Aquatic Invasive Species : Update on AIS related efforts at Deep Creek Lake, Maryland

Presentation to the DCL Property Owners Association
August 19, 2017

Julie Bortz
Maryland Department of Natural Resources
Resource Assessment Service

Credit to Seth Metheny
Maryland Parks Service-DCL NRMA
for 2016 Launch Steward Data and Information

What is DNR doing in Maryland?

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2016-17 AIS Accomplishments

- ✓ Maryland ANS plan complete: allows MD to apply for funds to AIS
  - ✓ Pre-proposal Grant request Accepted from USFWS for $50k AIS related activities
- ✓ Legislation passed
  - ✓ House Bill 860 – State Lakes Bill; required the state to convene and AIS workgroup; conduct a survey of all state lakes to assess the current AIS infestation at each lake and as of April 1, 2017 boats launching on state lakes must be CLEAN
  - ✓ Senate Bill 396 – Protect and Restore Maryland State Lakes ; created a placeholder for future funding for 16 Maryland State Lakes
- ✓ Education/Outreach - Created signage and disposal stations that display the Clean, Drain, Dry message to educate boaters on minimizing spread of AIS (ramps in MD)
  - ✓ AIS Disposal Stations at Maryland Parks
  - ✓ AIS Road Signs around DCL; Disposal Stations at DCL Private Ramps
  - ✓ Boat Launch Steward Program: RGSP and DCLSP
  - ✓ DCL and Rocky Gap Self Certification form (online now at DNR fisheries)
  - ❑ AIS tri-fold communicating Clean, Drain, Dry message to educate boaters
  - ❑ Working with NRP to include AIS information in Boater Safety Class
- ✓ Awarded AIS intern (2016 and 2017) to help with education and monitoring

Aquatic Nuisance Species (ANS) Management Plan

- In November 2016, Maryland completed ANS Management Plan which allows the state to submit for funding requests from USFWS for ANS/AIS related activities
- Submitted Pre-proposal to USFWS in March 2017
- In April 2017, received word pre-proposal to US Fish and Wildlife Service was accepted to fund AIS activities
  - treat boat ramp at Rocky Gap to reduce chance of Hydrilla spreading
  - build additional AIS disposal stations for ALL state owned lakes (6 lakes not currently covered)
  - AIS tri-fold printing costs
  - Hydrilla signage for Rocky Gap and other lakes with known AIS
  - Environmental-Dna feasibility study at DCL and Chesapeake Bay

What is DNR doing…. at Deep Creek Lake?

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- Education/Outreach – Supported Property Owners Association (POA) in AIS Road Sign effort; worked with Maryland Parks to build AIS disposal stations and POA for DCL private ramps
- Hydrilla Control/Eradication and monitoring - Costs ~$250k annually; Detected new hydrilla find in Arrowhead cove August 2017, treated 5 days later
- AIS Self Certification Forms – for use at fishing tournaments and OTHER boating events
- Boat Stewards – Caught boat in June 2016 and July 2017 with zebra mussels attached; removed potential hydrilla introductions from boats prior to launching

AIS Educational Sign

Education and Awareness of AIS issues are KEY to protection

So ….

How are we doing?

2016 and 2017 Deep Creek Lake Boat Launch Steward Data

Year	Boats with Biological material present	% Boats with Biological material present	Boats with ANS/AIS	% Boats with ANS	# Boats Rejected Voluntary Inspection	% Boats Rejected	Total Inspected	Comments
2016	21	0.55%	9	0.24%	34	0.89%	3,824	May-Sept 2016
2017	30	0.94%	22	0.69%	31	0.98%	3,175	May- August 17, 2017

Highlights from Boat Steward Data

~4,000 boats inspected at Deep Creek Lake State Park Boat Ramp each year (2016 and 2017)

