

223rd Technical Committee Meeting

June 10, 2020

8:00 am – Noon

Held Virtually due to COVID Shutdown

Commissioner Bruno Pigott, Chairman
Presiding

Chairman's Welcome & Roll Call

Commissioner Pigott
Chairman, Technical Committee

TEC Members Roll Call

- IL – Scott Twait *
- IN – Eileen Hack *
- KY – Katie McKone *
- NY – Jeff Konsella *
- OH – Audrey Rush *
- PA – Kevin Halloran *
- VA – Melanie Davenport*
- WV – Scott Mandirola *
- USACE – Erich Emery*
- USCG – vacant *
- USEPA – David Pfeifer *
- USGS – Mike Griffin *
- CIAC – Dean Cordle
- PIAC – Cheri Budzynski
- PIACO – Betsy Mallison
- POTW – Alex Novak
- WOAC – Rich Cogen/Angie Rosser
- WUAC – Bruce Whitteberry
- Chairman – Commissioner Pigott *
- Executive Director – Richard Harrison *

* Voting member

TECHNICAL COMMITTEE MEETING AGENDA

CHAIRMAN'S WELCOME AND ROLL CALL

ACTION ITEMS AND REPORTS

1. Action on Minutes of 222nd Technical Committee Meeting*
2. Chief Engineer's Report
3. Status of ORSANCO's Monitoring Programs (Current and Future) Resulting from COVID-19 Shutdown
4. 2020 Biennial Assessment of Ohio River Water Quality Conditions (305b Report)*
5. Technical Committee Member Reports

BREAK

6. Ohio River Basin Mercury Loading Analysis Project
 7. Update on Ohio River PFAS Project Development
 8. ORSANCO Technical Programs Highlights from April 29, 2020 Program and Finance Committee Meeting
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OTHER BUSINESS

- Comments by Guests
- Announcement of Upcoming Meetings
- Adjourn

Agenda Item 1:

Request for action on minutes
of the 222nd Technical
Committee Meeting

Chairman Pigott

The minutes were mailed with the agenda package on May 21, 2020

Agenda Item 2: Chief Engineer's Report

Executive Director Harrison

No accompanying slides

Agenda Item 3:
Status of ORSANCO's Monitoring
Programs Resulting From COVID
Shutdown

Heath, Argo, Dinkins

Bimonthly and Clean Metals

Background

Used for 305(b) assessments

Mix of day-trip and overnight travel

Can require 2 person boat crews

29 sites sampled in January, March, May, July, Sep., & Nov.

- January and March – all sites sampled
 - except where access or water levels precluded sampling (4 sites in March)
- May – No overnight travel, single person sampling
 - 11 day-trippable stations on mainstem
 - 3 stations in Pittsburgh area via contract sampler
 - 3 tributaries near Cincinnati (G. Miami, L. Miami, Licking rivers)
- July thru ? – Continue with schedule established in May
 - Add additional tributaries as resources allow
 - Return to full suite of stations as access and overnight travel allow



Fish Surveys

Background

Used for Aquatic Life Use assessments

Return to 3 pools post NRSA involvement, 18 fixed stations

Requires minimum 3 person boat crews, overnight travel

Index period July 1 – October 31

Night-time electrofishing precludes day-trips >100mi from ORSANCO

- 2020 pools - Dashields, Hannibal, Olmsted, and a portion of open water section
- 6 of the 18 fixed stations fall within 100mi

Latest Dates Allowing for Task Completion

- August 10th – All 18 Fixed Stations
- October 5th – EF Surveys of all 3 pools (15 sites each) and 6 sites in open water

• Caveats

- Requires overnight travel and 3-person boat crews (minimal social distancing)
- No loss of time due to equipment failure or inclement weather



Macro Surveys

Background

Used for Aquatic Life Use assessments

Return to 3 pools post NRSA involvement, 18 fixed stations

Requires minimum 2-3 person boat crews, overnight travel

Index period July 1 – October 31

Macro SOPs preclude efficient day-trips >100mi from ORSANCO

- 2020 pools - Dashiels, Hannibal, Olmsted, and a portion of open water section
- 6 of the 18 fixed stations fall within 100mi, MH only collected at fixed stations

Latest Dates Allowing for Task Completion

- August 10th – All 18 Fixed Stations
- September 1st – Setting of HD samplers and SAV collections
- October 12th – HD Retrieval and MH Kick completion in all 3 pools (15 sites each)

Caveats

- Requires overnight travel and multi-person boat crews (minimal social distancing)
- No loss of time due to equipment failure or inclement weather
- Overlapping October retrieval and potentially delayed EF-surveys will stress resources



Fish Tissue Contaminants

Background

Used for consumption advisories and 305(b) assessments

Decreased sample collections 2018-2019 due to NRSA

Requires minimum 2 person boat crews

No index period, Spring and Fall most successful

Minimum of 27 composites (3 fish) necessary to fill data gaps

- 20 additional composites needed to remain on schedule for 305(b)

Spring 2020 – Planned dedicated fish tissue “runs” cancelled (3 weeks)

- Spawning activity = very efficient sampling period

Probabilistic Surveys – Composites regularly collected during surveys

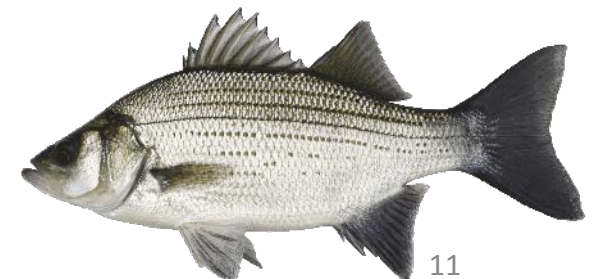
- Less efficient under normal conditions, depends on surveys being conducted

Fall 2020 fallback plan – Dedicated “runs” after index period ends

- If index period sampling is precluded by SARS-CoV-2 concerns or experience decreased success

