Water Quality Standards Advisory Committee, July 8, 2021

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  - It will not be used to capture formal comments verbally or through the chat function.

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Agenda

Item	~Time	Subject	Lead by
1.	1:30	Introductions	Ken Edwardson
2.	1:35	Legislative Update – Budget	Ted Diers
3.	1:45	EPA Update	Dan Arsenault
4.	1:55	PFAS – Fish Study Update	Ken Edwardson
5.	2:00	Instream Flow Update/Drought Update	Ted Diers
6.	2:10	Toward Triennial Review - HH Criteria – 2015 304(a) & MCLs	Ken Edwardson
7.	2:40	Toward Triennial Review - ALUS Selenium	Ken Edwardson
8.	2:55	Toward Triennial Review - Coastal Fecal Bacteria Issue	Ted Diers
9.	3:05	Toward Triennial Review - Status	Ken Edwardson
10.	3:10	2020/2022 Assessment cycles	Ken Edwardson
11.	3:20	Other Business • The next two regularly scheduled WQSAC meetings are on 10/14/2021 and 1/13/2022. • Other	Chair

Legislative Update – Budget

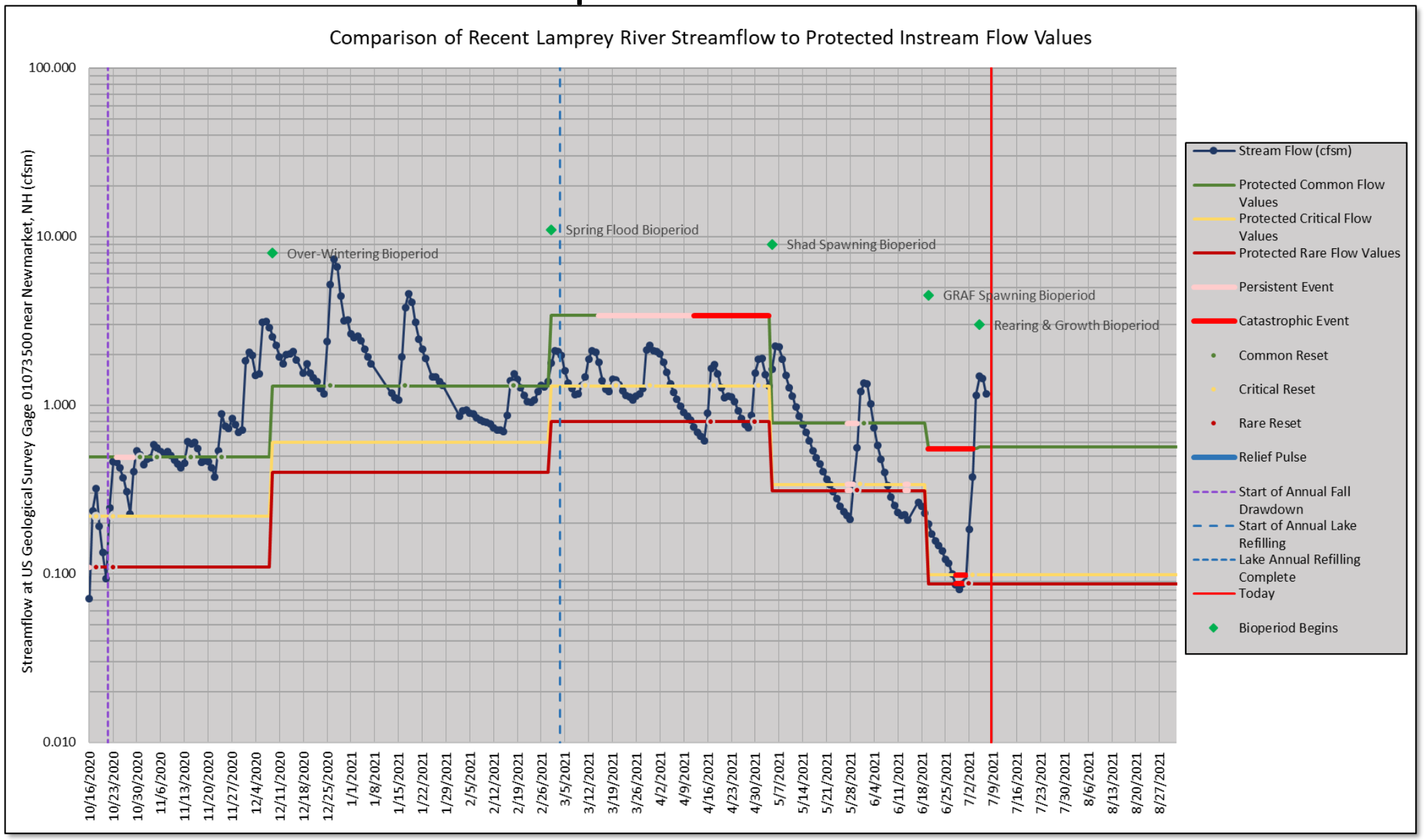
EPA Update

Fish Tissue PFAS Study

www.vecteezy.com

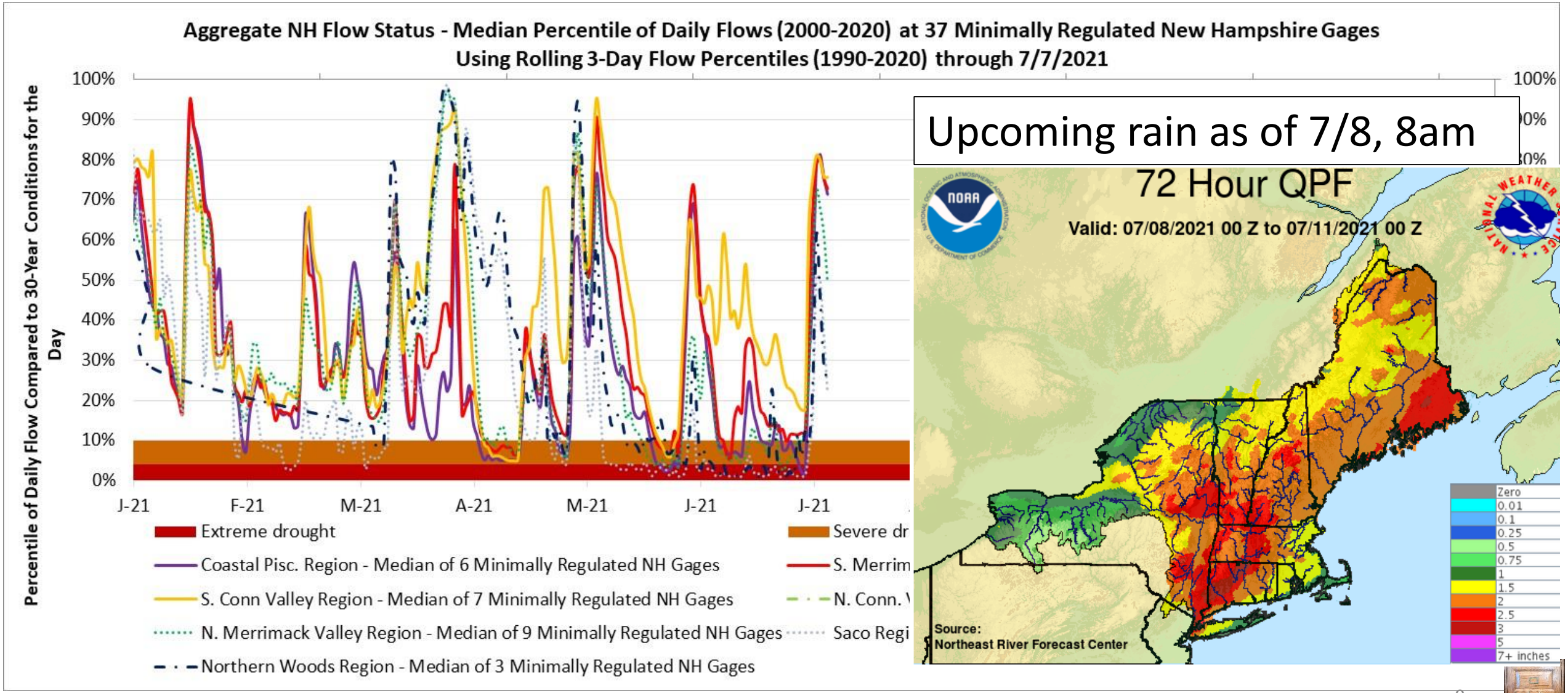
Instream Flow Update/Drought Update

Instream Flow Update



[Instream Flow (des.nh.gov)]

Drought Update



Upcoming rain as of 7/8, 8am

