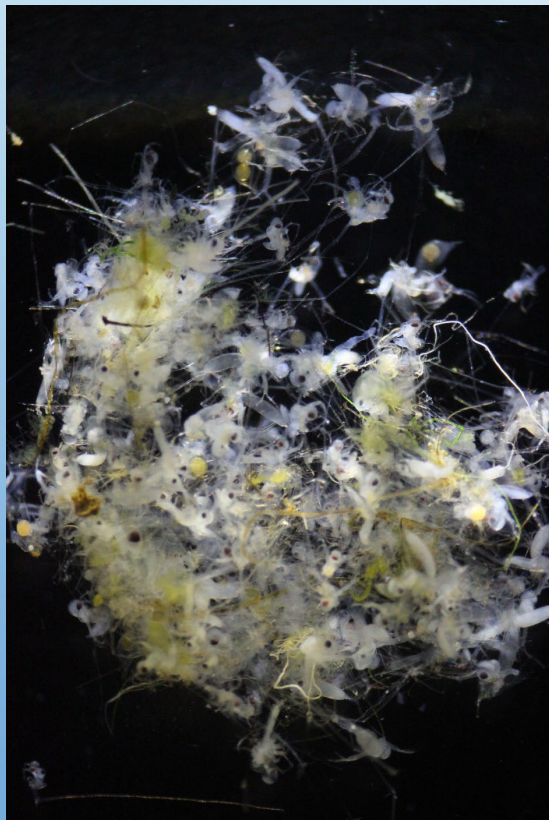


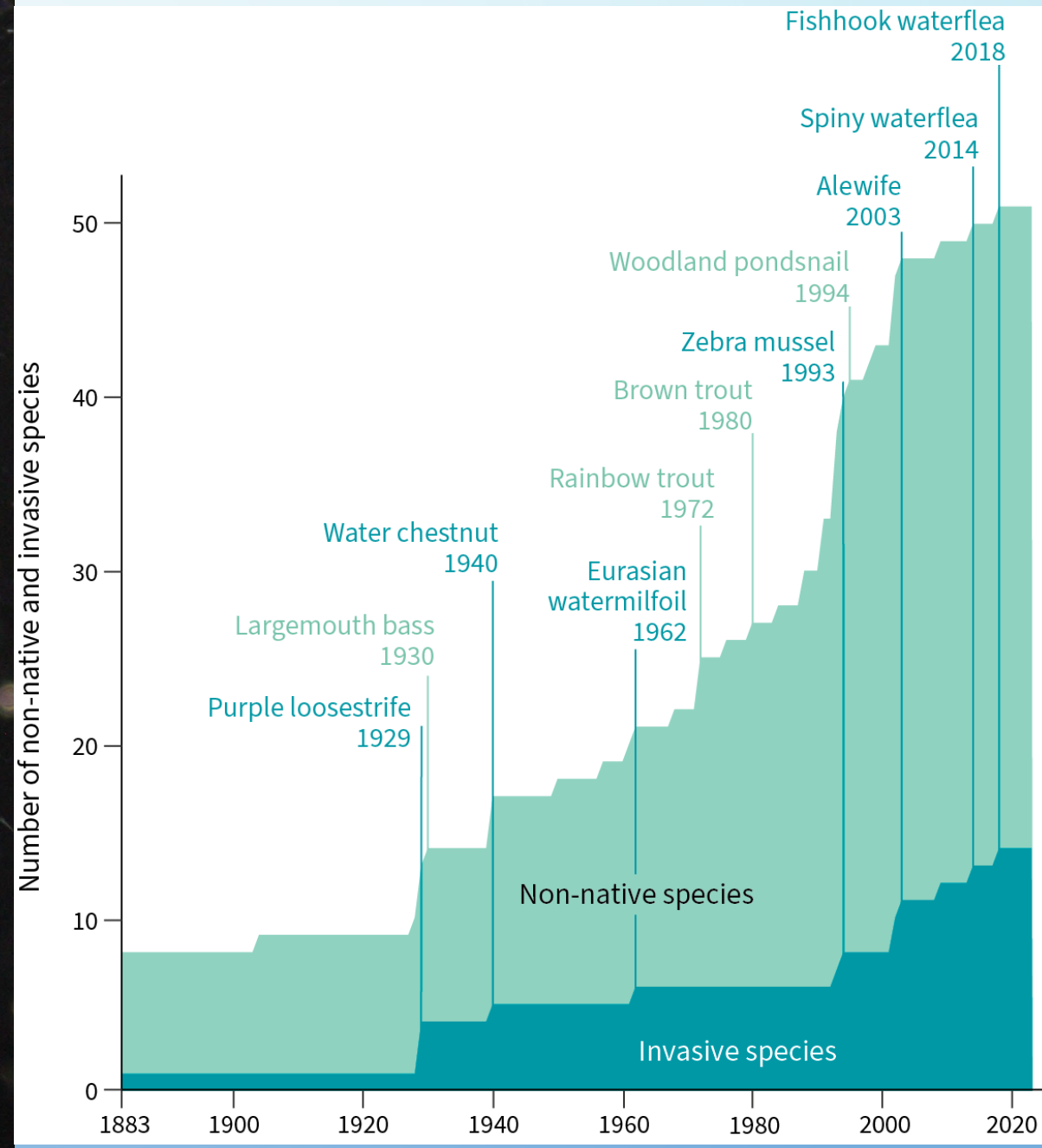


VTCAC UPDATE

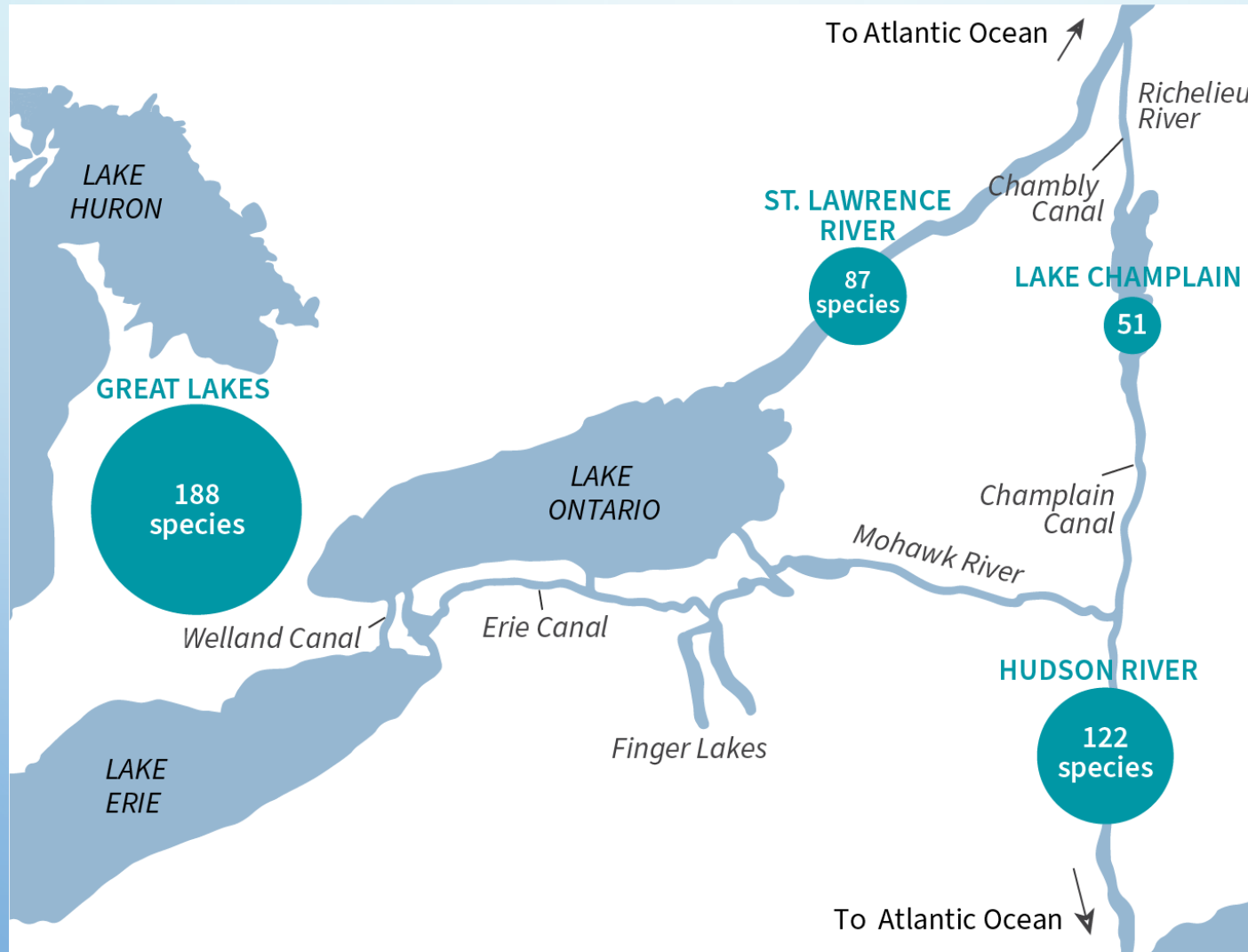
LAKE CHAMPLAIN 2018 LAST RECORDED