Project Framework

# Co-produced Research to Control Invasive Blue Catfish in Chesapeake Bay

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Morgan State University
Patuxent Environmental & Aquatic Research Laboratory

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# Problem

- Concerns over:
  - ❖ Predation impact
  - ❖ Overall ecosystem stability
  - ❖ Negative impacts on other commercially-important species

- A wide range of divergent ideas have arisen to manage and reduce the invasive population, along with sometime conflicting strategies to develop new fisheries intended to generate new possibilities for fisher income

- Preferred fishery management strategies differ by stakeholder group and by jurisdiction

# Project Goal

*To address the urgent need to unify stakeholders, managers, and researchers through co-production of a shared set of management preferences to both control the invasive Blue Catfish population and develop new fisheries for the species in the Chesapeake Bay region*

## Approach:

- Preferred management strategies developed through iterative evaluation of the modeled effects
  - ❖ Group-identified management options
  - ❖ Series of in-person meetings held over the next 1-1/2 years
  - ❖ Stakeholder-centered, professionally-facilitated
  - ❖ The trade-offs of different strategies (e.g., effects on other species, economic impacts for jurisdictions), visualized using a holistic, spatially-explicit modeling approach

# Partners

*Signatories Committed to Participation on Proposal*

***Commercial sector – Harvesters*** *(representation from multiple jurisdictions):*

***Captain William Rice*** *(Potomac R.), (Second vacant seat to be filled)*

***Commercial sector – Fish Processors:***

***Mr. Greg Casten*** *(DC);* ***Mr. Mead Amory*** *(Virginia)*

***Commercial sector – Seafood Sales and Marketing:***

***Mr. Matthew Scales*** *(Maryland),* ***Mr. Mike Hutt*** *(Virginia)*

***Recreational sector – Trophy Guides and Tournament Anglers:***

***Captain Christian Moore*** *(Blue Catfish focus),* ***Captain Chad Koenig*** *(Mixed Species focus)*

***Recreational sector – Independent Anglers:***

***Mr. John Page Williams***

***Recreational sector – Organized Anglers:***

***Mr. David Sikorski*** *(Maryland)*

***Non-Governmental Conservation Organizations:***

***Dr. Allison Colden*** *(Maryland),* ***Ms. Jaclyn Higgins*** *(Regional)*

***Governmental:***

***Adrienne Kotla*** *(Virginia)*

***Jurisdictional Fishery Managers:***

***Mr. Patrick Geer*** *(Virigina, saltwater),* ***Mr. Mike Bednarski*** *(Virginia, freshwater),* ***Ms. Ingrid Braun-Ricks*** *(Potomac R.),* ***Ms. Lynn Fegley*** *(Maryland)*

***Interjurisdictional Coordination & Support:***

***NOAA Chesapeake Bay Office, Mr. Bailey Robertory*** *(Invasive Catfish Workgroup Coordinator)*

***NOAA Science & Technology, Dr. Howard Townsend*** *(Modeler)*

***NOAA Restoration Center, Dr. James Maples*** *(Economist)*

***Project Facilitator:***

***Ms. Rita Graham*** *(Pennsylvania)*

# Evaluation

*A panel of external experts will be engaged to provide ongoing evaluation, and strategic guidance, throughout the project*

The External Advisory Panel experts will include:

- Regional Fishery Managers
- Biologists
- Fisheries/Natural Resource Economists
- Fisheries/Ecological Modelers

*Additional Information:*

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# Activities: *How will the project goal be achieved?*

*Objective 1*: **Build a stakeholder network** and **develop management scenarios** through in-person meetings with fisheries stakeholders and jurisdictional managers. **Jurisdiction-specific** Blue Catfish harvest strategies that are **agreeable among the stakeholders and implementable by the managers** will be provided to the Chesapeake Bay fishing community, along with additional stakeholder concerns identified during the project.

*Objective 2*: **Produce a spatially explicit ecosystem model for the Chesapeake Bay** estuary **that includes newly available science on Blue Catfish life history**, and the jurisdiction-specific fisheries**, stakeholder knowledge and ideas for managing the species** produced in Objective 1.

*Objective 3*: **Estimate regional economic impacts for each jurisdiction** using IMPLAN software, **for each scenario of interest** as **identified by stakeholders and managers** in Objectives 1 and 2. Economic metrics (e.g., number of jobs, dollars) will be provided for **stakeholders** to help in their **evaluation of trade-offs**.

*Objective 4*: **Identify stakeholder preferences** to manage the Blue Catfish population **in each jurisdiction** of the Chesapeake Bay and **apply structured decision making (SDM)** to progressively **refine stakeholder preferences** at in-person meetings using the products of Objectives 2 and 3.

*Objective 5*: **Disseminate** project **findings** to resource managers, commercial fishery advisory commissions, watermen's associations, researchers, and environmental NGO's **though meetings, fact sheets**, **summary reports**, **presentations**, **and** peer-reviewed **publications**.

*Objective 6*: **Elicit stakeholder feedback** on their experience through **one-on-one meetings with each participant** at the end of the process.

# Partners

*Successful engagement of the wide range of stakeholders as research partners working together with project scientists for solutions is a key feature in our approach.*

- We recognize that Blue Catfish stakeholders have divergent, and sometimes antithetical ideas on how to best manage the developing fisheries for Blue Catfish in the Chesapeake Bay. However, we also acknowledge this disparate group have common interests in maximizing the economic potential of commercial, charter, and recreational fisheries that are still developing for this invasive species.
- The science team will iteratively visualize trade-offs of the preferred management strategies for the stakeholders' evaluation and refinement.
- An experienced, professional facilitator with a record of previous success will guide our in-person, stakeholder-centered process, ensuring all stakeholder voices are heard.