Toward Triennial Review - Updating the Human Health Criteria

2015 304(a) Human Health Criteria Updates – What changed?

- New studies
- Updated base assumptions;
  - Body Weight 70 to 80 kg
  - Water Intake – 2.0 to 2.4 liters/day
  - Fish Consumption – 17.5 to 22 grams/day
  - Bioconcentration factors (*just direct water contact*) to Bioaccumulation Factors (*account for chemical accumulation in aquatic organisms from all potential exposure routes*)
  - Updated health toxicity factors (noncarcinogenic and carcinogenic effects)
  - Relative source contributions

2015 304(a) Human Health Criteria Updates – A categorical look

- No change to Env-Wq 1700 - Updated (increased) in the last triennial review.
  - 26 – Water & Fish Consumption
  - 24 – Fish Consumption
- No change to Env-Wq 1700 - Pre-existing/Unchanged Organoleptic threshold is more stringent.
  - 7 – Water & Fish Consumption
  - 10 – Fish Consumption
- New 304(a) values
  - 1 – Water & Fish Consumption
  - 4 – Fish Consumption
- Decreasing values
  - 60 – Water & Fish Consumption
  - 54 – Fish Consumption

New 304(a) Values

Water & Fish Consumption

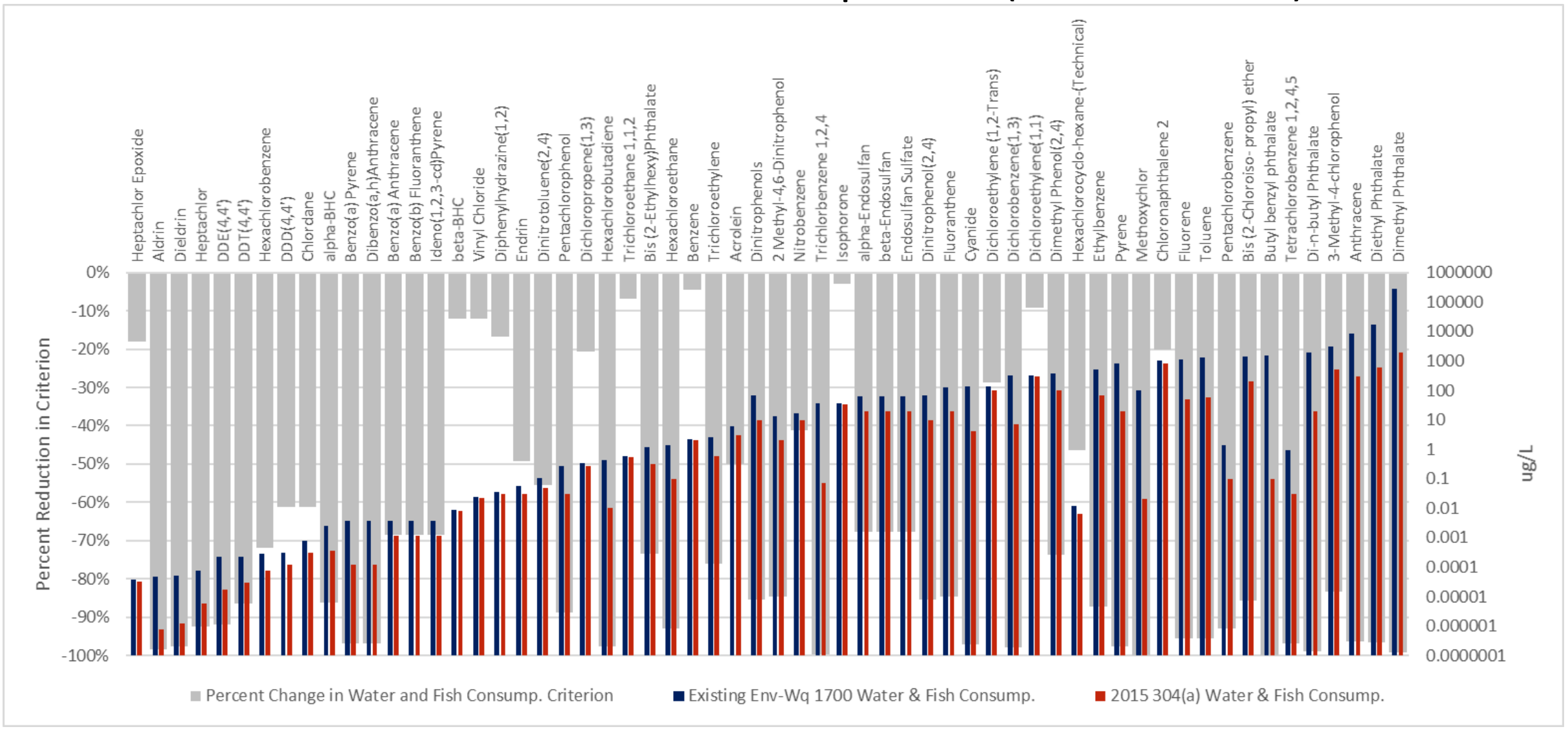
Pollutant	New 304(a) Value
Trichloroethane 1,1,1	10,000 ug/L *

