

# COMMUNITY & ENVIRONMENTAL DEFENSE SERVICES

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December 1, 2006

Antoni Sekowski  
New Castle County Land Use Department  
87 Reads Way  
New Castle Corporate Commons  
New Castle, Delaware 19720

**RE: Phase II Bog Turtle Survey  
LaGrange - Application NO. 2005-1045(S)**

Dear Mr. Sekowski:

We are assisting Friends of Historic Glasgow with concerns regarding the LaGrange project proposed for the Barczewski Property. One of the primary concerns of the Friends is the effect of the project on sensitive environmental resources associated with the 235-acre site. These sensitive resources include the possible presence of bog turtles (*Clemmys muhlenbergii*) on the site.

We reviewed the *Phase II Bog Turtle Report - Barczewski Property* prepared by James C. McCulley Environmental Consultants, Inc. (JCMECI), dated June 26, 2006. This report contains a number of deficiencies which draw the following principal conclusion into question:

*bog turtles are not present on the site.*

The deficiencies are described below. Because of these deficiencies the Department should require the applicant to carry out a second survey next spring which fully conforms to the intent of U.S. Fish & Wildlife Service (USFWS) guidance for Phase II Bog turtle surveys.

## **DEFICIENCIES**

A. In the last paragraph on page 2 of the report it is stated that:

*"Four Surveys were conducted between April 17, 2006 and May 12, 2006."*

The survey season runs from April 15 to June 15. The preferred practice is to spread surveys out to include (if possible) one survey day in April and three in May. If three surveys cannot be completed in May, the fourth survey is done in June. The last survey should not be performed until May 20th. That is the beginning of the nesting season for bog turtles and females are either on tussocks attempting to lay eggs or basking (more often than not, cryptically) for thermoregulation so that the shells on their eggs can form.

- B. Unless there was a monoculture of reed-canary grass or other invasive plant species within the wetlands on the site, it is questionable why the surveys were done so early. Although reed-canary grass is listed as being present within the wetlands, there is no mention of "problematic vegetation" in the report, so it is presumed the surveys should have been extended. If problematic vegetation is found to be present on the site, then the Department should require a survey for a second year or a Phase III trapping survey to be completed in 2007.
- C. There is no description of the property outside of the study area wetlands. The report should have provided information such as:
- Is the site a farm;
  - If yes, is it actively plowed; and
  - Is the rest of the site forested?

The absence of such a description makes it difficult to decide if the survey covered enough of the habitats on the site.

Although the report mentions a "*travel corridor*" between the two wetlands, there is no description of it.

- Is it a stream?
  - Is it a wetland that does not meet the characteristics of bog turtle habitat?
  - Are there more wetlands on the site? If yes, why were they excluded from the study area?
  - How many acres of additional wetlands are on the site?
- D. The reports states that ten people were involved in the survey, one of which was a qualified surveyor. The experience and training of the other nine people is not given. The report states that on May 5, 2006, JCMECI conducted a survey utilizing all 10 surveyors for 3 hours. Ten surveyors in a five-acre wetland for three hours meets the required protocols of 30 man-hours per survey, but also having ten surveyors in a five-acre wetland is an overload of people trampling around in potential bog turtle habitat, particularly if nine of the surveyors have limited experience.

Bog turtles are shy and will attempt to hide if they sense people, particularly a large number of people, in their habitats. If the nine people have little or no bog turtle

experience, it is unlikely that a turtle will be found on that day. The generally accepted practice is to limit surveys to five people, especially in relatively small wetlands like that on the Barczewski Property.

