AgWG Input Data Concerns

WQGIT

November 30th, 2020

CAST-21 Workplan (Working Draft)- AgWG Update

Approved data and method changes need to be finalized through the WQGIT by Sept. 1, 2021

KEY ACTION	STATUS
Task 1: Updates to data & methods that typically occur every 2 years.	 On-going In process: "Rules of the Road" document for data submissions
Task 2: Investigate alternative forecasting methods for ag land uses & animals	 In process Nov 19: CBPO presentation on 4 methods of forecasting Return March 2021 for decision
Task 3: Investigate 2012-2017 Ag Census change for fallow/idle acres	 Sept 17 AgWG presentation (L. Collins, D. Montali) Consulted NASS, no AgWG feedback No further action: Seek clarity via landcover & LiDAR imagery (Task 4)
Task 4: Investigate use of latest landcover & LiDAR imagery to better define changes in total ag (& other land use) acres	 Oct 15 AgWG: P. Claggett, USGS & J. Czawlytko, Chesapeake Conservancy Send inquiries to Peter Claggett Return in Jan/Feb 2021 for decision
Task 5: Investigate alternatives for double-crop acre estimates	 Oct 15 Oct AgWG (O. Devereux) Consulted NASS: agreed with estimation method, no partnership feedback No further action
Task 6: Consider supplemental NM for soybeans	• Dec Ad Hoc & AgWG
Task 7: QA/QC'd historic & current layer pop. data for Hillandale Farms (PA)	 No further action Dec Ad Hoc & AgWG In process CBPO- future presentation to AgWar CAST 21 Schedule: All data and methods approved In process Monthly Meetings
Task 8: Build-in Verification Ad Hoc Team products	 In process Monthly Meetings Reminsept 1, 2021 Final Control Final Final Control Final Control Final Control Final Control Final Co

September AgWG Call:

Action: The Ad Hoc Cast Concerns group will discuss and prioritize CAST concerns raised in addition to the current "CAST-21 Workplan" and bring recommendations back to the AgWG.

October AgWG Call:

Action: AgWG members and interested parties are asked to review materials and send feedback to Loretta Collins (Icollins@chesapeakebay.net) and Gary Felton (gfelton@umd.edu) regarding today's discussion of CAST concerns by COB Friday November 6th.

November AgWG Call:

Reviewed outcomes of feedback period and ad hoc recommendations. No concerns expressed.

CAST-21 Workplan Goal: Accommodate new data and methods with CAST 2021 for changes that have been approved by the Partnership up until COB Sept. 1, 2021

Challenges

Resources

Capacity is limited at the CBPO & state agencies

BMP Effectiveness Protocol

Care to follow science

July 2020 AgWG Action: Loretta Collins will reach out to the state jurisdictional members to curate a list of issues to be addressed related to Phase 6 watershed model ag inputs before release of CAST-21. An ad hoc group will be formed to discuss these issues, seek resolution, and bring recommendations back to the AgWG.

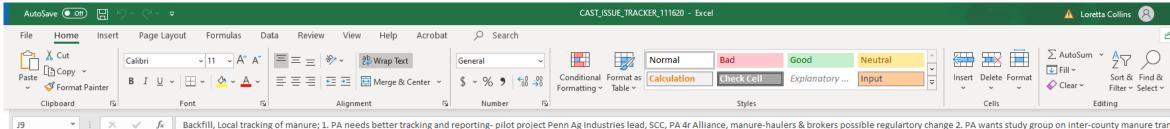
Animal Data

Crop Production/Acres

Nutrient
Applications/Assumptions

BMP Tracking & Reporting

BMP Effectiveness/Modeling



Backfill, Local tracking of manure; 1. PA needs better tracking and reporting- pilot project Penn Ag Industries lead, SCC, PA 4r Alliance, manure-haulers & brokers possible regulartory change 2. PA wants study group on inter-county manure trans budgets. AgWG study group: how to do thi? Need farmers to reduce applications but need to move. Liq manure is short distance- NEED INCENTIVES for short-distance MT. MTT- Jason/Ted

