United States Department of Agriculture

Animal and Plant Health Inspection Service

Wildlife Services

590 E. Western Reserve Rd
Building 1
Poland
Ohio, 44514
Voice 330.726.3386
Fax 330.726.3318

November 13, 2019

Mill Creek MetroParks
7574 Columbiana-Canfield Road
Canfield, Ohio 44406
(330) 702-3000

Mr. Derico,

Thank you for contacting Wildlife Services (WS) for assistance in reducing damage from raccoons (*Procyon Lotor*) and other meso predeators to protect turtle species. Wildlife Services personal initiated a meso-predator trapping effort from October 21, 2019 through November 1, 2019. WS utilized foot encapsilating traps baited with marshmellows to target raccoons which are known to prey on turtle nests and young. Traps where set on Mondays and removed on Fridays and where check atleast once every 24 hours. All meso-predators caught where euthinized in accourdance with the American Veterinary Medical Association euthanasia guidelines.

During the two week trapping period WS personnel trapped for a total of 218 trap nights. Trap locations where selected to maximize the likely hood of catching raccoons near areas where predation to nest or young could occur (Figure 1). Over 218 trap nights a total of 33 meso-predators where caught, 32 raccoons and 1 Virginia opossum (*Didelphis virginiana*) (Figure 2). Of the 32 raccoons captured 18 were males accounting for 57% of the total raccoon catch. Females accounted for 43% of the total raccoon catch with 14 individuals captured (Figure 3). The single opossum that was caught was a male. Of the 33 meso-predators captured 27 were adult animals accounting for 82% of the total catch. Juvenile animals accounted for 18% of the total catch with 6 individuals captured (Figure 4).

Biological samples were collected from a portion of captured animals, these samples included brain tissue and blood samples. The brain tissue samples where used to test for the presence of the rabies virus. A total of 19 brain tissue samples were collected from animals caught at the Mill Creek MetroParks Sanctuary and all tested negative for the rabies virus. Blood samples were collected to evaluate the effectiveness of the Oral Rabies Vaccine that WS personal distributed from August 23, 2019 through September 2, 2019. Nine blood samples were collected from animals caught at the Mill Creek MetroParks Sanctuary. The results for the blood samples are still pending.

Because habitat features and prey base that attract meso-predators are found within the Sanctuary at Mill Creek MeroParsk, it is realistic to expect that meso-predators including raccoons will continue to utilize these areas and potentially prey on nesting turtles and their nests. Therefore it is recommended to:

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- Change the timeframes of meso-predator surveys. Surveys should occur just prior to turtle nesting season. This will help to capture the number of meso-predators present that are most likely having an impact on turtle populations and will help to better guide management needs.

- Continue meso predator removal efforts to protect nesting turtles and their nests. Change trapping timeframes, focusing trapping efforts during time periods when turtle populations are most vulnerable. Turtles are most vulnerable during the months of May through July when nesting is occurring. Meso predator trapping efforts should be conducted during these months to target animals that are causing damage to turtle nests and nesting turtles.

Additional information on impacts to turtle populations and strategies to reduce these impacts can be found on the Midwest Partners in Amphibian and Reptile Conservation website at https://www.mwparc.org/. If you have additional questions or would like further assistance please contact the Ohio Wildlife Services office at 330-726-3386.

Figure 1 Trap locations for Mill Creek MetroParks meso-predator management program.

Figure 2 Locations of meso-predator captures during Mill Creek MetroParks meso-predator management program.

