

Oliver Pierson
Lakes and Ponds / DEC
July 26, 2022








An aerial photograph of a lake with a large, dense area of bright green algal blooms covering the water surface. The blooms are concentrated in the foreground and middle ground, extending from the shoreline. The water in the background is a darker blue-grey. The shoreline is lined with a thick forest of green trees. On the left side of the image, there is a small, dark-roofed building with a wooden deck, and a few people can be seen near it. The sky is blue with some white clouds.




Clean Boats Clean Waters

Under Vermont law, you may be fined up to \$1000 for transporting any aquatic plant or plant fragment, zebra mussels, or quagga mussels. (penalties: 15 V.S.A. § 465, 21 V.S.A. § 207, 4 V.S.A. § 404, 107 & 100)

The invasive species below marked with a "YES" are known to exist in this waterbody.
Other invasive species may sometimes be found but have yet to be reported.

 <p>Asian Clam</p> <p>Less than 1 1/2" in length Flattened concave edges Light tan to brown color</p>	<p>NO</p>	 <p>European and/or Variable-leaved Watermilfoil</p> <p>Feathers below 1 in. or 4-5 2 or more on a single stem Typically more branched stems</p>	<p>NO</p>
<p>Clean</p>	<p>Drain</p>	 <p>Fanwort</p> <p>Leaves are opposite on the stem and have a petiole A leaf segment is one fan (leaf) divided into 2-3</p>	<p>NO</p>
 <p>Hydrilla</p> <p>4 leaves in whorls of 3 or 4 Aerially rooted Suber (ditch) weed: the last segment dead</p>	<p>NO</p>	 <p>Water Chestnut</p> <p>Large and compact root Inflated stem Feathery underwater leaves Creates dense float on the surface of the water</p>	<p>NO</p>
<p>Dry</p>	 <p>Zebra and/or Quagga Mussel</p> <p>Less than 1 1/2" in length When dry they turn orange/brown 100% no report</p>	<p>NO</p>	




VERMONT
AGENCY OF NATURAL RESOURCES

Please report suspected aquatic invasive species sightings to:

(802) 828-1535

www.vtwaterquality.org



STOP AQUATIC HITCHHIKERS!

Do not transport any aquatic plants or animals between waterbodies.

Aquatic Invasive Species Program

- The Vermont Aquatic Invasive Species (AIS) Program coordinates management activities associated with both aquatic invasive and aquatic nuisance species
- AIS Program works with local, state, and federal partners to obtain and provide funds for control projects & provides education / outreach to reduce the threat and spread of AIS
- Created under statute (10 V.S.A. 1453) which also provides the framework for regulations on AIS management activities such as prohibitions on transport of AIS and Aquatic Nuisance Control (ANC) permitting



AIS/ANC Program Tasks and Staff

AIS Tasks and Responsibilities

- *Early Detection & Rapid Response*
- Statewide Monitoring and Surveying
- Administer ANC Grant in Aid Program
- Management & Control Projects
- Spread Prevention Projects (Greeters & VIP)
- Manage MBR & Federal Grants (\$1.3M / yr)
- Coordination w/ DFW, Feds, LCBP, Municipalities
- **Staff:**
 - 2017: 3 FTE + @ Techs
 - 2018: 2 FTE, 4 Techs, Intern
 - 2021: 1 FTE, 4 Techs, Intern

ANC Permitting

- Issue ANC Permits (herbicide, lampreys)
 - 0.5 FTE (Misha Cetner)

Title 10: Conservation and Development

Chapter 50: Aquatic Nuisance Control

§ 1451. Findings

§ 1452. Definitions

§ 1453. Aquatic nuisance control program

§ 1454. Transport of aquatic plants and aquatic nuisance species

§ 1455. Aquatic nuisance control permit

§ 1456. Aquatic species rapid response general permits

§ 1457. Entrance upon lands to prevent the introduction and spread of new aquatic species

§ 1458. Grant-in-aid to municipalities and agencies of the State

§ 1459. Joint municipal participation

§ 1460. Rulemaking

§ 1461. Aquatic nuisance inspection stations; training program



Aquatic Invasive or Aquatic Nuisance Species?

