



Chesapeake Bay Program
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Plastic Pollution Action Team Fall Meeting

Tuesday, October 29 · 1:00 – 4:00pm



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40 years of science, restoration and partnership.

Attendees

Kelly Somers (EPA, Vice-Chair)	Matt Gallagher (EPA, Chair)
Christina Garvey (CRC, Coordinator/Staffer)	Matt Robinson (EPA/CBP, Former Chair)
Bob Murphy (Tetra Tech)	William Nardin (UMCES)
Kristin Saunders (EPA/CBP)	Mark Trice (MD DNR)
Mark Southerland (Tetra Tech)	Tara O'Hare (EPA)
Rebecca Whiteash (PA DEP)	Christine Knauss (UMCES)
Austin Gray (VA Tech)	Jon Cohen (UDEL)
Allie Stevens (UMCES)	Phong Trieu (MWCOG)
Tish Robertson (DEQ)	Donna Marrow (MD DNR)
Carlie Herring (NOAA)	Adrienne Kotula (CBC)
Barbara Balestra (American U)	Emily Majcher (USGS)
Jesse Meiler (American University)	Greg Allen (EPA)
August Goldfischer (CRC)	Nicole Trenholm (ORP/UMCES/PL)
Jason Davison (American University)	



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Agenda

1:00 pm-1:15 pm	Introduction <ul style="list-style-type: none">● Roll Call
1:15 pm - 2:00 pm	Business <ul style="list-style-type: none">● Tetra Tech Contract Updates<ul style="list-style-type: none">○ Monitoring framework○ Updates on mysid shrimp and source tracking projects○ Discussion/questions
2:00 pm - 3:00 pm	Talks (15 min talk, 5 min for questions) <ul style="list-style-type: none">● Chesapeake Bay Report card (Christine Knauss)● Overview of VA Tech's Coastal and Inland Aquatic System Microplastic research (Austin Gray)● Micro and Macroplastics in Metro DC (Jason Davison)
3:00 pm - 4:00 pm	PPAT business <ul style="list-style-type: none">● Review original PPAT charge and future (Kelly Somers)● Beyond 2025 Updates (Kristin Saunders)

Action Items

Action Item: Christina Garvey to resend survey in follow-up email

Action Item: Members to complete survey

Action Item: Kelly Somers to secure group consensus towards pursuing the pilot program with USGS

Action Item: Members to reach out to Kelly Somers about interest about joining workgroup to help develop monitoring pitch to USGS

Action Item: Kelly Somers to start sharing work plan document

Action Item: Members to provide feedback about what they think the best biological response is regarding Mysid Shrimp-Striped Bass study



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Action Item: Members to provide feedback about establishing categories as part of creating a plastics score (size, classes, item types, units, etc.)

Action Item: Members to let Christine Knauss know about additional monitoring efforts

Action Item: Christine Knauss to follow-up with Kristin Saunders about stewardship behavior change indicator

Action Item: Christina Garvey to talk to Bruce Vogt about input on the endpoint for striped bass

Meeting Minutes

Introduction/Roll Call

Business

Tetra Tech Contract Updates

Monitoring Framework

- Goals and priorities
 - Current status/future trend
 - Spatial distribution
- Leverage existing water quality programs
 - Chesapeake, state, local, NGO wide monitoring
- Water column, spatial distribution
- Major exposure pathways of microplastics (where are they coming from/ moving through?)
 - Sources, types, and transformations
 - Tying hotspots to types and sources is most promising method to reduce pollution
 - PA sample site for pilot study
- Monitoring for concentrations & toxicity of microplastics



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- Living resources
- Bioaccumulation
- stomach content analysis
- Important work, a lot we need to learn
- Monitoring reference guide
 - Reference guides need to be updated as we move forward
 - Field sampling reference guide
 - Laboratory reference guide
 - How is quality control handled?
- Monitoring framework recommendations
 - First step is to create a goal and then set up a monitoring framework to complete the goal
- Most effective way to meet goal = add microplastic sampling to water and sediment programs and already existing Bay programming networks (tidal and nontidal sites)
 - Would be able to estimate bay loads to the tributaries of the bay in the same way that we do sediments and nutrients now
 - Structural, statistical, and modeling frameworks are already there for us to piggy-back off of
- Recommended priority actions
- Total of 10 recommended priority actions
- Near-term actions, Future-term actions, & potential program partners for each action
- Would like to make this a goal but we need the capacity to do that
- Future coordination and partnerships is important for these actions