DETECTION OF NEW AIS: FISHHOOK WATERFLEA



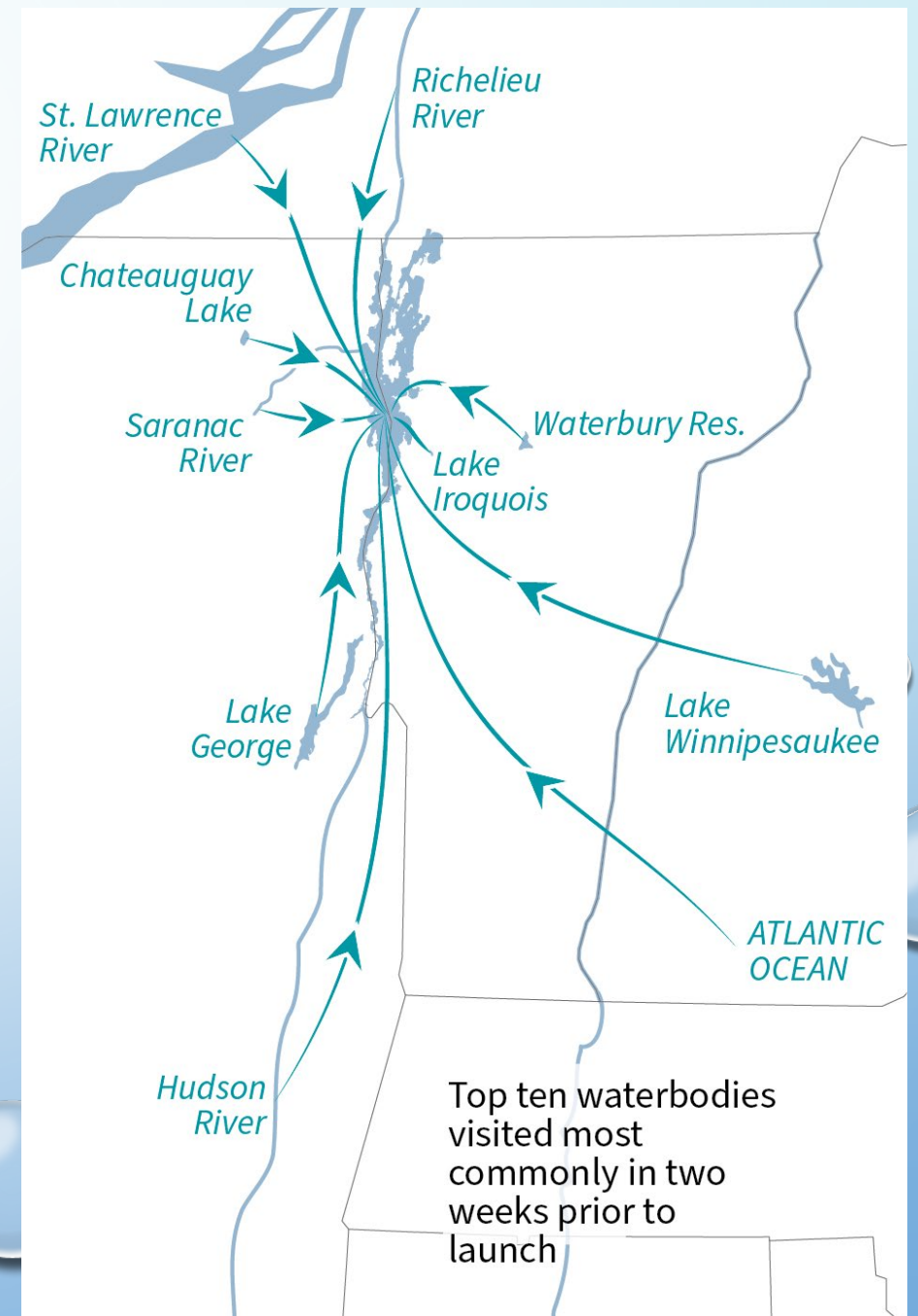
SUNY Plattsburgh Lake Champlain Research Institute
9/17/2018
SUNY Plattsburgh A1313018-01



