Sustainable Fisheries Goal Implementation Team Executive Committee

ADOPTION STATEMENT

Invasive Catfish Policy

Blue and flathead catfish exhibit nine out of the fifteen predictors of invasiveness as proposed by Morris and Whitefield, 2009. Both species are indigenous to the Mississippi, Missouri, and Ohio River drainages. Within the Chesapeake Bay ecosystem, blue and flathead catfish are a non-native, invasive species introduced throughout multiple introductions from the 1960s to 1970s. Since introduced, their range has expanded significantly and is threatening native species throughout all major Chesapeake Bay river systems in Virginia and spreading throughout Maryland tributaries as well.

Blue catfish (*Ictalurus furcatus)* are a large, long-lived fish species exhibiting an opportunistic, generalist feeding strategy. They are fast growing and upon maturation and a dietary switch to piscivory, have demonstrated weight gains of ~10 lbs/year. Records show they can reach well over 100 lbs (current *world* record is 143 lbs from the James River) and electrofishing surveys by VDGIF have resulted in catch per unit effort upwards of 6,000 fish/hour. Their spread and over-abundance are causing detrimental impacts throughout their range resulting in unbalanced ecosystems.

Flathead catfish (*Pylodictis olivaris*) are also a large, long-lived fish species that are aggressive and exhibit an opportunistic feeding strategy. They are almost exclusively piscivorous, centrarchid specialists, and known to be consuming alosines. This poses potential negative impacts on the ongoing work to restore shad and river herring populations within the Chesapeake Bay. Flathead catfish's range has been expanding since their introductions via angler introductions and habitat restoration (i.e. dam removals, fish ladders, etc.). Their over abundance may be altering lower trophic levels through hypothesized top-down cascade (McPeek 1998; MacAvoy, *et al*. 2008).

We, the undersigned, agree to develop and implement bay wide management strategies aimed at reducing invasive catfish populations and mitigating their spread to protect against their ecological impacts. We agree to work together to promote a productive and balanced Bay ecosystem driven by science-based decisions. To achieve this outcome, we agree 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.

September 19, 2011

Sustainable Fisheries Goal Implementation Team Executive Committee

FOR NOAA _____

FOR MD-DNR _____

FOR DC-DDOE _____

FOR PRFC _____

FOR VMRC _____

FOR ASMFC _____

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

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.

Fabrizio, Mary, G. Garman, 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.