

To Whom It May Concern:

The Southeastern Fishes Council (SFC) is a nonprofit scientific organization dedicated to the study and conservation of freshwater and coastal fishes of the southeastern United States. As such, the SFC membership is deeply concerned about the request to rezone property in the Turkey Creek Basin near Pinson, AL, from industrial/commercial to single family homes. The proposed development associated with this rezoning request may negatively impact populations of two imperiled fish species in the Turkey Creek Basin, specifically the federally endangered vermilion darter (*Etheostoma chermocki*) and the imperiled rush darter (*E. phytophilum*), a candidate species for federal listing. Both of these species are also protected by the State of Alabama as Priority 1 species (Highest Conservation Concern; Mirarchi et al. 2004).

Habitat degradation has increased throughout the basin over the last decade, with the most serious aquatic habitat destruction directly attributable to subdivision development. The construction of the subdivision just south of Turkey Creek at Goodwin Road caused massive amounts of fine sediments to enter Turkey Creek and bury the larger gravel and cobble substrate. Once common at Goodwin Road, vermilion darters are extremely rare at this site due to habitat destruction from the construction of the subdivision. The decline of vermilion darters in Turkey Creek proper makes populations in tributaries extremely important for the continued existence of this species.

Earlier this year (30 March 2005) personnel at the University of Alabama Ichthyological Collection (UAIC) observed 15 endangered vermilion darters (*Etheostoma chermocki*) in an unnamed tributary of Turkey Creek upstream of Sunrise Drive (33°40' 56"N, 86°41' 35"W; T15S, R2W, Sec. 36 SE 1/4). The site is only 0.6 miles downstream of the proposed subdivision. Just last month (8 June 2005) personnel from UAIC sampled fishes in another part of the same tributary at Pinson Heights Road (33°40' 7"N, 86°42' 18"W; T16S, R2W, Sec. 1 SW 1/4). This part of the stream is proposed to be modified into a lake and recreation area. Forty-nine rush darters were observed above the road crossing; eight rush darters were observed below the road. This is the largest number of rush darters taken in a single collection in the Turkey Creek Basin and may be the source population for other parts of the system.

The membership of the Southeastern Fishes Council strongly urges you to protect the vermilion and rush darters from the proposed subdivision and any future development that occurs in the watershed. As currently proposed, the subdivision is likely to negatively impact these species through sedimentation of stream habitat, impoundment of stream habitat, and changes in the natural flow regime (i.e., more flash floods and more extreme droughts) that are characteristic of urbanized watersheds. We believe that the impacts associated with the proposed development pose a significant risk to the long-term survival of these species.

If the commission decides to permit the re-zoning request, we make the following recommendations to minimize impacts to vermilion darters and rush darters:

1. A 100 foot buffer of undisturbed vegetation should remain along all perennial\* and intermittent\* streams in the watershed. Exemptions are allowed for utility and road crossings, but these crossings should be minimized to the greatest extent possible.
2. A 30 foot buffer of undisturbed vegetation should remain along all ephemeral\* channels.
3. To minimize impervious surfaces and conveyance of pollutants to streams, vegetated swales should be used instead of standard curb and gutter drainage systems.
4. Road crossings should be designed to maximize passage of fishes under a broad range of flow conditions. Free-span bridges are the best alternative from an ecological standpoint, but are relatively expensive in the short-run. Bottomless culverts are an excellent alternative to box and pipe culverts because they provide a natural stream bottom for fish passage. It is important that these bottomless culverts are wide enough to completely span the active channel during flooding events. If a bottomless culvert cannot be used, embedding culverts below the streambed can also provide a more natural stream bottom for fish passage. Again, these culverts must be wide enough to accommodate flood flows. Furthermore, a single large culvert is preferable to multiple small culverts because the latter will result in lower water depths for passage during low flow periods.
5. Road runoff at stream crossings and from roadside ditches should be dispersed at the outer edge of the buffer to maximize infiltration, and storm water from paved areas should be released at rates that mimic predevelopment conditions. See <http://www.stormwatercenter.net> for further guidance.
6. If the subdivision will have a Property Owners Association, the POA should adopt fertilizer and pesticide usage rules for private lawns and common areas in consultation with a local Extension agent or other Integrated Pest Management specialist, and shall impose fines for violations.
7. Impoundments (ponds, amenity lakes, detention basins) should not be constructed on perennial\* or intermittent\* streams. Stream permanence (ephemeral, intermittent, perennial) should be determined on the ground, not from USGS quads. If Alabama does not have a suitable method for determining ephemeral/intermittent/permanent stream origins and endpoints, then Jefferson County might wish to use NC-DWQ's field determination methods:  
[http://h2o.enr.state.nc.us/ncwetlands/documents/NC\\_Stream\\_ID\\_Manual.pdf](http://h2o.enr.state.nc.us/ncwetlands/documents/NC_Stream_ID_Manual.pdf)
8. Additional incentives should be offered to developers to decrease environmental impacts. If the county has a conservation subdivision ordinance, the subdivision could bear this attractive title if the developer agrees to a set of best management practices. Elements of such an ordinance might include: clustering of homes, short driveways and narrow streets to minimize impervious surfaces, a forested area set aside for recreation, rain gardens, and other innovative practices.

We hope that you find these recommendations helpful and will follow them to ensure that these two examples of the unique natural heritage of Jefferson County are maintained for generations to come.

Sincerely,  
Henry L. Bart, Jr., Ph.D.  
Representing the Southeastern Fishes Council

Cc: SFC Executive Committee, Vermilion Darter Recovery Team