Discussion:

- **Kelly Somers:** most logical thing is to start with recommendation #3 if we were to formalize ongoing monitoring. This will align with the goal of this framework. To clarify, the RIM stations are already being visited monthly. There is already ongoing access, so additional needs would be to determine the amount of water and sediment collected. Is there an opportunity to store those samples until we figure out the analysis? Who is the collector of those 9 IRM stations?
- **Tish Robertson:** USGS does our stations in VA
- **Matt Robinson:** In MD we fund that program through IA with USGS



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- **Kelly Somers:** Yeah, we should follow-up with Shawn and ask about sample storage. This could be at least a reasonable starting point. Anyone have ideas on how to actually start using these recommendations? Best way to approach this/start monitoring for this contaminant?
- **Bob Murphy:** This framework was finished in late July. Within two weeks PG county implemented microplastic monitoring. They were waiting for this framework to come out, no chance to collect dust. 90 sites a year. Good spatial coverage. To speak about sample storage, depends on the program but most are required to hold onto samples for a period of time. Would be interesting to look back.
- **Kelly Somers:** I'm seeing if we could get support and pilot adding microplastics to these stations. We might not have a full analysis capability at first but collecting and storing them and working towards that goal would be a place to start. Looking at feedback from collectors would be helpful. Is it burdensome, is it a challenge? To add it to their monthly sampling.
- **Christine Knauss:** I think this is a great idea to move on this and recommendation #3 is a good place to start. There is a tool to estimate the volume of a sample that you need so that it is representative. Take these tools to the people taking the samples and see if this would be useful. Would the volumes be usable?
- **Kelly Somers:** Yeah, it would be good to go to USGS with a proposal on the table and see what they say about feasibility. Proposal detailing volume of water, sediment, and replicates, and dupes and all of that.
- **Tish Robertson:** These samples would need to be filtered right? Maybe collectors filter them in the field and we just store the filters. Easier than storing large bottles.
- **Christine Knauss:** What we propose might add a lot more time or it may not be a lot of time. But it's worth asking collectors how feasible it is for them to do this. It would be better for storage for sure.
- **Jon Cohen:** There is a lot of organic material to deal with, which makes filtration difficult. But comes down to the small group that is dealing with specifics of the issue.
- **Rebecca Whiteash:** Can you talk more about the tool that tells you how much volume needed for a sample? What is it called, where can you find it?
- **Christine Knauss:** Yes it is called the RSVP tool. Shared the tool in the chat.
- **Rebecca Whiteash:** Great. For the pilot program we are going to do this coming spring, I might be doing sampling that is different from others. But collecting the amount of water I plan to may be time consuming



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- **Bob Murphy:** What we are doing in PG county is using a zooplankton net and running it for a specific amount of time. So not collecting water but estimating how much water flows through the net. Easier than collecting bulk sample
- **Rebecca Whiteash:** Yeah i am doing something similar, just pumping the water through a series of sieves
- **Kelly Somers:** How is your study going?
- **Rebecca Whiteash:** I have approval to move forward, I have funding, and starting to make purchases for the gear. First thing in the spring I intend to start sampling. I feel like I'm a bit late to the sampling and monitoring compared to you all but it has taken a little bit of time to work it into our program.
 - **Nicole Trenholm (chat):** Rebecca where are you sampling?
 - **Rebecca Whiteash (chat):** I have six locations in PA that I will be sampling; the map that was shared earlier shows those stations
- **Kelly Somers:** Let us know if you need any help. If we moved forward with developing a pitch to USGS w sampling SOP and figure out gear, volume, needed. Would the process be to get CBP leadership to approve it first? Or go to USGS prepared first and then go to leadership? I want to make sure we follow the right processes.
- **Matt Robinson:** It all comes down to money and what it takes to make it happen. We have Fisher at USGS, he has done this at gauging stations, and ask about what you are asking for regarding time and money before you go asking for time and money.
- **Kelly Somers:** I agree, I just want to make sure that the leadership board wouldn't be surprised if they don't hear about it first.
- **Matt Gallagher:** Yeah if we are giving them updates anyways, would that be the first step?
- **Matt Robinson:** I think it makes sense to do hw first
- **Kristin Saunders:** I agree. We might want an exploratory conversation with STAR team, maybe August can help us understand how we might fit into the agenda there. It would be good having it planned/with the money and see which recommendation is worth leaning into. Is there a sequencing that makes sense here? Understanding the existing network of monitors/partners and their capacity makes sense to find out first before you present to leadership. The biggest piece is, how do we connect with these partners without being a burden. Conversation with Peter Tango and Ken Hire from USGS and other people from STAR. Combine partners in a room and see what they think?