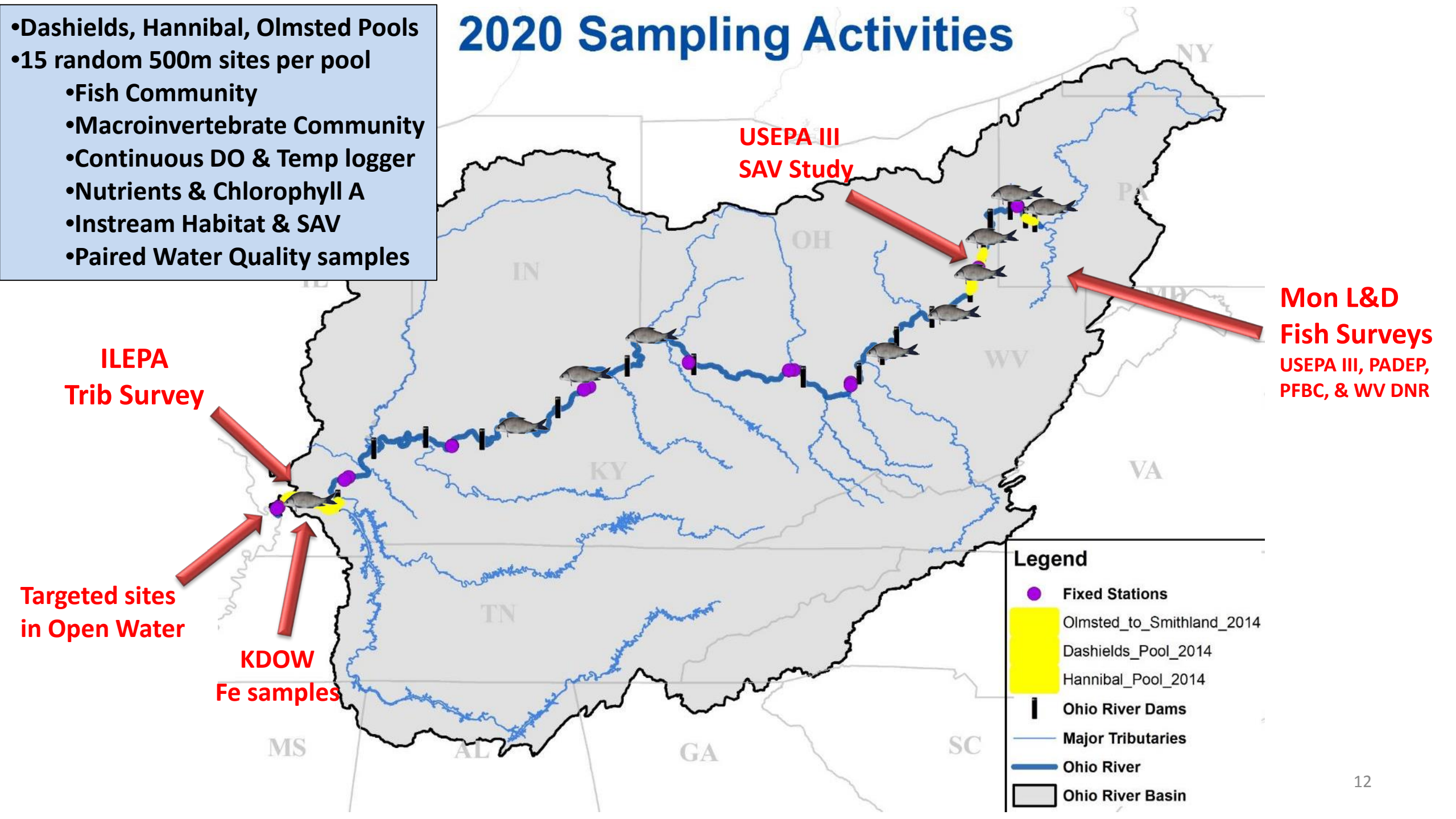
Caveats

- Requires 2-person boat crews (minimal social distancing)
- Some day-trips possible



2020 Sampling Activities

- Dashields, Hannibal, Olmsted Pools
- 15 random 500m sites per pool
 - Fish Community
 - Macroinvertebrate Community
 - Continuous DO & Temp logger
 - Nutrients & Chlorophyll A
 - Instream Habitat & SAV
 - Paired Water Quality samples



**ILEPA
Trib Survey**

**USEPA III
SAV Study**

**Mon L&D
Fish Surveys**
USEPA III, PADEP,
PFBC, & WV DNR

**Targeted sites
in Open Water**

**KDOW
Fe samples**

Legend

- Fixed Stations
- Olmsted_to_Smithland_2014
- Dashields_Pool_2014
- Hannibal_Pool_2014
- ▬ Ohio River Dams
- Major Tributaries
- Ohio River
- ▭ Ohio River Basin

Emergency Response

Program Details

- ORSANCO provides a number of services when spills occur including:
 - 24/7 Notifications
 - Field sampling
 - Time-of-travel modeling
 - Analytical support

Impacts to Program

- Spill response deemed an essential function.
- No change to services provided during COVID response.
- No major spills requiring field response occurred March thru May.



Continuous WQ Monitoring Stations



Program Details

- ORSANCO maintains 4 continuous water quality monitoring stations.
 - D.O, pH, conductivity, temperature, chlrophyll, phycocyanin
- Pike Island and Meldahl are deployed from June thru October
- Markland and Newburgh stations are maintained year-round as part of IN HAB grant project.
- Sites serviced twice per month

Impacts to Program

- One site visit was postponed for Markland & Newburgh stations in March.
- Site visits to Markland & Newburgh resumed in April.
- All sampling up-to-date.
- Pike Island & Meldahl will be deployed in June as normally scheduled.

Bacteria Monitoring

Program Details

- Bacteria samples collected weekly in the six largest CSO communities from April thru October.
- Data used to assess impairment and to inform the public regarding suitability of the river for recreational activities.

Impacts to Program

- Bacteria sampling suspended for all sites in April.
- Resumed weekly sampling in four of the six cities in May.
 - Huntington, Cincinnati, Louisville, and Evansville
- Wheeling will resume in June
- Pittsburgh will resume once restrictions are lifted



Organics Detection System



Program Details

- ORSANCO maintains a network of gas chromatographs at 17 stations as early warning spill detection system.
- Units are owned and maintained by ORSANCO.
- Stations operated by host facilities (water utilities and industries)

Impacts to Program

- Repair visits maintained through out COVID response for sites that could be serviced as a day-trip by single crew member
 - Some sites prohibited visitors
- Preventative maintenance visits suspended for March and April.
- Training visits suspended indefinitely until COVID restrictions are lifted.

US EPA DNA Tracer Study



Project Details

- Special project to assist US EPA in testing the use of a DNA tracer to better understand spill time-of-travel.
- Study entails injecting DNA tracer on Big Sandy River and tracking from Ashland, KY to Cincinnati, OH.
- Originally planned for Summer 2020.

Impacts to Program

- Sample collection requires multi-person boats crews.
- Timing of study execution is uncertain given the current restrictions on multi-person crews and overnight travel.

Ohio River PFAS Sampling



Project Details

- Special project to quantify ambient levels of PFAS in the Ohio River at 20 sites.
- Sampling scheduled for Fall 2020

Impacts to Program

- Sampling requires multi-person boat crew and extensive overnight travel.
- Timing of study completion is uncertain given the current COVID-related travel restrictions.

Moving Forward

- Continue to follow guidance from Ohio's Governor's Office and state health department.
- Stay apprised of COVID-related field work restrictions of partner agencies to inform ORSANCO approach.
- Request point of contact from each agency

Agenda Item 4:
2020 Biennial Assessment of
Ohio River Water Quality
Conditions (305b Report)

Argo

Does the Technical Committee wish to endorse the report?

Agenda Item 4:

2020 Biennial Assessments of Ohio River Water Quality Conditions 305(b) Report



223rd TEC Meeting

Virtual

2020 Biennial 305(b) Report Timeline

- November 2019 – Assessments, of 2014-2018 data, completed by ORSANCO staff
- December 12, 2019 - 305b workgroup met to review methodologies & assessments
- February 2020 – Final use assessments approved by TEC
- April 9, 2019 – Draft report distributed to 305b Workgroup members for review
- May 5, 2019 – Member comments received and incorporated
- May 21, 2019 – Final report distributed for review prior to June TEC meeting

Aquatic Life Use Assessment

Non-Support >10% water criteria exceedance
and/or
Biological Indices <20 average index score

- **Entirety of Ohio River is fully supporting**

- Total Iron exceeded criteria in greater than 10% of samples in several river segments
- Fish and/or macroinvertebrate assessments indicate every segment is in full support
- WOE approach employed favoring the direct measures of aquatic life (biological indices)



Contact Recreation Use Assessment

Partial Support >10% criteria exceedance

Not Supporting >25% criteria exceedance



- **641.5 miles (i.e. approx. 2/3) of Ohio River is classified as impaired**
 - Historical (2003-2008) longitudinal survey data was used as it provides the greatest coverage in regards to river miles sampled and precipitation events included
 - Recent data from six largest combined sewage overflow (CSO) communities during the recreational season was also used
 - Five additional river miles added to the 2018 impaired reaches due to recent recreational data

Public Water Supply Use Assessment

Non-Support >10% water criteria exceedance



- **Entirety of Ohio River is fully supporting**
 - Water utility surveys did not indicate source water issues
 - Finished water maximum contaminant level (MCL) violations as reported to USEPA by water utilities were treatment byproducts or due to incomplete treatment
 - WOE approach employed concluding that neither the surveys nor MCL violations indicated issues with the Ohio River source water

Fish Consumption Use Assessment



Not Supporting >10% Total Hg water criteria (12ng/L) exceedance
and/or

Not Supporting if the consumption-weighted MeHg conc. for a pool > 0.3 mg/kg

- **Entirety of Ohio R. is partially supporting (PCB/Dioxins)**
 - Historic water quality data for PCBs and Dioxins exceeded criteria by two or more orders of magnitude
- **Entirety of Ohio R. is fully supporting (Mercury)**
 - Recent water quality samples exceeded the 0.012 µg/L mercury criterion in excess of ten percent of the samples at six stations, river-wide
 - Using USEPA's approved consumption-weighted method, no exceedances of the 0.3 mg/kg methylmercury criteria occurred in fish tissue data for each pool of the Ohio R.
 - WOE approach employed favoring the direct measure of methylmercury in fish tissue as opposed to the water column mercury criteria which was derived to indirectly protect methylmercury levels in fish tissue

