December 2018 GIT meeting takeaways

OYSTERS

Oyster restoration

- Restoration is progressing and making progress towards 10 by 2025 outcome
    - 9 tributaries selected
    - 6 tributary plans completed
    - 2 tributaries restored (Lafayette and Harris Creek)
- Based on monitoring results from Choptank complex, evaluated against oyster success metrics, restoration is working and especially showing positive results in Harris Creek
    - 74% of Harris Creek reefs met target oyster density metric with multiple year classes present
- What is the cost of restoration and what resources are needed to complete projects/tribs and continue monitoring?
    - Varies based on what you want to achieve
    - Substrate, partnerships, location matter
- *Decision: St Mary's endorsed as the 9th tributary for restoration under oyster outcome*

Ecosystem Services

- Based on model results, oyster restoration is benefiting:
    - Blue crab fishery,
    - local economy,
    - water quality (Nitrogen, phosphorus and sediment removal) at watershed scale
- Economic benefits are over $20 million for Choptank area!
    - Need to communicate success and the benefits of restoration

Adaptive Management

- Representatives from both VA and MD shared lessons learned from restoration that will inform the Fisheries GIT's Strategic Review System (SRS) adaptive management

Virginia

- Science benefits of large scale restoration for stakeholders within and outside the restored tributary (dual benefits)
- Identify opportunities for reducing costs and leverage funding

Maryland

- The goal is to balance restoration, public fishery, and aquaculture
- Spread out sanctuaries, science based selection of areas, alternative substrate use
- Communication across interests to address challenges and highlight successes with evidence
- Funding: restoration is expensive, it helps to demonstrate benefits in justifying costs

Monitoring Protocol

- Evaluated monitoring based on three components:

    - Accuracy
    - Precision
    - Total cost (equal to overhead + patent effort + diver effort)
- Results Summary:
    - monitoring efforts at the budget levels evaluated attained sufficient sample sizes to provide acceptable relative margin of error for estimates of oyster density
    - Total sampling per gear type is potentially reduced by at least 30%
    - Recommend monitoring at reef level using stratified random sampling with a cap on diver effort

Decision: adopt recommended sampling procedures to reduce monitoring costs in interim

BMP Panel:

- Expert panel was charged with establishing a nutrient and suspended sediment reduction effectiveness determination decision framework for oyster Best Management Practices (BMPs)
- A final 2nd report will be presented for CBP approval May/June 2019

Oyster Stock Assessment

- First state-wide oyster stock assessment in Maryland commissioned by DNR
    - Used maximum sustainable yield to develop biological reference points (target and threshold fishing rates) at NOAA code spatial scale
    - Majority NOAA codes over threshold fishing rate
    - 18-30% oysters in Maryland coming from hatchery seed sources planted at sanctuary restoration sites

FORAGE

Shoreline Hardening Threshold

- Two approaches being used identify thresholds at which the amount of shoreline development compromises forage species (Baywide approach and temporal approach for the York River)
- Project is getting underway, first step is testing a few curve models to see which fit best
- Watershed land use at varying buffers paired with fish survey data to identify thresholds using GAMs and boosted regression

Forage Indicator Development

- Following May 2018 discussion, work has been ongoing to follow Buchheister and Houde methods to calculate abundance indices
    - Data sources over various time frames and spatial coverage
    - Indicator mock-up focused on predator species, several finfish prey species, and several invertebrate taxa
- Discussion around how we envision using a forage indicator
    - Great input on how to link to other efforts in the watershed
    - Should we pursue a stoplight model?

    - Concerns over what information on forage will mean for fisheries management action or trigger

BLUE CRAB

Blue Crab Stock Assessment Update

- The stock assessment update shows that the existing blue crab reference points are still working and that a full benchmark assessment is not needed at this time.
- Decision rules documenting what management options or actions will occur under different abundance and exploitation rate scenarios will be drafted.

Decision: No benchmark stock assessment needed at this time

CROSS-OUTCOME

Invasive Catfish

- The Executive Committee agreed there is still a need for the Invasive Catfish Task Force.
- Continued roles for the ICTF could be to communicate research results, coordinate across jurisdictions, and identify multi-stakeholder objectives.

Decision: maintain ICTF and develop clear objectives for the group

Summer Precipitation Impacts

- 2018 was a very unusual summer with well above average precipitation levels baywide
    - only second year above normal streamflow in over a decade (last was 2011)
- Salinities well below normal for prolonged period
- Mixing from storms reduced hypoxia in August but increased into October to at or above average levels
- Impacts on living resources:
    - High oyster mortality in areas and still being assessed, aquaculture harvests not impacted
    - Fish moved to remain at preferred salinity
    - Submerged aquatic vegetation (SAV): in August, high turbidity was observed outside of beds with grasses still present in Susquehanna Flats