** Note l will remain - MCL is 200 ug/L (unchanged)*

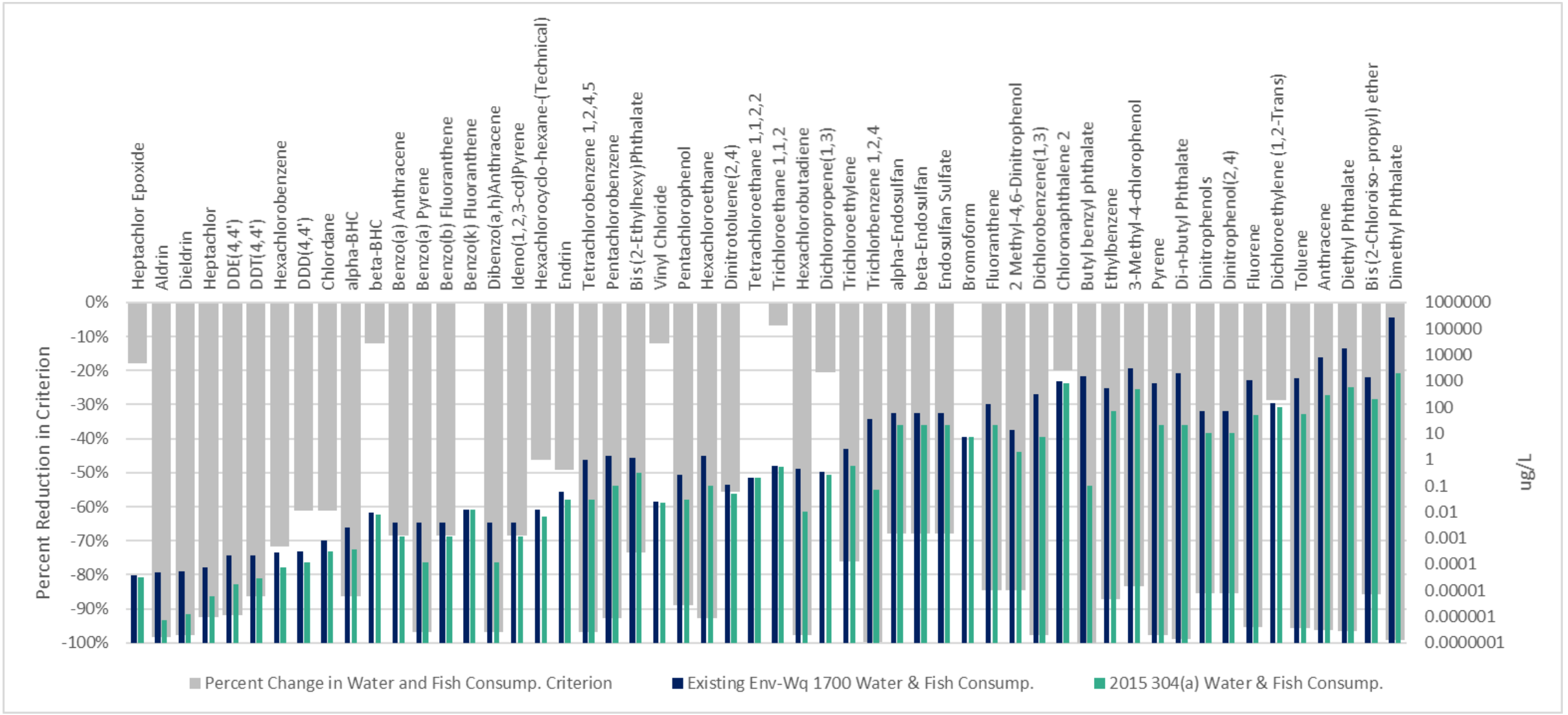
Fish Consumption

Pollutant	New 304(a) Value
Chlorophenoxy herbicides (2,4,5-TP)	400 ug/L
Chlorophenoxy herbicides (2,4-D)	12,000 ug/L
Methoxychlor	0.02 ug/L
Trichloroethane 1,1,1	200,000 ug/L

Decreasing criteria
60 – Water & Fish Consumption (55 on PPL)



Decreasing criteria
54 – Fish Consumption (50 on PPL)



2015 304(a) Human Health Criteria – Additional Resources

- Human Health Water Quality Criteria and Methods for Toxics | Water Quality Criteria | US EPA
- Comparison of EPA's 2015 Final Updated Human Health AWQC and Previous AWQC, June 2015
- Chemical-specific Inputs for EPA's 2015 Final Updated Human Health Ambient Water Quality Criteria - Summary of Inputs (final_revised_3.24.16.pdf (epa.gov))
- Human Health Ambient Water Quality Criteria: 2015 Update, June 2015 (epa.gov)

MCLs - Updates

Refresher –
Env-Wq Table 1703-1 – Note l

"(l) The letter "l" shall indicate that there is a more stringent drinking water maximum contaminant level (MCL) specified in Env-Dw 700, so if the surface water is a source for a public water system as defined in RSA 485:1-a, XV or is within 20 miles upstream of any active surface water intake for a public water system, the department shall use the MCL values shown in table 1703-2A, below, for the water and fish ingestion human health criteria:"

Env-Wq Table 1703-1 and Note I's Table 1703-2A

- Address where changed/added/missing.
- As MCLs are developed with consideration given to the costs and technological feasibility of reducing contaminant levels, how do they, in some cases, end up being lower than 304(a) HH Criteria?
  - Key base differences
    - 304(a) HH –
      - chronic (i.e., lifetime) exposure
    - MCLs -
      - Consider the adverse health risk to sensitive subpopulations: infants, children, the elderly, those with compromised immune systems and chronic diseases

Table 1703-2A: MCL Values for Water and Fish Ingestion Criteria

CAS Number	Chemical Name	MCL (Units per Liter)
7440417	Beryllium	4 µg
7440439	Cadmium	5 µg
7782505	Chlorine (as Cl_2)	4 mg
94757	Chlorophenoxy herbicides (2,4-D)	70 µg
93721	Chlorophenoxy herbicides (2,4,5-TP)	50 µg
18540299	Chromium+6	see Chromium Total
16065831	Chromium+3	see Chromium Total
7440473	Chromium Total (equal to the sum of Chromium+3 plus Chromium+6)	100 µg
95501	Dichlorobenzene (1,2)	600 µg
106467	Dichlorobenzene(1,4)	75 µg
107062	Dichloroethane (1,2)	5 µg
75354	Dichloroethylene(1,1)	7 µg
156605	Dichloroethylene(1,2-Trans)	100 µg
58899	gamma-BHC (Lindane)	0.2 µg
72435	Methoxychlor	40 µg
7782492	Selenium	50 µg
108883	Toluene	1 mg
71556	Trichloroethane 1,1,1	200 µg

We have lines in Env-Wq Table 1703-1 that are fully populated.