AIS THREATS FROM SURROUNDING WATERWAYS



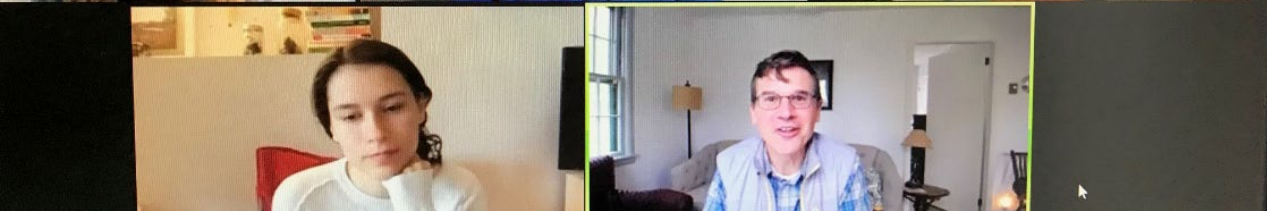
OVERLAND TRANSPORT OF AIS STATE OF THE LAKE 2024





VIRTUAL+IN PERSON! = TRAINING 2024

- BENEFITS:
 - ALL TRAINING MODULES CONTINUED ONLINE TO THE PSC CANVAS PLATFORM
 - AIS 101, AQUATIC PLANT ID, WATERCRAFT ANATOMY, SPECIES OVERVIEW, SURVEY DATA COLLECTION, SEXUAL HARASSMENT, PUBLIC INTERPRETATION, COVID 19 TRAINING, WATERCRAFT DECONTAMINATION
 - STEWARD ACCESS AT THEIR OWN PACE WITH MODULE STUDY GUIDE, NARRATED AND UNNARRATED POWER POINTS, QUIZZES FOR CONFIRM COURSE COMPLETION AND FOLLOWED UP WITH LIVE WEBINARS FOR QUESTIONS
 - INTERNET CONNECTIONS
 - STEWARD RETENTION OF INFO AND ABILITY TO ACCESS THROUGHOUT SEASON
- SUCCESS:
 - RETURNED TO AIS ID AND DECONTAMINATION IN PERSON AT PAUL SMITHS COLLEGE ADIRONDACK WATERSHED INSTITUTE
 - STEWARDS PRACTICED COLLECTING DATA





TRAINING

2023 DATA SUMMARY/HIGHLIGHTS

- Decontamination coverage at Malletts Bay Boat Launch for 3rd year; 1st year decontamination at Converse Bay
- Stewards conducted more decontaminations
717 referred for decon, 365 decons performed
- LCBP stewards assisted VTDEC with WC harvest days (7)
- Stewards assisted Lewis Creek Association with European frogbit harvest days (2)
- VTDEC Greeters transitioned to same boat launch steward survey application use



2023 Boat Launch Steward Survey Data



35,566
individuals
reached



16,832
watercraft
surveyed

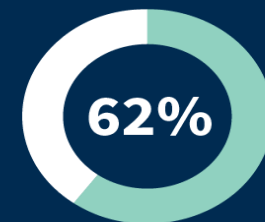


9% of surveyed
watercraft carried
aquatic hitch-hikers

716
AIS saves
on takeout



178
AIS saves
on launch

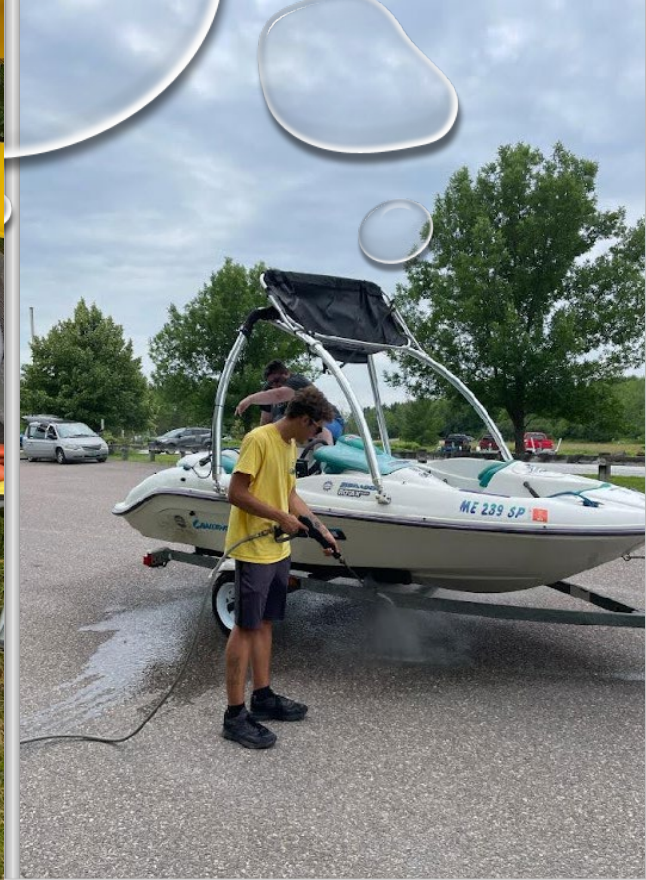


of boaters took
spread prevention
measures

2023 FIELD SEASON DATA SUMMARY

- # OF INSPECTIONS = 16,722 SURVEYS WITH 16,832 WATERCRAFT
- # BOATER INTERACTIONS = 35,566
- # OF DECONTAMINATIONS = 365 (UP FROM UNDER 196 IN 2021, 224 IN 2022)
- # ORGANISM INTERCEPTIONS = 1,492 (311 ON LAUNCH; 1,167 RETRIEVE) 9.16%
- # AIS INTERCEPTIONS = 885 (178 LAUNCH; 716 RETRIEVE) 5.46%!!!!!!
- % BOATERS REPORTING SPREAD PREVENTION BEHAVIORS = 61.68%

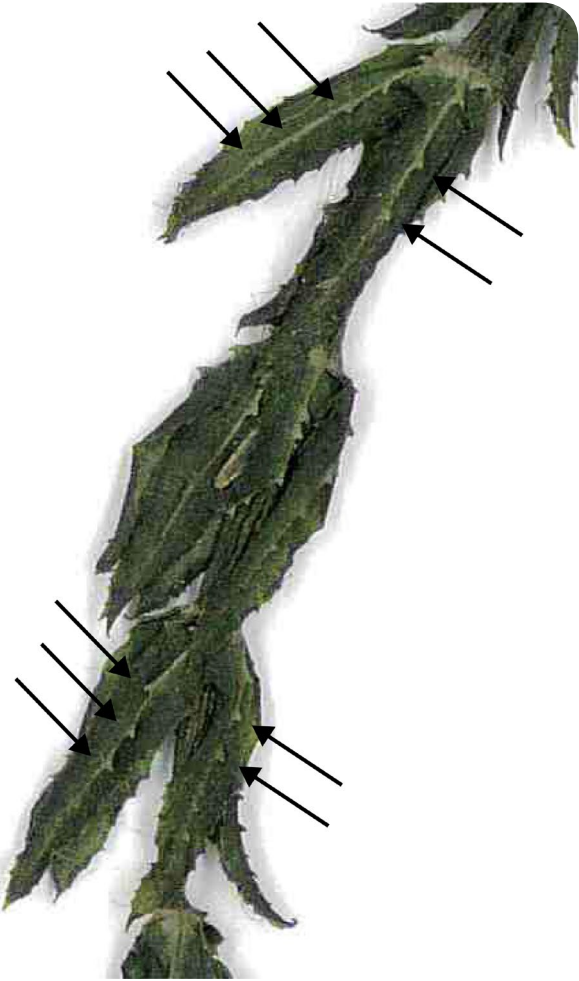




Stewards in the Field







HYDRILLA SAVE

ROMANY INTERCEPTED
SUSPICIOUS SAMPLE AT POINT
AU ROCHE PUBLIC LAUNCH

LATE JUNE/WATERCRAFT
COMING FROM TX

GENETIC TESTING- DIOECIOUS
HYDRILLA

(NIC TIPPERY UW- WHITEWATER)