Addressing Harmful Algal Blooms (HABs)

- The 2015 HAB was detailed in the previous 305(b) report
 - HAB data were not used to assess any of the uses
 - Thought to be a unique event...then 2019 event occurred
- Workgroup could not decide on any one assessment method
- State methodologies are still in development
- Recommend that staff look into development of an assessment methodology for future consideration
- 2020 Report details recent ORSANCO work in area of HABs

Additional Items

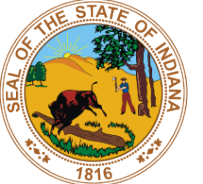
- **Report Format Changes**

- Detailed tables and composite graphs moved to appendices
 - e.g. summary boxplots of bimonthly parameters by station
- Summary tables and figures maintained in text
 - e.g. aggregated data pertinent to assessments
- Upon approval - large datasets made available online to improve accessibility and usefulness
 - e.g. 2014-2018 raw assessment data

- **Prior to 2022 Assessment**

- Full review of assessment methodologies for each use
 - Development of HAB methodology
- Feasibility of changing to a web report and/or story map format
 - Increase report accessibility

2014-2018 Assessment Summary



	States	Number Miles Use is Impaired				
		Aquatic Life	Contact Recreation	Public Water Supply	Fish Consumption for PCBs & Dioxin	Fish Consumption for Mercury
PA	0.0-40.2	0	40.2	0	40.2	0
OH-WV	40.2-317.1	0	245.1	0	276.9	0
OH-KY	317.1-491.3	0	67.1	0	174.2	0
IN-KY	491.3-848.0	0	243.6	0	356.7	0
IL-KY	848.0-981.0	0	40.6	0	133.0	0
TOTAL	981.0	0	631.6	0	981.0	0

Action Requested

Approval of the Final 2020 Biennial 305(b) Report

Agenda Item 5: Technical Committee Member Reports

Technical Committee Members

State: IL, IN, KY, NY, OH, PA, VA, WV

Federal: USACE, USCG, USEPA, USGS

Advisory Committees: CIAC, PIAC, PIACO, POTW, WOAC, WUAC

No Accompanying Slides

TEC Members Reports

- IL – Scott Twait
- IN – Eileen Hack
- KY – Katie McKone
- NY – Jeff Konsella
- OH – Audrey Rush
- PA – Kevin Halloran
- VA – Melanie Davenport
- WV – Scott Mandirolla
- USACE – Erich Emery

- USCG - vacant
- USEPA – David Pfeifer
- USGS – Mike Griffin
- CIAC – Dean Cordle
- PIAC – Cheri Budzynski
- PIACO – Betsy Mallison
- POTW – Alex Novak
- WOAC – Rich Cogen/Angie Rosser
- WUAC – Bruce Whitteberry

Agenda Item 6: Ohio River Basin Mercury Loading Analysis Report

Heath

Commissioner Bruny, Chairman Ad-Hoc Committee on Mercury Studies,
will also be available to answer any questions

Ohio River Basin Mercury Loading Analysis Project

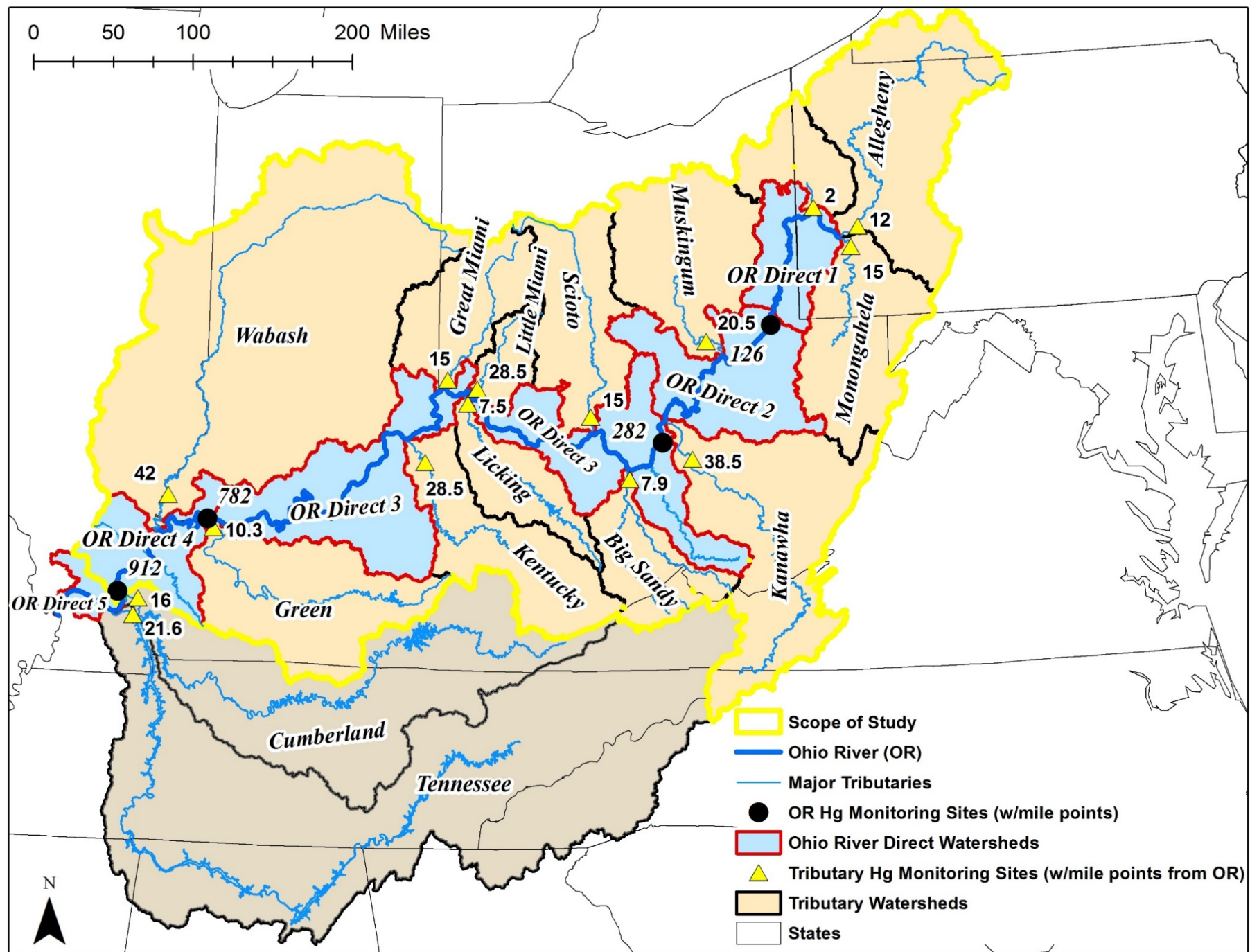
Report to TEC Committee
June 10, 2020

Recent Background

- A draft report was distributed to TEC at the February meeting and to the Ad Hoc Committee on Mercury Studies with 6 week comment period.
- Hundreds of comments received from multiple commenters.
- The report was revised prior to a May 6 conference call of the ad hoc committee and TEC.
- Many comments were received again after a short review period.
- Comments were largely incorporated into the current Proposed Final Report, and distributed to the ad hoc committee, TEC, and Commissioners.
- The Ad-Hoc Committee on Mercury Studies will be recommending the Commission approve the report at its meeting tomorrow.