- Aquatic invasive species are non-native species whose introduction can cause harm to the environment, economy, and even human health.
- Aquatic nuisance species: undesirable or excessive substances or populations that interfere with the recreational potential or aquatic habitat of a body of water, including rooted aquatic plants and animal and algal populations
- All aquatic invasive species are considered aquatic nuisance species



Water
Chestnut



Eurasian
Watermilfoil



Variable-leaf
Watermilfoil



Hydrilla



Starry
Stonewort



Curly-leaf
Pondweed



Zebra
Mussel



Spiny
Waterflea



Asian
Clam



Rusty
Crayfish

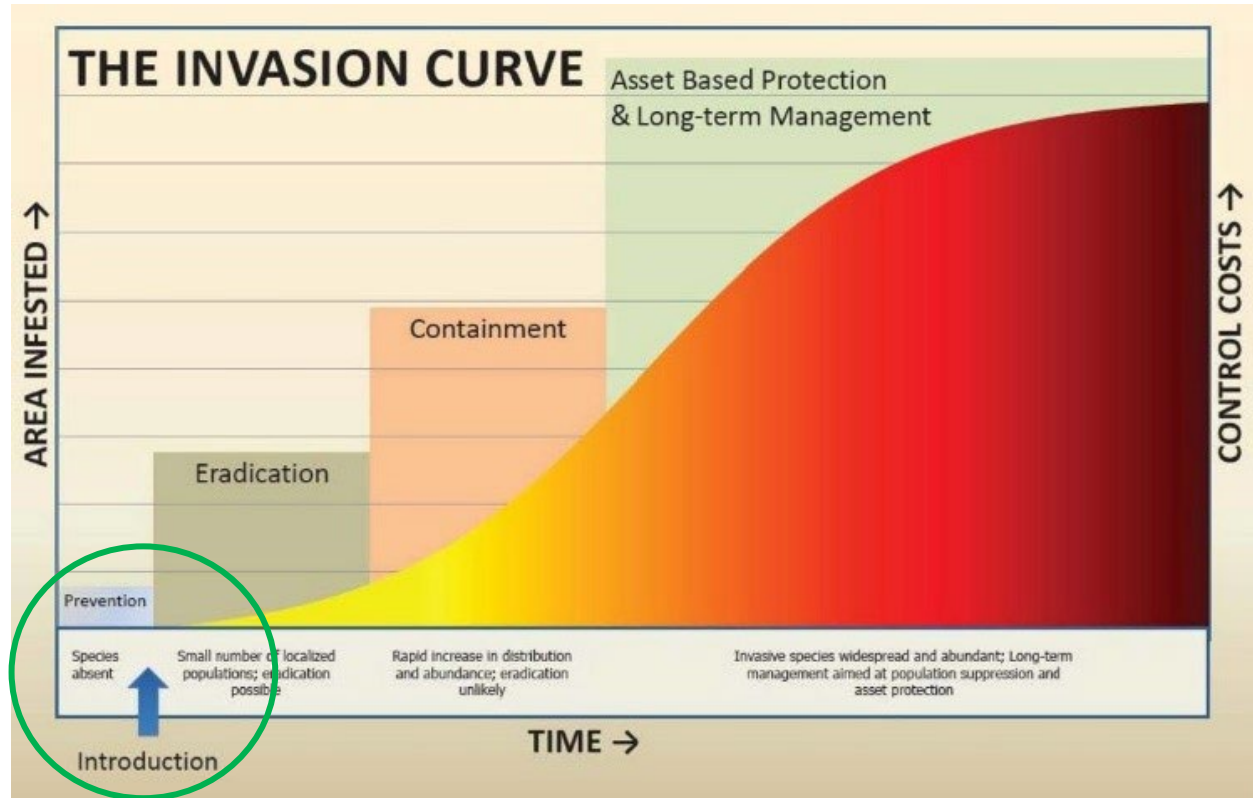


Didymo



Alewife

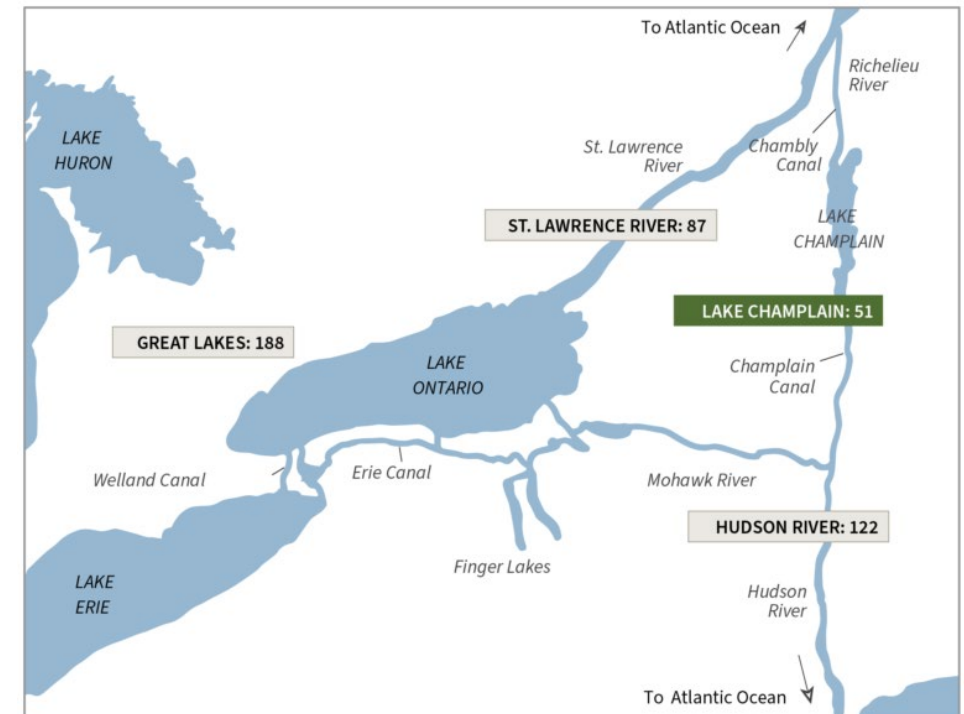
Aquatic Invasive Species Threats/Costs



Likely Arrivals: Round goby, Hydrilla
Expanding Infestations: Water Chestnut

Number of AIS Today:

- **Vermont (Inland):** 12 Species (+2 NL)
- **Vermont (Lake Champlain):** 51 Species
- **New York:** 122 Species
- **New Hampshire:** 15 Species
- **Massachusetts:** ~12 Species
- **Connecticut:** ~9 Species



