



We are also including as Enclosure 2 responses to Dr. Murphy's December 9, 2010 input to the November 30, 2010, revised HSC's. In response to Mr. Hartle's November 8, 2010, email input and suggestions (Enclosure 3), we have eliminated the Greenside darter HSC and included HSCs for Banded darter and Tessellated darter. Banded darter HSCs were taken from Aadland and Kuitunen (2006) and depth and velocity criteria for Tessellated darter HSCs were taken from the Fenton River instream flow study in Connecticut (Warner et al. 2006). The Fenton River study did not utilize a substrate/cover criterion, but an internet and reference book review showed the preferred substrate for Tessellated darter to be sand and/or mud in slow-moving water (see Tessellated Darter Substrate and Cover HSC.xls). The book Pennsylvania Fishes by Ms. Linda Steiner (Pennsylvania Fish and Boat Commission)<sup>1</sup> indicates the tessellated darter greatly resembles the Johnny darter, and was formerly considered a subspecies of the Johnny darter. Using this information we located substrate and cover information on the Johnny darter (Aadland and Kuitunen 2006) and converted it for use as a surrogate for the Tessellated darter.

Enclosures 4 through 6 are additional email exchanges which led to preparation of this final draft. Should the Commission have any questions regarding the attached, please contact Mr. Gary Petrewski at 610-774-5996 or [gpetrewski@pplweb.com](mailto:gpetrewski@pplweb.com).

Respectfully,



Terry L. Harpster

TLH/kw

- Enclosures: 1) Revised HSC Curves and Documentation on CD
- 2) Response to Dr. Margaret Murphy's December 9, 2010 comments.
  - 3) Email from Mark Hartle dated Monday, November 08, 2010 03:01 PM
  - 4) Email from Pat Naugle dated Wednesday, November 10, 2010 04:39 PM
  - 5) Email from Thomas R. Payne dated Tuesday, November 30, 2010 6:09 PM
  - 6) Email from Margaret Murphy dated Thursday, December 09, 2010 4:47 PM

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<sup>1</sup> Pennsylvania Fishes. Pennsylvania Fish and Boat Commission, Chapter 23 Perches. ([www.fish.state.pa.us/pafish](http://www.fish.state.pa.us/pafish))

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