PROJECT OBJECTIVE

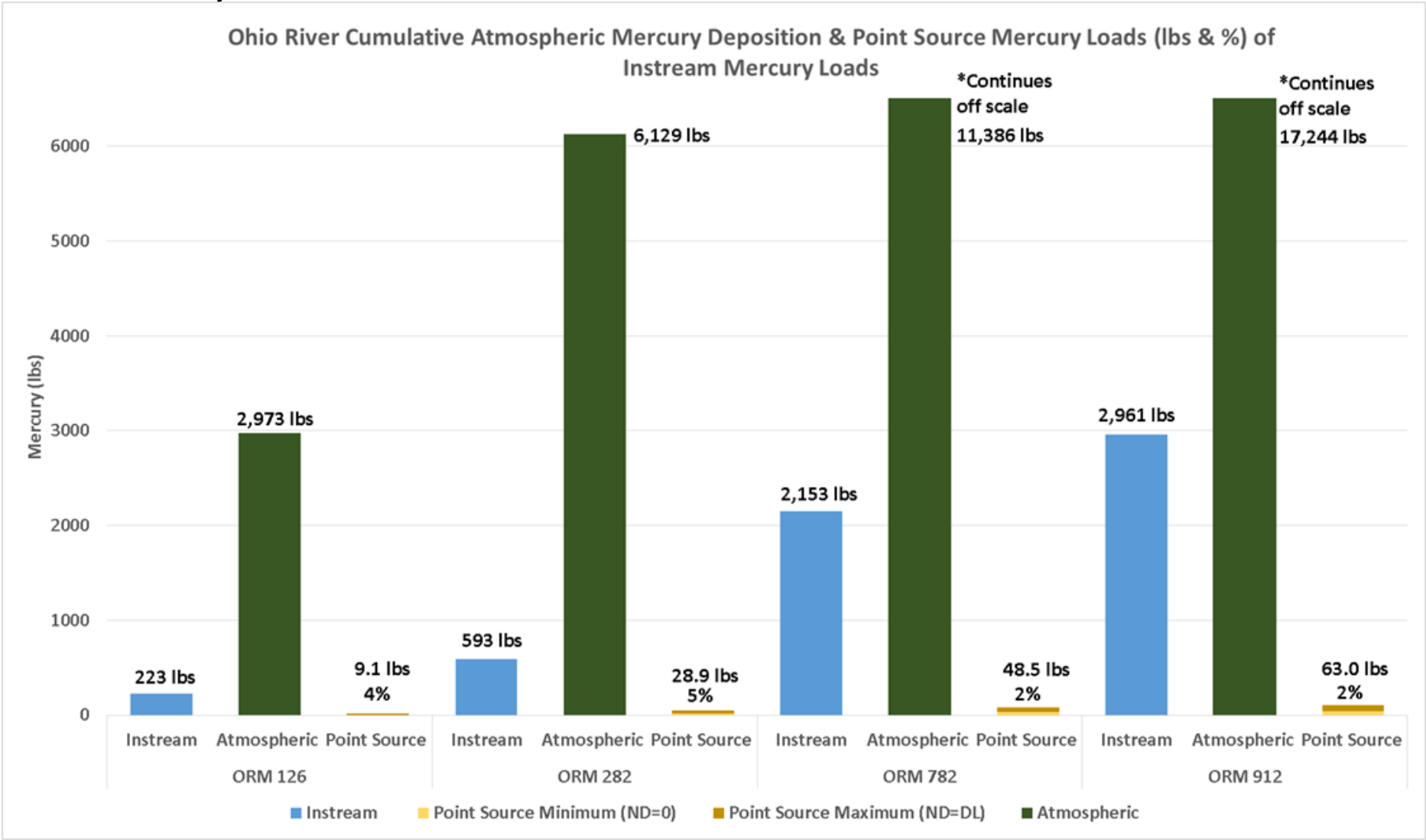
- **Complete a mercury loading analysis and source apportionment for the Ohio River Basin for the one-year study period November, 2015 to October, 2016:**
 - Develop **instream** mercury loads for 15 major watersheds and at 4 Ohio River mainstem stations **using monthly stream monitoring data.**
 - Develop **point source** mercury loads for the Ohio River Basin **using discharge monitoring report data.**
 - Develop **atmospheric deposition** mercury loads for the Ohio River Basin **using Nat'l Atmospheric Deposition Program data.**



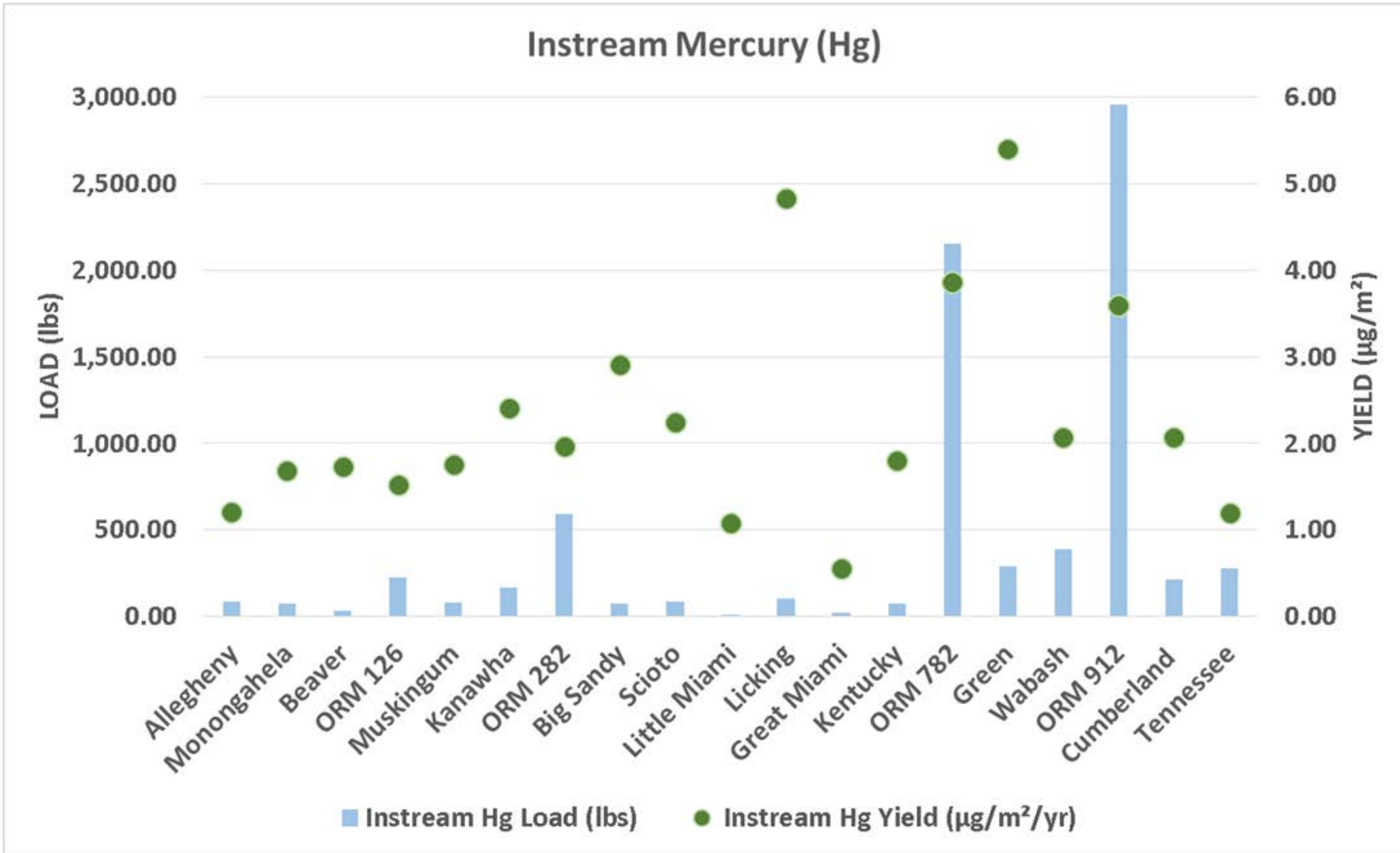
Main Conclusions

- 1) Point sources combined upstream of ORM912 totalled 2% of the instream mercury load at ORM912.
- 2) Atmospheric deposition in the entire watershed upstream of ORM912 was approx. 6 times the instream mercury load at ORM912.
- 3) Instream mercury loads and yields are shown for all tribs and mainstem stations.
- 4) Instream tributary loads cumulatively upstream of ORM912 totalled half of the instream mercury load at ORM912.
- 5) Monitored point sources discharging directly to the Ohio River were 40% of the total cumulative monitored point source load upstream of ORM912.
- 6) Project instream mercury sampling results compared well and were consistent with 10 years of Clean Metals Program data.

