

CHESAPEAKE BAY COMPREHENSIVE WATER RESOURCES AND RESTORATION PLAN

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Anacostia Watershed Restoration Partnership –
Management Committee Meeting

February 23, 2017

“The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation.”

Chesapeake Bay Comprehensive Water Resources
and Restoration Plan Watershed Assessment



US Army Corps
of Engineers
Baltimore District



US Army Corps
of Engineers
Norfolk District



AGENDA

- Authority
- Study Area
- Vision
- Goal
- Background
- Stakeholder Collaboration
- Plan Formulation
- Geospatial Analyses
- Schedule/Budget
- Next Steps



AUTHORITY



- United States Senate Committee on Environment and Public Works, Committee Resolution - 26 September 2002
- Section 4010(a) WRRDA 2014)
- Chesapeake Bay Agreement 2014
- EO 13508 Strategy 2010



STUDY AUTHORITY



4

*“Resolved by the Committee on Environment and Public Works on the United States Senate, that the Secretary of the Army is requested to review the report of the Army Corps of Engineers on the Chesapeake Bay Study, dated September 1984, and other pertinent reports, with a view to developing a coordinated, comprehensive **master plan** within the Corps mission areas for **restoring, preserving and protecting** the Chesapeake Bay ecosystem. The plan shall focus on **integrating existing and future work of the Corps of Engineers**, shall be developed **in cooperation** with State and local governments, other Federal agencies, the Chesapeake Bay Program, the Chesapeake Bay Commission, and the Chesapeake Executive Council, and shall encompass all Corps actions necessary **to assist in the implementation of the goals of the 2000 Chesapeake Bay Agreement**. The plan shall identify additional feasibility studies and research efforts required to better understand and solve the environmental problems of the Chesapeake Bay.”*



STUDY AREA



SHARED VISION

- June 16, 2014, the Chesapeake Bay Watershed Agreement was signed.
- Signatories from all Bay states and the Federal Leadership committee.
- CBCP will ALIGN with the Vision established in the 2014 Agreement with a slight change per stakeholder collaboration



“We envision an environmentally and economically sustainable AND RESILIENT Chesapeake Bay watershed with clean water, abundant life, conserved lands and access to the water, a vibrant cultural heritage, and a diversity of engaged citizens and stakeholders.”

GOAL

Develop a comprehensive and integrated master plan that would assist with implementation of the 2014 Chesapeake Bay Agreement:

- Effectively and efficiently engage Bay stakeholders to identify problems, needs and opportunities in the watershed and avoid duplication of ongoing or planned actions by others.
- Determine where and how USACE mission areas could be utilized in the watershed to support the goals of the 2014 Chesapeake Bay Agreement.
- Identify actions by other federal, state, and local government agencies and NGOs in the watershed to address problems outside of USACE mission areas.



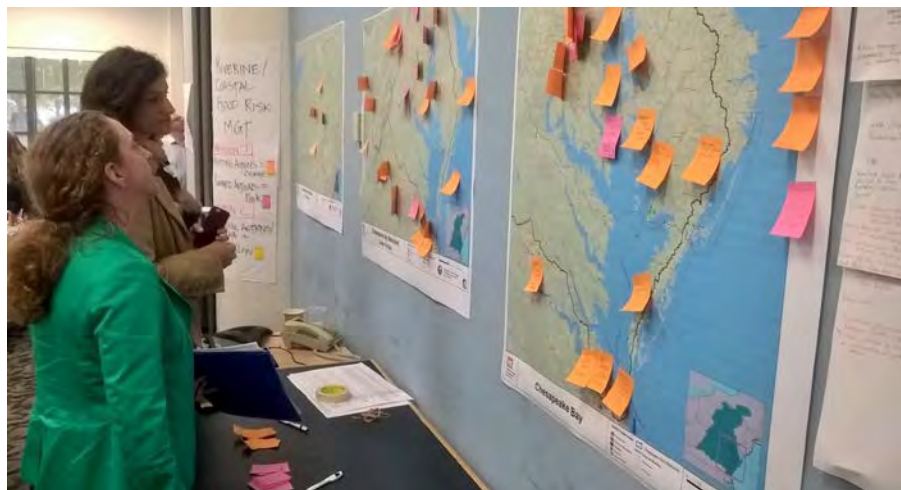
BACKGROUND

CBCP will result in a single, integrated restoration plan to:

- **Guide** implementation of actions that **protect, restore** and **preserve** the Bay
- **Adopt and Align** actions with what others are doing
- **Avoid duplication** of ongoing or planned actions by others
- Make maximum use of **existing information**
- **Identify** ecological problems, needs, and opportunities
- **Identify** projects for **further study** and **implementation**, including at least one for each Bay state and the District of Columbia

STAKEHOLDER COLLABORATION

- ✓ Study Initiation Notice
- ✓ Federal Agency Coordination Letters
- ✓ Webpage, email updates
- ✓ Interagency watershed planning collaboration workshop
- ✓ Strategic Engagements: Cross GIT, SAGE, FWS, DoD Chesapeake Bay Action Team
 - Upcoming
 - Topical Webinars
 - Review of Draft Report



STAKEHOLDER INPUT

Flooding and Storm Damages

Ecosystem Degradation

Economic and Social Vulnerability

Constraints, Inventory Existing Conditions

Future Forecasts

Identified Priorities by others

Composite Analysis

Action by others

Findings, Needs, and Opportunities

Strategies, Cost Ranges, Benefits

Actions for others under their authorities

USACE Actions Roadmap

Funding and Implementation Strategy

Implementation Barriers, Sequencing

Costs/Benefits

State Plans

FULL STRATEGY



Flooding and Storm Damages

- Eroding shorelines
- Flood inundation
- Loss of life/life safety
- Direct and indirect infrastructure damages

Ecosystem Degradation

- Wetlands
- SAV
- Oysters
- Stream health
- Connected habitat/corridors
- Anadromous/diadromous fish
- Brook trout
- Black duck
- Degraded streams
- Forested riparian buffers
- Fish passage
- Rare, threatened, and endangered species
- Bird habitat
- Water quality
- Chemical contaminants
- Legacy sediment
- Tidal fisheries
- Benthic habitats
- Tree canopy/forests
- Blue crab
- Healthy landscapes

Economic and Social Vulnerabilities

- Limited public access/recreation
- Limited education and stewardship
- Aging infrastructure
- Navigation issues – inefficiencies, vessel damages
- Vessel damages due to shoaling
- Water supply
- Source water protection

Constraints, Inventory Existing Conditions

Future Forecast and Stakeholder Input

Composite Analysis

COMPOSITE ANALYSES



Identified Priorities by others



Action by others

GIS cluster analysis or other processes for these evaluations such as a scoring scheme or density analyses to identify hot regions of focused activity (or lack of activity).



USACE Mission Analyses

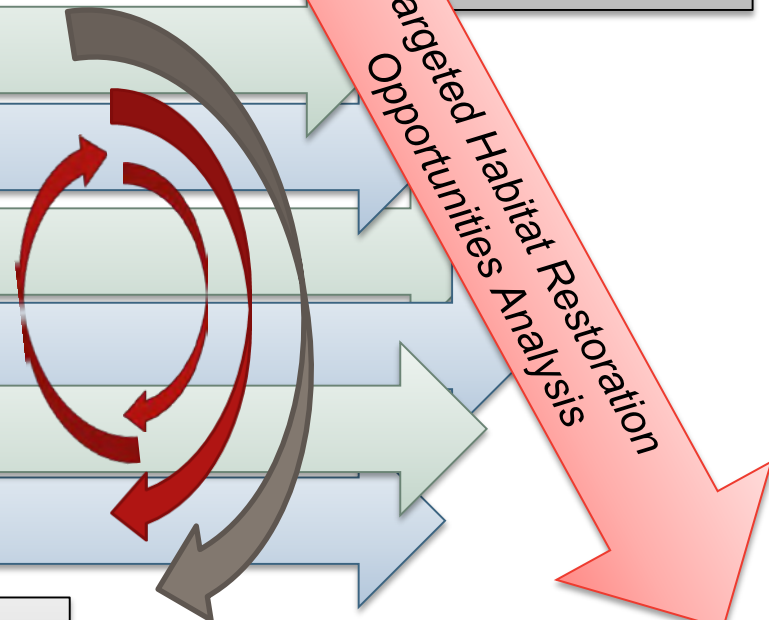
Connectivity Analysis

Healthy/High Value Habitats Analysis

Watershed Degradation Analysis

Threats Analysis

Socioeconomic Analysis



These analyses would be completed independently. The results will then be used with results from other analyses to answer questions and develop recommendations.