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BMPs	ORIGINAL APPROVAL	Priority Level	CAST-21	TIMELINE	JURISDICTIONS	LEAD	CBPO Contact	ACTION	NOTE	Status
Dairy Precision Feeding	Simpson & Weammert, 2009		Possible for 2021 Progress- if approved by relevant groups in the partnership.	TBD	PA	Bill Angstadt (PA)		Presentation to AgWG/Ad Hoc on recent MUN research and suggested change in implementation tracking based on updated science. Dairy expertise necessary (e.g. Penn State dairy specialist).	PA actively working on solution to tracking challenges. Seeking flexibility in CBP requirements. This would require a change to the Simpson & Weammert (2009) report recommendations. Dr. Virginia Ishler (Penn State) and Dr. Kathy Soder (ARS), both involved in original recommendations, have more recent reserach on dairy herds and MUN levels. Jennifer Reed-Harry (Penn Ag Ind. Assoc.) & Ron Ohrel (Mid-Atlantic Dairy Assoc.) working on dairy processor co-op sub-population verification. Brady Seeley (DEP) writing up a narrative of path forward. Interested in tracking % of PA dairy population under DPF versus individual herd management. Up to 70% of PA dairy population may use DPF.	leading effort.
Rotational/Precision Grazing	STAC, 2010	N/A	N/A	N/A	PA (withdrawn)	N/A	N/A	No Action		Withdrawn
Heavy Use Area Protection (HUAP)	Loafing Lot BMP, 2003	PA Leading	Possible for 2021 Progress- if approved by relevant groups in the partnership.		PA	Ted Tesler	Mark Dubin, Loretta Collins	Request info tracking of barnyard BMPs across states. Loretta will work with Ted on gather information.	Track & Reporting issue. Can NRCS 561 be crosswalked to Loafing Lot Management? Is 561 exclusive to Loafing Lots (non-poultry) across all jurisdictions?	Requesting information on tracking and reporting methods of AWMS and Barnyard BMPs from each jurisdiction. PA leading leading effort.
Heavy Use Area Protection (HUAP) - Poultry Pads	AWMS EP 2016	N/A	N/A	N/A	MD, DE, WV (withdrawn)	N/A	N/A	No Action. RESOLVED 11/13/20	Concern regarding crediting for poultry pads. Language included in 2016 AWMS EP report. Poultry pads defined as part of AWMS BMP.	Withdrawn
Winter Crop (proposed)	NM Expert Panel 2016		No	Next Watershed Model (possibly sooner)	PA, NY, MD		Vanessa Van Note	Loretta reach out to Dr. White, AgWG presentation in early 2021?	PA no change in EP recs, "WINTER CROP" proposal (EP)- corn silage-man- forage (multi-species foraging & feed- greenchop. "triple cropping" over two years. Charlie White (Penn State) research. Man N uptake (not leached) NEW SCIENCE! AgWG consider EP for winter crop. legume/legume grass hay LU as most appropriate for application of BMP.	Further discussion in Ad Hoc and invitation to brign expertise to AgWG/Ad Hoc.
MODELING	ORIGINAL APPROVAL/CROSSOVER	Priority Level	CAST-21	TIMELINE	JURISDICTIONS	LEAD	CBPO Contact	ACTION	NOTE	Status
Manure Treatment & Transport	MTT EP 2016, Phase 6 CBWN 2017	?/next model phase	No	Next Watershed Model	PA, MD		Vanessa Van Note	PA request to AgWG for study group; Check w/ MWG on progress on refined modeling efforts and efforts in general for the CBWM.	Backfill, Local tracking of manure; 1. PA needs better tracking and reporting- pilot project Penn Ag Industries lead, SCC, PA 4r Alliance, manure-haulers & brokers possible regulartory change 2. PA wants study group on inter-county manure transport county-level budgets. AgWG study group: how to do thi? Need farmers to reduce applications but need to move. Liq manure is short distance- NEED INCENTIVES for short-distance MT. MTT- Jason/Ted	Further discussion needed with MWG.
Pasture Nutrient Management	NM EP 2016; Phase 6 CBWM 2017	N/A	N/A	N/A	PA, NY (Withdrawn)	N/A	N/A	N/A	Nutrient spread curves; Manure eligible for beans (for sulfur) full season and bean sm gr. Winter Crops (EP); Nutrient Spread Slopes: request to limit pasture applications due to unintended consequences. Reviewed current eligibility in CAST source data. RESOLVED 11/13/20.	Withdrawn
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Ag Inputs into the Phase 6 Chesapeake Bay Watershed Model (CAST)

Summary of Concerns & Ad Hoc Response

Updated Draft

September 2020 AgWG Action: The Ad Hoc Cast Concerns group will discuss and prioritize <u>CAST</u> concerns raised in addition to the current "<u>CAST-21 Draft Workplan</u>" and bring recommendations back to the <u>AgWG</u>.