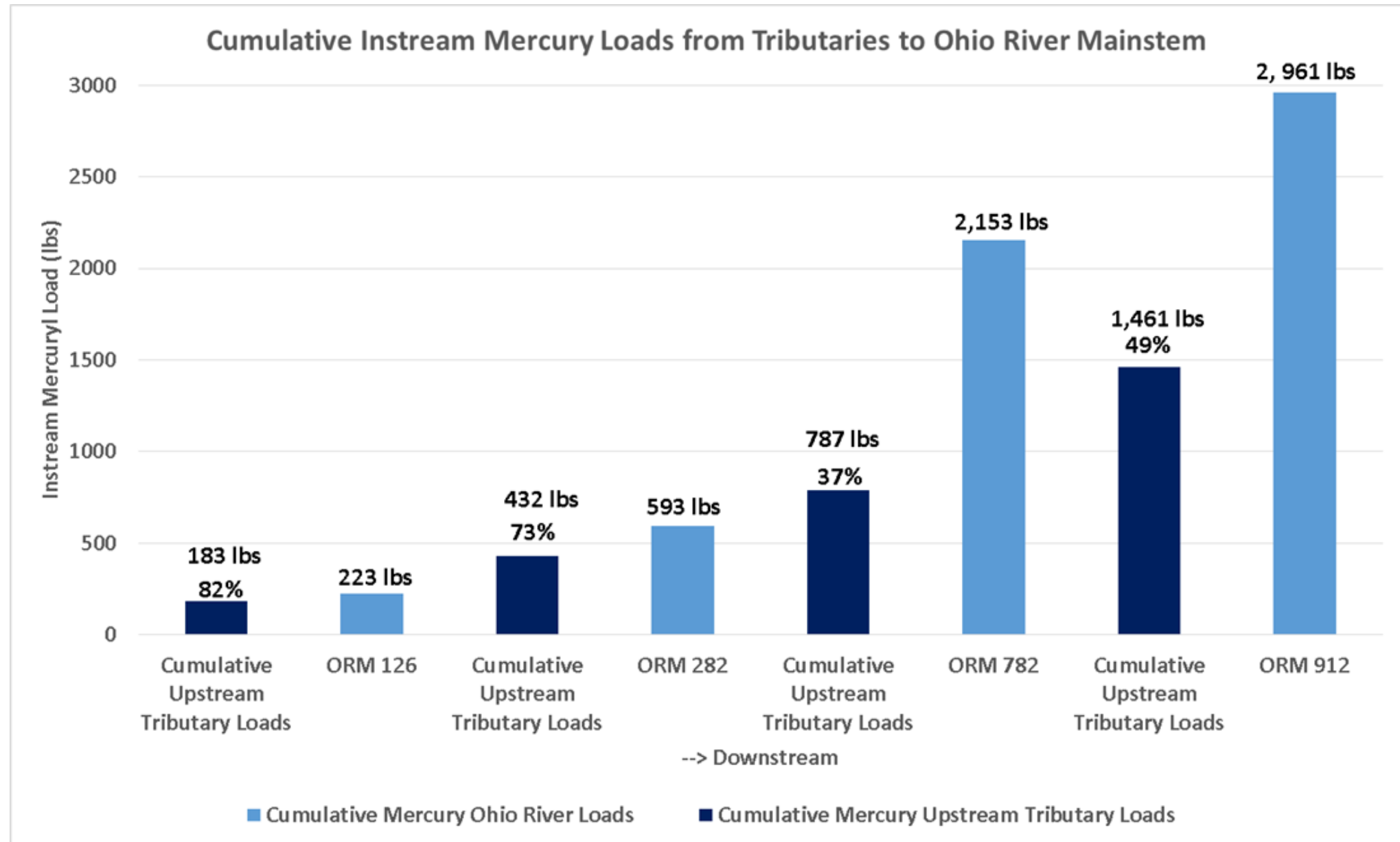
- 1) Point sources combined upstream of ORM912 totalled 2% of the instream mercury load at ORM912.
- 2) Atmospheric deposition in the entire watershed upstream of ORM912 was approx. 6 times the instream mercury load at ORM912.



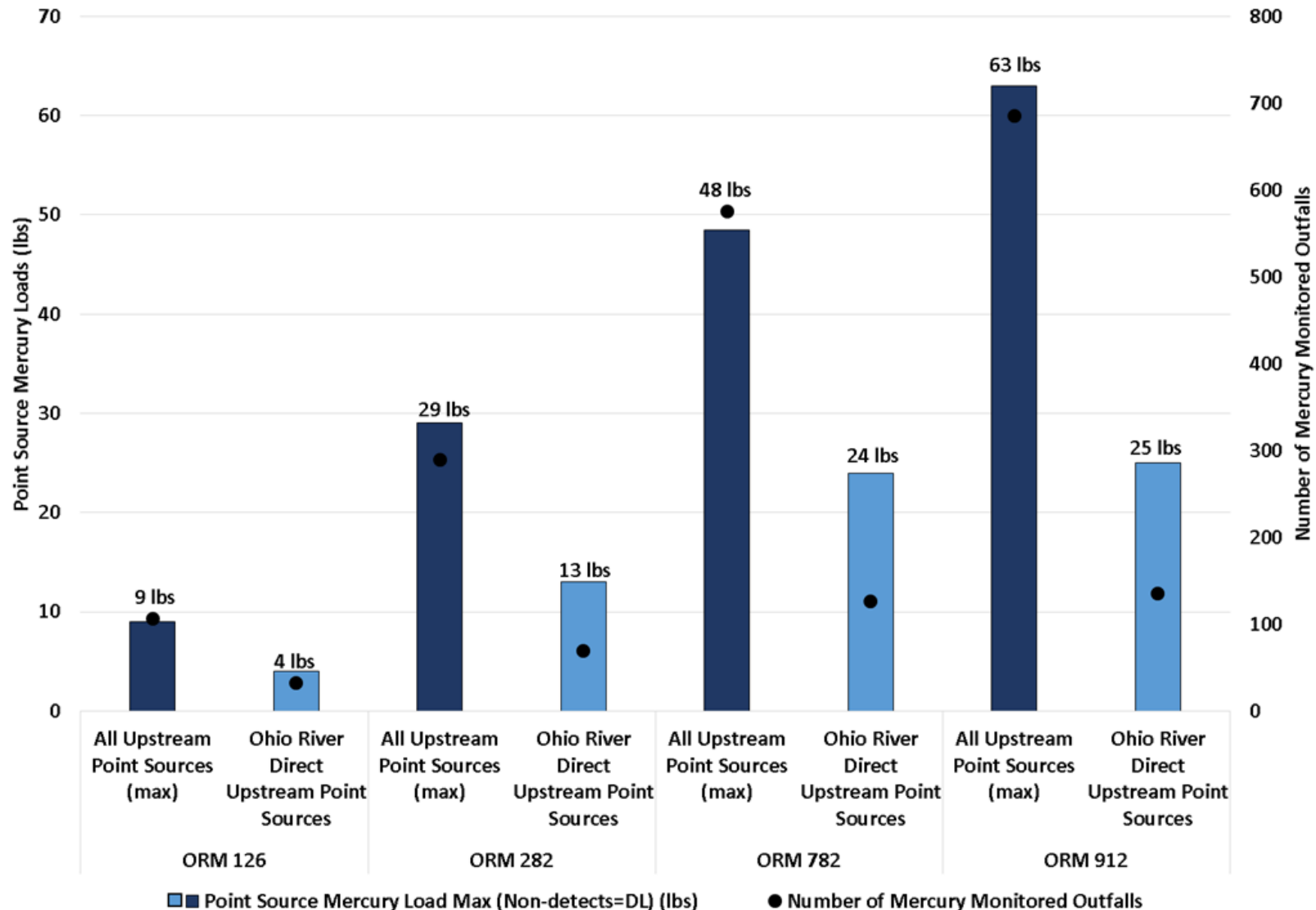
3) Instream mercury loads and yields from 15 major tributaries to the Ohio River are presented