FUTURE WITHOUT PROJECT CONDITIONS



Areas of Interest

Climate Change Threats

Land use/Population Trends

Planned Projects

Data Sources & Process

Cross-GIT Mapping Team - CBP Model of Development Threats~ Spring 2017.

USACE- CBP land cover data set, ICLUS

USFWS PAR

Forecast future conditions planning horizons to 2025, 2050, and 2100

Projects planned through 2025 - Chesapeake Bay EO 13508 and Phase III TMDL effort

Semi-quantitative analyses to forecast future conditions to 2050 and 2100

Analyses of SLC for the Chesapeake Bay adopted from the NACCS SLC analyses (EC 1165-2-8162)



GEOSPATIAL DATA COLLECTION SPREADSHEET

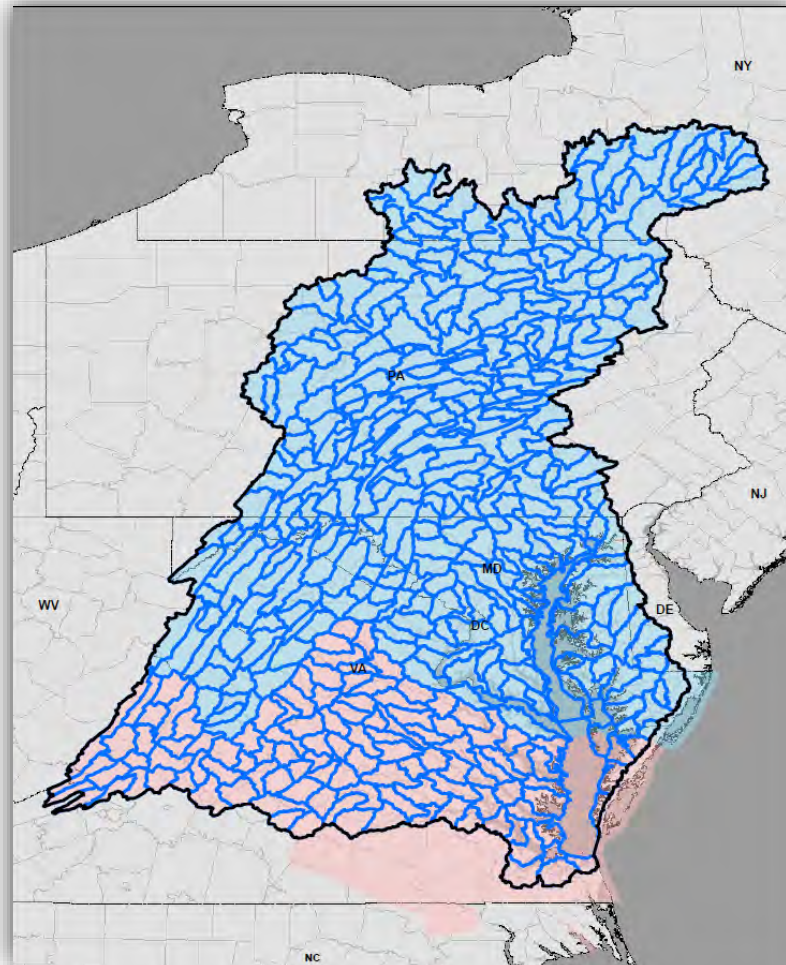
Chesapeake Bay Comprehensive Plan Data Inventory									
DATA THEME / CATEGORY	DATA DESCRIPTION	ACTION TO BE TAKEN	CONTACT	DATA OBTAINED ?	RESPONSIBLE GIS TEAM MEMBER	STATUS	DATA SOURCE		
Boundaries	Additional boundaries	develop a layer and map showing state, county, and USACE district boundaries		YES	Jason O'Neal	Complete	HSIP Gold 2015 DVD		Wwab-netapp\1nab.ds.usace.2
	USACE Authorities	develop a layer and map showing USACE Authorities		YES	Jason O'Neal	Added 1/23 by Angle - available through	Army Comp Plan		Wwab-netapp\KGIS\PLD\DATA\
	HUC10 Watershed boundaries	develop a layer and map showing HUC10 boundaries		YES	Jason O'Neal	Complete	http://hd.usgs.gov/hd.html		Wwab-netapp\1nab.ds.usace.2
	Land use within Chesapeake Bay watershed	develop a layer and map that depicts land use by major category in each HUC10		YES	Norberto Quinones	Working on layer	Chesapeake Conservancy & VA DEQ via NFVF		Wwab-netapp\1nab.ds.usace.2
Landuse/land cover	Percent impervious cover	develop a layer and map that shows percent impervious cover in each HUC10		YES	Norberto Quinones	Working on layer			Wwab-netapp\1nab.ds.usace.2
	Percent forest cover	develop a layer and map that shows percent forest cover in each HUC10		YES	Norberto Quinones	Working on layer			Wwab-netapp\1nab.ds.usace.2
	Percent forested riparian buffer	develop a layer and map that shows percent of buffers that are forested - possibly utilize Riparian	Angle	NO	Norberto Quinones	Working on layer	have reached out to Sally Claggett inquiring latest Bay efforts		Wwab-netapp\1nab.ds.usace.2
	Wetlands	develop a layer and map that shows percent wetlands within each HUC10		YES	Norberto Quinones	Complete	https://www.fws.gov/wetlands/Data/DataDownload.html		Wwab-netapp\1nab.ds.usace.2
	Soils			YES	Norberto Quinones	Creating Map	?		Wwab-netapp\KGIS_Store\So