Ad Hoc November Recommendation: Create a tracking mechanism for jurisdictions' wish list for 2-year CAST updates & the next model phase.

Greyed-out issues resolved

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State	Cluster	Concern & Updates	CAST-21 Priority?* /Status	Action (First Steps)	FEEDBACK RECEIVED & NOTES (NOV)
MD/NY	Animal Data	Improve animal population estimates Explore other estimating options: Dairy, Equine, Beef Accounting for partial CBW counties.	High/on-going with CAST updates- (CAST-21 Workplan: TASK 1)	Winter 2020-2021 Loretta Collins will address NASS annual surveys for dairy. State report partial county animal population ratios to CBPO. Mark Dubin will update AgWG on animal characterization studies.	Loretta work with CBPO staff on possible use of annual NASS data for dairy Schedule Mark Dubin for ARWS update
MD/PA	Crop Production Data	Improve annual crop estimates • Annual Implementation Reports (AIR-MD) • USDA-FSA crop reporting • National Commodity Crop Productivity Index (NRCS)	High/on-going with CAST updates- (CAST-21 Workplan: TASK 1)	MD will reach out to state FSA office Encourage assignment of USDA liaison to the CBP (how? TBD) to facilitate better communication and understanding of data options	Seek periodic updates.
MD/PA/VA/NY	Nutrient Assumptions	Fertilizer Sales and Use Data: engaging state chemists	High/on-going with CAST updates- (CAST-21 Workplan: TASK 1)	State & industry partners work w/ state chemist to improve submission to AAPFCO.	Collaboration between MDA and industry partners working with state chemists to create template for all Bay states to improved data submissions to AAPFCO. CBPO assistance unnecessary.
NY/PA	Nutrient Assumptions	Nutrient Management on Pasture: Request inclusion of soybeans and small grain & soybeans as "manure eligible" to better reflect real-world management and relieve pasture of excess manure applications.	N/A: RESOLVED Nov 13, 2020	Winter/Spring 2021: Facilitate discussions btw AgWG MWG and/or CAST team on updating "Fertilizer Only" land uses or crop types and subsequent impacts and/or	hopefully before Phase 7- Bill A (for PA) You expressed Modeling Team concern on both refinements adjusting "nutrient spread

Feedback Received

Nutrient Management on Pasture

- Review of CAST data sources for Phase 6 with Ad Hoc Group
 - Issue resolved

"Winter Crop" BMP

- Would like to resolve before new watershed model- Bill A.
 - Schedule presentation on recent research on N fate following fall-manured forage crops.

CAST Workplan Task 1:

Updates to data & methods that typically occur every 2 years.

Animal Data

Animal Populations: explore other estimating options (MD/NY; Task 1)

Crop Production/Acres

Crop Production Acres: improve annual estimates (MD; Task 1)

Nutrient Applications/Assumptions

Fertilizer Sales and Use Data (MD; Task 1)

Improving Ag Data?

Crop Acreage Data

Alternative methods to account for fitting Ag Census data to CBP needs?

• Adjusting methods for estimating crop acres (e.g. double crops)

Alternative/supplemental data sets

• Other data sets at the state or federal level?

Animal Population Data

Additional NASS Annual Survey Data may be available to inform population trends.

• Dairy, Beef Cattle, Layers, Swine...

Direct from industry data can inform animal population <u>trends</u> between census years.

Requires careful cooperation, legal, privacy assurances

Manure Generated

Crop **Application**

Goal

Other Data Issues (new data incorporation every 2 years)

Soil P data

- Gary Shenk Sept 2018 presentation to AgWG on data set incorporated into the
- Additional soil P data is welcome and encouraged

Manure Nutrient Concentration Data

- Changes in management may result in changes in nutrient concentrations
- Additional manure concentration data is welcome and encouraged

Fertilizer Data

More accurate allocation of fertilizer within the CBW?