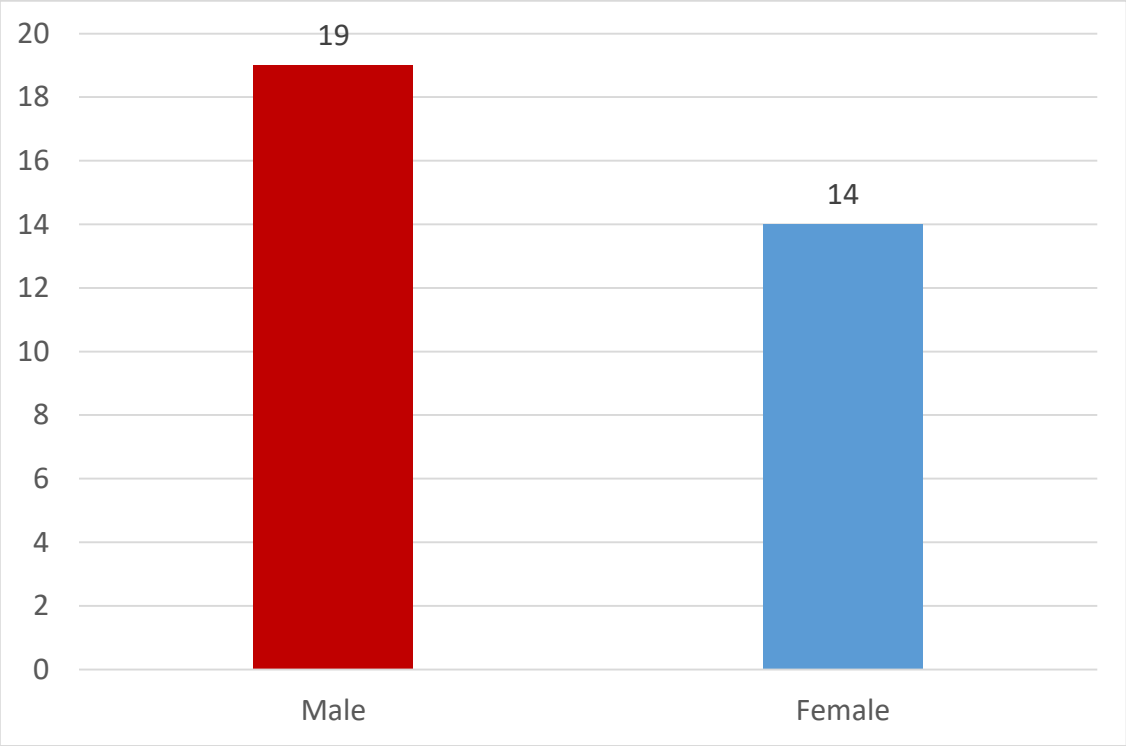


Figure 3 Number of captures by sex during the Mill Creek MetroParks meso-predator management program.

