

Influence of Bait Type on Capture Success of *Clemmys guttata* Using Small Hoop Nets in Shallow Wetlands

Kevin J. Oxenrider¹, Berlynnna M. Heres¹, Joel M. Mota², and Donald J. Brown^{2,3}

¹West Virginia Division of Natural Resources, Wildlife Resources Section, Wildlife Diversity Unit, Romney, WV

²School of Natural Resources, West Virginia University, Morgantown, WV

³ United States Forest Service, Northern Research Station, Parsons, WV

Introduction

- Canned sardines have historically been used as bait during studies involving passive trapping of turtles.
- Recent research has suggested that wet cat food can be equally as, if not more effective at capturing turtles in ponds.
 - Wet cat food is substantially cheaper than canned sardines.
- Research interest in *Clemmys guttata* has increased with their petitioning for listing under the ESA.
 - Canned sardines are currently the recommended bait to be used in passive trapping surveys for *C. guttata*.

Objective

- Determine if wet cat food is a reliable alternative to canned sardines during passive trapping surveys for *C. guttata*.



Methods

Paired Trap Surveys

- Two collapsible mesh minnow traps were placed 1 m apart at each site, 1 had ½ can sardines, the other had ½ can wet cat food.
- Sites were active for 4 consecutive days with baits changed daily.
- Individuals were captured and uniquely marked
- Bait preference tested using paired randomization tests with 10,000 iterations

Individual Surveys

- Independent surveys completed using 1 trap at each trap location and bait type randomly assigned.
- Simple randomization test with 10,000 iterations used to determine if captures differed by bait type.



Results

Paired Trap Surveys

- 38 paired trap tests were completed between April 2018 and May 2018 on 3 management units, 1 in Hampshire County, WV and 2 in Jefferson County, WV.

Table 1. Number of *Clemmys guttata* captured in hoop nets with different bait types in shallow wetlands in WV during paired trap tests.

Bait Type	<i>Clemmys guttata</i>	All turtles
Sardines	31	110
Cat Food	27	94
Total	58	204

- We found **no significant difference** between the number of *C. guttata* captured in traps baited with canned sardines and those captured in traps baited with wet cat food (Table 1; **p=0.810**).

Independent Surveys

- Independent surveys completed in April 2019 on 2 of the previously surveyed management units and 1 privately owned wetland using identical field methods and traps (Traps baited with sardines (N=18); baited with cat food (N=27))

Table 2. Number of *Clemmys guttata* captured in hoop nets with different bait types in shallow wetlands in WV during independent surveys (2019)

Bait Type	<i>Clemmys guttata</i>	# Traps	# CLGU/ Trap
Sardines	12	18	0.667
Cat Food	23	27	0.852
Total	35	45	

- We found **no significant difference** between the number of *C. guttata* captured in baited traps during independent surveys (Table 2; **p=0.256**)

Discussion

- Wet cat food is an effective alternative to sardines for attracting *C. guttata*.
- Canned sardines cost ~\$0.96 a can and wet cat food cost ~\$0.54 a can.
 - Using wet cat food as bait during passive *C. guttata* trapping will result in cost savings making monitoring programs more affordable.
- We suggest that standardized trapping protocols include wet cat food as a bait option to allow a more cost-effective bait type.
- Raccoons were found to be problematic at management units without hunting and/or trapping pressure.
 - Raccoon related issues were greatly reduced by wrapping traps completely in 36 in. chicken wire with 1 in. wire hexagons and staking traps down with steel electric fence posts directly in front of each entrance to the traps.



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