

# Turtle Mortality in Powhatan County, Virginia

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Turtles are one of the most successful groups of reptiles. They have existed on Earth for more than 200 million years (Zug, 1993), yet today the order Testudines is one of the most threatened groups of vertebrates. Recently in Virginia, much attention has been given to the declining populations of wood turtles (Mitchell and Pilcicki, 2000) and bog turtles (Mitchell, 1994), but what about the other turtles found in Virginia? Non-listed species of turtles are being diminished by the same threats as endangered and threatened turtles. Increased suburbanization, habitat fragmentation, and road building results in smaller populations and creates a greater threat of local extirpation. Well-documented factors involved in turtle declines include pollution (Ernst, 1997), collection for the pet trade (Ernst et al., 1994), habitat destruction and fragmentation (Klemens, 1997), and in this article, road mortality. Every year many turtles are killed on the roads of Virginia. Exactly how many and what damage this does to turtle populations is unknown. What is known, though, is that each turtle killed reduces genetic diversity, diminishes potential for dispersal to new locations, decreases reproductive capacity, and leads to a decrease in the overall population.

In a limited time period of two years (April 1999 to June 2001), I made observations of road-killed turtles in Powhatan County, Virginia. Information gathered was limited to species identification, date of observation, and habitat surrounding the road where DOR (dead on road) turtles were found. Data were collected during my drive to and from work (approximately 30 miles round trip), but observations were not limited to this time period.

All six species of turtles recorded from Powhatan County (Gibson, 2001) were found road-killed during this survey. In total, 35 DOR turtles were observed (Table 1). *Terrapene carolina carolina* (eastern box turtle) was the most common species of road-killed turtle, accounting for 54% of all observations. Turtles in Powhatan County were found to be most sensitive to vehicular traffic during the months of May and June (Table 2).

**Table 1.** Annual summary of road-killed turtles found in Powhatan County.

Species	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>Total</u>
<i>Chelydra serpentina serpentina</i>	0	1	0	1
<i>Chrysemys picta picta</i>	1	0	0	1
<i>Pseudemys concinna</i>	0	4	0	4
<i>Terrapene carolina Carolina</i>	4	10	5	19
<i>Kinosternon subrubrum subrubrum</i>	4	3	2	9
<i>Sternotherus odoratus</i>	1	0	0	1
Total	10	18	7	35

**Table 2.** Monthly summary of road-killed turtles found in Powhatan County.

<u>Year</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>
1999	0	2	1	3	3	1
2000	0	4	10	1	2	1
2001	1	2	4	-	-	-
Total	1	8	15	4	5	2

Below is a species list with dates on which DOR turtles were found and descriptions of habitats surrounding kill sites.

### Species Accounts

#### 1. *Chelydra serpentina serpentina* (Common snapping turtle)

Only one snapping turtle was found road-killed. This animal was found on a road near a farm pond on 16 June 2000. Several large turtles were collected alive on roads and taken to less dangerous areas. Road mortality of this species was not documented in Mitchell (1994) or Ernst et al. (1994).

#### 2. *Chrysemys picta picta* (Eastern painted turtle)

One DOR painted turtle was observed on 24 May 1999. A swamp and small stream comprised the habitat surrounding the road.

#### 3. *Pseudemys concinna* (River cooter)

Four DOR river cooters were observed on 10 and 21 May, 13 June, and 7 August 2000. All animals were found on roads adjacent to large ponds. The late date of 7 August may represent late nesting activity or normal terrestrial movement. Mitchell (1994) also found river cooters on highways outside of the normal mating and nesting period.

#### 4. *Terrapene carolina carolina* (Eastern box turtle)

Many eastern box turtles were collected alive on the road and moved to safer locations, but 19 road-killed turtles were observed during the survey period. Box turtles were found on roads that crossed through various habitats including old field succession, mature hardwood forests, swamps, and small streams. Specimens were observed in 1999 on 22 May, 3 July, 29 August, and 20 September, in 2000 on 14 May, 3, 16, 18(2), 19, and 23 June, 1 July, 6 August, and 6 September, and in 2001 on 21 May and 2, 5, 9, and 22 June.

#### 5. *Kinosternon subrubrum subrubrum* (Common mud turtle)

Mud turtles were found on roads that were near swamps and on roads that crossed small streams. DOR turtles were found in 1999 on 13 June, 9 July, 6 and 29 August; in 2000 on 14 May, 10 and 13 June; and in 2001 on 14 April and 21 May. This terrestrially active turtle seems sensitive to vehicular traffic from April to August.

#### 6. *Sternotherus odoratus* (Stinkpot)

One road-killed stinkpot was collected on 17 July 1999. This turtle was found on a road that crossed a small stream. Neither Mitchell (1994) nor Ernst et al. (1994) mention road mortality for this species.

### **Discussion**

Road mortality is yet one more assault on populations of turtles. Turtles seem most susceptible to vehicular traffic during the mating and nesting seasons and in areas adjacent to wetlands and woodland forests. For managers or conservation groups working with these reptiles, life history data and locations of large populations can lead to ways to protect turtles from being killed on roads. More documentation and data are needed in this effort to reduce the effects of road mortality on Virginia's native turtle fauna.

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