<1% of boat owners refused inspection

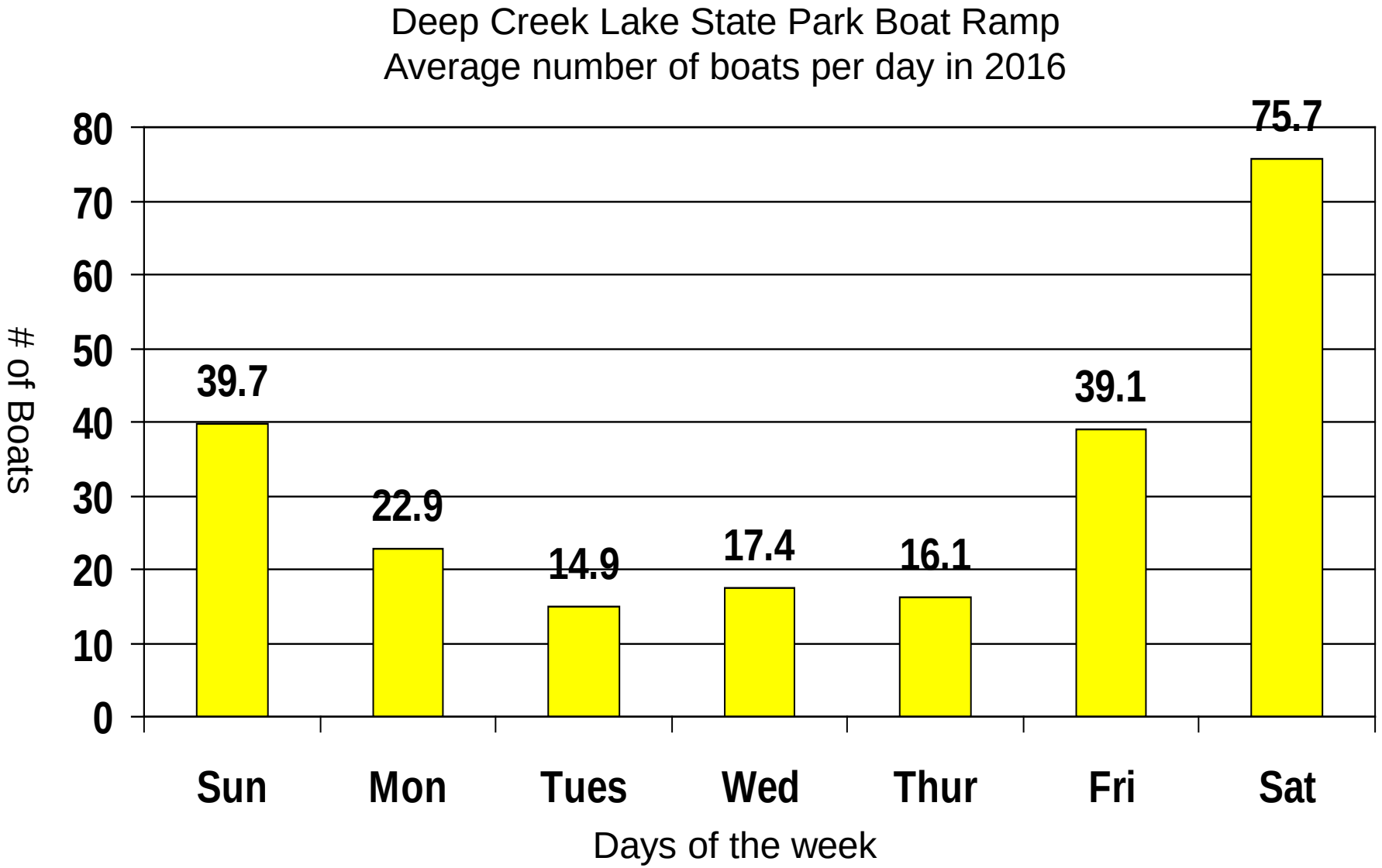
<1% 'dirty' or containing biological material

<1% of inspected boats were confirmed as having an aquatic invasive species or AIS;