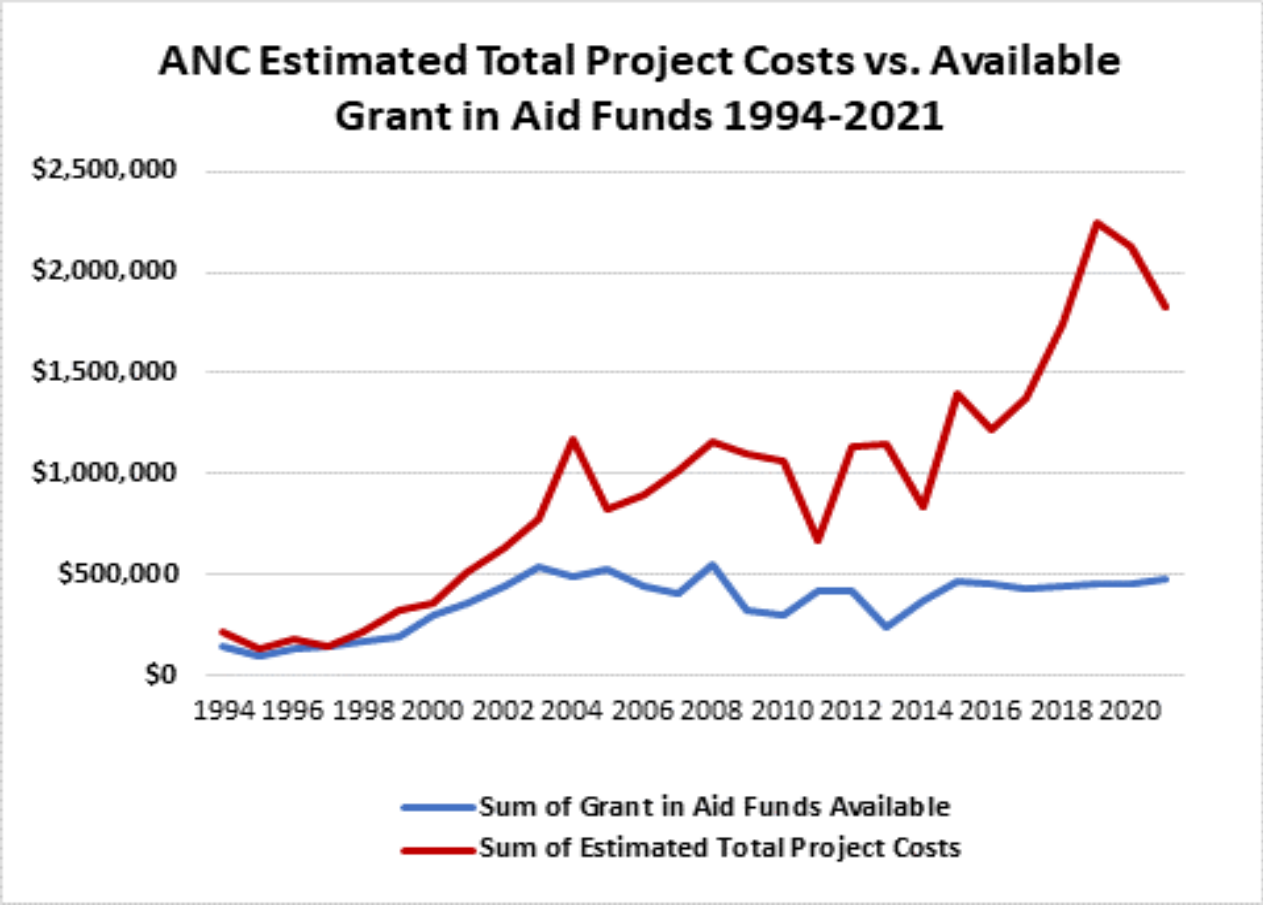
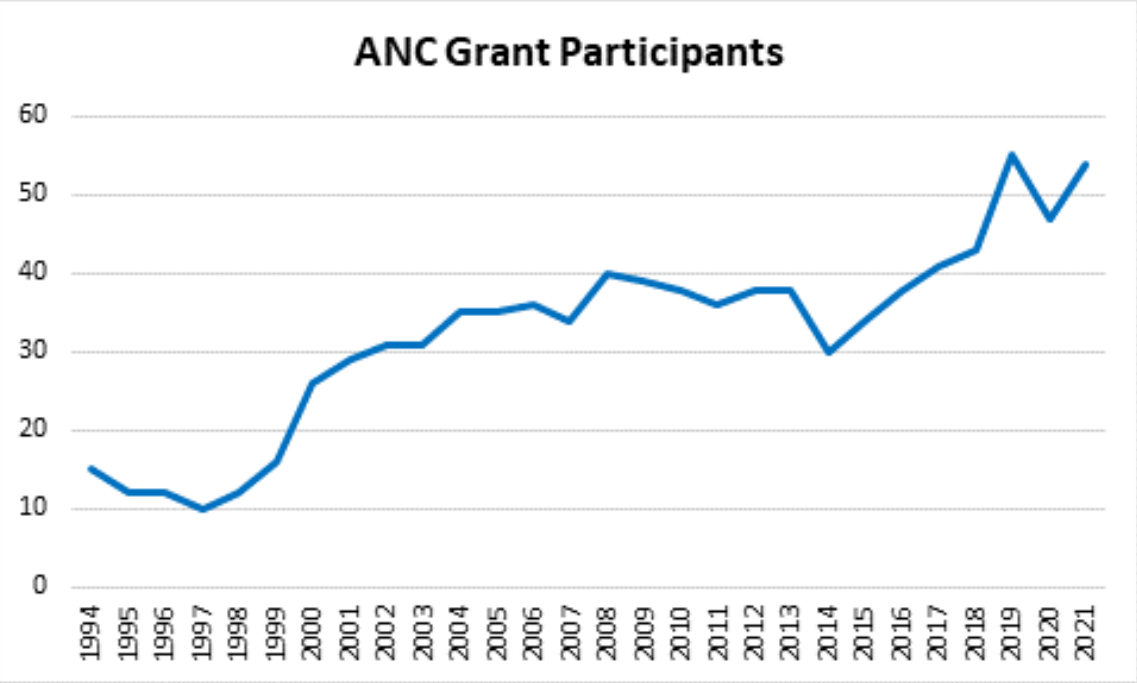
Aquatic Nuisance Control Funding Sources