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- *Kristin Saunders (chat)*: We should at a minimum add the recommendations to the Strategic Science and Research Framework science needs database that STAR maintains AND also connect with Brooke Landry as she is beginning a project to define sentinel sites for monitoring in shallow water for SAV and multiple other outcomes (timing good to slot this in). I wonder if a future STAR meeting topic could convene some of the monitoring partners to talk about what this framework looks like to them, and explore how we might recruit some early adopters?
- *Matt Robinson*: And you also have some very experienced academics in the room that have been doing this kind of sampling, and mine that experience as well to come up with something. I don't think there is a rush to go notify the management board. Get info straight before going to them.
- *Kelly Somers*: Does anyone have any concerns about us pursuing this path forward, to convene a small group to pilot one of these recommendations? Are there any volunteers that would like to do a think tank about working with USGS and coming up with sampling needs and resource assessment?

Shared reference links (in the chat):

- Monitoring framework: <https://www.chesapeakebay.net/what/publications/framework-for-monitoring-plastic-pollution-in-the-chesapeake-bay>
- Pre-print for prediction calculations: (PDF) [The importance of ensuring representative sample volumes in microplastic monitoring – A predictive methodology](#)
- Excel sheet for prediction calculations: [0b1d1acbcca3caff2bf1b498.xlsx](#)

Action Items: Kelly Somers to secure group consensus to pursue piloting program with USGS

Action Items: Members to follow up with Kelly Somers about joining workgroup

Mysid Shrimp- Striped Bass Study

- Use storm events as the washing method
- All sites were nearshore
- Currently at laboratory isolation stage



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- Quality control/contamination is a major issue - taking measures and improving this
- Demonstrated that Mysid shrimp will ingest microplastics and serve as pathways
 - Mysids are good to work with
 - don't move far and they do not burrow
- Currently in the process of digesting mysids for microplastic extraction
- NC state is supplying striped bass for Phase II of the study
 - Still need to talk and decide on what data points to look into on striped bass study

Discussion:

- *Jon Cohen (chat)*: you might consider thermal performance curves (oxygen consumption across temperature range)
- *Bob Murphy (chat)*: Good suggestion Jon. Thanks
- *Kristin Saunders (chat)*: Bob, let's also get Christina Garvey to talk to Bruce Vogt in the Fish GIT for input on the endpoint for striped bass

Shared reference links (in the chat):

- Potential data source: <https://www.epa.gov/trash-free-waters/escaped-trash-risk-map>

Action Item: Christina to talk to Bruce about input on the endpoint for striped bass

Action Item: Members to provide feedback about what they think the best biological response is regarding Mysid Shrimp-Striped Bass study

Talks

Creating a man-made debris indicator for the Chesapeake Bay and Watershed Report Card (Christine Knauss)

Overview:

- What is the big picture, what is actually healthy (thresholds), how does the data add up, what is the story?



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- No trash/plastic indicator currently included in the watershed report card
 - We need to have a large vision and take small pieces from it to start
 - Start with microplastics and then move up to other problems (fishing gear etc.)
- Many different types of plastics, different sample locations, species, sources etc.
- Talked to NIST who are trying to add airborne microplastic into their regular air quality sampling
- Sampling microplastics in biosolids and drinking water would be a goal as well
 - all long term vision but achievable
- Steps to create a score
 - Using all *existing* data
 - Create framework to fill monitoring gaps (building off of Bob Murphy et al. And MDP action plans) and supporting new monitoring program
- Next steps will be to begin starting the steps and then bring it to PPAT and ask for feedback in terms of size classes and different categories that we are going to include