# Timeline

Objectives, major tasks, and responsibilities over the two-year project. “X” indicates planned completion. “CP” is collaborating partner.

| *Project Window: 03/2025 – 02/2027* | | Y1Q1 | | | Y1Q2 | | | Y1Q3 | | | Y1Q4 | | | Y2Q1 | | | Y2Q2 | | | Y2Q3 | | | Y2Q4 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PDF-Postdoctoral Fellow (ToBeHired), TI – Ihde (PI), SK-Knoche (Co-PI), GS-Grad.Student, CP-T(Townsend), CP-M (Maples), F-Facilitator, ST-StakeholderTeam | | M | A | M | J | J | A | S | O | N | D | J | F | M | A | M | J | J | A | S | O | N | D | J | F |
| **1. Complete Stakeholder Team, Develop (ST mtgs 1,2), & Refine (ST mtgs 3,4) Management Scenarios** | | - | - | - | - | - | - | - | - | - | - | - | X | | | | | | | | | | | | |
| 1.1 | Verify key Stakeholders engaged (PDF, SK, TI, F) | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.2 | ST meetings 1&2; identify initial management strategies & metrics (F, ST, PDF, GS, TI) | | | | | | | | | | | | | | | | | | | | | | | | |
| **2. Produce EcoSpace Model & ST Scenarios** | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | X | | | |
| 2.1 | Revise Existing EcoSpace model (PDF, GS, TI, CP-T) | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.2 | Customize fishing fleets (PDF, GS) | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.3 | Calibrate model (PDF, GS, TI) | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.4 | Conduct harvest scenarios (PDF, GS) | | | | | | | | | | | | | | | | | | | | | | | | |
| **3. Estimate Economic Impacts** | | | | | | | | | | - | - | - | - | - | - | - | - | - | - | - | - | X | | | |
| 3.1 | Conduct IMPLAN Analysis for each scenario (CP-M, PDF, GS, TI) | | | | | | | | | | | | | | | | | | | | | | | | |
| **4. Identify Stakeholder Preferences** | | | | | | | | | | | - | - | - | - | - | - | - | - | - | - | - | X | | | |
| 4.1 | Introduce structured decision making (SDM) approach, ST mtg #2 (TI, F, PDF) | | | | | | | | | | | | | | | | | | | | | | | | |
| 4.2 | Apply SDM to iteratively identify and refine stakeholder preferred management by jurisdiction, ST mtgs 3&4 (F, ST, PDF, GS, TI) | | | | | | | | | | | | | | | | | | | | | | | | |
| **5. Disseminate Products** | | | | | | | | | | | | | | | | | | | - | - | - | - | - | - | X |
| 5.1 | Share final report with the ST in virtual mtg 5 (F, ST, PDF, GS, TI, SK) | | | | | | | | | | | | | | | | | | | | | | | | |
| 5.2 | Share results broadly (PDF, GS, TI, SK) | | | | | | | | | | | | | | | | | | | | | | | | |
| **6. Gather Stakeholder Feedback** | | | | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | X |
| 6.1 | Conduct initial and final meetings with each Stakeholder (TI, F) | | | | | | | | | | | | | | | | | | | | | | | | |
| **Evaluate progress** – External Advisory Panel | | | | | | | | | | | | | | | | | | | | | | | | | |

# Project Impacts & Outputs

*General:*

- This project provides much-needed information on the jurisdiction-specific ecological outcomes and socio-economic impacts likely to result from a range of stakeholder-identified, preferred-management options to mitigate the effects of the Blue Catfish invasion in Chesapeake Bay tributaries.
- This project provides fishery managers with a broad understanding of the ecological and economic trade-offs expected under preferred management strategies, as well as which of these is preferred by their jurisdictional stakeholders.
- All participants will benefit from this work by allowing multiple sectoral concerns to be not only heard directly by managers but also discussed with all participants.
- All groups will see the ecological and economic trade-offs of their ideas to manage Blue Catfish visualized and compared side-by-side with competing ideas using an integrative, science-based tool.
- Each participating stakeholder group will gain an improved understanding of other stakeholders.

# Project Impacts & Outputs

*Sector-specific:*

- Commercial sector – provides harvesters and processors with science-based quantitative estimates of the economic impacts of the current USDA inspection requirements. The work will also provide insights for the commercial fishing community to make informed long-term investment and business operation decisions in a context of possible alternative futures for the Blue Catfish population in Chesapeake tributaries;
- Commercial Harvesters – identification of the most effective combination of harvest gear(s) and policies to both maximize catch of blue catfish and establish sustainable harvest fisheries by jurisdiction;
- Commercial – Fish Processors – identification of jurisdictional Blue Catfish management strategies needed to sustain adequate populations of a wide range of species in the system, so that the harder-to-market Blue Catfish do not overwhelm the traditional products available to bring to market;
- Recreational – Trophy Anglers and Guides – identification of jurisdictional Blue Catfish management strategies that would allow adequate numbers of trophy-sized Blue Catfish persist in areas of most interest to maintain their guide and trophy-focused businesses;
- Recreational - Independent Anglers – identification of the jurisdictional Blue Catfish management strategies needed to minimize population impacts for all species of interest to the ST; allowing a wide variety of sustainable fishing opportunities (e.g., striped bass [*Morone saxatilis*], spot [*Leiostomus xanthurus*], croaker [*Micropogonias undulatus*], white perch [*Morone americana*]) to continue to be available throughout the Chesapeake, despite the persistence of the newly established blue catfish population;
- Non-governmental Conservation Organizations (NGOs) – identification of Blue Catfish management strategies needed to minimize impacts to other important populations and ensure sustainability of a wide range of species in the system, despite the newly established blue catfish population.