- E. During the May 5, 2006 survey two other assistants are shown to be present and are identified by the initials "CS" and "TH." These assistants are not mentioned in the list of assistants at the bottom of Table 1.
- 1) The identity of the two additional assistants should have been provided.
  - 2) Also, as stated above, the report should have included a description of the bog turtle surveying experience of all twelve assistants who participated in the four survey days.
- F. The list of species captured during the survey includes numerous upland species, such as Ring-necked snake and Eastern Red-backed salamander. Is this due to assistants wandering outside of the potential bog turtle habitats and into surrounding uplands looking for other herptiles? If yes, then the hours looking in the uplands should not be included in the survey hours because they are not looking for bog turtles.
- G. The USFWS *Guidelines for Bog Turtle Surveys*<sup>1</sup> require that:

*Ambient air temperature at the surface in the shade should be 55°F.*

Table 1, on page 4 of the Phase II report shows that air temperature was in excess of 55°F on all four survey dates, but neither the table nor the methodology section of the report states whether air temperature measurements were made in the shade or at the surface as required by the USFWS guidelines. Various scientific studies shows that the air temperature in unshaded areas can be 2°F to 8°F warmer when compared to nearby shaded locations. The initial air temperature on two of the four survey dates was 60°F. If the 60°F value was obtained in an unshaded area then the air temperature might have been as low as 52°F in the shade - 3°F too low to conduct a survey.

- H. In the conclusions section on page 3 of the report, the author writes:

*"Furthermore, despite the presence of vegetation characteristic of Bog Turtle habitat in the northeastern wetland, this area did not contain mucky substrate and hydrology was restricted to the stream beds during the Phase II Bog Turtle survey."*

The stated lack of hydrology may be attributable to the rather dry conditions which existed prior to and during the survey period. As shown in Table 1 on the next page of these comments, the nearest precipitation monitoring site, which is located four miles

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<sup>1</sup> The USFWS *Guidelines for Bog Turtle Surveys* can be viewed online at: <http://www.fws.gov/northeast/nyfo/es/btsurvey.pdf>

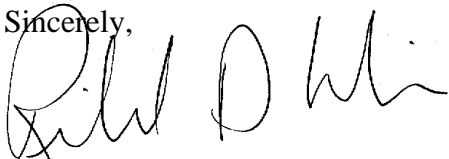
north at the University of Delaware campus, shows a precipitation deficit for five of the six months prior to and during the survey.

By May 2006, when two of the four surveys were conducted, the deficit had accumulated to 3.58 inches of precipitation. The lack of hydrology noted in the northeastern wetland may have been due to climate and not normal conditions at the site. Drier conditions might also account for wetland substrate seeming less mucky than would be the case when climatic conditions are normal.

Again, due to the numerous deficiencies cited above, the Department should require the applicant to carry out a second survey next spring. The next survey should fully conform to the U.S. Fish & Wildlife Service guidance for Phase II bog turtle surveys.

I can be reached at 410-654-3021 if you have any questions.

Sincerely,



Richard D. Klein

cc: Friends of Historic Glasgow  
Mr. Charles Baker, New Castle County Land Use Department  
Ms. Holly Niederriter, Delaware Natural Heritage Program  
Ms. Mary Ratnaswamy, U.S. Fish & Wildlife Service  
Mr. Victor Singer, New Castle County Planning Board  
Honorable David Tackett, New Castle County Council

**Table 1: Precipitation Data for the University of Delaware at Newark**

(Source: National Climatological Data Center <http://cdo.ncdc.noaa.gov/CDO/cdo>)

Month	Average 1956-2006	Normal	Actual Precipitation 2005-2006	2005-2006	2005-2006
		2005-2006 Accumulated Precipitation		Accumulated Precipitation	Accumulated Precipitation Deficit
January 2005	2.23	2.23	3.80	3.80	1.57
February	2.19	4.41	0.00	3.80	-0.61
March	2.96	7.37	4.30	8.10	0.73
April	2.55	9.92	5.30	13.40	3.48
May	3.00	12.92	1.90	15.30	2.38
June	3.08	16.01	1.70	17.00	1.00
July	3.19	19.19	4.90	21.90	2.71
August	2.95	22.15	2.00	23.90	1.75
September	3.26	25.41	0.00	23.90	-1.51
October	2.56	27.98	7.60	31.50	3.52
November	3.18	31.16	0.00	31.50	0.34
December	2.40	33.56	1.10	32.60	-0.96
January 2006	2.23	35.78	3.90	36.50	0.72
February	2.19	37.97	1.40	37.90	-0.07
March	2.96	40.93	0.40	38.30	-2.63
April	2.55	43.48	3.60	41.90	-1.58
May	3.00	46.48	1.00	42.90	-3.58