Credit to Seth Metheny
Deep Creek Lake NRMA

Peak Launch Days

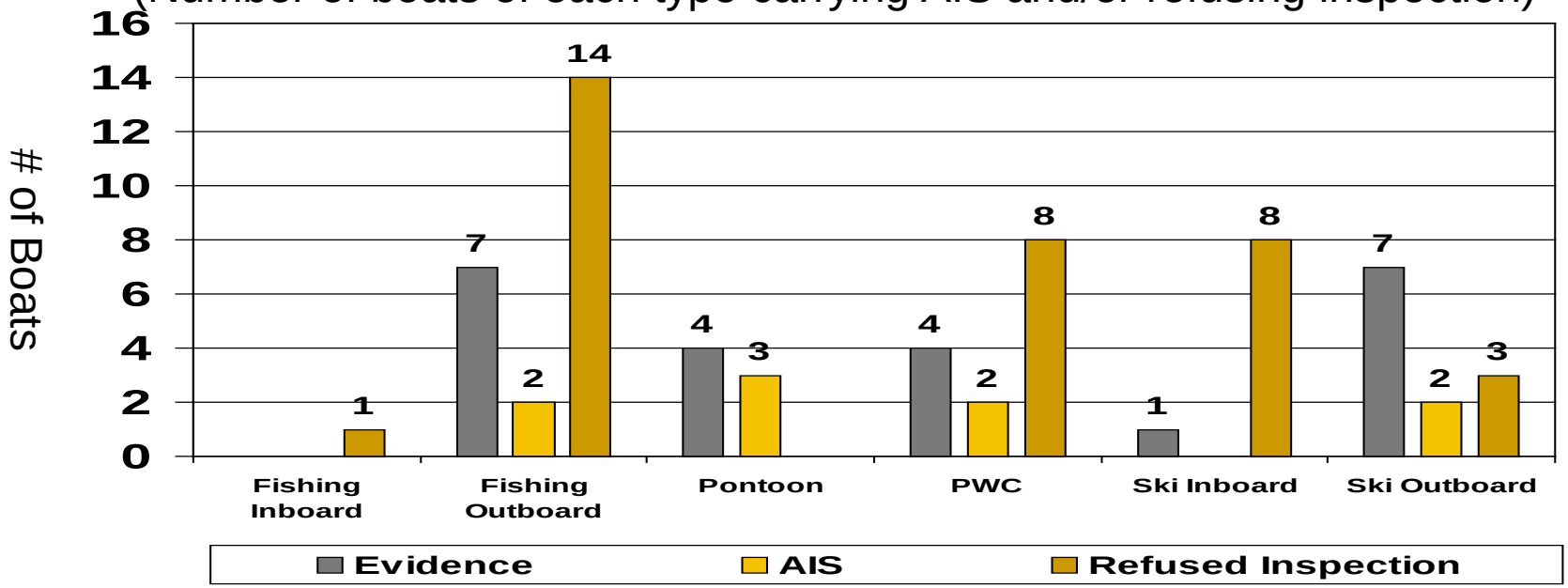
(based on 2016 Launch Steward data)



2016 Vessel Information

(based on Launch Steward Data)