2023 BOAT LAUNCH STEWARD STAFF

Clare



CELEBRATING STEWARDS

Emma



CELEBRATING STEWARDS

Jack



CELEBRATING STEWARDS

James



CELEBRATING STEWARDS

Jeremy



CELEBRATING STEWARDS

Kylie



CELEBRATING STEWARDS

Mallory



CELEBRATING STEWARDS

Mason



CELEBRATING STEWARDS

Matt




CELEBRATING STEWARDS

Parker



CELEBRATING STEWARDS

Robert



CELEBRATING STEWARDS

Romany



CELEBRATING STEWARDS

Stephen



CELEBRATING STEWARDS

Sylvie



CELEBRATING STEWARDS

Thomas



CELEBRATING STEWARDS

Tim



CELEBRATING STEWARDS

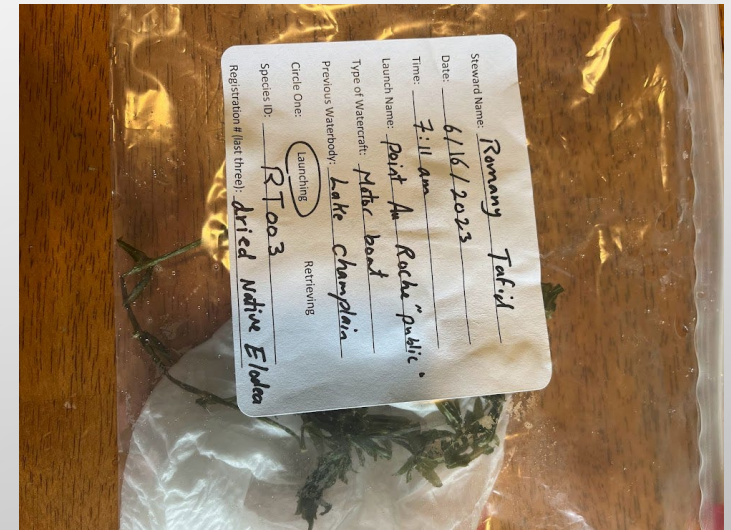
Yann



CELEBRATING STEWARDS



ONTO 2024...



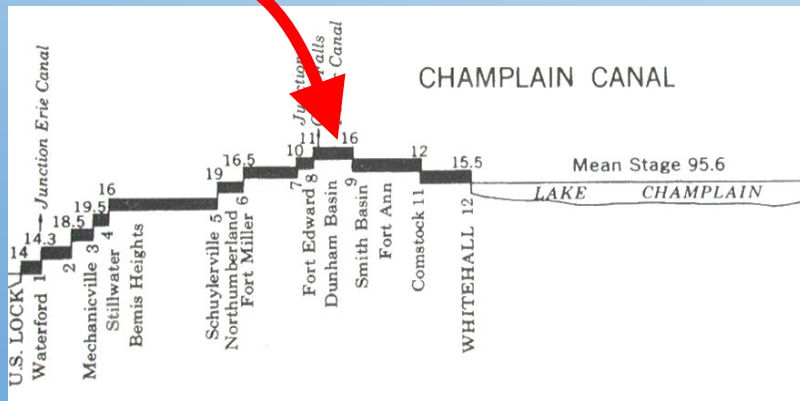
ADDRESSING AIS SPREAD THROUGH CANALS IN THE LAKE CHAMPLAIN BASIN



Champlain Canal Barrier Study for All Taxa

- Phase I Study/Alternatives – completed with local match (LCBP/NEIWPC local sponsor) through Section 542 Watershed Assistance USACE program (35% local match)
- Phase II – data, NEPA, full design may be achieved through Section 542, or other program – estimated cost \$4M and two years (local match will come from NYSDEC and LCBP/NEIWPC)
- Phase III – Implementation – pursue WRDA Sect. 5146 – full federal expense, no cost-share, appropriation of \$40M+

Target area of the canal

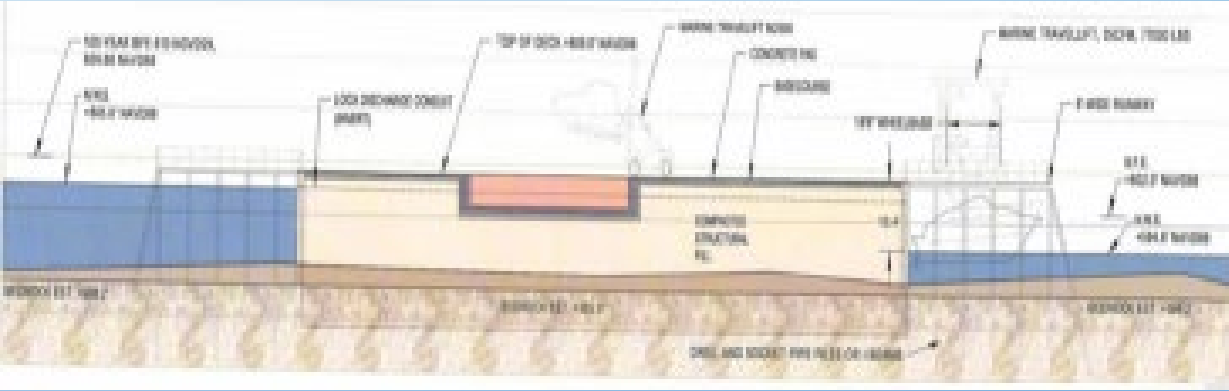


Mouth of Glens Falls Feeder Canal – looking upstream

BERM STRUCTURE- ALTERNATIVE 2



- **Measure 1) Reverse Flow C9 -> C8, Raise Weir,**
- **Measure 2) Back Pump,**
- **Measure 4) Physical Barrier (Berm / Block Flow),**
- **Measure 5) Boat Lift and Cleaning Station, and**
- **Measure 9) Repair Lock Seals.**