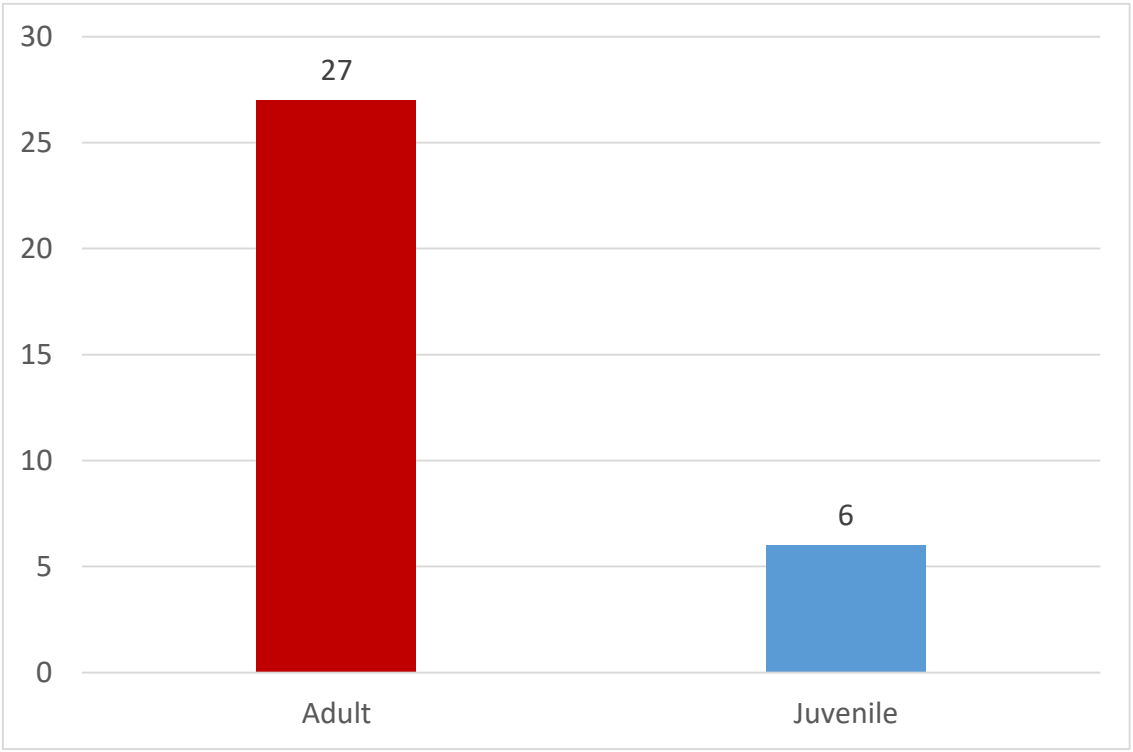

Figure 4 Number of captures by age class during the Mill Creek MetroParks meso-predator management program.

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June 26, 2020

Mill Creek MetroParks
7574 Columbiana-Canfield Road
Canfield, Ohio 44406
(330) 702-3000

Mr. Derico,

Thank you for contacting Wildlife Services (WS) for assistance in reducing damage from raccoons (*Procyon lotor*) and other meso-predeators to protect turtle species. Wildlife Services personal initiated a meso-predator trapping effort from June 15, 2020 through June 19, 2020. Wildlife Services utilized cage traps and foot encapsilating traps baited with marshmellows to target raccoons which are known to prey on turtle nests and young. Traps were placed in the field on Monday through Friday and were checked at least once every 24 hours. All captured meso-predators were euthinized in accourdance with the American Veterinary Medical Association guidelines for euthanasia.

Trap locations were selected to maximize the likelihood of capturing raccoons near areas where predation to nests or young could occur (Figure 1). A total of 11 raccoons were captured over a period of 90 trap nights (Figure 2). Biological data (age and sex) was collected for every raccoon that was captured (Figure 3). All captured raccoons were tested for the presence of the rabies virus to enhance rabies surveillance efforts in the state. Results for those samples are pending at the time this report was completed.

During the course of meso-predator management activities at Mill Creek MetroParks WS personnel discovered one turtle nest that had been predated (Figure 4). The nature of the damage and dry conditions makes it very difficult to identify what predator destroyed this nest.

Because habitat features and prey base that attract meso-predators exist within the Sanctuary at Mill Creek MetroParks, it is realistic to expect that meso-predators including raccoons will continue to utilize these areas and potentially prey on nesting turtles and their nests. Therefore it is recommended to:

- Adjust the timeframes of current meso-predator surveys. Surveys should occur just prior to turtle nesting season. This will help to capture the number of meso-predators present that are most likely having an impact on turtle populations and will help to better guide management needs.

- Along with the meso-predator surveys an effort should be made to determine the species that are predating on turtle nests and to what levels these damages are occurring. Focus should be placed on

the damage that is occurring and not on the number of meso-predators on the landscape.

- Identifying potential nest areas used by turtle species at the Mill Creek Sanctuary. Once nesting areas are identified exclusion efforts can be used to reduce the possibility of nest predation. Combining strategic (timing and location) lethal management with nest exclusion will likely produce the greatest results for increasing natural recruitment within the spotted turtle populations

- Meso-predator removal efforts should be directed to coincide with the peak of turtle nesting activity in northern Ohio. A large percentage of turtle nest predation typically occurs within the first week following the completion of the nest, with the greatest risk occurring during the first 24 to 48 hours, and then tapering off with time. In Ohio, turtle populations are considerably vulnerable during the months of May through July when nesting is occurring. Meso-predator trapping efforts should be conducted during these months to target animals that are causing damage to turtle nests and nesting turtles.