Discussion:

- **Kelly Somers:** Is the plan to start with macro then? Would be a good story to advocate, data would be analyzed and used for status and trends.
- **Christine Knauss:** Macro would be easiest to work on first. All of the work that others in this group have done to monitor microplastics and with pilot projects like we were talking about earlier, that is a reason why that is important- that information can go into something like this. There is already some continual data for that. I see those two things happening together.
- **Matt Gallagher:** For trash trap DC related trash things, you can start with me. I sit on the trash TMDL revision workgroup and all of that data gets sent to me for MS4 reporting.
- **Kelly Somers:** Yeah for MS4 reporting, that is a good resource. If you need help I can talk to the stormwater folks at the region and try to get information for you if you need.
 - **Action Item:** Kelly Somers to talk to storm water team to ask about data for Christine Knauss
- **Christine Knauss:** thank you, that would be very helpful
- **Kelly Somers:** yeah anyway we can support. It is an exciting metric to add. The social-economic side of it would align with residents as well- what are the biggest trash macro factors in the Chesapeake bay watershed? There may be some data



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that we can share (from a piloted source tracking project) to help feed that report card indicator.

- **Christine Knauss** (chat): Yeah I am hoping to not collect any data ourselves. Goal is to organize what is out there already and present it as a story. We are going to try and drill into as many categories as we can. One project I am hoping to help is monitoring with video cameras and using AI to track floating trash. Would be cool to support and the data would feed into the report card.
 - **Carlie Herring** (chat): The NOAA Marine Debris Program is also funding a nationwide shoreline monitoring survey...there are some sites in the Chesapeake Bay.
 - **Kristin Saunders** (chat): Christine, you may want to also connect with Amy Handen in the EPA Bay Program Office who is working on a stewardship behavior change indicator. I think there is a nexus with plastic pollution that we might be able to connect to.
 - **Christine Knauss** (chat): I completely agree. I will send you an email so we can connect on this

Action Item: Christine Knauss to follow-up with Kristin Saunders about stewardship behavior change indicator

- **Kelly Somers**: Have you looked into to see if any other watershed reports have used trash/plastic as an indicator?
- **Christine Knauss**: Some others included trash I believe but not to the degree that I hope to do it here. This would be the most comprehensive indicator out there.
- **Kristin Saunders**: Puget sound might have one, they have that vital signs set of indicators that is pretty comprehensive. We looked at their model back in 2009-2010 when we were working on the stewardship indicators for the bay program. I will look it up.
- **Matt Robinson**: San Francisco Bay
- **Kelly Somers**: Yeah they have a really good tracking program
- **Phong Trieu**: Yeah shoot me an email I have a ton of contacts from PADP has started a program. I know Fairfax County's got a program. For AI recognition, a professor from Catholic University/one of our presenters may touch on it.
- **Jason Davison**: Yeah it is in my slides!

Shared reference links (in the chat):

- <https://www.epa.gov/trash-free-waters/escaped-trash-risk-map>
- <https://clearinghouse.marinedebris.noaa.gov/project?mode=View&projectId=2518>



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- <https://imdos.org/>
- <https://pugetsoundkeeper.org/2020/03/20/2019-2020-microplastic-analysis-of-puget-sound-waterways-results/>
- <https://vitalsigns.pugetsoundinfo.wa.gov/>

Action Item: Members provide feedback about establishing categories as part of creating a score (size, classes, item types, units, etc.)

Action Item: Members to let Christine Knauss know about any additional monitoring efforts

Understanding the Ecological Consequences of Microplastic Pollution along the Freshwater-marine Continuum (Austin Gray)

Overview:

- Main emphasis is microplastics
- Freshwater is often underrepresented in research
 - Microplastic present in drinking water
- Looking at sediment records in salt marshes and estuaries
 - Microplastics trapped overtime
 - Helps understand the accumulation of microplastics over time
 - Has concentration/composition of microplastics varied over time in the Bay?
 - Does concentration/composition of microplastics differ in different environments? (Bayside v. seaside)
 - Relationship between microplastic concentration/composition in regard to tidal inundation (low tide/high tide)?
- Bayside and seaside coring sites
 - When did we start seeing microplastics in the Chesapeake Bay?
 - Increase in microplastics as you go up the sediment column
 - In seaside core there is no increase or decrease- no change/trend
 - Different environments show different settlement patterns of microplastics
 - Seaside may not be best for historical dating
 - Bayside is better environment for historical dating
- Understanding microplastic pathways in dolphins
 - Charleston SC
 - Analyze the guts of dolphins to identify microplastic contents (apex predators, do not drink seawater- plastics coming in from diet)