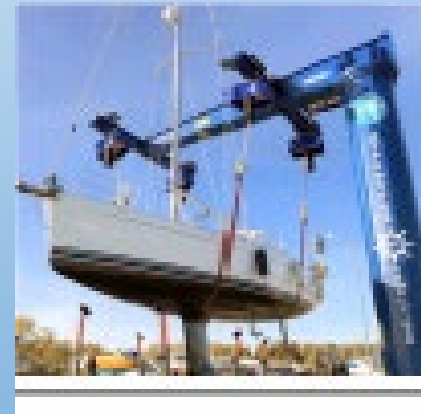


BOAT LIFT AT LOCK C9- ALT 4&5

LOCK REMAINS FUNCTIONAL FOR PASSAGE OF LARGE RECREATIONAL WATERCRAFT, COMMERCIAL, AND MAINTENANCE ONLY



- **MEASURE 1) REVERSE FLOW C9 -> C8, RAISE WEIR,**
- **MEASURE 5) BOAT LIFT AND CLEANING STATION,**
- **MEASURE 6) WEDGE WIRE INTAKE SCREENS, AND**
- **MEASURE 9) REPAIR LOCK SEALS**





CHAMPLAIN CANAL – AQUATIC INVASIVE SPECIES SPREAD PREVENTION BARRIER PHASE II STUDY WITH U.S. ARMY CORPS OF ENGINEERS

WORKGROUPS: STAKEHOLDER, VESSEL DESIGN, OPERATIONAL/LEGAL, ECONOMIC IMPACTS

The background features a light blue gradient sky with several stylized, rounded purple clouds scattered across it. The clouds vary in size and are positioned at different heights and locations, including the top center, top right, middle left, middle right, and bottom left.

ROUND GOBY AND GRASS CARP



LAKE CHAMPLAIN GOBY RESPONSE

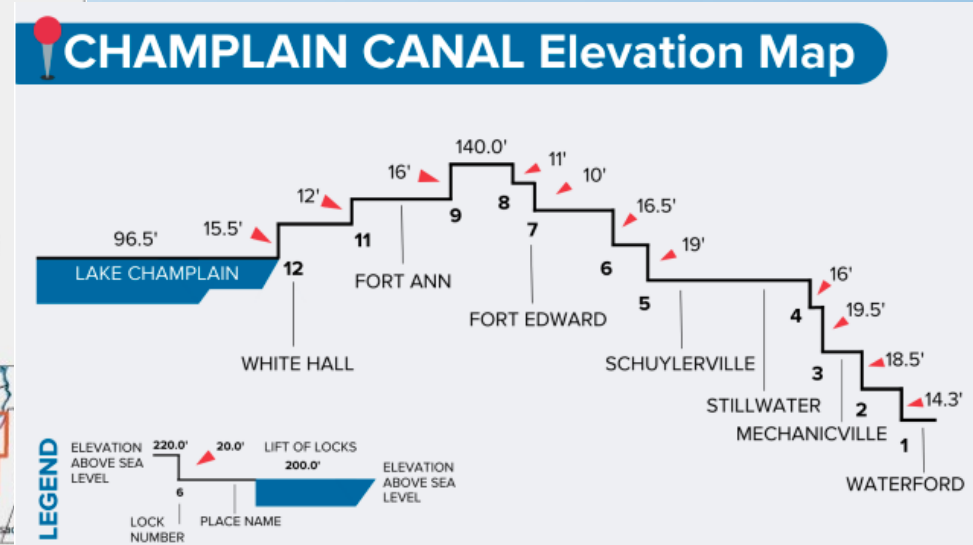
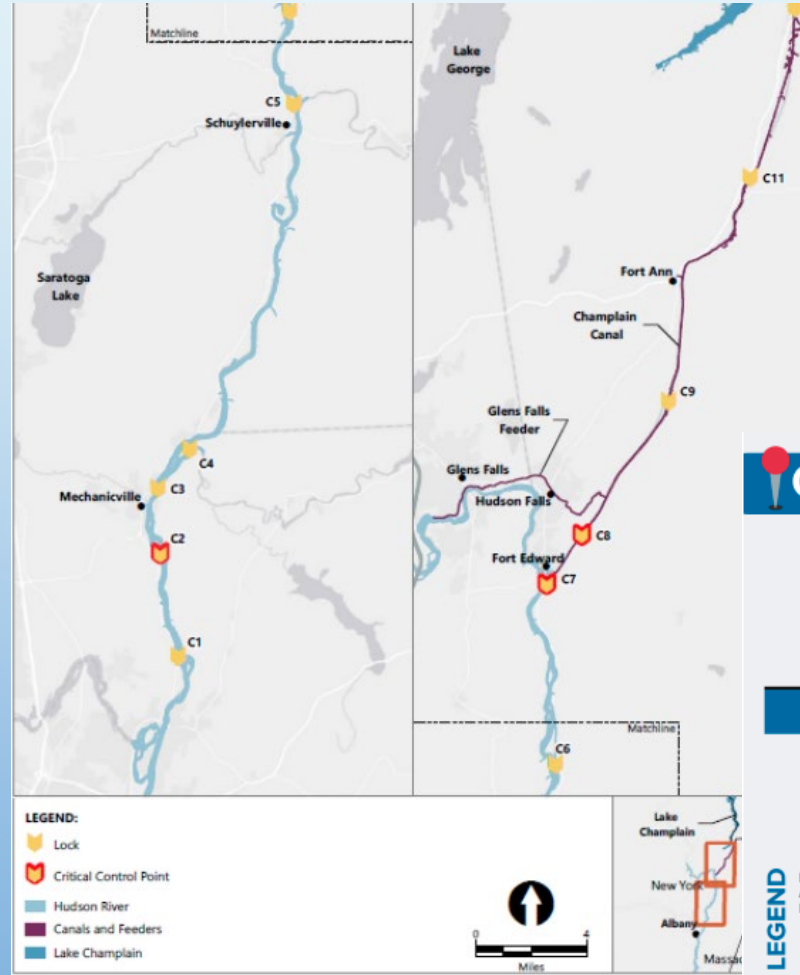
- LAKE CHAMPLAIN AIS RAPID RESPONSE TASK FORCE
(USFWS, NYSDEC, APA, VFWD, VTDEC, QUEBEC MFFP)
 - EVALUATING ECOLOGIC AND ECONOMIC IMPACTS, THREATS AND MANAGEMENT OPTIONS, AND SUPPORTING EARLY DETECTION MONITORING AND EDUCATION AND OUTREACH FOR SPREAD PREVENTION; UTILIZE RAPID RESPONSE FUND
- ADDRESS ALL THE PATHWAYS:
 - CANALS – CHAMPLAIN AND CHAMBLY
 - BAITFISH/BAIT BUCKET INTRODUCTION
 - OVERLAND TRANSPORT ON BOATS AND TRAILERS