Additional information on meso-predator impacts to turtle populations and strategies to reduce these impacts can be found on the Midwest Partners in Amphibian and Reptile Conservation website at https://www.mwparc.org/. If you have additional questions or would like further assistance please contact the Ohio Wildlife Services office at 330-726-3386.

Figure 1. Trap locations for used during meso-predator management at Mill Creek MetroParks, June 15-19, 2020.

Figure 2. Locations of meso-predator captures during meso-predator management activities at Mill Creek MetroParks, June 15-19, 2020.

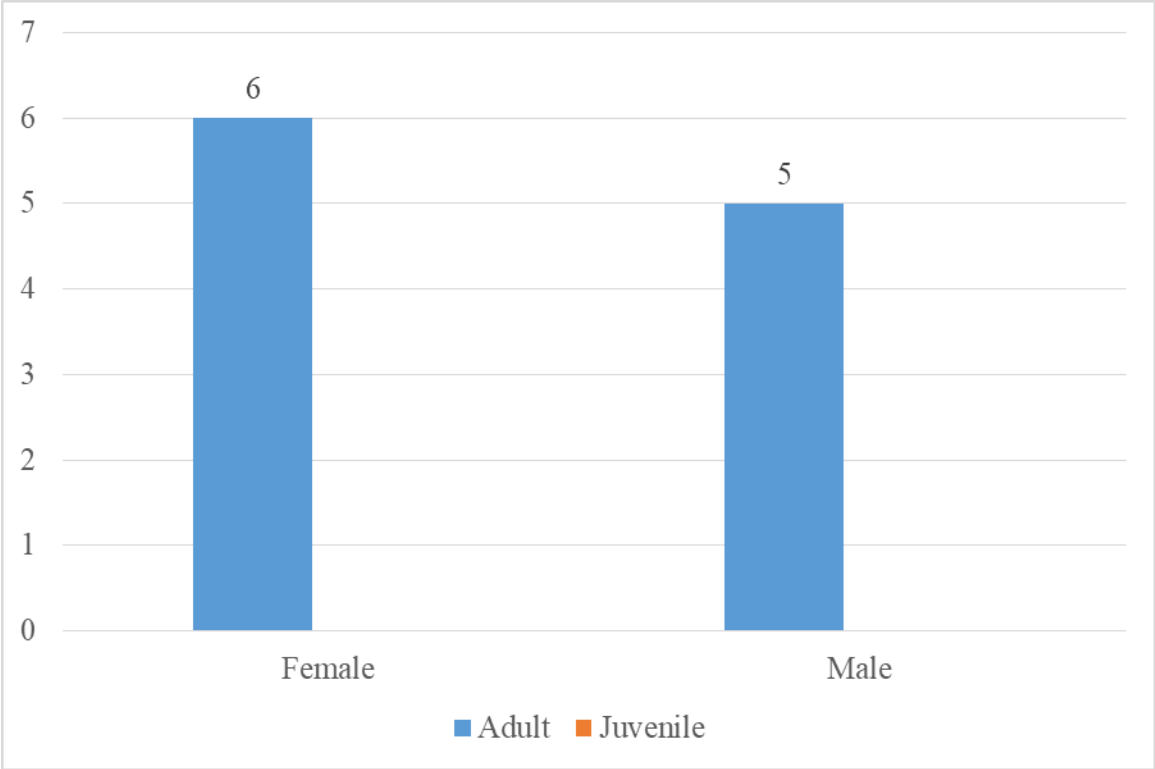

Figure 3. Summary of biological data from raccoons captured during meso-predator management activities at Mill Creek MetroParks, June 15-19, 2020.