CAS Number	Chemical Name	Protection of Aquatic Life Concentration in micrograms per liter (µg/l)				Protection of Human Health Units per Liter	
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria	Water & Fish Ingestion	Fish Consumption Only
7440382	Arsenic	340 [d, i]	150 [d, i]	69 [d, i]	36 [d, i]	18 ng [b, c]	140 ng [b, c]

Other lines are partially populated and point to “Note l” for HH Fish and water ingestion.

CAS Number	Chemical Name	Protection of Aquatic Life Concentration in micrograms per liter (µg/l)				Protection of Human Health Units per Liter	
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria	Water & Fish Ingestion	Fish Consumption Only
7440417	Beryllium	130	5.3	--	--	Note 1	--

For the first time we would add lines that have just the “Note l” for HH Fish and water ingestion like the mock-up below suggests.

CAS Number	Chemical Name	Protection of Aquatic Life Concentration in micrograms per liter (µg/l)				Protection of Human Health Units per Liter	
		Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria	Water & Fish Ingestion	Fish Consumption Only
15972-60-8	Alachlor (Lasso)	--	--	--	--	Note 1	--

Additional MCLs - Env-Dw Table 703-1: Radionuclide Contaminants

Env-Dw Table 703-1: Radionuclide Contaminants

- 4 of the 4 parameters are not in either the Env-Wq Table 1703-1 nor in the radionuclide sections of Env-Wq 1700.
- There is a close match where Env-Wq Section 1703.17 (radium-226) has a criterion of 3 pCi/L, whereas Env-Dw Table 703-1 has an MCL of Radium 226 + 228 of 5 pCi/L.
- As they are not truly a toxic, the radionuclides may need to exist with the other radionuclide text (1703.15, 1703.16 and 1703.17) with a cross-link to Table 1703-1 “Note l”.

Radionuclide Contaminant	MCL
Compliance Gross Alpha	15 pCi/L
Radium 226 + 228	5 pCi/L
Uranium	31 ug/L
Beta Particle and Photon Radioactivity	5 mrem/year

Additional MCLs - Env-Dw Table 703-2: Average Annual [Radionuclide] Concentrations

Env-Dw Table 703-2: Average Annual [Radionuclide] Concentrations
Assumed to Produce a Total Body or Organ Dose of 4 mrem/year

- 2 of the 2 parameters are not in Env-Wq 1700.
- As they are not truly a toxic, the radionuclides may need to exist with the other radionuclide text (1703.15, 1703.16 and 1703.17) with a cross-link to Table 1703-1 “Note l”.
- Duration may need to be included if these are added to Env-Wq 1700.

Radionuclide	MCL
Tritium	20000 pCi/L
Strontium 90	8 pCi/L

Additional MCLs - Env-Dw Table 704-1: Inorganic chemicals

Env-Dw Table 704-1: Inorganic chemical

- 3 of the 17 parameters not in Env-Wq 1700.

IOC Contaminant	MCL
Flouride	4 mg/L
Nitrite-N	1 mg/L
Nitrate-N + Nitrite-N	10 mg/L

Additional MCLs - Env-Dw Table 705-1: Volatile organic chemicals

Env-Dw Table 705-1: Volatile organic chemicals

- 4 of the 22 parameters not in Env-Wq 1700.

VOC Contaminant	MCL
Dichloroethylene (1,2-cis)	70 ug/L
Methyl tertiary-butyl ether (MtBE)	13 ug/L
Styrene	100 ug/L
Xylene, Total	10 mg/L

Additional MCLs - Env-Dw Table 705-2: Synthetic organic chemicals

Env-Dw Table 705-2: Synthetic organic chemicals

- 16 of 33 parameters not in Env-Wq 1700.

SOC Contaminant	MCL
Alachlor (Lasso)	2 ug/L
Aldicarb (Temik)	3 ug/L
Aldicarb sulfoxide	4 ug/L
Aldicarb sulfone (aldoxycarb)	2 ug/L
Atrazine (Atranex, Crisazine)	3 ug/L
Carbofuran (Furadon, 4F)	40 ug/L
Dalapon	200 ug/L
Dibromochloropropane (DBCP)	0.2 ug/L
Di(2-ethylhexyl)adipate	400 ug/L
Dinoseb	7 ug/L
Diquat	20 ug/L
Endothall	100 ug/L
Ethylene Dibromide (EDB)	0.05 ug/L
Glyphosate	700 ug/L
Oxamyl (Vydate)	200 ug/L
Picloram	500 ug/L
Simazine	4 ug/L

Additional MCLs - Env-Dw Table 705-3: Disinfection Byproducts

Env-Dw Table 705-3: Disinfection Byproducts

- 4 of 4 parameters not in Env-Wq 1700.
- Hummmm…

Contaminant	MCL
Total trihalomethanes (TTHM)	80 ug/L
Haloacetic acids (five) (HAA5)	60 ug/L
Bromate	10 ug/L
Chlorite	1000 ug/L

Additional MCLs - Env-Dw Table 705-4: MCL goals for disinfection byproducts

Env-Dw Table 705-4: MCL goals for disinfection byproducts.

- Goals, not MCLs, therefore not to be included.

Additional MCLs - Env-Dw Table 705-5: Maximum residual disinfection levels (MRDLs)

Env-Dw Table 705-5: Maximum residual disinfection levels (MRDLs) and MRDL goals.

- MRDLs are a special category of MCL and treated as an MCL.
- 2 of 3 parameters are not in Env-Wq 1700.

Contaminant	MRDL
Chloramines, as Cl2	4 mg/L
Chlorine Dioxide, as ClO2	0.8 mg/L

Additional MCLs - Env-Dw Table 705-6: MCLs and MCLGs for Certain Treatment Chemicals

Env-Dw Table 705-6: MCLs and MCLGs for Certain Treatment Chemicals

- 2 of 2 parameters are not in Env-Wq 1700.
- Treatment technique maximum dosage of the residuals in treatment chemicals.
- Not sure how these would be applied.
- Likely not to be included.

