CCP Priority Habitat Scoping Project Update

Scientific, Technical Assessment and Reporting (STAR) Meeting

July 27th, 2023

Scoping Project Overview

Goals of the Scoping Project:

- Produce a report on potential approaches and resources required for an updated watershed-wide dataset of important habitat

- This is the first phase that may lead to a more detailed future project to potentially update the Chesapeake Conservation Partnership (CCP) Priority Habitat dataset

Update Objectives:

- Identify where utilizing higher resolution land cover data would improve understanding of vital lands and habitat

- Identify other considerations and data that could improve the Priority Habitat model

Scoping Project Considerations

Chesapeake Bay Watershed Agreement - Vital Habitats Goal

- There are many habitat "endpoints" recognized in the Agreement

- *In addition to CCP Habitat Model interests, to what extent do we incorporate connections to Habitat-based Outcomes?*
  - Brook Trout
  - Stream Health
  - Bay Grasses
  - Wetlands
  - Black Duck
  - Fish Passage
  - Forest Buffers
  - Tree Canopy

Current Habitat Model

- Derived from the Nature's Network Conservation Design data developed in 2017

- Depicts Tiers 1-3 of important habitats, lands, waters, and connectors

- Target and prioritize the value of certain landscapes, connectivity, wildlife, climate, and other important considerations for the Chesapeake region

- Identifies 19,467,339 acres of important habitat for conservation, about 47% of the Chesapeake watershed

Picture from CBP Web Map Viewer
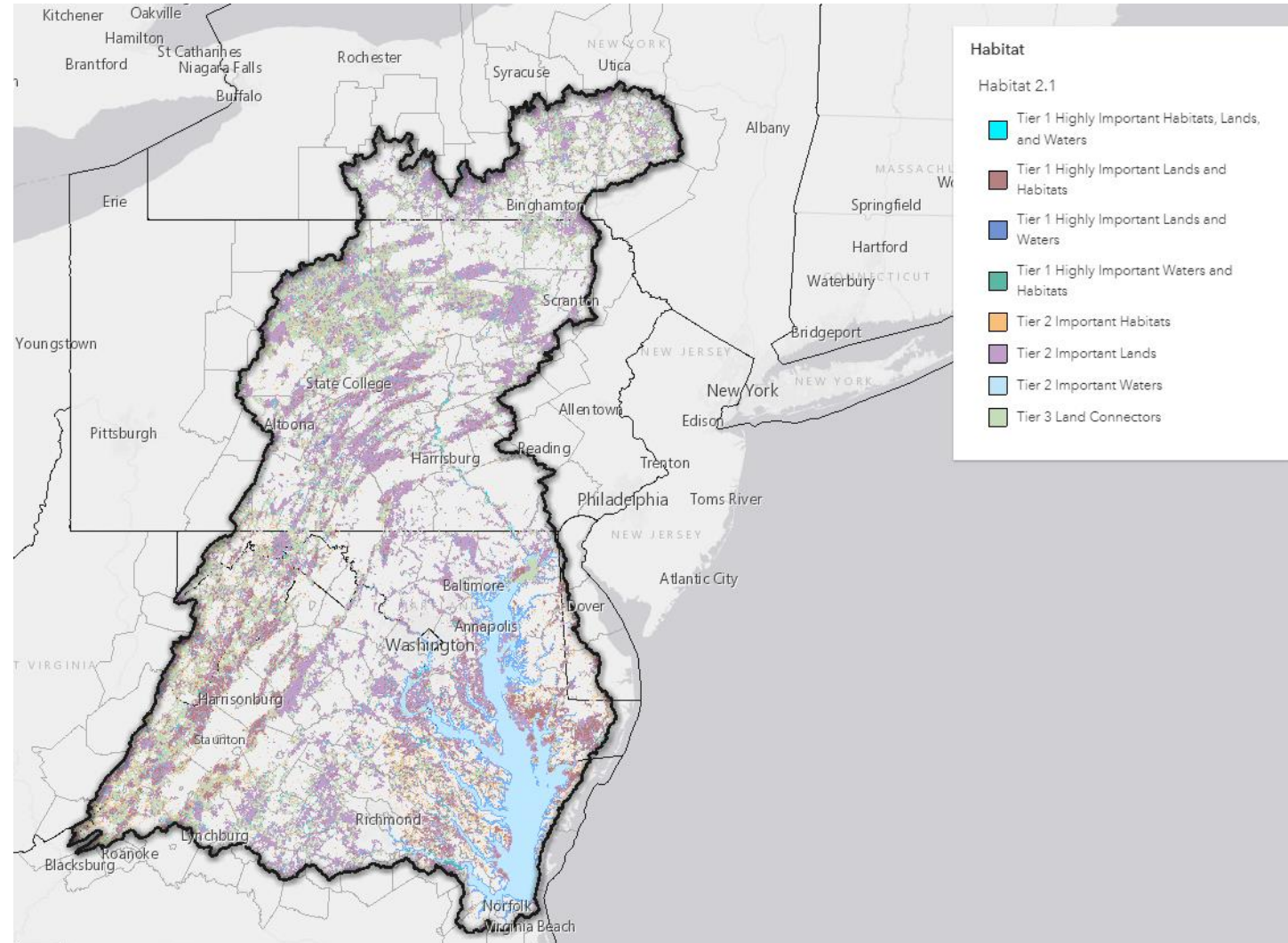
Habitat Model Components