	Shoreline structure	develop a layer and map that depicts shoreline by classification (NACCS/NOAA data)	Dave R	YES	Jason O'Neal	Follow up with Dave			Wwab-netapp\1nab.ds.usace.2
	NOAA ESI Shoreline Classifications	develop a layer and map that shows eroding shorelines	Dave R	YES	Norberto Quinones	Creating Map	http://response.restoration.noaa.gov/es1_downloading		Wwab-netapp\1nab.ds.usace.2
	USGS Coastal Vulnerability Index/vulnerable shoreline	incorporate into detailed shoreline analysis (Step 3)	Dave R	YES	Norberto Quinones	Complete	http://www.osc.noaa.gov/digitalcoast/data		Wwab-netapp\1nab.ds.usace.2
	Marginal Blue Infrastructure (Ranked Shoreline)	incorporate into shoreline analysis?	Angle	YES	Norberto Quinones	Complete	http://map.marginal.gov/IPages/data.aspx		Wwab-netapp\1nab.ds.usace.2
	Marginal Coastal Resiliency Assessment - Shoreline Hazard Index	incorporate into shoreline analysis?	Angle	YES	Norberto Quinones	Complete	http://map.marginal.gov/IPages/data.aspx		Wwab-netapp\1nab.ds.usace.2
Streams	Stream network	develop a layer and map that shows the stream network categorized by stream order throughout watershed		YES	Jason O'Neal	Complete	HSIP Gold 2015 DVD		Wwab-netapp\KGIS_Store\Pr
	Stream order		Chris Wright,	YES	Jason O'Neal	Requested from CBP	USGS		Wwab-netapp\1nab.ds.usace.2
	Impaired streams on 303(d) List	develop 1) a layer that depicts the impaired stream network and 2) a layer that depicts the number of miles of		YES	Jason O'Neal	Requested from CBP	link for 303(d) is at https://www.epa.gov/exposure-assessment-models/303(d)-listed		Wwab-netapp\1nab.ds.usace.2
Habitats	Stream health	develop a layer and map that depicts stream health by HUC10 (replicate Army Comp Plan analysis)	Angle	NO	Jason O'Neal	Requested from CBP	Chesapeake Bay Program Cross GIS Mapping Team - Stream Health		Wwab-netapp\1nab.ds.usace.2
	Submerged aquatic vegetation (SAV)	develop a layer and map that shows historic and current habitat (replicate Army Comp Plan)		YES	Jim Green				Wwab-netapp\1nab.ds.usace.2
	Historic oyster reef habitat	develop a layer and map that shows historic and current habitat (replicate Army Comp Plan)	Angle	YES, but map	Jim Green		Army Comp plan files		Wwab-netapp\1nab.ds.usace.2
	Fish passage blockages	develop a layer and map that shows number of fish passage blockages by HUC10		YES	Miranda Pijan	Complete	http://www.fishhabitatool.org OR https://ecos.fws.gov/geoinf (shows number of		Wwab-netapp\1nab.ds.usace.2