4. Define Inorganic Fertilizer **Available to Crops**

KEY ACTION

Task 1: Updates to data & methods that typically occurring every 2 years.

Reminder - CAST 21 Schedule:

- Sept 1, 2021 All data and methods approved
- Nov 1, 2021 CAST-21 Beta release
- Jan 1, 2022 Final CAST-21 release

CRITICAL CONCEPT:

To maintain integrity of CBWM there are two options for new data sets:

- Provide data all the way back through 1985. OR
- Use the **trend** in new data sets for the years available.

CBWM= Chesapeake Bay Watershed Model

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MD/PA	Crop Production Data	 Improve annual crop estimates Annual Implementation Reports (AIR-MD) USDA-FSA crop reporting National Commodity Crop Productivity Index (NRCS) 	High/on-going with CAST updates- (CAST-21 Workplan: TASK 1)	 MD will reach out to state FSA office Encourage assignment of USDA liaison to the CBP (how? TBD) to facilitate better communication and understanding of data options 	Seek periodic updates.
MD/PA/VA/NY	Nutrient Assumptions	Fertilizer Sales and Use Data: engaging state chemists	High/on-going with CAST updates- (CAST-21 Workplan: TASK 1)	State & industry partners work w/ state chemist to improve submission to AAPFCO.	Collaboration between MDA and industry partners working with state chemists to create template for all Bay states to improved data submissions to AAPFCO. CBPO assistance unnecessary.

BMP Tracking & Reporting

Dairy Precision Feeding (PA)

Heavy Use Area Protection- NRCS 561 (PA)



Ask:

- Request developing alternative methods to develop the needed data.
- Is there an effective approach in the mold of phytase use in poultry?

Challenge:

- Enabling and ensuring accurate tracking of farm operations (implemented on voluntary basis)
- Dairy Precision Feeding BMP recs from 2009 (merits revisiting)

WIP III SNAPSHOT: Dairy Precision Feeding

State	2019 Progress % Implementation	WIP 2025 % Implementation (AU)
DE	0	100 (4308.11)
MD	0	47 (19400.0)
NY	3.8	3.7 (10371.0)
PA	0	42.2 (25879.34)
VA	0 —	100 (68962.26)
WV	0	0

State	Cluster	Concern & Updates	CAST-21	Action (First Steps)	FEEDBACK RECEIVED & NOTES
			Priority?*		(NOV)
			/Status		
<mark>PA</mark>	ВМР	Dairy Precision Feeding:	Medium/Possible	PA facilitate presentation and	Phytase use is currently not
	Tracking &	PA has an initial approach to develop	for 2021 progress	discussion to the AgWG/Ad Hoc on	tracked as a BMP but is
	Reporting	data for reporting but long way to go.	reporting- if	suggested change in	accounted for through the
		Request developing alternative	approved by	implementation tracking based on	incorporation of updated
		methods to develop the needed data.	relevant groups	updated science on MUN and	nutrient concentration data
		"Pennsylvania stakeholders are	in the	tracking. Dairy expertise necessary	for manure/litter.
		engaged in how we can develop this	partnership.	(e.g. Penn State dairy specialist).	
		data, however, as with phytase use,			PA will take the lead in
		we believe there may be more			bringing issue forward for
		effective methods that the			consideration.
		partnership should explore instead of			
		running down individual feed			
		mixtures and "head under			
		management" level reporting."			
PA	ВМР	Heavy Use Area Protection (HUAP)		Suggested Fall/Winter 2021	Can NRCS crosswalk mapping
	Tracking &	In Pennsylvania, poultry pads are		Schedule a review of	be different for different
	Reporting	reported under NRCS CPS 313 (Waste	' ' '	tracking/reporting of Loafing Lot	states depending on their
		Storage Facility) and we see no	approved by	Management BMP across	tracking methods for barnyard
		conflict in mapping NRCS CPS 561	relevant groups	jurisdictions to determine feasibility	BMPs and AWMS BMP?
		(HUAP) to CBP BMP Loafing Lot	in the	of reporting NRCS CPS 561 as	
		Management.	partnership.	creditable. Include CBPO staff and	
				AgWG/ad hoc/WTWG. (excludes	
				poultry pads)	