Contaminant	MCL
Acrylamide	0.05% dose at 1 mg/L
Epichlorohydrin	0.01% dose at 20 mg/L

Additional MCLs -Env-Dw Table 705-7: PFAS

Env-Dw Table 705-7: PFAS

- 4 of 4 parameters are not in Env-Wq 1700.

PFAS Contaminant	MCL
Perfluorohexane sulfonic acid (PFHxS)	18 ng/L
Perfluorononanoic acid (PFNA)	11 ng/L
Perfluorooctane sulfonic acid (PFOS)	15 ng/L
Perfluorooctanoic Acid (PFOA)	12 ng/L

MCLs

Anticipated Updates

- Bring most missing MCLs into Table 1703-1
- Likely not include Env-Dw Table 705-6: MCLs and MCLGs for Certain Treatment Chemicals (Acrylamide & Epichlorohydrin)
- Sort out where the radionuclides fit

MCLs – Additional Resources

- Env-Dw 702-706 (nh.gov)
- National Primary Drinking Water Regulations Complete Table (epa.gov)

Toward Triennial Review – Aquatic Life Use – Selenium

Selenium – EPA 2016 304(a)

- EPA provided finalized freshwater 304(a) recommendations June 30, 2016

  https://www.epa.gov/wqc/final-aquatic-life-ambient-water-quality-criterion-selenium-freshwater-2016 (807 pp, 2016, 822-R-16-006)

- Selenium toxicity is primarily based on the food-chain bioaccumulation route, not on a water column route of exposure.
- Chronic exposure in fish and invertebrates can cause reproductive impairments (e.g., larval deformity or mortality) and can also adversely affect juvenile growth and mortality.
- Criteria Hierarchal Primacy
  - Fish tissue - Egg/Ovary
  - Fish tissue - Fish Whole Body or Muscle
  - Water Column - Monthly Average (different lentic/lotic values)
  - Water Column – Intermittent Exposure (different lentic/lotic values) to account for potential chronic effects from short-term exposures.
- Exception to hierarchy when a waterbody is fishless or in cases of a new discharge.

Selenium – EPA 2016 304(a)

Media	Fish Tissue*		Water Column**	
Element	Egg/Ovary	Fish Whole Body or Muscle	Monthly Average Exposure (30-d) (dissolved total)	Intermittent Exposure
Criteria	15.1 mg/kg dw	8.5 mg/kg dw whole body or 11.3 mg/kg dw muscle (skinless, boneless filet)	1.5 µg/L in lentic aquatic systems 3.1 µg/L in lotic aquatic systems	$Criteria_{int\ exp} = \frac{[Criteria_{monthly\ average} - C_{bkgrnd}(1 - f_{int})]}{f_{int}}$ Where: • $Criteria_{int\ exp}$ = Intermittent Exposure Criteria • $Criteria_{monthly\ average}$ = The monthly average exposure criteria from the monthly element, for either a lentic or lotic waters. • C_{bkgrnd} = Average background selenium concentration. • F_{int} = Is the fraction of any 30-day period during which elevated selenium concentrations occur.

Existing Env-Wq 1700 Freshwater

- 5 ug/L as a chronic criterion
- No acute criterion.

*Not to be exceeded

**Not more than once in three years on average

(EPA 822-R-16-006)

Common Sources

Table 2.1. Predominant Chemical Forms of Selenium in Discharges Associated with Different Activities and Industries.

Selenium Form	Sources
Selenate	Agricultural irrigation drainage Treated oil refinery effluent Mountaintop coal mining/ valley fill leachate Copper mining discharge
Selenite	Oil refinery effluent Fly ash disposal effluent Phosphate mining overburden leachate
Organoselenium	Treated agricultural drainage (in ponds or lagoons)

Source: Presser and Ohlendorf 1987; Zhang and Moore 1996; Cutter and Diego-McGlone 1990.

(EPA 822-R-16-006)

