Sustainable Fisheries Goal Implementation Team Executive Committee

ADOPTION STATEMENT

Invasive Catfish Policy

Blue catfish (*Ictalurus furcatus)* and flathead catfish *(Pylodictis olivaris)* are indigenous to the Mississippi, Missouri, and Ohio River drainages. They are considered a non-native, invasive species within the Chesapeake Bay ecosystem and were introduced in the 1960s to 1970s. Both species are long lived and fast growing exhibiting an opportunistic, generalist feeding strategy that becomes predominantly piscivorous (fish-based diet) at an early age.

Since their successful introduction, their range has expanded significantly and is threatening native species throughout all major Chesapeake Bay river systems in Virginia and Maryland. In addition to an expanding range influenced by unauthorized angler redistributions of flathead catfish, they may also be altering lower trophic levels through hypothesized top-down cascade (McPeek 1998; MacAvoy, *et al*. 2008). Recent electrofishing collections on blue catfish have reported blue catfish representing up to 75% of the total biomass in portions of the tidal James and the Rappahannock rivers (Schlosser et al. in press).

Invasive catfish species share certain biological characteristics that are believed to enhance the likelihood of their establishment in new environments, including a diverse diet, adult trophic status as apex predators, long life span, large body size, high salinity tolerance, and parental care of young (Table 1; Morris and Whitfield 2009; Fabrizio *et al.* 2011). Flathead and blue catfish are likely causing detrimental impacts throughout their expanding range, potentially creating unbalanced ecosystems. Their innate behavior as an aggressive predator pose potential negative impacts on the ongoing work to restore shad and river herring populations within the Chesapeake Bay.

The Sustainable Fisheries Goal Implementation Team Executive Committee believes that the potential risk posed by blue and flathead catfish on native species warrant action to mitigate their spread an protect against ecological impacts. The Sustainable Fisheries Goal Implementation Team Executive Committee agrees to work together to:

- Initiate a public awareness campaign on invasive blue and flathead catfish;
- Improve our scientific understanding of blue and flathead catfish biology and population dynamics;
- Develop a set of management measures aimed at controlling populations and mitigating adverse effects of blue and flathead catfish;
- Develop models that will aid in better understanding the potential impacts of non-native species on the fish community;
- And, create an online decision support tool integrating coordinated assessments of non-native catfish populations' risk of expansion and ecological resource valuation to identify high-risk/high-value opportunities for containment and mitigation programs.

October 17th, 2011

Sustainable Fisheries Goal Implementation Team Executive Committee

FOR NOAA _____

FOR MD-DNR _____

FOR DC-DDOE _____

FOR PRFC _____

FOR VMRC _____

FOR ASMFC _____

Table 1. Predictors of invasiveness for blue and flathead catfishes (adapted from Morris and Whitfield 2009). Propagule pressure refers to the density of individuals introduced, the number of introduction events, and the frequency of introductions. In addition to the predictors shown in the table, short distance to native source, young age at maturity, large egg diameter, and long reproductive season have been identified as additional predictors of invasiveness, however, none of these apply to the two catfishes.

Are Blue and Flathead Catfishes Invasive in the Chesapeake Bay Watershed?

Predictor	Blue catfish	Flathead catfish	Reference
High propagule pressure	?	?	Marchetti *et al*. 2004a Marchetti *et al*. 2004b Colautti 2005 Jeschke & Strayer 2005 Jeschke & Strayer 2006
Prior invader	X	X	Kolar & Lodge 2002 Marchetti *et al*. 2004a Marchetti *et al*. 2004b Ribeiro *et al*. 2008
Large native range	X	X	Marchetti *et al*. 2004a Marchetti *et al*. 2004b
Environmental tolerance	X	X	Kolar & Lodge 2002 Marchetti *et al*. 2004a Marchetti *et al*. 2004b Vila-Gispert *et al*. 2005
Long life span	X	X	Marchetti *et al*. 2004a
Large body size	X	X	Marchetti *et al*. 2004b Colautti 2005 Duggan *et al*. 2006 Ribeiro *et al*. 2008
High adult trophic status	X	X	Marchetti *et al*. 2004b
Broad diet	X		Kolar & Lodge 2002 Ruesink 2005
Fast growth		X	Kolar & Lodge 2002
High fecundity	X		Jeschke & Strayer 2005 Jeschke & Strayer 2006 Vila-Gispert et al. 2005
Parental care	X	X	Marchetti *et al*. 2004a Marchetti *et al*. 2004b Jeschke & Strayer 2005 Jeschke & Strayer 2006

Work Cited

Lastname, first intial. YEAR. . Document type (thesis tech report, journal) Affiliation University or journal ,state

Fabrizio M, Garman G, B. Greenlee, M. Groves, N. Butowski. Are Blue and Flathead Catfishes Invasive in the Chesapeake Bay Watershed? White paper presented to the Sustainable Fisheries Goal Implementation Team, July 2011.