BMP Effectiveness/Modeling

Winter Crop (NY/PA)

Manure Transport / Manure Treatment Technologies (PA)



Ask:

 New BMP recognizing forage-based cropping systems

Challenge:

Expert Panel needed

Resource limitations



Ask:

- AgWG sponsored study group
 - inter-county manure transport
 - MTT & nutrient backfill concerns

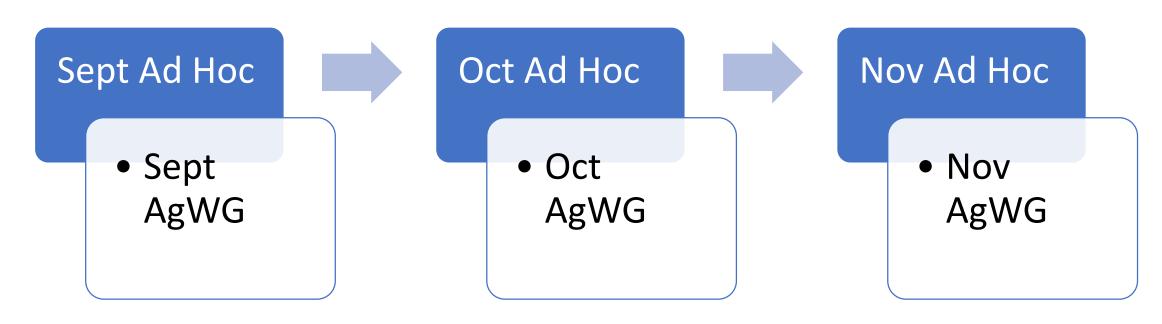
Challenge:

- Unresolved(?) issues related to MTT & N backfill (circa 2017)- need to check on this
- Agricultural input data for the Phase 6 CBWM* is collected, analyzed, and interpreted on a county-level
 - Crediting transport within-county or across river segments is not feasible with Phase 6 CBWM

State	Cluster	Concern & Updates	CAST-21 Priority?* /Status	Action (First Steps)	FEEDBACK RECEIVED & NOTES (NOV)
NY/PA/MD	BMP Effectiveness	are taking off corn silage end of August 1 to September coming back with fall manure applications and then following up that with winter forage crops. These are neither commodity or traditional cover crops, they're truly forage crops, where they're doing multi species- particularly for the reason of spring grazing or harvest as feed. They are removing these crops to cycle the nitrogen within their farming	/Status Low/ next watershed model	 Winter/Spring 2021 Invite Dr. Charlie White, Penn State, to discuss recent research on nitrogen fate in terms of manured winter forage and green chop. Follow-up discussion on Expert Panel needed, available resources and timeline. 	(hopefully before Phase 7)- Bill A (Dr. White could be scheduled sooner or reviewed on-line; the EP charter (refine the need) does not have to be delayed for 6-8 months) Bill A
		operations. Perhaps it's even better defined as what we now have as a legume or legume grass mix hay land use."			
PA	BMP Effectiveness	 Manure Transport/ Manure Treatment Technologies Request for a study group within the AgWG to better understand county nutrient budgets and applications. We are requesting a study group within the AgWG to look at how we would do this, as the modeling workgroup is looking at finer scale river segments 	Low/ next watershed model	Summer 2021/Fall 2021 Facilitate communication between AgWG Ad Hocand MWG/CBPO staff to further discuss manure transport possibilities. Possibly structure specific group to engage this issue.	What is the timeline for a Phase 7 model? What are the fundamental changes to be expected? When does a group need to be convened to address ag inputs and how should it be organized? Discussion with CBPO needed.

AgWG Ag Hoc

Jurisdictional reps reviewing submitted concerns Monthly updates to the AgWG



Ad Hoc November Recommendation: Create a tracking mechanism for jurisdictions' wish list for 2-year CAST updates & the next model phase.



Nov 30

Water Quality GIT Update

<u>Dec 17</u>

- AgWG cover crop discussion
- Updates from ad hoc/CAST items

Early 2021

- Update
 - NASS annual surveys (Task 1)
- Decision on forecasting (Task 2)
- Decision on land cover/LiDAR data (Task 4)
- Updated research
 - N fate for fall manure on forage crops ("winter crop")
 - Dairy Precision Feeding