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- Identify where along the intestinal tract do we see microplastics occur?
- Identify polymers- what particles are we seeing?
 - More microplastics in intestines than in the stomach
 - No spatial trend of plastic abundance in dolphins along coast (more urban areas vs. not as developed areas)
 - 67% of particles collected were matched to polymers
 - Most abundant polymers are polypropylene and nylon
- Younger dolphins have more microplastics than older
 - Microfibers within the breast milk (potential transfer)
 - Microplastic inhalation (collected in the breath of dolphins)

Discussion:

- *Matt Robinson*: There has also been evidence that microplastics have accumulated in human placenta, could that be another pathway for dolphins?
- *Austin Gray*: Yes, we just haven't been able to see that yet from the dolphins we collect. Since what we collect is advantageous of what washes ashore dead. We haven't seen that mechanism yet.
- *Christine Knauss*: For that high count in the sediment core on the bayside, did you look at weather for those years and if that is a factor for what you are seeing?
- *Austin Gray*: No we haven't. The main reason is that for the sediment dating the range in error is plus or minus 6 years so it is difficult to discern. We would have to go back and look at it over a period of time to see what is occurring. Because of that range, that is why we are continuing more of this work to try and pinpoint if that is truly what is reflecting or if that is an error from the lab itself.
- *Bob Murphy*: On Chesapeake vs. seaside sampling, I understand the cores were taken in the saltmarshes?
- *Austin Gray*: Yes
- *Bob Murphy*: Why did you opt to do cores in a saltmarsh v. Submerged?
- *Austin Gray*: More so for the profile. If we went in a submerged area, the vertical profile would be agitated with the inundation. We wouldn't get a good dating on the top layer. We wanted to focus on areas that would have a top profile that would measure pretty well.
- *Greg Allen*: Is there an absence of research regarding microplastics as absorbers and de-absorbers? Two pollutants we are interested in are PCBs and PFAS, both



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of which we are seeing in our fish. What research is out there regarding the dynamics of the absorption and desorption process?

- **Austin Gray**: Yeah we have done that research with Fluoranthene, I just haven't published it because we had wacky data with the controls. The lab I was in as a student focused more on PAHS (Polycyclic Aromatic Hydrocarbons) and thinking about how Fluoranthene spikes microspheres and seeing if there's a transfer and concentration between the water and microplastics. One of my students is working on microplastics and PFAS in benthic invertebrates. Some work with DDT, looking into the transfer of pollutants from the surface of plastics into the tissues of organisms. Kinetic studies with PFAS. Limitation is that they are using commercial beads, but not environmentally realistic (represent less than 2% of what you find globally in the environment). Plastics are already altered- changes in the surface chemistry. Researchers are delving into that but it is still in its infancy. There is just a lot of interference with absorption dynamics (because of the surface of particles...heavy metals, mineral deposits, etc). Part of it is understanding how to study that better.
- **Carlie Herring**: Is there a lot of aquaculture in the area? Could nylon be coming from nylon nets?
- **Austin Gray**: Yes possibly, we are making hypotheses that it is from laundering because the amount we see is more than what we would see from just nylon nets.
- **Kelly Somers (chat)**: Have there been any studies on any biological effects on dolphins from MP contamination?
- **Austin Gray (chat)**: Not a ton but we are trying to do some of that work, but since the dolphins are already deceased when we get them, it made doing RNA work really difficult. We are also working on proposals to address the biological effects.
- **Kelly Somers (chat)**: Any theories on why seaside vs bayside sediment data are different?
- **Austin Gray (chat)**: We think the tidal cycle and wave action are what may resuspend the sediment and redeposit MPs at different depths and influence the lack of pattern where the bay side is fed from rivers, and the infiltration of water allows for a less disturbed deposition resulting in increases over time. But this is still very preliminary.