*LCBP/USFWS SUPPORT AIS OUTREACH SPECIALIST POSITION FOR CHAMPLAIN CANAL REGION

CHAMPLAIN CANAL SYSTEM

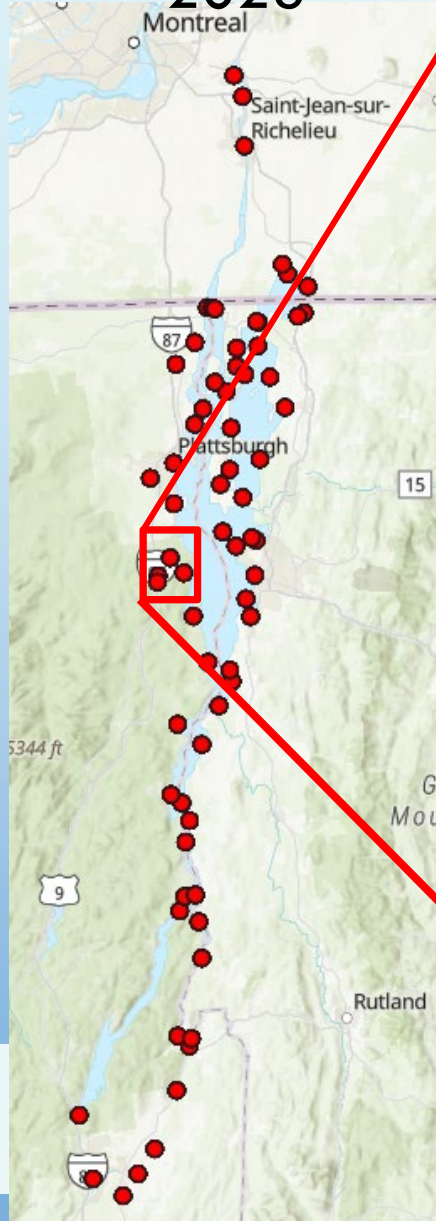
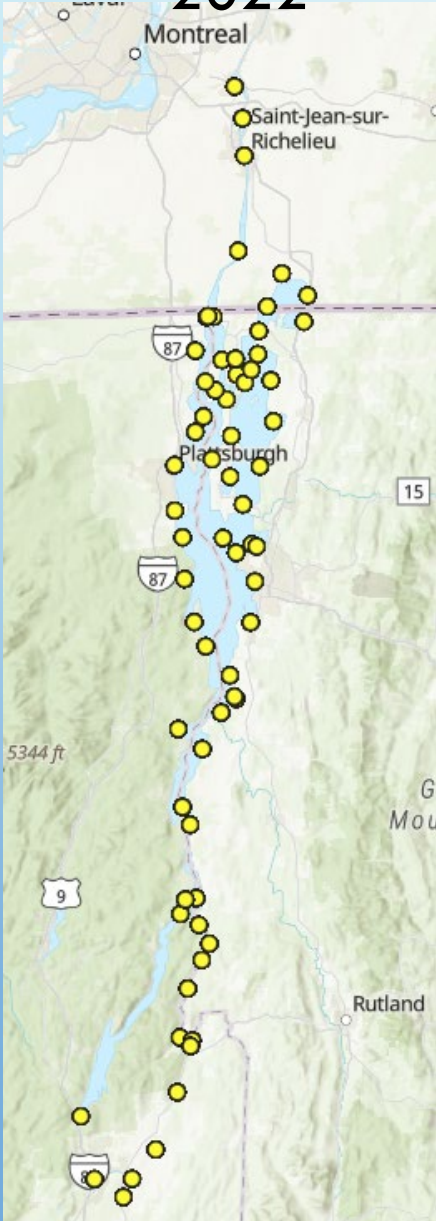
- 11 LOCKS WITHIN CANAL
 - 6 WITHIN MAIN STEM OF HUDSON RIVER
 - 5 WITHIN “LAND CUT” PORTION OF CANAL
 - BRIDGES HUDSON BASIN WITH CHAMPLAIN BASIN



EDNA SAMPLE SITES IN LAKE CHAMPLAIN BASIN

2022

2023

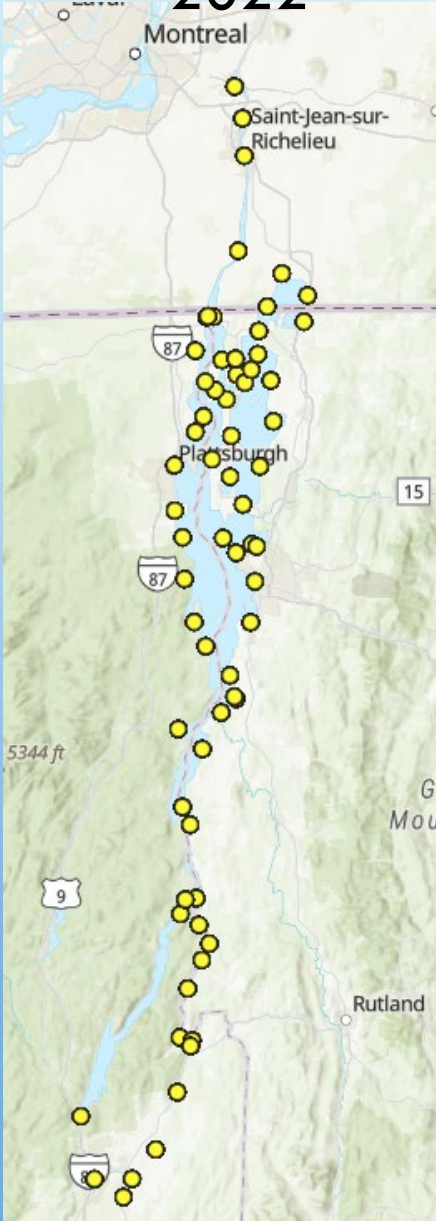


- 72 SITES SAMPLED IN 2022 AND 2023
- GRASS CARP SITES OF INTEREST ADDED AND TARGETED IN 2023
- META-BARCODING ANALYSIS PERFORMED AT USFWS LAMAR FISH TECHNOLOGY CENTER