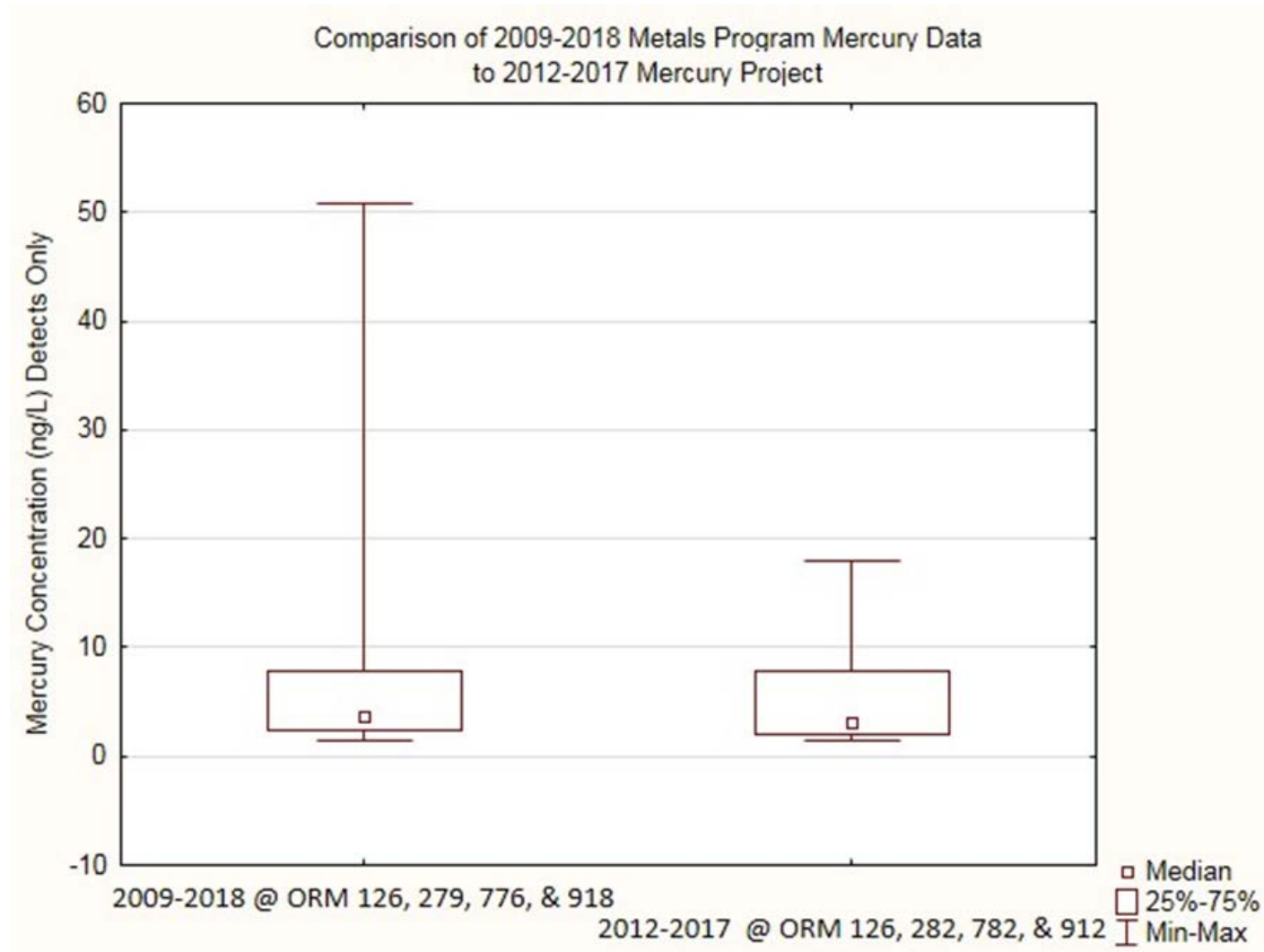
4) Instream tributary loads cumulatively upstream of ORM912 totalled half of the instream mercury load at ORM912.



5) Monitored point sources discharging directly to the Ohio River were 40% of the total cumulative monitored point source loads upstream of ORM912.



6) Instream mercury sampling data used for this project compared well and were consistent with 10 years of data from ORSANCO's Clean Metals Program instream monitoring data.



Summary

- This report presents the results of a study to address mercury concerns in the Ohio River, which was a first step to better understand the pathways for mercury to the Ohio River, on a very broad, basin-wide scale.
- The Ad-Hoc Committee on Mercury Studies will be recommending the Commission approve the report at its meeting tomorrow.
- Does the Technical Committee wish to endorse the report?

Agenda Item 7:
Update on Ohio River PFAS
Project Development

Heath, Dinkins

Study Objective

- Characterize ambient conditions relative to PFASs in the Ohio River at 20 locations, for 2 rounds of sampling under two separate seasons.
 - 1 higher flow & 1 lower flow event.
 - Probabilistic-systematic approach used for site selection.
 - Outside of any regulatory mixing zones.
- The survey is not intended to focus on drinking water, but rather develop a ambient baseline conditions for the Ohio River.
- Results may inform states, EPA, utilities & other interested parties on Ohio River ambient water quality conditions. The Commission is developing a communication plan.

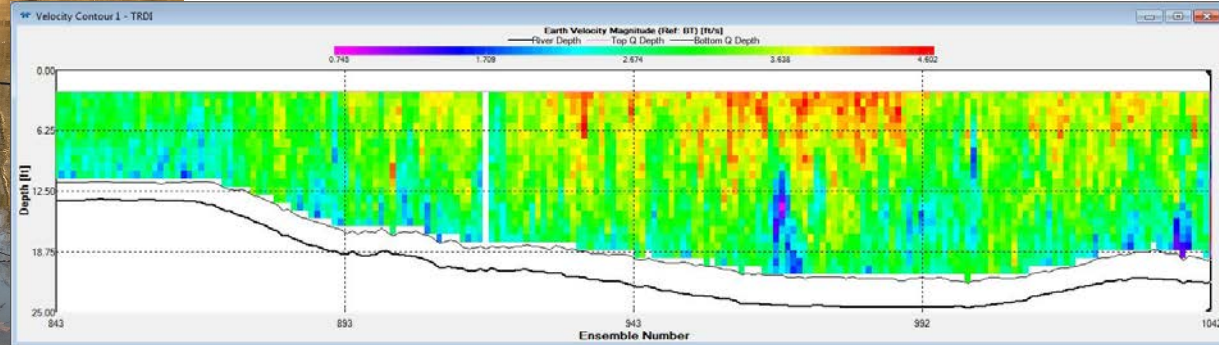
Working with our Federal Partners

- USEPA research lab will analyze water samples for PFASs. They are currently working on new methods
- We continue to work with the USGS on use of the EDI sampling method for PFASs.
- The USGS has completed some extensive QA samples. Results may be available in 3 months.
- Current plan is to begin the survey in 2020 (depending on COVID considerations and results of USGS project).

Sample Collection Methodology

- Preferred Method is EDI-Equal Discharge Increment.
- Collects a flow-weighted cross-sectional composite of the river.
- Needs to be evaluated for suitability for PFAS compounds.