Macro and Microplastics in DC

Overview:

- 20 sampling sites in Silgo creek (Anacostia Watershed)



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- 0.5 mile sampling
- Clean room development in lab (HEPA filtration)
- Process
 - Hydrogen peroxide on samples for 10 hrs
 - Dry samples for 12 hrs
 - Optical analysis
- Some hotspots
 - Taken over 6 month period- difficult to draw conclusions on spatial distributions, temporal could have been more significant
- 3/20 sites taken for μ FTIR analysis
 - Concentrations increase as you get closer to the Anacostia River
- New μ FTIR microscope added to lab (16 diff measuring capabilities and high absorbency)
- Botell. AI model
 - Uses public dataset and pipes through YOLOv8 (computer detection model)
 - Take trained model with recorded video, tracking, object filtering algorithm
 - Validation
- All bottles looked the same so model was slimmed down to get 90% confidence that bottles can be tracked within a frame
 - If image quality is good the computer will be able to categorize the object
 - 60 + FPS on lab GPU
 - HPC cluster being built to process 10 + videos simultaneously

Discussion:

- **Matt Robinson:** For the μ FTIR microscope can you do multiple particles at once?
- **Jason Davison:** Yes it can scan an entire slide. My colleague from Desert Research Inst. is coming to AGU. If anyone wants to come to AGU it's the second week of December. There will be three days of microplastic presentations.
- **Matt Robinson:** Where is that?
- **Jason Davison:** D.C
- **Kelly Somers:** What does the acronym stand for?
- **Jason Davison:** American Geophysical Union. It's like \$700 to attend.
- **Christine Knauss:** I would love to connect about these tools and about using the data for the report card indicator.



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- **Jason Davison:** Yeah great. We created the model but the footage we have is artificial. We are looking for some actual test videos to run. And thanks to DOEE we are getting an LDR and ramen. Anyone that wants to come and use our resources please reach out to me. This is really EPA funding though.
- **Matt Robinson:** Clean water state revolving fund right?
- **Kelly Somers:** Yup. Through the BIL emerging contaminants supplemental funding
- **Matt Robinson:** So for AI work you are only looking at floatable right now?
- **Jason Davison:** Yes. We could do submerged if we could get training data on it. The problem is that the shapes have to be fairly unique in some way. A general purpose AI tool is really challenging. We tried to make something that solves all problems but that makes a really bad tool so we focused on just one item.
- **Matt Gallagher:** Phong has really great data. If you could estimate the number of plastic bottles using AI maybe using existing data you could extrapolate the other poundage or whatever of different other categories are. That would make our lives so much easier.
- **Jason Davison:** That was our exact goal, to make some kind of fitting curve at some point. One similar thing you see in all environments are plastic bottles so I think a fitting curve would be fairly easy to develop.
- **Bob Murphy:** Have you done stormflow of plastic bottles?
- **Jason Davison:** No, we just did our artificial test videos. The videos are not great for stormflow because you can't identify any objects in it. We have gopros that we plan to deploy but need to talk to DC about where we can do that. There are already cameras available. Buoys could be an interesting way to get some good video.
- **Matt Gallagher:** Yes, we should talk. I could find money to buy things that could help us in the long run. If we could invest in something that can save us money or augment monitoring that is being done that would be super useful.
- **Jason Davison:** There have been a couple groups working on this AI solution but I haven't seen anyone make a usable tool yet. It has all been conceptual.
- **Matt Robinson:** What about positioning this at a trash trap to watch stuff go into the trash trap?
- **Jason Davison:** That would be awesome. And then you have the data that was collected in it and it can be verified.
- **Matt Robinson:** There's big signage on the trash wheel that says DOE put this in, it would be a nice place to mount something and watch the trash come in.
- **Jason Davison:** Is there power on that though?
- **Matt Robinson:** no