	Dielutinous and resident fish habitat	develop a layer and map that shows habitat range - historic and current		YES	Miranda Pijan				Wwab-netapp\KGIS_Store\H0
	Vulnerable shorelines				Jim Green				
	Eastern Brook Trout	develop a layer and map that depicts EBT habitat	Angle	NO	Jim Green	Duplicate from CBP layer, Brook Trout?	Chesapeake Bay Program Cross GIS Mapping Team - Brook Trout		
	Black Duck	develop a layer and map that depicts black duck habitat, may also want to include a layer on potential	Angle	NO	Jim Green	Duplicate from CBP layer, Black Duck	Chesapeake Bay Program Cross GIS Mapping Team - Black Duck Energetics		
	Primary migration pathways - marsh	develop a layer and map showing tidal marsh migration with SLFI specified marsh migration for this, but	Angle	YES	Miranda Pijan		https://halco.databasin.org/gallery/28f4de780c444634a45e4acc53a09558e9pa		Wwab-netapp\1nab.ds.usace.2
	Bird migration pathways	develop a layer and map showing Atlantic Flyway	Angle	YES	Miranda Pijan		Ducks Unlimited - http://www.ducks.org/Conservation/Geographic-Information-		Wwab-netapp\1nab.ds.usace.2
Air Quality	Designated Use	Each state has a designated use for their streams and waterways. If pertinent, we could depict these in a	Angle		Miranda Pijan		Margland		
	Nesting locations of wading and waterbirds	develop a layer and map depicting nesting locations		YES	Jim Green		http://www.northeastcoastdata.org/		Wwab-netapp\KGIS_Store\H0
	Zones for ozone and PM25	develop a layer and map depicting attainment and non-attainment zones (replicate Army Comp Plan)	Angle	YES	Jim Green		Army Comp plan files - just make sure up to date		
Chesapeake Bay Model Data	Overall relative effectiveness of nitrogen	develop a layer and map depicting ranking of overall relative effectiveness of nitrogen by HUC10 (replicate	Angle	YES	Jim Green		Army Comp plan files - just make sure up to date		
	Overall relative effectiveness of phosphorus	develop a layer and map depicting ranking of overall relative effectiveness of Phosphorus by HUC10 (replicate	Angle	YES	Jim Green		Army Comp plan files - just make sure up to date		
Land conservation, preservation, and easements	SPARROW Nutrient Yield (GIT)		Chris Wright,		Doug Hessler	Requested from CBP	Chesapeake Bay Program Cross GIS Mapping Team - SPARROW Nutrient		
	Chesapeake Bay protected and conserved lands	develop a layer and map depicting subject, overlay with layers highlighted in green to develop planned project map	Angle		Jason O'Neal	Requested from CBP	Chesapeake Bay Program Cross GIS Mapping Team - Protected Lands		