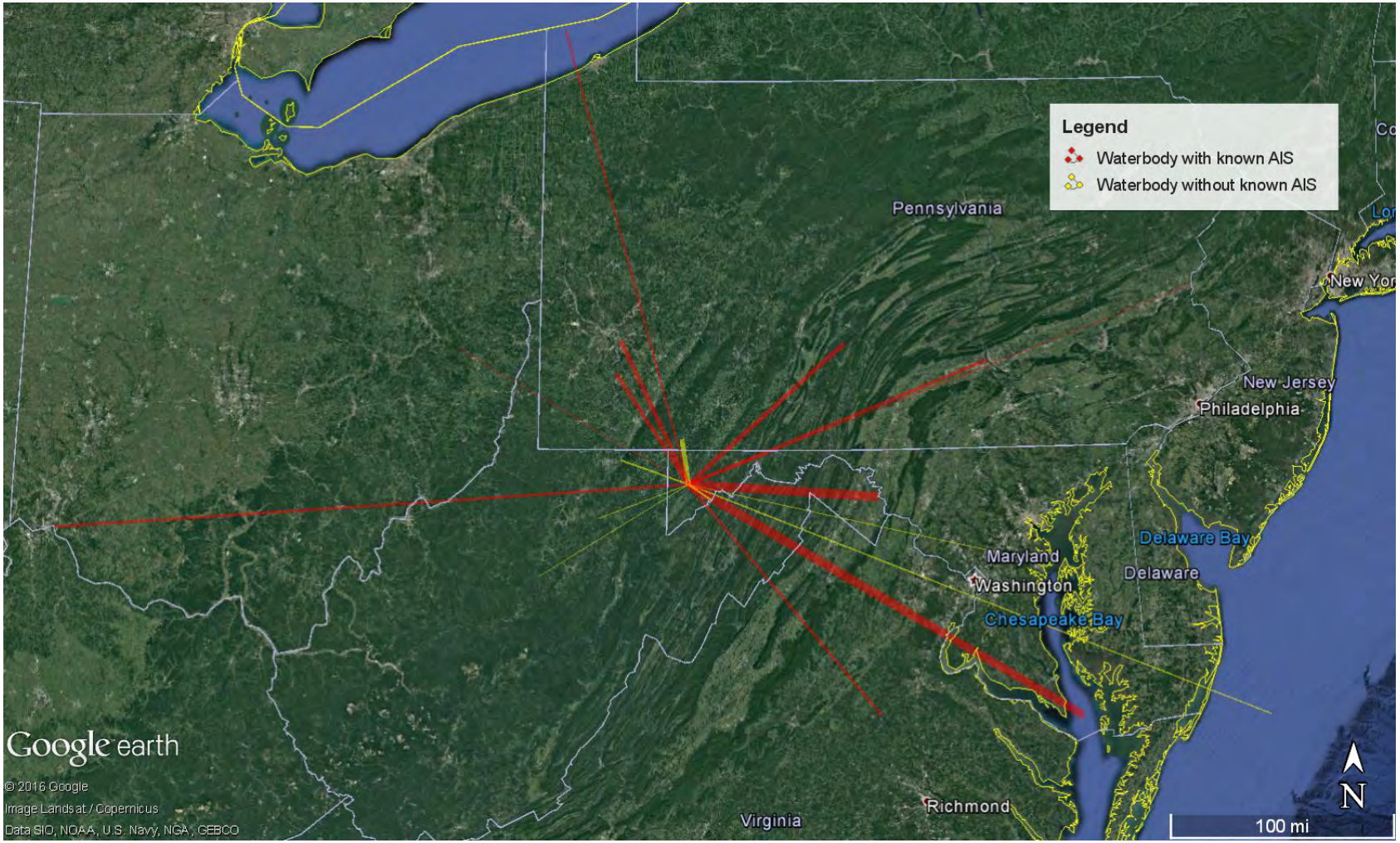
(Number of boats of each type carrying AIS and/or refusing inspection)



Type of vessel	Total	Refused Inspection	Percent Refused	Evidence	AIS	Percent AIS
Fishing inboard motor	157	1	0.6	0	0	0
Fishing outboard motor	1305	14	1.1	7	2	0.1
Pontoon boat	408	0	0	4	3	0.7
PWC	501	8	1.6	4	2	0.4
Ski inboard motor	690	8	1.2	1	0	0
Ski outboard motor	710	3	0.4	7	2	0.3

2016 Launch Steward Data for DCL

Locations where boats launching on DCL are **Most Commonly Used**



Excluding boats that most commonly used Deep Creek Lake and boats that did not specify a most commonly used waterbody