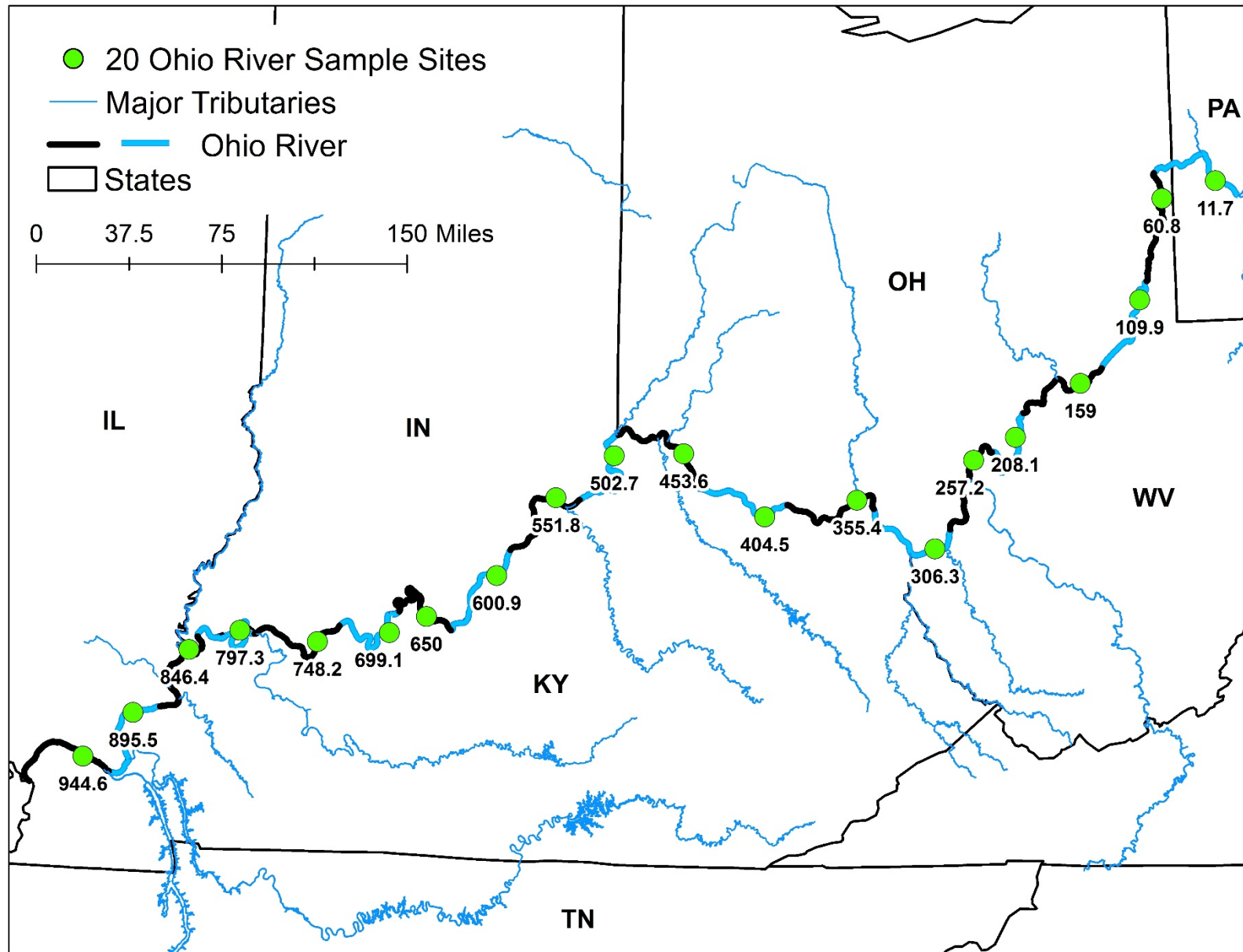
USGS EDI Sampling Equipment



What to Sample

- EPA has a couple of analytical methods suitable for ambient waters.
- Rely heavily on EPA expertise for method selection.
- Workgroup recommends including Gen-X compounds – EPA can do this.
- Flow measurements at every site with ADCP (Acoustic Doppler Current Profiler) instrumentation considers full X-sectional flows.

Systematic-Probabilistic Approach



Status

1. We have been communicating with USGS on EDI method.
2. QAPP has been developed to the extent possible. Sample collection and handling methods thus far based on Michigan methods. USGS methods for EDI method will be added as available.
3. Meeting scheduled with EPA Cincinnati regarding analytical services.
4. 20 sites have been selected and sent to states to check alignment with regulatory mixing zones.
5. Considering the addition of two sites on the Allegheny and Monongahela Rivers through the WV Water Resources Institute/3 Rivers Quest Program.

Site Selection to Bracket Parkersburg Area

- The initial work plan stated that 2 additional sites (above the 20 sites) were to be selected to bracket the Parkersburg area.
- Concern about explaining the results of those bracketed sampling results.
- The 20 selected sites will inherently bracket the Parkersburg area.
- Considering dropping these two additional sites – TEC input?

Remaining Tasks

1. Secure analytical services.
2. Confirm use of USGS EDI sampling method for PFAS and obtain any needed alternative equipment and USGS field sampling procedures.
3. Reconsideration of 2 sites bracketing Parkersburg area of Ohio River.
4. Finalize QAPP, Sampling Plan, and Communication Plan.
5. Consider additional sites on Allegheny & Monongahela Rivers.
6. USGS EDI method requires 3-person boat crew. Continued COVID concerns may affect when ORSANCO is able to begin sampling.

Agenda Item 8:
ORSANCO Technical Programs
Highlights from April, 2020
Program & Finance Committee
Meeting

Heath, Argo, Dinkins



2020 Program & Finance Committee Meeting: Technical Programs





Technical Program Overall Highlights

Biological Programs

Water Quality Monitoring & Assessment Programs

Source Water Protection Programs



Biological Programs

- Finished NRSA last year
 - 2 year monitoring program repeated every 5 years.
 - Have done biological monitoring in 2 pools for the last 2 field seasons.
 - This field season back to monitoring 3 biological pools.
 - Large income producing program.
 - Possibility that future monitoring be spread over 5 yrs (EPA decision).
- Fish Tissue
 - Increased sampling to make up for less sampling during prior two years of NRSA.

Monitoring and Assessment Programs

- Evaluation of the Bimonthly/clean metals monitoring programs.
 - Used for 305b and trends.
 - Can the baseline be improved while still meeting key program needs and not significantly increasing budget.
 - Can we be more efficient while meeting our information needs.
- Initiate review of our monitoring strategy for all ORSANCO monitoring programs after completion of Bimonthly/clean metals monitoring strategy.



Monitoring and Assessment Programs (Continued)

- 305b – Development of an assessment methodology for HABs.
- Trends assessments – FY 22 Bacteria; FY22-23 Bimonthly/metals; FY 23-24 Fish Tissue.
- Standards – No budget for PCS Development but adding task under PCS Administration to stay abreast of developments pertaining to water quality criteria.
- Continue to review permits.
- Mercury – wrapping up project. There are spin-off studies that could be done with the project data ie. methylation analysis.
- PFAS Survey – Currently contemplating a Fall 2020 start, however we are holding for results of USGS QA study and sampling methodology for EDI sample collection method.

Source Water Protection

- Options for replacing ODS units per the replacement strategy.
- Continue operating the HABs continuous monitoring network.
- Continue to participate in Contaminant Source Inventory Project.



Core Bio/Bimonthly Programs

Program	FY20	FY21	FY20/ FY21 Diff	Reason
Clean Metals	\$94,372	\$94,372	\$0	Decreased supplies offset increased analytical costs
Bimonthly	\$43,030	\$41,385	-\$1,195	Reflects actual analytical costs vs mid-RFP FY20 estimates
Macros	\$45,104	\$63,986	\$18,882	Added analytical/travel of 3 rd pool
Fish Tissue	\$21,583	\$26,963	\$5,380	Added analytical/travel to fill data gaps exacerbated by NRSA involvement
Fish Population	\$102,354	\$105,267	\$2,913	Added FY20 contractual costs offset by paired abiotic water samples & 3 rd pool
Bio Assessment	\$16,499	\$16,398	-\$101	Update per diem estimates
Aquarium	\$10,221	\$13,856	\$3,635	Returned to more typical event load post NRSA involvement, new tires
Overall	\$333,612	\$362,676	\$29,514	Overall increased due to a reincorporation of a 3 rd pool



FY21 5yr Monitoring Assumptions

- Bimonthly/Clean Metals
 - No major changes to number or frequency of samples
 - Pending the results of MPG (update to monitoring strategy and bimonthly evaluation)
- Biological Core Programs
 - Pools Surveys – 3 per year, except during portion of NRSA years
 - Calculated costs of adding FT parameters (dioxins, PFAS/PFOA) and development of mussel index/sampling plan
 - Shown but not included in 5yr
- Aquarium
 - Scheduled maintenance and some body/paint work
 - No outside sponsorship
- NRSA
 - Two potential scenarios
 - Funding similar to 2018-2019 – between FY22 and FY24
 - Annual funding beginning in FY22 through FY27



Bimonthly & Clean Metals Programs

Program	Category	FY21	FY22	FY23	FY24	FY25
Clean Metals	Supplies	\$1,500	\$1,530	\$1,561	\$1,592	\$1,624
	Lab Fees	\$92,872	\$92,872	\$102,159	\$112,375	\$123,613
	Travel	\$8,590	\$8,702	\$8,815	\$8,929	\$9,045
Bimonthly	Supplies	\$1,200	\$1,224	\$1,248	\$1,273	\$1,299
	Lab Fees	\$32,045	\$32,045	\$41,725	\$41,725	\$43,811
Core Programs		\$136,207	\$136,373	\$155,508	\$165,895	\$179,392