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- **Jason Davison:** So we need power because go pros only last for 6-8 hours of video. And we wouldn't be able to bring an operator out there every 6 hours. Also as you add more infrastructure, the likelihood of it getting stolen increases.
- **Matt Robinson:** Yeah I was gonna bring that up next, cause they have used those signs as target practice
- **Jason Davison:** Oh I am not surprised. Something that is bolted down, likelihood of it getting stolen is less.
- **Matt Gallagher:** Especially if it is on the underside of an outfall. I don't think anyone would see that.
- **Jason Davison:** And we could potentially hook up a car battery or something a little more secure
- **Matt Robinson:** And that brings up a whole other issue of working with DC Water, something we would want to know.
- **Christine Knauss:** I saw the positioning of cams on trash traps and using AI to pick out the trash. We should talk to Baltimore waterfront partnerships and the trash wheels because they have solar panels on their trash wheels. We thought buoys would be challenging because of waves the camera may not always be pointing down. Jason, I am not sure how you deal with that. I am not sure about buoys. A good start would be a pilot project on the trash wheel because it is stable and it has a solar panel, you could probably tuck it up so you wouldn't be able to see it.
- **Jason Davison:** It would also be harder to steal them
- **Christine Knauss:** Yeah so that was our initial idea. At the MARCO working group, someone from NOAA suggested putting them on one of NOAAs platforms as well. But we need you and your research to do it.
- **Matt Robinson:** So where are your cameras now?
- **Jason Davison:** So me and two students attached a go pro on the side of a pedestrian bridge at Sigo Creek and threw the bottles in the water. We collected all the bottles!
- **Matt Robinson:** So when Christine said buoys. Does she mean the bay buoys, park service bay buoys?
- **Matt Gallagher:** Yes



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Partner roundtable/updates/close out

PPAT 5 Year Review

- Only four responses on form (reflects on accomplishments, future direction? How are we doing?)
 - **Action Item:** Members to complete survey
 - **Action Item:** Christina Garvey to resend the survey in follow-up email
- Original PPAT charges
- 2019 STAC workshop
- A lot of accomplishments in the last couple of years
- Survey results:
 - Charge 1:
 - 100% responses we reached our goal on development of ERAs
 - Majority thought we don't need to update ERAs- if we do want to update we can focus on new stressor or new assessment endpoint
 - Charge 2:
 - 100% think we reached our goal on developing a strategy
 - Living document needs to be updated
 - Feedback on how to implement the recommendations from the monitoring framework
 - Work with USGS and Chesapeake Bay monitoring coordinator
 - Work to engage small network to implement it
 - Charge 3:
 - 100% said yes we reached goal to present results to management board
 - Charge 4:
 - 50% say we need to do more work in monitoring policy advances (Kelly agrees)
 - Future meeting, get think tank together on how to start meeting this charge and what that would look like
 - FY25-FY27 Planning
 - Prioritize:
 - Source reduction strategy (need goals/work orders/funding for this but need to talk about what we want and look for funding sources)
 - Watershed monitoring



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- Research
 - Majority think that a work plan would be helpful
 - Need volunteers for help
 - Kelly to create shared doc for people to provide input (ex: projects where PPAT can provide technician oversight)
 - Meeting frequency
 - Quarterly meetings are still good
 - Some feel 3 hour meetings are too long
 - 1-2 meetings in person is still good
 - Participation in PPAT is still valuable to majority of members
 - Beyond 2025
 - Plastics incorporated in formal capacity in Beyond 25?
 - Majority state yes
 - And how to be more involved?
 - Help define new toxic goals
 - Active participation by PPAT leadership

Beyond 2025 and Plastic Pollution

- Executive Council Charge Oct. 2022
 - Phase 1: Scope and breadth of what should be undertaken (we are at this phase now)
 - Phase 2: Execute the plan
- Report was just accepted by management board and will be going to exec council in Dec with 2 recommendations
- Affirm partnership commitment to meet goals and outcomes of original agreement and make amendments for existing agreement for updated outcomes/goals by end of 2025
- Keep partnership strong but streamline the structure and processes
- High level recommendations to consider: (phase 2, calendar year 2025)
 - Science (filling knowledge gaps- in face of changing climate, land use, emerging contaminants)
 - Restoration and Conservation (Steering committee work led to the pairing of conservation and restoration moving forward)
 - Partnership (streamline in process, building capacity, centering people & communities, communication/transparency)
 - Issues and suggestions of the small groups would be taken up in phase 2