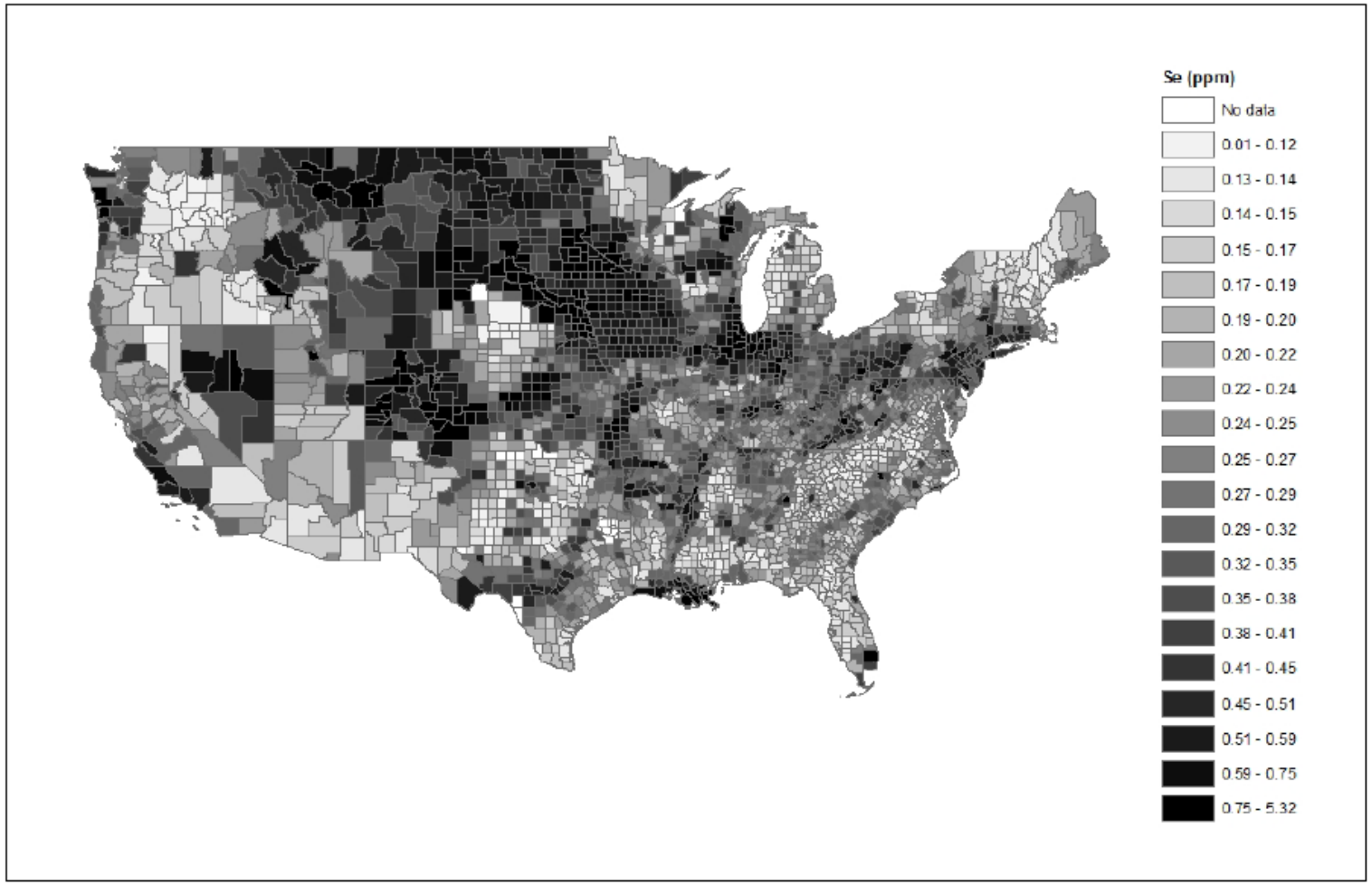
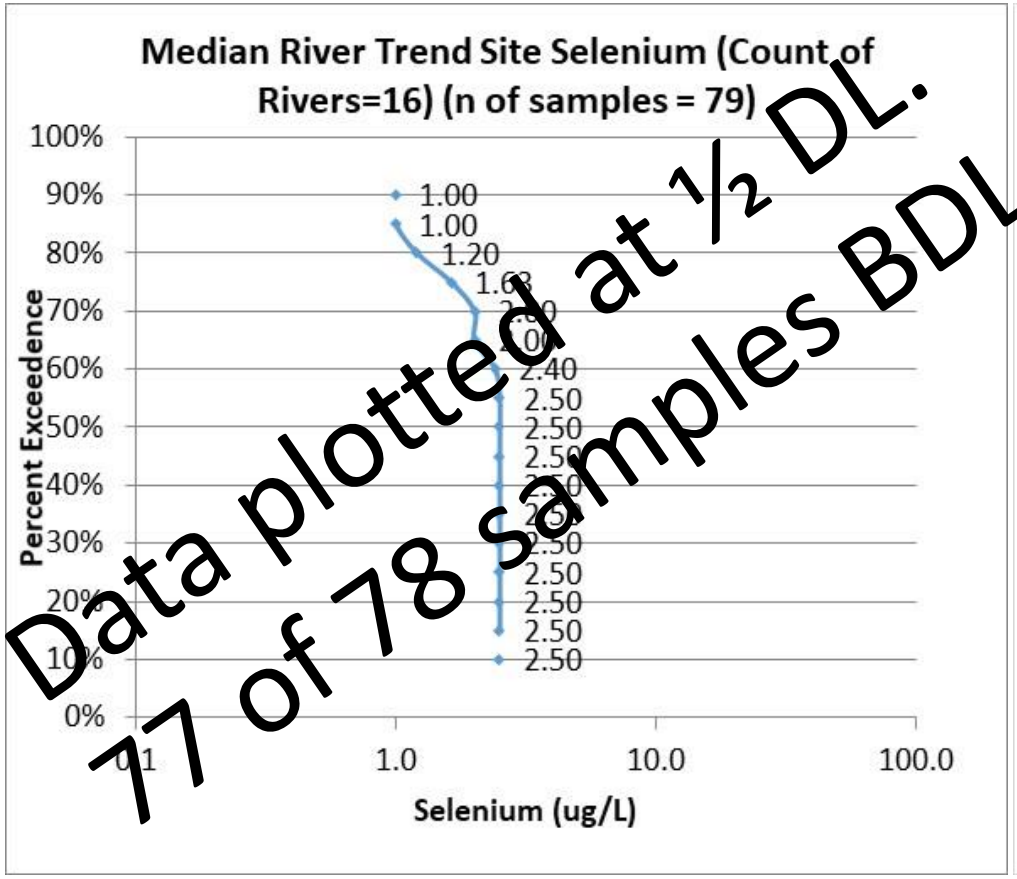


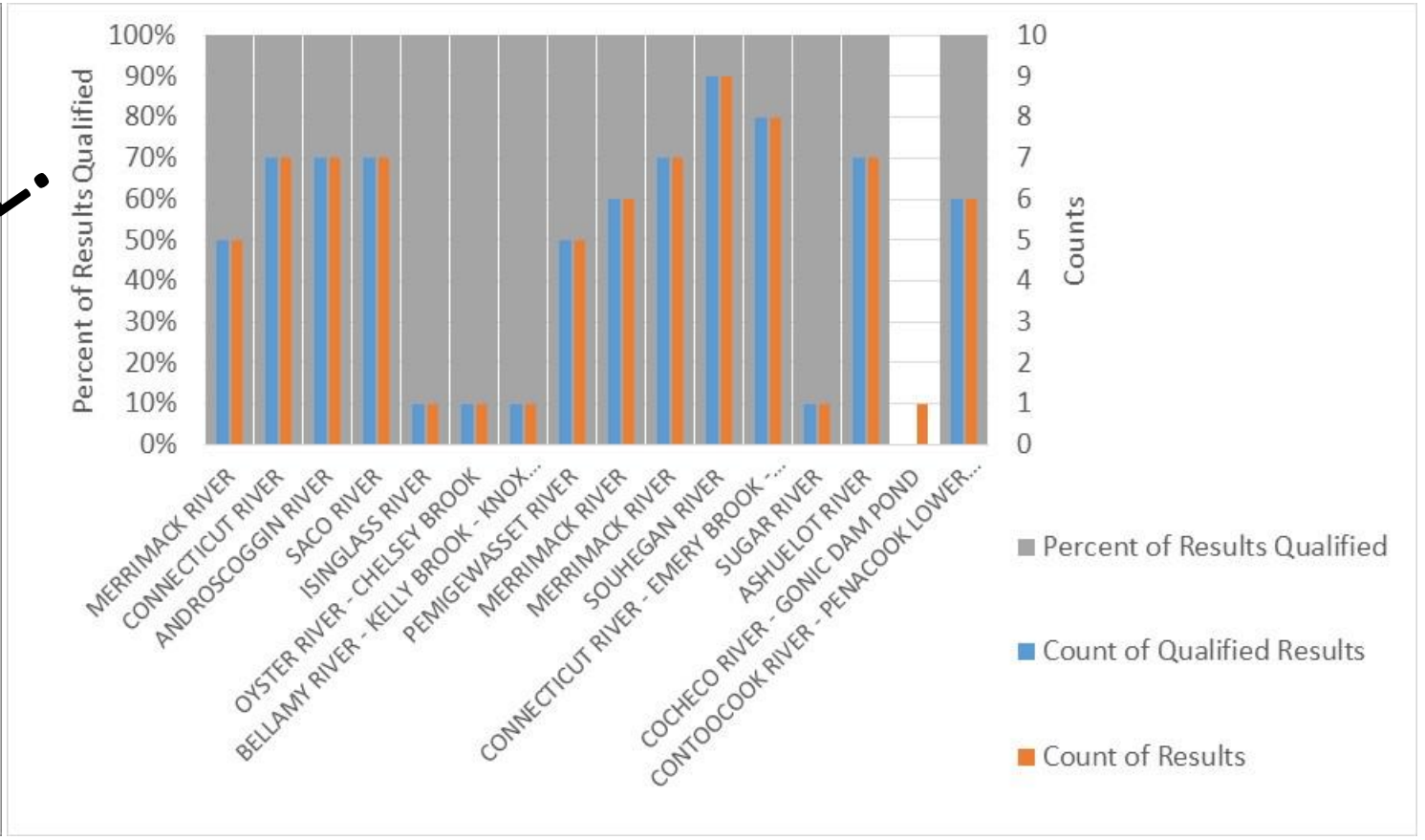
Figure 2.1. Selenium in Surficial Soils and Aquatic Sediments in counties of the Conterminous United States.
U.S. Geological Survey Open-File Report 2004-1001. URL: http://mrdata.usgs.gov/geochem/doc/averages/countydata.htm. Data are available from: http://mrdata.usgs.gov/geochem/doc/groups-cats.htm.