Source	Amount	Use
VT DEC General Funds	\$30,000	Long-Term Part-Time Temp
US Army Corps of Engineer	\$500,000	Water Chestnut & AIS prevention removal in Champlain Basin via grants
EPA – LCBP Water Chestnut Control Program	\$90,000	Water Chestnut Removal Contracts
US FWS Aquatic Nuisance Species Program	\$93,805	Mix – Water Chestnut, mapping, watercraft inspection, technicians, rapid response & detection
US FWS Partnership Program	\$15,000	Some of one technician
Motorboat Registration 1 (20%)	\$250,000	Small Grants for greeter programs, outreach projects, AIS management
Motorboat Registration 2 (17%)	\$210,000	Admin Costs – 2 FTEs
TOTAL	\$1,188,805	

ANC Grant in Aid Program Summer 2021 Statistics – Questions from Legislature

- How many total municipalities / entities requested ANC Grant-in-Aid funds?
 - 42 Municipalities and 6 other entities (NRCDs, DFW, Winooski Park District, UNH, VYCC)
- What was the total amount of dollars of that ask?
 - \$1,825,392
- How much funding did DEC have to award, with a breakout of state and federal dollars.
 - Around \$450K, with \$250K coming from MBR revenue, \$100K from USACOE Award for Water Chestnut and Milfoil Control, and \$100,000 from MBR surplus, which is dwindling
- How does DEC use MBR funding?
 - 20% of the total MBR to DEC for ANC Grants, \$250K in SFY21
 - 17% of the total MBR to DEC for ANC Program Administration (FTEs), \$210K in SFY21
- How many entities received funds...all that asked or just a portion of those?
 - All. We don't reject complete applications. But we are only funding, on average, 25% of requested funds due to limited funds (down from 75% when program began)
- How much did our funds leverage from local sources in 2021?
 - TBD but around \$1M

ANC Grant in Aid Program Numbers



	2017	2018	2019	2020	2021
DEC ANC Grant Amount	\$401,050	\$416,658	\$430,356	\$428,677	\$450K
Leverage or Match	\$881,494	\$710,841	\$1,139,930	\$911,185	\$1,000,000
Total Project Amount	\$1,282,544	\$1,127,498	\$1,570,286	\$1,339,862	TBD