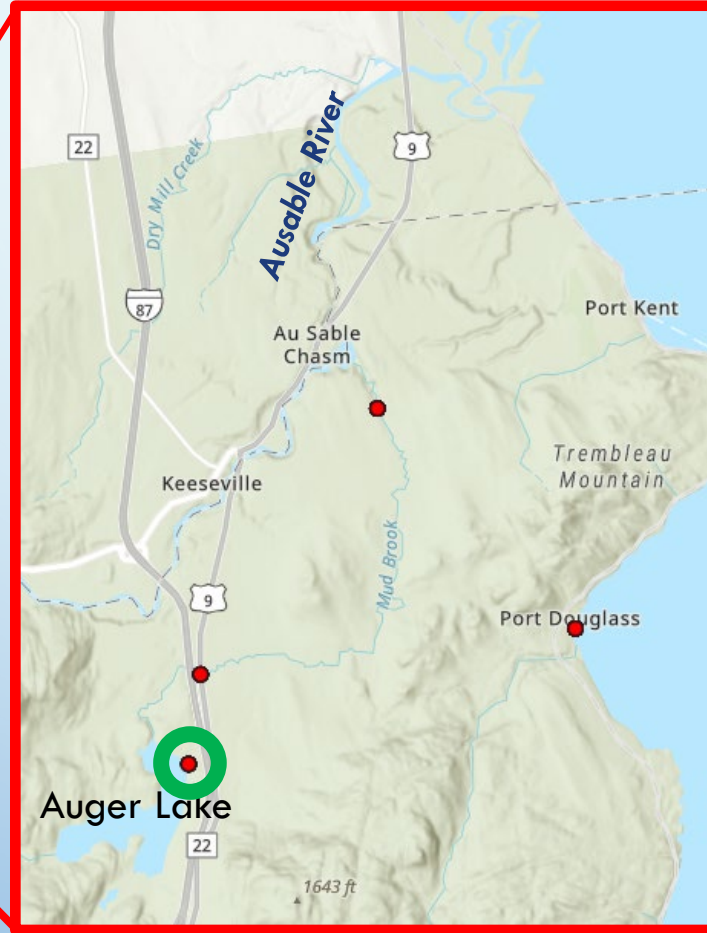
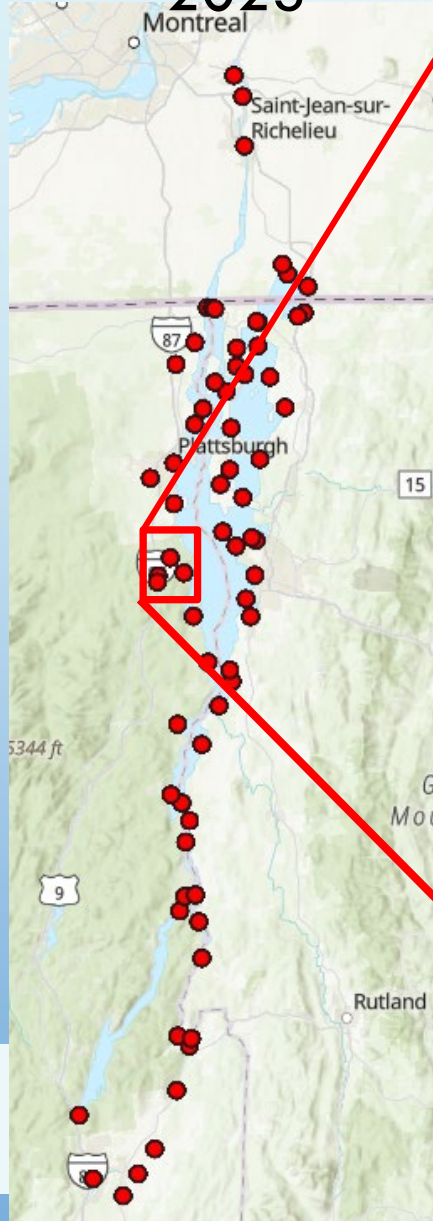


EDNA SAMPLE SITES IN LAKE CHAMPLAIN BASIN

2022



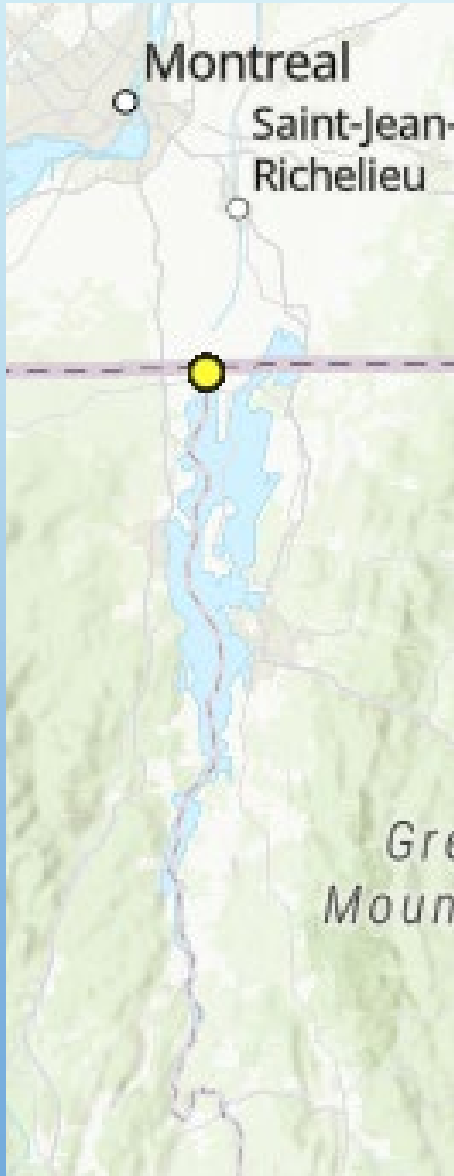
2023



- NO GRASS CARP DETECTIONS IN 2022
- NO GRASS CARP IN LAKE CHAMPLAIN, RICHELIEU RIVER, OR CHAMPLAIN CANAL SITES IN 2023
- SINGLE POSITIVE DETECTION IN AUGER LAKE IN 2023
 - KNOWN, INTRODUCED TRIPLOID POPULATION
 - NOT IN AUGER LAKE OUTLET



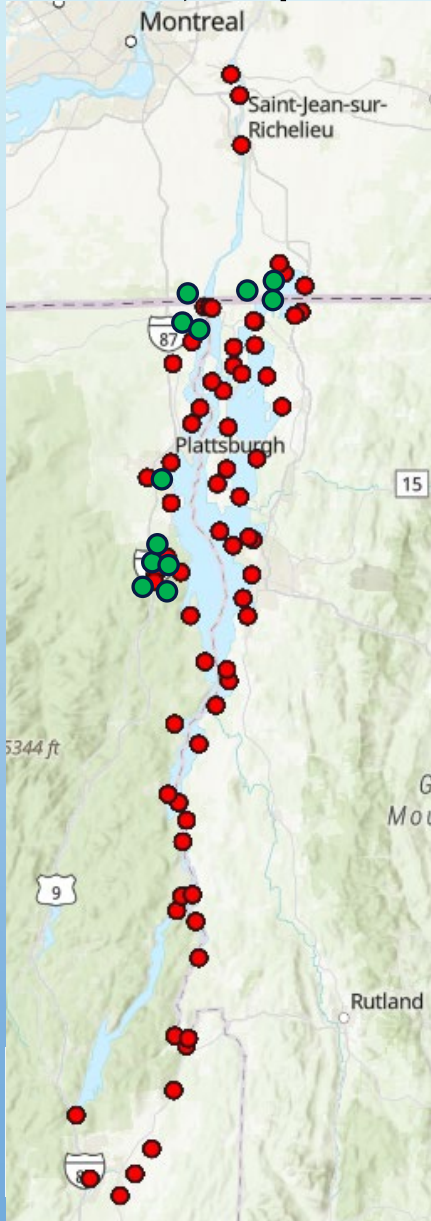
LATEST NEWS LAKE CHAMPLAIN GRASS CARP NEWS