(EPA 822-R-16-006)

New Hampshire Rivers Trend Monitoring Sites? 1990-1995



Data plotted at ½ DL.
77 of 78 samples BDL.



- Distribution plot data from river trend stations, 1990-1995
- (78 samples, 1 detection at 18-CCH of 2 ug/L)

In New Hampshire Rivers?

- Looking at all EMD River Selenium Samples
  - 706 water samples
  - 25 detections
    - 13 were 2-14 ug/L in “common” river samples (1990-1992)
    - 12 were 10-35 ug/L in Ore Hill Mine Brook

New Hampshire Lakes Samples?

WATERBODYNAME	STATIONID	STATNAME	STARTDATE	FRACTIONTYPE	QUALIFIER	Result (ug/L)
BOWERS POND	08T-PEN	TINKER RD BRIDGE	7/8/1991	TOTAL	<	2
HADLEY FALLS	06-PQG	RTE 114 BRIDGE	6/6/1991	TOTAL	<	2
PAUGUS BAY	PC1	PICKEREL COVE-1	5/19/2003	TOTAL	<	5
HEDGEHOG POND	199609008SW01	HEDGEHOG POND, SE CORNER	7/18/2012	TOTAL	<	1
HEDGEHOG POND	199609008SW01	HEDGEHOG POND, SE CORNER	7/24/2013	TOTAL	<	1

Selenium in NPDES permits?

NPDES

- Remediation General Permit
  - RGPs are categorical.
  - Sample for everything, then based on the monitoring results they get the default Technology Based Effluent Limits (TBELs) or if results are higher or dilution is lower they may get more restrictive Water Quality Based Effluent Limits (WQBELs).
  - 6 NH RGPs have TBELs suggesting they showed no reasonable potential.
  - A deeper dive shows that all RGP sampled in NH << Reasonable Potential threshold (all BDL where DL 1-100 ug/L + dilution).
- WWTFs
  - No WWTFs have a selenium limit.
  - Hillsborough WWTF sampled as part of their antidegradation study and did not end up getting a selenium monitoring requirement or permit limit.

Likely Approach - New note “v” to Table 1703-1: Water Quality Criteria For Toxic Substances

(v) The letter “v” shall indicate that the freshwater aquatic life criteria for selenium are shown in Env-Wq 1703.34. [a new section]

Likely Approach - New Section 1703.34

Env-Wq 1703.34 Freshwater Aquatic Life Criteria for Selenium.

(a) The letter "v" shall indicate that the freshwater aquatic life criteria for selenium are expressed in multiple parts having primacy of the whole-body or muscle element over the water column elements, and the egg-ovary element over any other element unless there is a new discharge or waters are fishless in which case the water column elements shall be used. The department shall use the values shown in table 1703-3A, below, for the freshwater aquatic life protection criteria :

Table 1703-11: Freshwater Selenium Ambient Chronic Water Quality Criterion for Protection of Aquatic Life

Media	Fish Tissue		Water Column	
Element	Egg/Ovary	Fish Whole Body or Muscle	Monthly Average Exposure	Intermittent Exposure
Criteria	15.1 mg/kg dw	8.5 mg/kg dw whole body or 11.3 mg/kg dw muscle (skinless, boneless filet)	1.5 µg/L in lentic aquatic systems 3.1 µg/L in lotic aquatic systems	$Criteria_{int\ exp} = [Criteria_{monthly\ average} - C_{bkgrnd}(1-f_{int})] / f_{int}$

a) Fish tissue elements are instantaneous measures expressed as steady-state not to be exceeded.
b) Egg/Ovary supersedes any whole-body, muscle, or water column element when fish egg/ovary concentrations are measured.
c) Fish whole-body or muscle tissue supersedes water column element when both fish tissue and water concentrations are measured.
d) Water column values are based on total of the dissolved species of selenium in water and are derived from fish tissue values via bioaccumulation modeling. Water column values are the applicable criterion element in the absence of steady-state condition fish tissue data and not to be exceeded more than once in 3-years.
e) Intermittent Exposure Criteria ($Criteria_{int\ exp}$) is the $Criteria_{monthly\ average}$ from the monthly element, for either a lentic or lotic waters, minus the C_{bkgrnd} which is the average background selenium concentration time one minus the f_{int} which is the fraction of any 30-day period during which elevated selenium concentrations occur, divided by the f_{int}.

Toward Triennial Review – Coastal Fecal Bacteria Issue

Tidal Waters. Amend RSA 485-A:8, V to read as follows:

V. Tidal waters utilized for swimming purposes shall contain not more than either a geometric mean based on at least 3 samples obtained over a 60-day period of 35 enterococci per 100 milliliters, or 104 enterococci per 100 milliliters in any one sample, unless naturally occurring. Those tidal waters used for growing or taking of shellfish for human consumption shall,[~~ in addition to the foregoing requirements, be in accordance with the criteria recommended under the National Shellfish Program Manual of Operation, United States Department of Food and Drug Administration~~]*not exceed a geometric mean most probable number (MPN) of 14 organisms per 100 ml for fecal coliform, nor shall more than 10 percent of the samples exceed an MPN of 28 per 100 ml for fecal coliform, or other values of equivalent protection based on sampling and analytical methods used by the department of environmental services shellfish program and approved in the latest revision of the National Shellfish Sanitation Program, Guide For The Control of Molluscan Shellfish.*

SB146 (state.nh.us)

Toward Triennial Review - Process

Phases	Approx. Timeframe*
Pre-Rulemaking – internal review and solicit public comment. Draft initial proposal	January – Dec. 2021
First Stage – Finalize initial proposal, public comments and hearing, final rule proposal	January – July 2022
Second Stage – JLCAR	July – Sept. 2022
CWA Submittal – EPA review and approval	October 2022 - ?