- The Nature Network map includes 3 separate datasets:

  - Terrestrial Core-connector Network

  - Aquatic Core Areas

  - Core Habitat For Imperiled Species

- Difference from CCP Habitat Model

Photos from Nature's Network Webpage

Stakeholder Engagement

- 8 Subject Matter Expert interviews
  - One on one interviews conducted to dive deeper into specific technical questions

  Feedback:
  - Provided background information on development of current model as well as insights to consider for update
  - More flexibility given to users to make their own map is helpful, but also good to have a pre-made model as a starting point. It is difficult to make a truly dynamic tool
  - 1m data is less helpful at bay wide scale but would be useful at parcel scale
  - Matching up the model with the bay restoration goals will help with other efforts like aligning with NFWF grant selection criteria

Stakeholder Engagement

- 3 workshops

  - Two workshops for internal CBP stakeholders
  - One workshop for external stakeholders
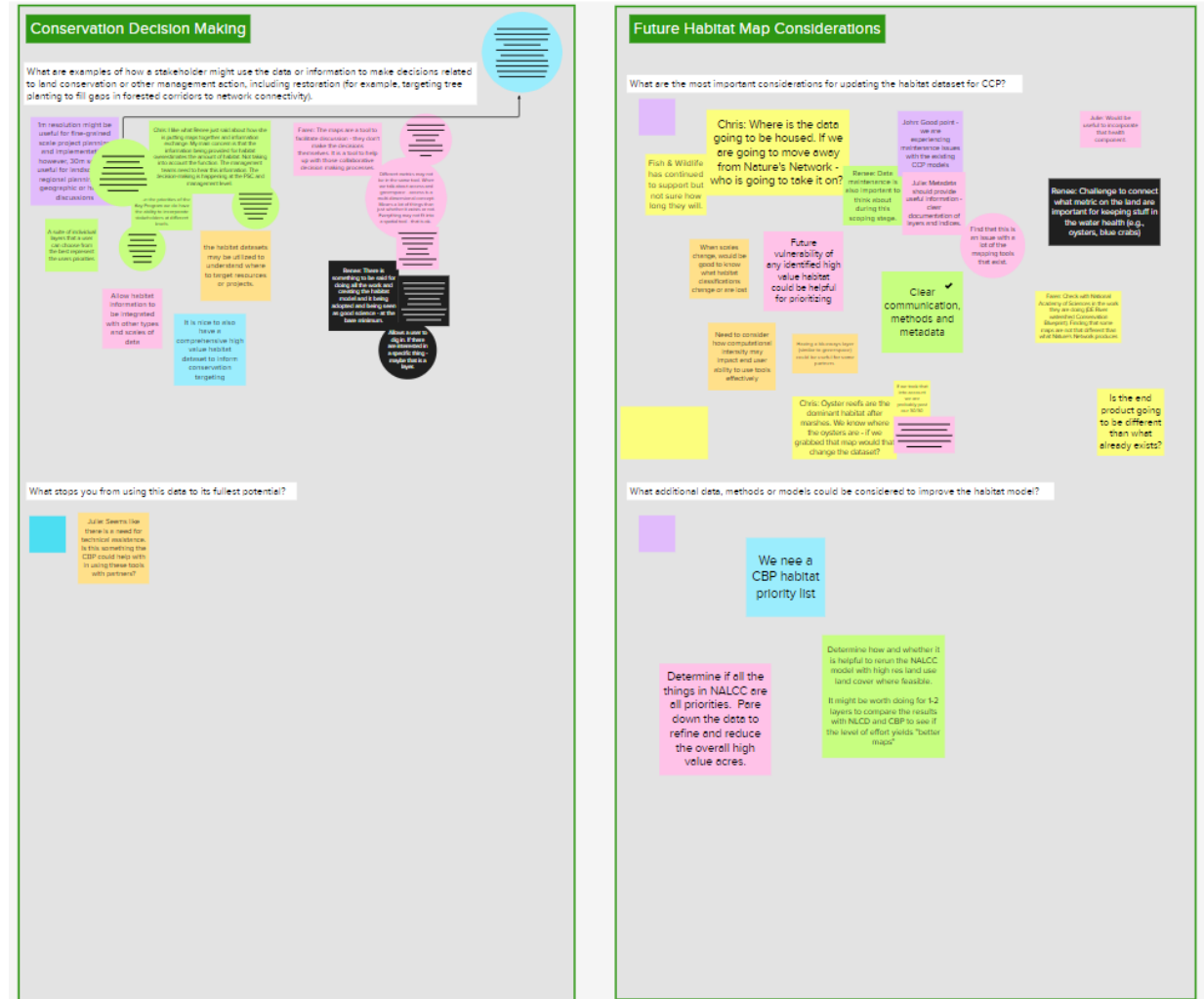
Recommendations

