

Literature searches are being made to aid in the development of a pellet group survey technique for the monitoring of the deer herd on CATO. We plan to try to incorporate past CATO research efforts and data collected if feasible.

Letters have been received from the Maryland Forest, Park, and Wildlife Service that will allow us to initiate a spotlight survey on CATO beginning in June 1988. Arrangements are being finalized with the Southeastern Cooperative Wildlife Disease Study for a late summer herd health evaluation on CATO.

Charles Ford will return to CATO late May or early June for a 2-3 week-period. We will set out and run the pellet group surveys, begin the spotlight surveys, and continue radiotelemetry data collection and habitat evaluations.

Securing additional funding

On 28 and 29 January 1988, Dr. Warren travelled to Washington, D.C. and met with NPS officials from the National Capital Region and Center for Urban Ecology to present a slide program detailing the immunosterilization research, and to discuss future funding options. Subsequently, Dr. Warren returned to CATO on 10 March 1988 to present a slide program at the annual business meeting of C.A.M.P.E.R., after which additional discussions were held with NPS officials at CATO

regarding future research and funding, as well as the purchase of nets for capturing deer. Mr. Tom McFadden, CATO superintendent, requested a research proposal be submitted for a small-scale, preliminary field evaluation of the effects of immunosterilization on reproduction and movements of female deer on CATO. The second draft of the proposal was completed and transmitted to Superintendent McFadden in April 1988, and is attached.