COMPLETE
DATA REQUESTED
NEED MORE INFO

- GIS Team - organization and tracking progress
- ~150 data layers currently on list
- Sub-teams to add specific data needs
- Need to align data collection efforts with geospatial analysis



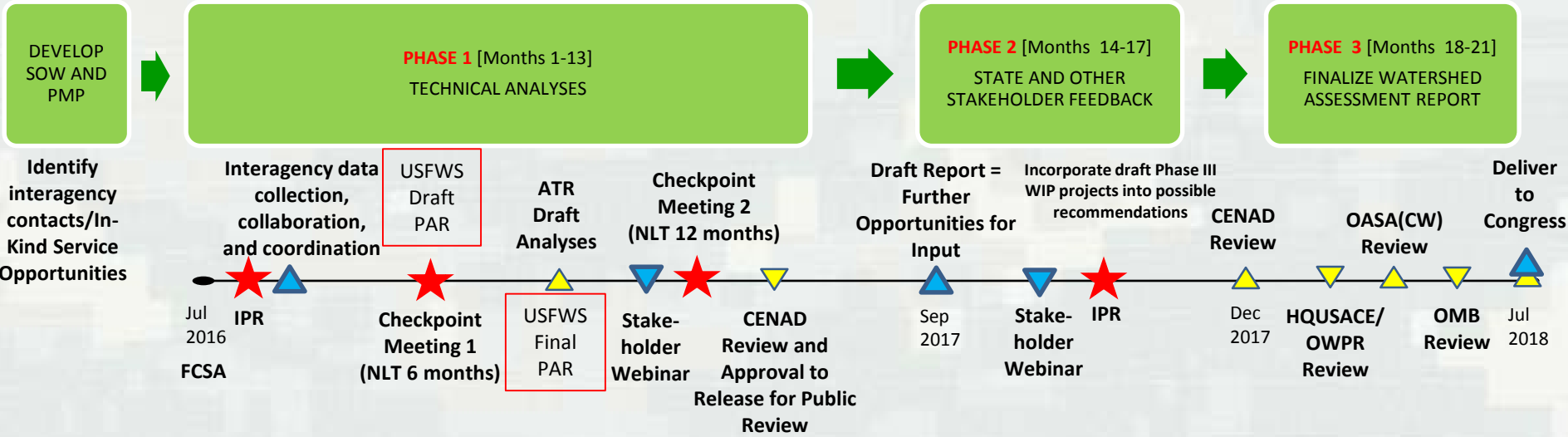
SAMPLE MAPS SHOWING HUC-10 LEVEL WATERSHED



Chesapeake Bay Comprehensive Plan Milestone Schedule

Chesapeake Bay Program Management
 Strategies and Action Plan Synchronization

State Draft Phase III WIPs 2017-2018



PHASE 1 [Months 1-14]

1. Vertical team IPR
2. Interagency watershed planning collaboration workshop
3. Data collection-**ONGOING**
4. Existing and future conditions forecast/geospatial analyses **ONGOING**
5. Coordinate and synchronize Chesapeake Bay Program management strategies and biennial work plans **ONGOING**
6. Vertical team IPR – Checkpoint Meeting 1 - **TODAY**
7. Review Draft USFWS PAR
8. Complete geospatial analyses
9. ATR draft geospatial analyses
10. Stakeholder webinar
11. Vertical team IPR – Checkpoint Meeting 2
12. Draft report preparation
13. District quality control and sponsor/state POC reviews
14. CENAD review and approval to release for public review

PHASE 2 [Months 15-18]

1. Release draft report for state, other stakeholder, and public review
2. Respond to comments
3. Incorporate latest information related to draft Phase III watershed implementation plan data
4. Final report preparation
5. District quality control and sponsor/state POC reviews

PHASE 3 [Months 19-21]

1. CENAD review
2. Comment response
3. HQUSACE/OWPR review
4. Comment response
5. OASA(CW) review
6. Comment response
7. OMB review
8. Comment response
9. HQUSACE Chief, Planning and Policy approval
10. HQUSACE RIT coordinates with OASA(CW) delivery of final report to Congress

**Initiate New Start USACE Feasibility Study Funding Requests/
 Initiate New Start CAP or Technical Services Actions/
 Coordinate Section 510 Implementation Plan**



- = USACE Vertical Team Integration Action
- = USACE Reviews
- = Stakeholder Collaboration Opportunity

NEXT STEPS

Between now and Checkpoint Meeting 2

- Complete data collection-**ONGOING**
- Complete existing and future conditions forecast/geospatial analyses
- Complete coordination/synchronization with CBP management strategies and biennial work plans
- Review draft USFWS PAR
- ATR draft geospatial analyses
- Stakeholder webinars (3)