- TO DATE, ONLY ONE GRASS CARP HAS BEEN FOUND IN LAKE CHAMPLAIN PROPER
 - *BOW-FISHERMAN IN 2022*
 - *VERMONT FISH AND WILDLIFE DEPARTMENT EMPLOYEE*
 - *TURNED OVER THE FISH FOR ANALYSIS*
- VERTEBRAL CURVE STRONGLY SUGGESTS THAT IT IS TRIPLOID, BUT THIS COULD NOT BE CONFIRMED ON THE DECOMPOSED REMAINS
- OXYGEN ISOTOPE ANALYSIS CONFIRMS THAT THE FISH WAS HATCHED IN ARKANSAS AT ONE OF THE TWO GRASS CARP CULTURE FACILITIES
- MICRO-ELEMENTAL OTOLITH ANALYSES UNDERWAY TO DETERMINE HOW LONG IT LIVED IN THE CHAMPLAIN BASIN AND POTENTIALLY IF IT IS AN AUGER LAKE ESCAPEE



2024 (Proposed)



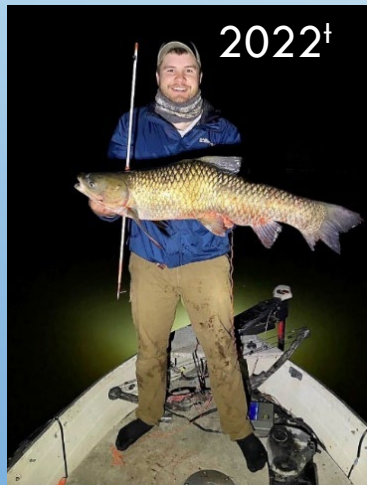
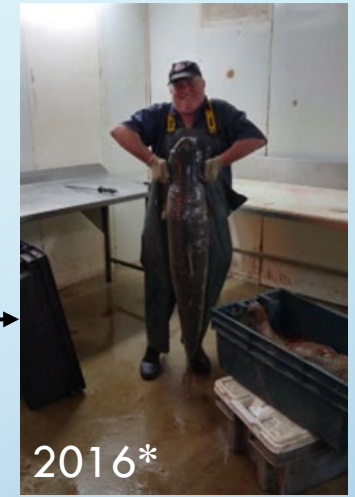
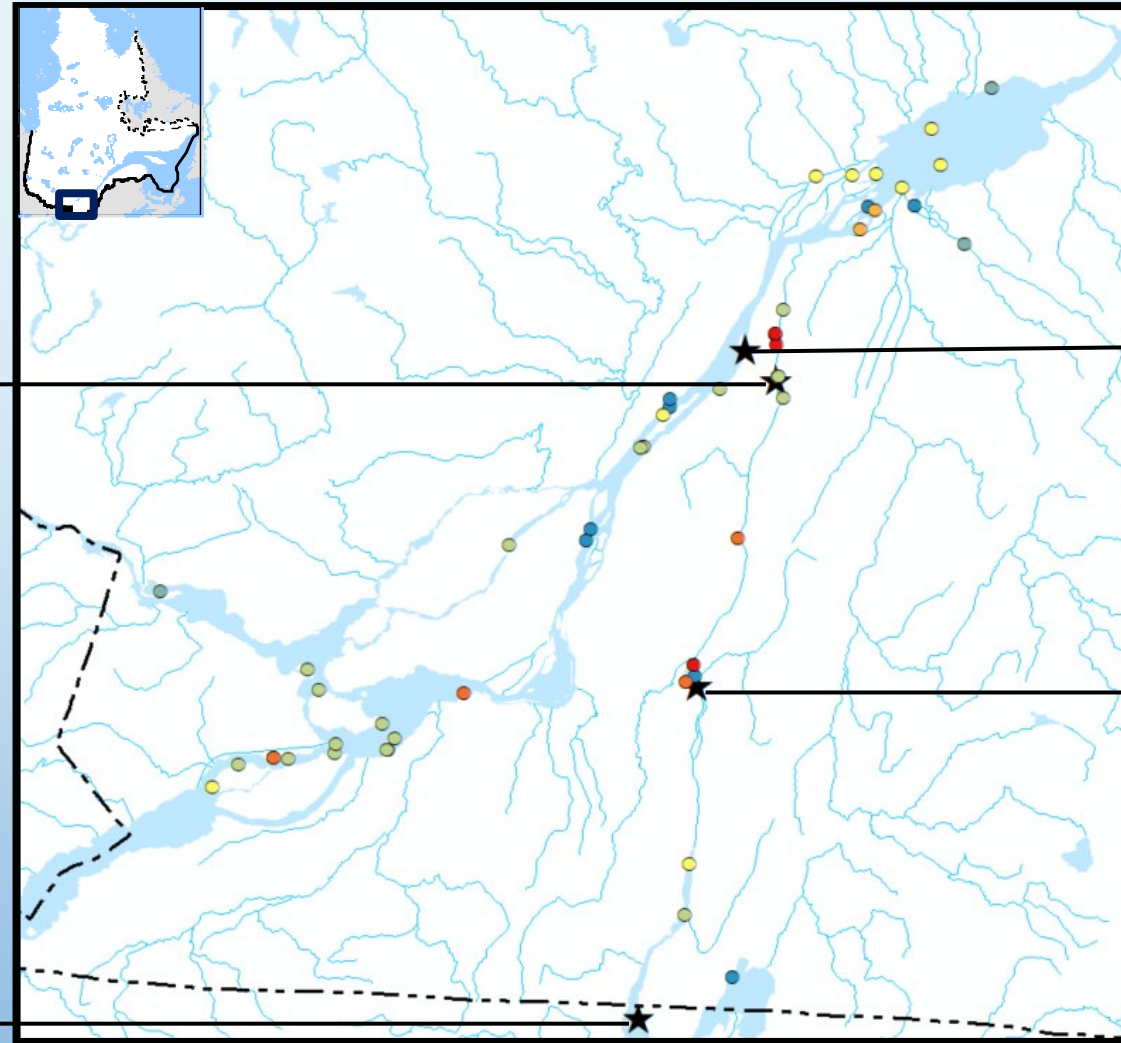
EDNA IN LAKE CHAMPLAIN BASIN – NEXT STEPS

- AS PART OF LONG-TERM AIS (FISH), BASIN-WIDE SAMPLE COVERAGE WILL CONTINUE IN 2024. THIS IS SCHEDULED TO CONTINUE ANNUALLY THROUGH 2027 AND MAY BE EXTENDED.
 - EDNA *METABARCODING*
- ADDITIONAL GRASS CARP SPECIFIC SITES SELECTED BASED ON HIGHER LIKELIHOOD OF DETECTION
 - EDNA *QPCR*
- NEW YORK STATE DEC PLANS TO ELECTROFISH THE AUGER LAKE OUTLET TO LOOK FOR GRASS CARP

- Repeated sample sites
- Focused Grass Carp sample sites



GRASS CARP CAPTURES AND POSITIVE EDNA DETECTIONS IN QUEBEC



* Female, fertile, wild born, 7-9 years old

**Sex, fertility, origin and age unknown

† Under analysis by USFWS