Multipurpose
Grant





Biological Monitoring Programs



Program	Category	FY21	FY22	FY23	FY24	FY25
Fish Pop	Travel	\$21,624	\$21,905	\$22,190	\$22,478	\$22,771
	Supplies	\$11,200	\$10,000	\$10,200	\$10,404	\$10,612
	Lab Fees	\$8,140	\$8,140	\$8,547	\$8,547	\$8,547
	Contractual	\$64,205	\$64,205	\$70,626	\$70,626	\$70,626
Macros	Travel	\$15,240	\$15,438	\$15,639	\$15,842	\$16,048
	Supplies	\$2,410	\$1,500	\$1,530	\$1,561	\$1,592
	Lab Fees	\$42,510	\$41,725	\$41,725	\$41,725	\$43,811
Fish Tissue	Travel	\$3,240	\$3,282	\$3,325	\$3,368	\$3,412
	Supplies	\$750	\$765	\$780	\$796	\$812
	Lab Fees	\$21,600	\$22,680	\$23,814	\$25,005	\$26,255
	PFOS		\$5,670	\$5,954	\$6,251	\$6,564
	Dioxins		\$9,450	\$9,923	\$10,419	\$10,940
Mussels	Contractual	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Core Programs		\$190,919	\$189,640	\$198,375	\$200,351	\$204,485
Potential Additions		\$100,000	\$115,120	\$115,876	\$116,670	\$117,503





Biological Monitoring Programs



Program	Category	FY21	FY22	FY23	FY24	FY25
Fish Pop	Travel	\$21,624	\$21,905	\$22,190	\$22,478	\$22,771
	Supplies	\$11,200	\$10,000	\$10,200	\$10,404	\$10,612
	Lab Fees	\$8,140	\$8,140	\$8,547	\$8,547	\$8,547
	Contractual	\$64,205	\$64,205	\$70,626	\$70,626	\$70,626
Macros	Travel	\$15,240	\$15,438	\$15,639	\$15,842	\$16,048
	Supplies	\$2,410	\$1,500	\$1,530	\$1,561	\$1,592
	Lab Fees	\$42,510	\$41,725	\$41,725	\$41,725	\$43,811
Fish Tissue	Travel	\$3,240	\$3,282	\$3,325	\$3,368	\$3,412
	Supplies	\$750	\$765	\$780	\$796	\$812
	Lab Fees	\$21,600	\$22,680	\$23,814	\$25,005	\$26,255
	PFOS		\$5,670	\$5,954	\$6,251	\$6,564
	Dioxins		\$9,450	\$9,923	\$10,419	\$10,940
Mussels	Contractual	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Core Programs		\$190,919	\$189,640	\$198,375	\$200,351	\$204,485
Potential Additions		\$100,000	\$115,120	\$115,876	\$116,670	\$117,503





National Aquatic Resource Survey

Program	Category	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
NRSA 1.0 (2yr & 100 Sites)	<i>Sites (Pools)</i>		<i>25 (2)</i>	<i>50 (2)</i>	<i>25 (2)</i>				
	Personnel		\$49,774	\$69,969	\$26,813				
	Travel		\$26,240	\$46,740	\$21,968				
	Supplies		\$5,950	\$5,950	\$4,450				
	Contractual		\$43,010	\$99,113	\$57,907				
	Cost		\$124,974	\$221,772	\$111,138				\$457,885
	Income		\$160,000	\$320,000	\$160,000				\$640,000
	Benefit		\$84,800	\$168,197	\$75,675				\$328,671





National Aquatic Resource Survey

Program	Category	FY21	FY22	FY23	FY24	FY25	FY26	FY27	Total
NRSA 1.0 (2yr & 100 Sites)	<i>Sites (Pools)</i>		25 (3)	50 (2)	25 (2)				
	Personnel		\$49,774	\$69,969	\$26,813				
	Travel		\$26,240	\$46,740	\$21,968				
	Supplies		\$5,950	\$5,950	\$4,450				
	Contractual		\$43,010	\$99,113	\$57,907				
	Cost		\$124,974	\$221,772	\$111,138				\$457,885
	Income		\$160,000	\$320,000	\$160,000				\$640,000
	Benefit		\$84,800	\$168,197	\$75,675				\$328,671
NRSA 2.0 (5yr & 130 Sites)	<i>Sites (Pools)</i>		10 (3)	30 (2)	30 (2)	30 (2)	20 (3)	10 (3)	
	Personnel		\$18,751	\$41,184	\$41,184	\$41,184	\$30,362	\$15,859	
	Travel		\$15,542	\$28,738	\$28,738	\$28,738	\$20,538	\$8,200	
	Supplies		\$2,500	\$5,950	\$4,450	\$5,950	\$3,700	\$2,500	
	Contractual		\$41,430	\$99,113	\$99,113	\$99,113	\$99,113	\$49,780	
	Cost		\$78,223	\$174,985	\$173,485	\$174,985	\$153,713	\$76,338	\$831,730
	Income		\$64,000	\$192,000	\$192,000	\$192,000	\$128,000	\$64,000	\$832,000
	Benefit		\$4,528	\$58,199	\$59,699	\$58,199	\$4,649	\$3,520	\$188,794



Mobile Aquarium



Program	Category	FY21	FY22	FY23	FY24	FY25
Aquarium	Travel	\$9,226	\$9,346	\$9,467	\$9,591	\$9,715
	Contractual	\$750	\$750	\$750	\$750	\$750
	Consumables	\$500	\$473	\$473	\$473	\$473
	Lighting		\$110		\$110	
	Plumbing				\$600	
	Tires	\$2,200				\$2,200
	Brakes	\$450	\$473	\$496	\$521	\$547
	Axles		\$400			
	Metalwork	\$1,750	\$1,750			
	Paint			\$5,000		
Totals		\$14,876	\$13,301	\$16,186	\$12,044	\$13,685

ORSANCO Staff and PIACO have discussed seeking sponsorship to offset maintenance costs and increase educational events – **Motion to Pursue such funds**



Source Water Protection Programs





Programs Overview

Source Water Protection Programs	FY20	FY21
Source Water Assessment & Protection	\$189,255	\$214,208
ODS	\$464,083	\$468,996
Algae/Nutrients/HABs	\$ 82,647	\$ 53,904
Spills	\$ 87,462	\$ 86,673
<u>Emergency Response Prep</u>	<u>\$ 72,585</u>	<u>\$ 61,491</u>
TOTAL Source Water Programs	\$896,032	\$ 885,272



Programs Overview

Special Projects	FY20	FY21
Harmful Algal Blooms (HABs)		
IN 205j Grant	\$150,000	\$150,000
PFAS – WQ Monitoring		
WV 604b Grant	\$ 81,604	\$ 0
OH 604b Grant	\$ 52,009	\$ 52,000
106 – Supplemental	\$ 72,300	\$ 57,895
PFAS – State Funded	\$ 15,882	\$ 53,904
TOTAL Special Projects	\$371,795	\$313,799

Program Notes

1. ODS

- Maintenance contract with Terra Tech (\$80,000)
- Instrument replacement (\$178,000)

2. Indiana HAB Project(205j Grant)

- FY20 \$150K – Deployed 2 additional continuous monitoring stations (Markland, Newburgh)
- FY21 \$150K – Extend project period plus add Aquarius software
- FY22 \$146K – Extend project period

Program Notes (continued)

3. PFAS

- FY20
 - WV Water Quality Monitoring Grant – Prep work (training, equipment)
 - OH Water Quality Monitoring Grant – Prep work (QAPP, SOPs, Communications Plan)
 - 106 Supplemental – Prep + 1st round of sampling time
- FY21
 - OH 604b – 1st round sampling (travel, supplies, time)
 - 106 Supplemental – 2nd round of sampling

Other Business:

- Comments by Guests
- Announcement of Upcoming Meetings
- Adjourn

Chairman Pigott