Aquatic Nuisance Control Grant in Aid Program Summer 2021 Statistics

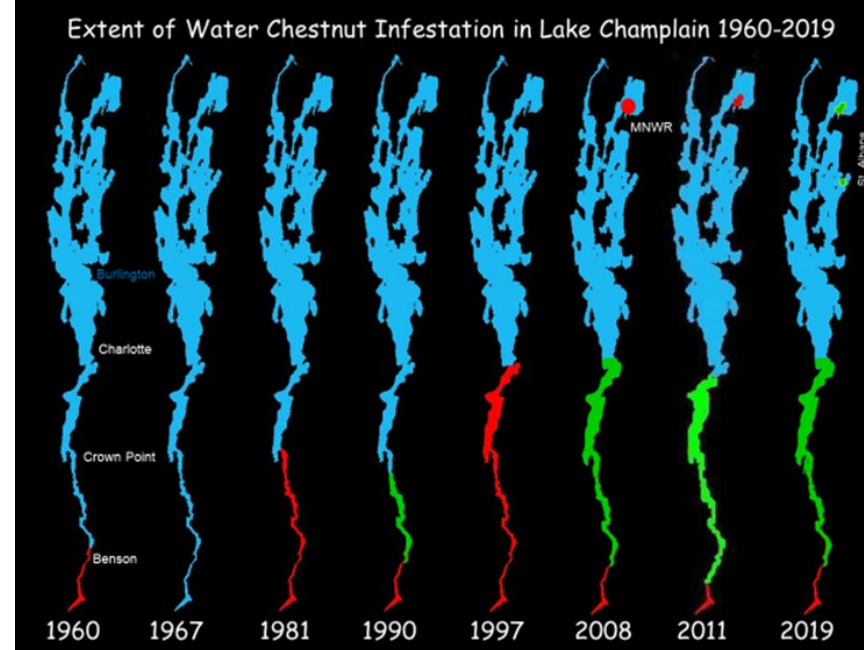
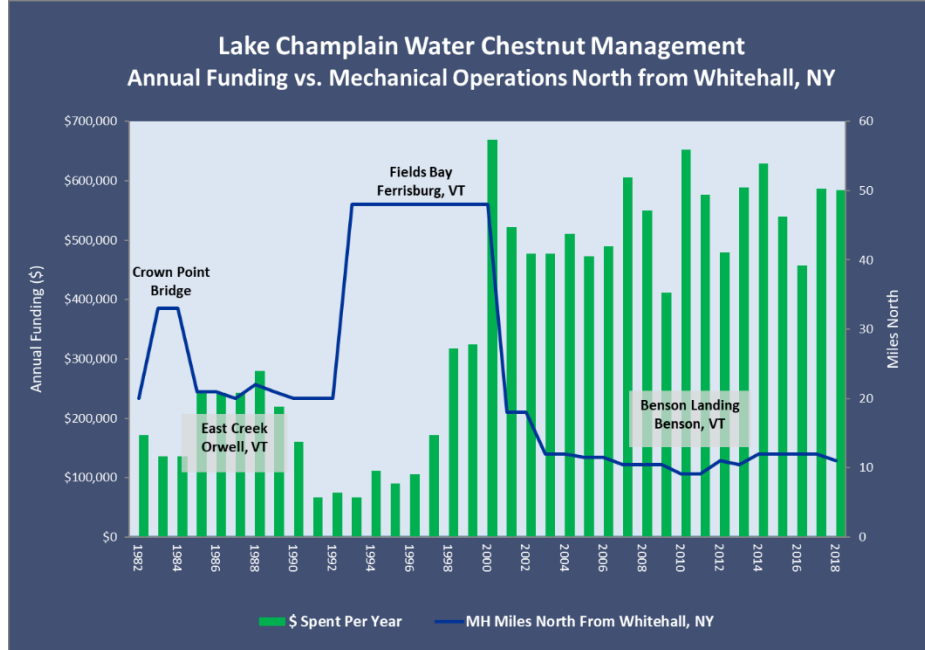
➤ Actual & Projected MBR/USACOE Funding for ANC Grants:

CALENDAR YEAR	AMOUNT
2017	\$401,050
2018	\$416,658
2019	\$430,356
2020	\$428,677
2021	\$450,000
2022	\$450,000
2023 (and beyond)	\$350,000 (MBR + ACOE)

- Starting in SFY2020, DEC started to use some MBR funds for salary costs as allowed under statute (prior to 2021, these salary costs were funded by other sources)
- Surplus now being used to fund grants at previous levels, will be depleted after summer 2022
- DEC tried to reduce the funds in 2020 (COVID), but budget already out, legislature protested

Lake Champlain Water Chestnut Management Operations

- Objective: Maintain navigable waterway on 75 Miles of South/Central Lake Champlain
- \$550K annual effort (ACOE \$400, LCBP \$100, USFWS \$50K)
- Mechanical harvesting (\$380K), Handpulling (\$100K), & Mapping (\$20K)
- Significant progress since 2000, when matching State Funds became available again
- Current Challenge: **Many** operational difficulties threaten program viability, ACOE funding
 - *Lack of contractors, labor shortage, no Vermont site access, varying water levels, etc.*
- Solution: Site Supervisor? Leadership Support on Access Areas?



AIS Key Program Elements, Barriers to Growth, and Solutions

ELEMENTS	BARRIERS	SOLUTIONS
ANC Grants and AIS Contracts	Decreasing & Limited State Funds	Statewide Aquatic Nuisance Species Mgmt & EDRR Plan
Early Detection and Rapid Response Events	Inadequate DEC Staff Time to Manage Scope	Additional Trained Staff
Greeter Programs and Educational Trainings	Insufficient Capacity to Maintain & Expand	Operational Manuals and Training Opportunities
Decontamination & Equipment Deployment	Limited Partner Abilities & Administration Support	Clarify roles w/ VFWD & Support Staff (Wardens)
VT Invasive Patrollers (Citizen Science Monitoring)	Incomplete & Labor Intensive Operations	Enhance & Expand Digital Data Collection Tools
Regional & National Partnerships	Inadequate Operational Systems and Procedures	AIS Survey Data and Geospatial Maps

Challenges Moving Forward

- Dwindling funding / staffing but increasing demand for funds, assistance, and expertise
- Proliferation of threats to VT's waters (round goby, hydrilla, etc.)
- Remarkable increase in boat launch use within state and regionally, major vector of spread
- Outsourced work unable to successfully fulfill deliverables due to inadequate skilled labor and lack of technological capacity & operational knowledge from service providers
- DEC Staffing at Present: Overall AIS workload ideally requires 2 FTEs + 3 Techs/Interns
 - 2021: 1 FTE + 4 Techs + 1 Eco-AmeriCorps (down from 3 FTEs 2017 in FTE)
 - DEC making do w/ imperfect "Army of Temps" approach, but transaction costs are high, limited ability to provide consistent efforts for operations, inability to build capacity



Possible Solutions

- Sticker Bill to Increase Revenue for AIS work? – another attempt in 2023 (NE, ME)
- Legislative Advocacy to identify new sources of funds?
- Use MBR Program Admin Funds and/or Fee Bill Revenue for a second AIS FTE?
 - The former approach would require moving ANC Permit Lead to alternative funding source
- In absence of a 2nd FTE, pursue ANC Grant in Aid Block Grant, w/ GF support for admin costs
 - Drawback: High admin costs, currently unaware of qualified statewide service provider
- ARPA Funds: CWSRF Eligible Projects are ARPA eligible, including AIS equipment
 - Equipment could include AIS decontamination units for access area greeter programs, estimated at \$5K-7K each, could utilize \$100K to \$150K of ARPA funds



Thanks for your attention!