Model Update

- Invest in a developing new CBP Habitat Model. The current model is static, lacks a transparent method, is not widely used and is out of date relative to other data sources.

Purpose

- The purpose of the new model would be to serve as the CBP approved high value habitat layer to guide conservation investments and track conservation goals at the watershed scale. The model could be a reference for parcel-specific conservation and restoration, but the priority is to create a watershed-wide baseline screening and tracking tool.

Recommendations

Approach

Base layers: Adopt the new Conservation Design Nature's Network datasets as the foundation layers for the CBP Habitat Model and integrate updated datasets as they are released.

Optional layers will allow users to explore habitat goals in relation to climate resilience, underserved populations, and vulnerability to development.

Recommendations

Interface

- Create a dynamic web-based interface to house the new CBP Habitat Model that will provide flexibility in viewing individual data layers, changing scales, and adding data relevant to specific geography and programs (such as 1-meter land cover data set, state habitat models, social vulnerability data, climate resilience and other priorities to evaluate multiple benefits as appropriate).
- Integrate the new dynamic web interface into a landing page such as the CBP Targeting website to contain metadata, instructions, resources, and scenarios for utilizing the CBP Habitat Model for conservation funding and priorities.

Education/Outreach

- Invest in funding for outreach, education and technical assistance to integrate the new CCP Habitat Model into relevant conservation programs, priorities and funding throughout the Chesapeake Bay.

Potential Development Scenarios

A. Adopt Nature's Network 2.0
B. Tailor Nature's Network 2.0 with Chesapeake Bay data, including 10-meter land cover
C. Scenario B with 1-meter land cover data
D. Scenario B with 1-meter land cover integrated for select areas only (such as urban or urbanizing areas)

- Cost, Annual Maintenance, Staffing, Computing Needs, Development Timeframe, Updates

Considerations for 1M vs 30 M Land Cover Data

Considerations	Pros of 1-Meter Data	Cons of 1-Meter Data
Data storage and processing	• Possible to move toward cloud-based computing or code based	• Requires more storage, which adds an ongoing cost • Slower speeds to process plus additional time cost • Need to transition from using desktop GIS software
Utility compared to 30-meter data	• More detailed information at finer scale • Bay-specific classifications • May show fragmentation otherwise undetected by 30-meter data that could be relevant	• Such fine detail may not translate to differences at the bay or regional scale • May show fragmentation where habitat is still viable • May introduce errors that are difficult to correct
Update intervals	• Able to see changes in land cover over more frequent intervals	• Requires more level of effort and staff time (up to 10 times greater) to integrate updates given the larger files sizes
Aggregating to 5 meters, or using the 10-meter resolution	• Less computing power and storage needed • Still very granular level detail	• Not using full detail of 1-meter data • More difficult for end users to interpret 10-meter fractional dataset. The 1-meter data are rolled up into 10-meter data.
Recalculate model according to scale	• Provides more detail in urban or urbanizing areas where finer resolution is more relevant	• Larger computing effort • Slower speeds and more processing time and cost • May not be appropriate for CCP if statistics are only needed at bay-wide level
Ground truthing/ verifying accuracy	• Can see changes over time	• Ground-truthing would be larger effort

Additional Considerations

Development Process Considerations

- Existing Regional Models

- Model Ownership and Goals

- Stakeholder Coordination

Ongoing Program and Maintenance Considerations
- Staff capacity and responsibilities of the owner/ host of the model or web tool
- Understanding both the technical details of the tool and convey that effectively to users through outreach, education, and technical assistance side for users.
- Frequency with which the model or tool is updated

Looking Forward

Beyond the Scoping Project

- Additional subject matter expert outreach
- Additional research into the cost proposals related to other models and tools