* Timeframe assumes everything goes well.

Toward Triennial Review – How to stay Informed

- Watch the NH Rulemaking Register Website
  - OLS Administrative Rules (state.nh.us)
- Watch the DES Rules/Regulatory Website
  - Public Comment Opportunities | NH Department of Environmental Services
- If you are not getting the meeting notices, get on the WQSAC e-mail distribution list
  - Send Ken Edwardson your address Kenneth.J.Edwardson@des.nh.gov

Combined 2020/2022 Cycle Overview

Combined 2020/2022 Cycle Overview

- 2022 is the 50th anniversary of the Clean Water Act.
- National goal to have all states up-to-date by April 1, 2022.
- EPA memo January 14, 2021 to facilitate timely submission of the 2022 Section 303(d) and 305(b) integrated report.
- States were asked to identify potential actions to address the challenges, which included the option of submitting a combined cycle.
- After careful review of NHDES concluded that the only way to guarantee submittal of our integrated report by April 1, 2022 would be to submit a combined 2020/2022 Section 303(d) and 305(b) Integrated Report.
- On April 12, 2021 NHDES sent a letter to EPA to request consideration on the submittal of a combined 2020/2022 Integrated Report.
- EPA accepted NHDES' request for submittal of a combined 2020/2022 Integrated Report in a letter dated April 29, 2021.

NH Challenges to the April 1, 2022 deadline

1. Reduced Timeline

- Typically ~12-months from started to submittal of the draft 303(d) List to EPA.
- NHDES is still in the process of working on the 2020 assessments.
- If 2022 assessments were started now (concurrently), NHDES' timeline would be compressed to approximately 9-months.
- Many things would have to go just right - staff time (i.e. no other major work tasks), the databases to work seamlessly, and no additional modifications needed to the SADB.

2. EMD Upgrade - Resolving Bugs

- New Hampshire's Environmental Monitoring Database (EMD) was recently upgraded/converted.
- Conversion has resulted in several bugs that are hindering the upload of datalogger data.
- We thought that corrective work was complete but a recent upload attempt (this week) failed indicating more issues.

Challenges to meeting the April 1, 2022 deadline

3. SADB Upgrade and Testing

- The Supplemental Assessment Database (SADB) process its nearly five-million grab sampe data points per cycle plus datalogger datasets.
- SADB running on Oracle 10g and to be upgraded to Oracle 12/19c in July 2021.
- Done in test environment but not yet in production.

4. SADB Test Load from EMD

- Upgrades to the EMD included some changes to the underlying table structure.
- Thus far, a test load and build of the SADB from the EMD has been conducted in test (2-weeks). Needs to be pushed into production environment.
- If all goes well, it will work cleanly in production.

Challenges to meeting the April 1, 2022 deadline

5. DoIT Developer Time Restraints

- The Watershed Management Bureau has a single dedicated software developer.
- Time split between the EMD, SADB, and Pools DB plus priorities set by the NHDES in whole for larger enterprise projects.
- Also dependent on others in DoIT staff for certain actions for broader network constraints.
- Building a cycle is getting challenging (~5M/cycle * 8 cycles…). Archive some of the older data or process the new cycle in a non-production environment? Either is beyond the normal assessment window.

6. Cycle Uploads to ATTAINS (Assessment, Total Maximum Daily Load (TMDL) Tracking and Implementation System (ATTAINS))

- State submittals need to be in the online ATTAINS platform.
- NHDES is was been working (since Fall 2020) with EPA to address issues regarding the upload of data from NHDES' SADB into ATTAINS.
- The timeframe for getting NHDES' data into ATTAINS cleanly has not yet been successful.
- Diverting staff from ATTAINS upload to the 2022 assessments would hinder data uploads.

Benefits to submitting a combined 2020/2022 assessment

1. More Data to Evaluate Waterbody Conditions

- Tidal Waters - If stand-alone 2022 assessment → only one additional year of data (2019) compared to 2020 assessments.
- Freshwaters - The only new data would be from 2020 and due to COVID issues, only 30-70% (lakes–rivers) of the "normal" annual samples.
- By doing a combined 2020/2022 cycle, when NHDES reevaluates the data for the 2024 assessments there would be at least 4 years of data (2019-2022/23) to evaluate. This would be much more meaningful in determining changes to water quality.

2. Ability to Assess Success of NGP

- As noted above, a new 2022 assessment would only include one additional year of data from the Great Bay Estuary. Combining the assessment and running a new assessment in 2024 will afford an excellent opportunity for a first look at the success of the Nitrogen General Permit.

Benefits to submitting a combined 2020/2022 assessment

3. Time to Implement Changes

- NHDES currently keeps a running list of necessary changes/upgrades to make the SADB run more efficiently.
- By submitting a combined 2020/2022 cycle, NHDES and DoIT will have the necessary time needed to fully implement all the changes needed to make that SADB run efficiently prior to starting the 2024 assessments.

4. Time to Correct Bugs from EMD/SADB Conversions

- As discussed previously, the EMD recently underwent a conversion and the SADB partially upgraded to a back end of Oracle 12/19c.
- If the push to production is clean, this may be in good shape.

Benefits to submitting a combined 2020/2022 assessment

5. Time to Import Cycles to ATTAINS

- EPA's How's My Waterway website will be central to EPA's outreach on water quality for the 50th anniversary.
- How's My Waterway relies on ATTAINS datasets and currently shows NH's 2012 assessment data.
- Cycles build on each other in ATTAINS therefore we need to get 2014 uploaded, then 2016, and then 2018.
- By submitting a combined cycle, NHDES will have the necessary time to fully work through the ATTAINS process and then upload the 2020/2022 assessment data once finalized and approved by EPA.

6. Time to Complete 305(b) Report

- By submitting a combined 2020/2022 cycle, NHDES will have the necessary time needed to complete a 2020/2022 305(b) report, which otherwise may not get done in a timely manner if NHDES had to shift its focus to building a stand-alone 2022 assessment.

Other Business

- The next two regularly scheduled WQSAC meetings are on 10/14/2021 and 1/13/2022.
- Other?