Figure 4. A depredated turtle nest at Mill Creek MetroParks, June 17, 2020.

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July 09, 2021

Mill Creek MetroParks
7574 Columbiana-Canfield Road
Canfield, Ohio 44406
(330) 702-3000

Mr. Derico,

Thank you for contacting Wildlife Services (WS) for assistance in reducing damage from raccoons (*Procyon lotor*) and other meso-predeators to protect turtle species. Wildlife Services personal initiated a meso-predator trapping effort during the timeframes of 7-11 June, 2021 21-22 June, 2021. Wildlife Services utilized baited cage traps to target raccoons which are known to prey on turtle nests and young. Traps were placed in the field on Monday through Friday and were checked at least once every 24 hours. All captured meso-predators were euthinized in accourdance with the American Veterinary Medical Association guidelines for euthanasia.

Trap locations were selected to maximize the likelihood of capturing raccoons near areas where predation to nests or young could occur (Figure 1). A total of 10 raccoons were captured over a period of 95 trap nights (Figure 2). Biological data (age and sex) was collected for every raccoon that was captured (Figure 3). To enhance rabies surveillance efforts in the state, all captured raccoons were tested for the presence of the rabies virus. Results for those samples are pending at the time this report was completed.

Because the habitat features and prey base that attracts meso-predators are still present within the Sanctuary at Mill Creek MetroParks, it is realistic to expect that meso-predators, including raccoons, will continue to utilize these areas and potentially prey on nesting turtles and their nests. To further enhance the effectiveness of meso-predator management efforts, it is recommended to:

- Adjust the timeframes of current meso-predator surveys. Surveys should occur just prior to turtle nesting season. This will help to capture the number of meso-predators present that are most likely having an impact on turtle populations and will help to better guide management needs.

- Along with the meso-predator surveys an effort should be made to determine the species that are predating on turtle nests and to what levels these damages are occurring. Focus should be placed on the damage that is occurring and not on the number of meso-predators on the landscape.

- Identifying potential nest areas used by turtle species at the Mill Creek Sanctuary. Once nesting areas are identified exclusion efforts can be used to reduce the possibility of nest predation.

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Combining strategic (timing and location) lethal management with nest exclusion will likely produce the greatest results for increasing natural recruitment within the spotted turtle populations

- Meso-predator removal efforts should be directed to coincide with the peak of turtle nesting activity in northern Ohio. A large percentage of turtle nest predation typically occurs within the first week following the completion of the nest, with the greatest risk occurring during the first 24 to 48 hours, and then tapering off with time. In Ohio, turtle populations are considerably vulnerable during the months of May through July when nesting is occurring. Meso-predator trapping efforts should be conducted during these months to target animals that are causing damage to turtle nests and nesting turtles.

Additional information on meso-predator impacts to turtle populations and strategies to reduce these impacts can be found on the Midwest Partners in Amphibian and Reptile Conservation website at https://www.mwparc.org/. If you have additional questions or would like further assistance, please contact the Ohio Wildlife Services office at 330-726-3386.

Figure 1. Trap locations used during meso-predator management at Mill Creek MetroParks, June 2021.

Figure 2. Locations of meso-predator captures during meso-predator management activities at Mill Creek MetroParks, June 2021.