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- Leadership will work with management board to identify priority items moving into beyond 2025
- How can PPAT stay relevant and plugged in within phase 2?
- Connect plastics to ongoing work
- Clean Water Cohort present to Management Board (Nov 7)
 - nexus there- encourages members to attend and push for plastics
 - Most timely and relevant place to get real estate for plastic work
- Management Board retreat (mid-November)
 - How will phase 2 play out?
 - -Principal Staff meeting (December)
 - Setting priorities for management board
- Observations:
 - Traction to decrease number of outcomes and complexity (high priority items focused on)
 - Might not have success going in with proposal to make new outcome focused on plastic pollution
 - Might not have request to make more action teams
 - Traction for focus on people/community
 - Ties to multiple benefits are helpful (best management practices that also tie to habitat, plastics, etc)
 - The more you can point out how you are connected the easier it will be
 - Champion at each level to give a voice (get a champion on the Goal team)
 - recipe for success
 - Monitoring and multiple lines of evidence (how to sustain the monitoring system...BIL provided support but how will money be replaced when it goes away?)
 - CESAR and STAC recommend looking at multiple lines of evidence for monitoring (good place for plastic pollution to hitch onto the wagon)
 - Behavior change
 - Clear nexus here (source reduction strategies & roles people play in plastic pollution)
 - Toxics
 - Explore conversations with habitat, fisheries, stewardship \ul style="list-style-type: none;"> - Nexus here- can plastics be a healthy watershed indicator?
- Connect to groups that get assigned high level recommendations



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- PPAT could sunset or continue
- Clear opportunities to embed our work and have it live on if we connect it to the right people
 - Explore clear connection to living resources and impacts on human health
 - Make sure the people in these spaces know the information we know

Discussion:

- **Kelly Somers:** Emily reached out from toxics for some bullets. I sent them to her last week. I didn't see any of the bullets making it into the toxics presentation unless they are updating them but I see it's posted.
- **Kristin Saunders:** The materials have to be posted two weeks in advance of the meeting. Could be that they posted a placeholder and they are going to update it. Or it could be they just haven't put them in.
- **Kelly Somers:** Or I didn't get it to her in time
- **Kristin Saunders:** It could be. If it is not in the materials, then having a voice in the meeting always helps to keep the conversation alive.
- **Adrienne Kotula:** Toxics need more champions at the management board.
- **Kristin Saunders:** I will say, they are a part of the water quality goal team and it's very hard with the burden of work the GIT has to deal with, you can see why some things tend to fall off the radar a bit. The Chesapeake Bay commission has made it very clear that toxics is something they are interested in. There is a champion there but there should be others.
- **Adrienne Kotula:** Yeah we are looking for friends, thanks for the shout out.
- **Kelly Somers:** When you say active voice, you aren't saying that Matt and I chime in at the meeting?
- **Kristin Saunders:** Sometimes that makes sense to do. But if you have a jurisdiction rep or a PSC member that can give voice to it all the better. Having the membership carry the flag themselves on these issues tends to make them more palatable to their members.
- **Kelly Somers:** Well that is a message for our jurisdiction reps, get the word out to your leadership about plastics being considered in the future, either formalized or not that would be helpful.
- **Tish Robertson:** I can make recommendations to my immediate management chain but we are being motivated to do above and beyond what we are regulatorily supposed to be doing by our general assembly. For example, reaching out to state delegates in MD and VA. This has been effective, and I



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don't know if this is something the commission could do. This has been an effective strategy to be able to do toxics monitoring. Great in-roads with PFAS because of bills that have been passed. If we want change we have to go through policy and state legislatures.

- **Kristin Saunders:** PFAS has the possibility of stealing the thunder of plastics and there is competition to be on the plate for policy. The best way forward I think is finding that nexus that connects to living resources/human health and using that as a reason to stay engaged.
- **Tish Robertson:** I agree. Maybe it is a message of emerging contaminants. Selling it as we can do PFAS and other contaminants we currently are not regulating. Understanding what are the hotspots and the baseline? We don't have any of the information.
- **Kelly Somers:** We will be following up about requests for input and action items.

Shared reference links (in the chat):

- Five year review form: <https://forms.gle/Y6Z5zfpMbwwcpBTZ6>

End of meeting. Thanks to all who attended. Please email Staffer/Coordinator Christina Garvey with any questions.

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