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Disclaimer:

^{137}Cs Body-Burden in Wild Turkeys at the Savannah River Site

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DISCLAIMER

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Savannah River National Laboratory™
OPERATED BY SAVANNAH RIVER NUCLEAR SOLUTIONS

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EXECUTIVE SUMMARY

Turkeys were measured using the Hunter Dose Tracking System in late April and early May of 2017 and 2018. None of these animals had activity distinguishable from background.

These animals were harvested from twenty-seven of the fifty unique hunt compartments at the Savannah River Site. These locations include both radiologically contaminated and clean areas.

Based on this study, turkeys from the Savannah River Site are not a significant source of dose to those who consume their meat.

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LIST OF ABBREVIATIONS

DOE	Department of Energy
HDTS	Hunter Dose Tracking System
MDA	Minimum Detectable Activity
SRNL	Savannah River National Laboratory
SRNS	Savannah River Nuclear Solutions
SRS	Savannah River Site

1.0 Introduction

The Hunter Dose Tracking System (HDTS) [1], created by the Savannah River National Laboratory (SRNL) in support of wildlife hunts at the Savannah River Site (SRS), was used to measure ^{137}Cs in turkeys harvested during hunts in April of 2017 and 2018 and a special hunt conducted by the Savannah River Ecology Laboratory (SREL) in late April and early May of 2018. The seventy turkeys shot during these five events were harvested from 27 of the 50 unique hunt compartments at SRS. These 27 hunt compartments cover more than 50% of the area of the site and include both clean and radiologically contaminated (such as the Pond B dam) areas.

2.0 Experimental Setup

The same physical setup and count time was used as in the regular wildlife hunts.

Figure 2-1 shows the harvested turkey locations. The orange dots show the hunt compartments where turkeys were harvested during the April hunts in 2017 and 2018:
2,3,4,5,6,7,8,10,14,16,18,27,29,33,36,37,42,44,45,46,48.

For the SREL hunt, the GPS locations where the turkeys were shot are shown as red dots, these correspond to the following compartments: 13,18,20,24,25,26,41,44,46.

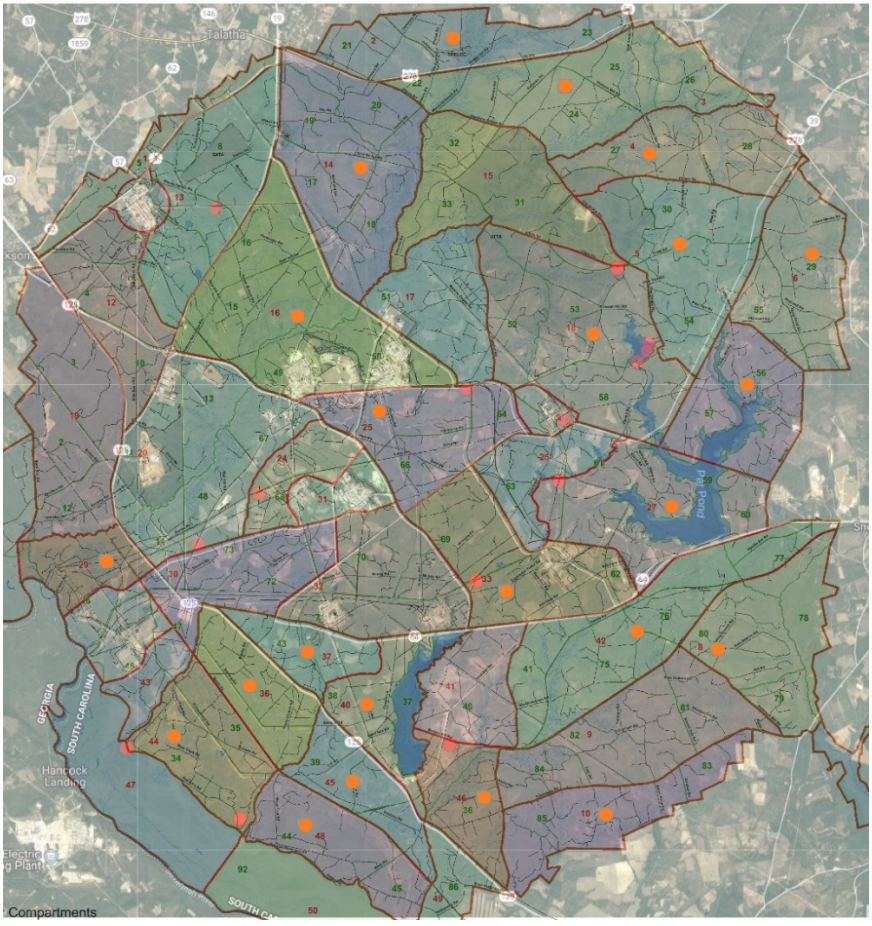

Figure 2-1. Turkey locations.

3.0 Results

None of the seventy turkeys measured, after a one-minute count time, had any detectable activity. This means the reported counts-per-minute were all below the resolution limit of the system and indistinguishable from the background.

One way to determine what the actual body-burden of ^{137}Cs in these animals would be to count the whole birds on the current system for a much longer time, at least one hour. This would not be practical for use during wildlife hunts; however, it could establish a baseline activity for these animals.

4.0 Conclusions

Turkeys at the Savannah River Site, even when harvested in and around radiologically contaminated areas, pose no significant source of dose to those who consume their meat.

5.0 References

1. Improvements to the Hunter Dose Tracking System. SRNL-STI-2017-00091, Rev 1.

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