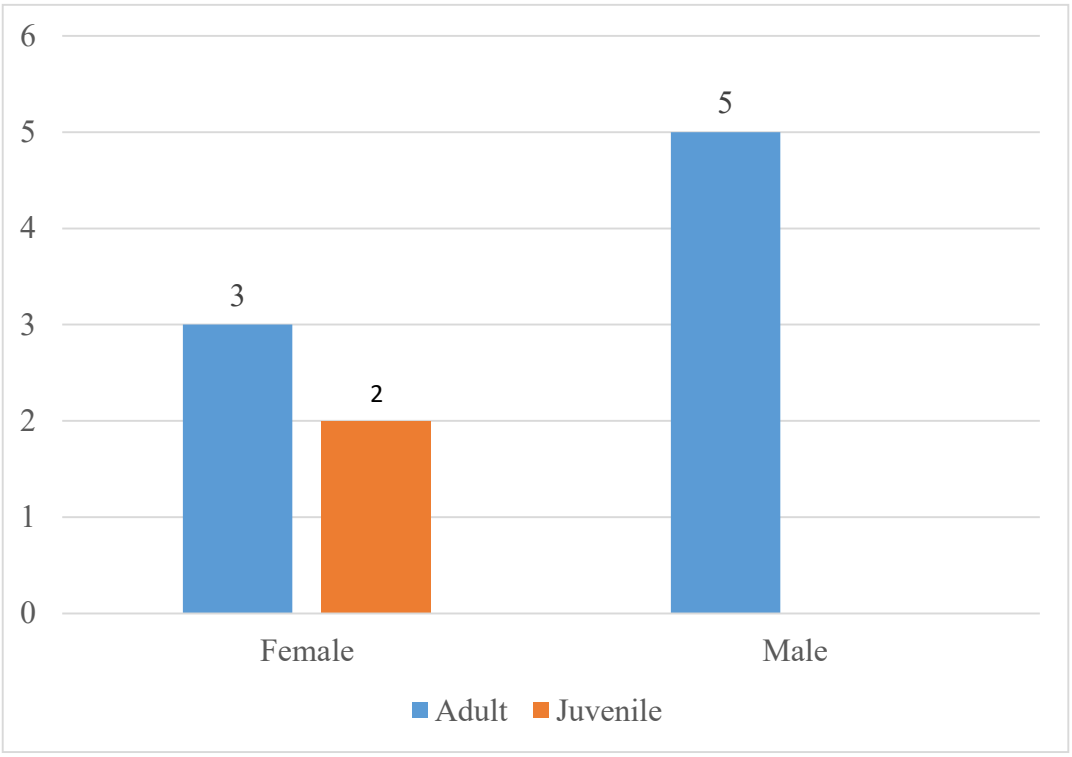


Figure 3. Summary of biological data from raccoons captured during meso-predator management activities at Mill Creek MetroParks, June 2021.

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590 E. Western Reserve
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Poland, Ohio, 44870
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June 22, 2022

Mr. Derico,

Thank you for contacting Wildlife Services (WS) for assistance in reducing damage from raccoons (*Procyon lotor*) and other meso-predeators to protect turtle species. Wildlife Services personnel initiated meso-predator trapping effort during the timeframe of 13-17 June, 2022. Wildlife Services utilized foot encapsalation traps to target raccoons, which are known to prey on turtle nests and young turtles. Traps were placed in the field on Monday through Friday and were checked at least once every 24 hours. All captured meso-predators were euthinized in accourdance with the American Veterinary Medical Association guidelines for euthanasia.

Trap locations were selected to maximize the likelihood of capturing raccoons near areas where predation to nests or young could occur (Figure 1). A total of 12 raccoons were captured over a period of 88 trap nights (Figure 1). Biological data (age and sex) was collected for every raccoon that was captured (Figure 2). To enhance rabies surveillance efforts in the state, all captured raccoons were tested for the presence of the rabies virus. Results for those samples are pending at the time this report was completed.

Because the habitat features and prey base that attracts meso-predators are still present within the Sanctuary at Mill Creek MetroParks, it is realistic to expect that meso-predators, including raccoons, will continue to utilize these areas and potentially prey on nesting turtles, their nests and their young. To further enhance the effectiveness of meso-predator management efforts, it is recommended to:

- Adjust the timeframes of current meso-predator surveys. Surveys should occur just prior to the turtle nesting season. This will assist with more accurately documenting the number of meso-predators that are most likely having an impact on nesting turtle populations and will help to further refine and guide management needs.

- An effort should be made to determine all species that are depredating turtle nests and to what levels that damage is occurring. Focus should be placed on the damage that is occurring and not on the number of meso-predators on the landscape.

- Identify potential nesting areas used by turtle species at the Mill Creek Sanctuary. Once nesting areas are identified, exclusion

efforts can be used to reduce the possibility of nest predation. Combining strategic (timing and location) lethal management with nest exclusion will likely produce the greatest results for increasing natural recruitment within targeted turtle populations

- Meso-predator removal efforts should be directed to coincide with the peak of turtle nesting activity in northern Ohio. A large percentage of turtle nest predation typically occurs within the first week following the completion of the nest, with the greatest risk occurring during the first 24 to 48 hours, and then tapering off with time. In Ohio, turtle populations are considerably vulnerable during the months of May through July when nesting is occurring. Meso-predator trapping efforts should be conducted during these months to target animals that are causing damage to turtle nests and nesting turtles.

Additional information on meso-predator impacts to turtle populations and strategies to reduce these impacts can be found on the Midwest Partners in Amphibian and Reptile Conservation website at https://www.mwparc.org/. If you have additional questions or would like further assistance, please contact the Ohio Wildlife Services office at 330-726-3386.

Regards,

Jeffery Raines

Jeff Raines
Wildlife Biologist

# Meso-predator Management at Mill Creek Sanctuary
# 13 June 2022- 17 June 2022

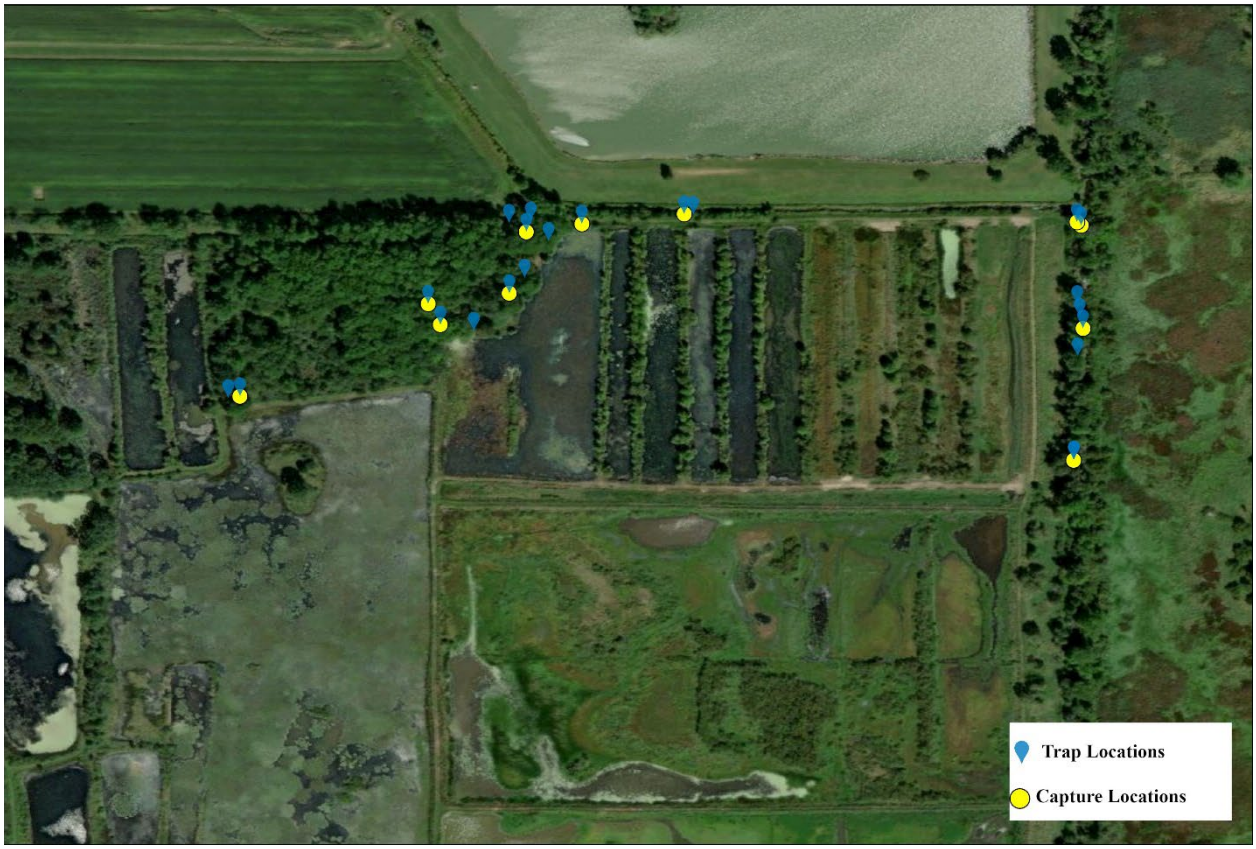


*Figure 1 Meso-predator management trap and capture locations at Mill Creek Sanctuary, June 2022.*

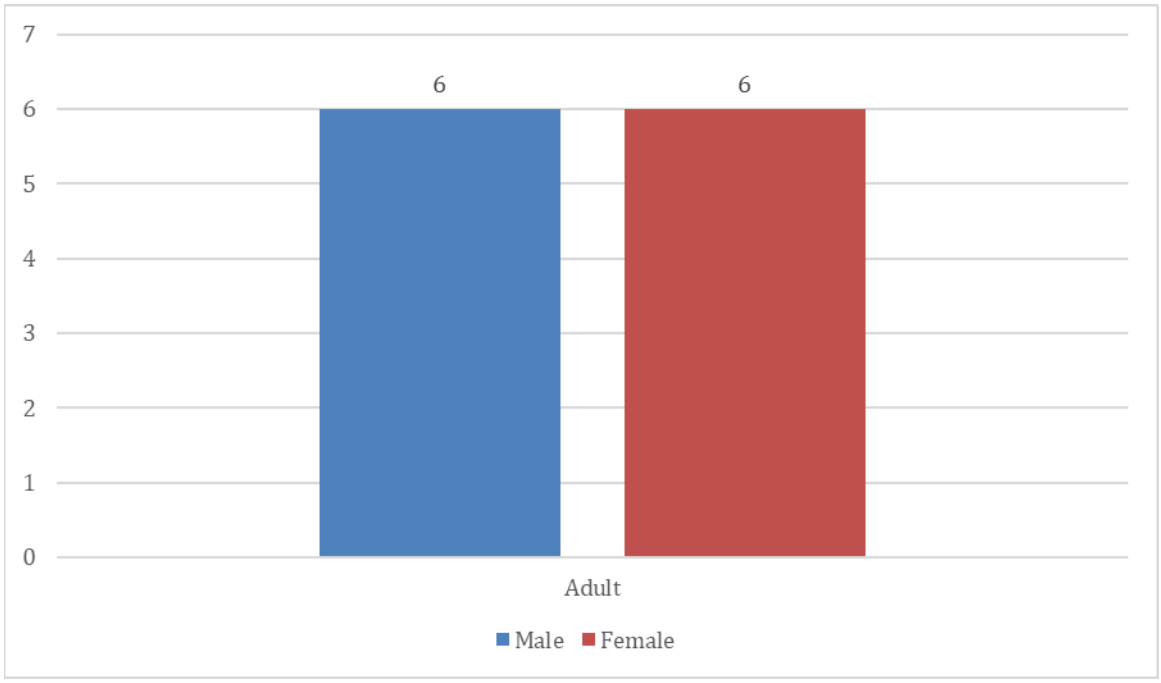


*Figure 2 Summary of biological data from raccoons captured during meso-predator management activities at Mill Creek Sanctuary, June 2022*