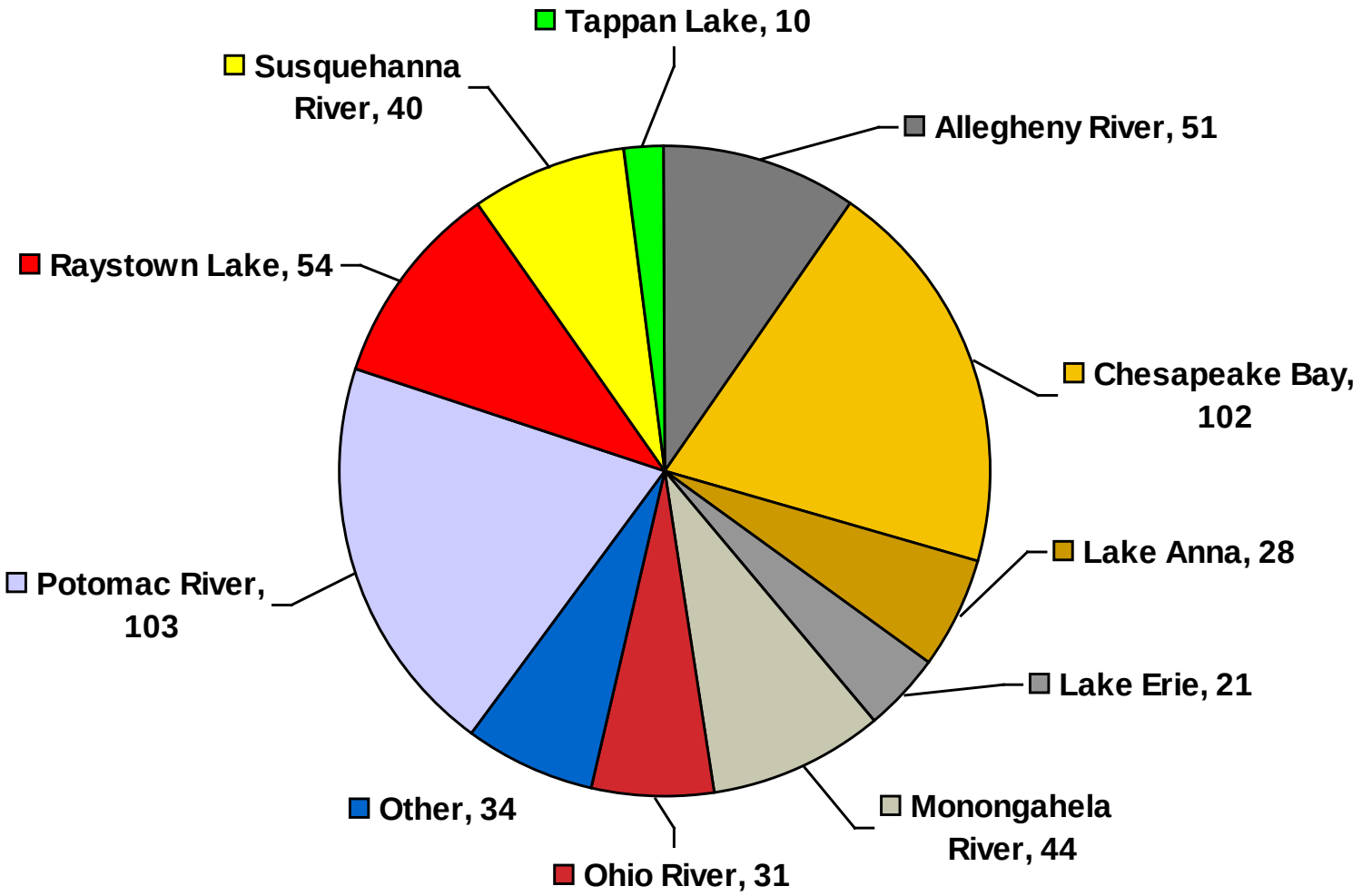
75.6% of boats most commonly used a waterbody with known AIS.

AIS Infected Waterbodies….

Most Commonly Used

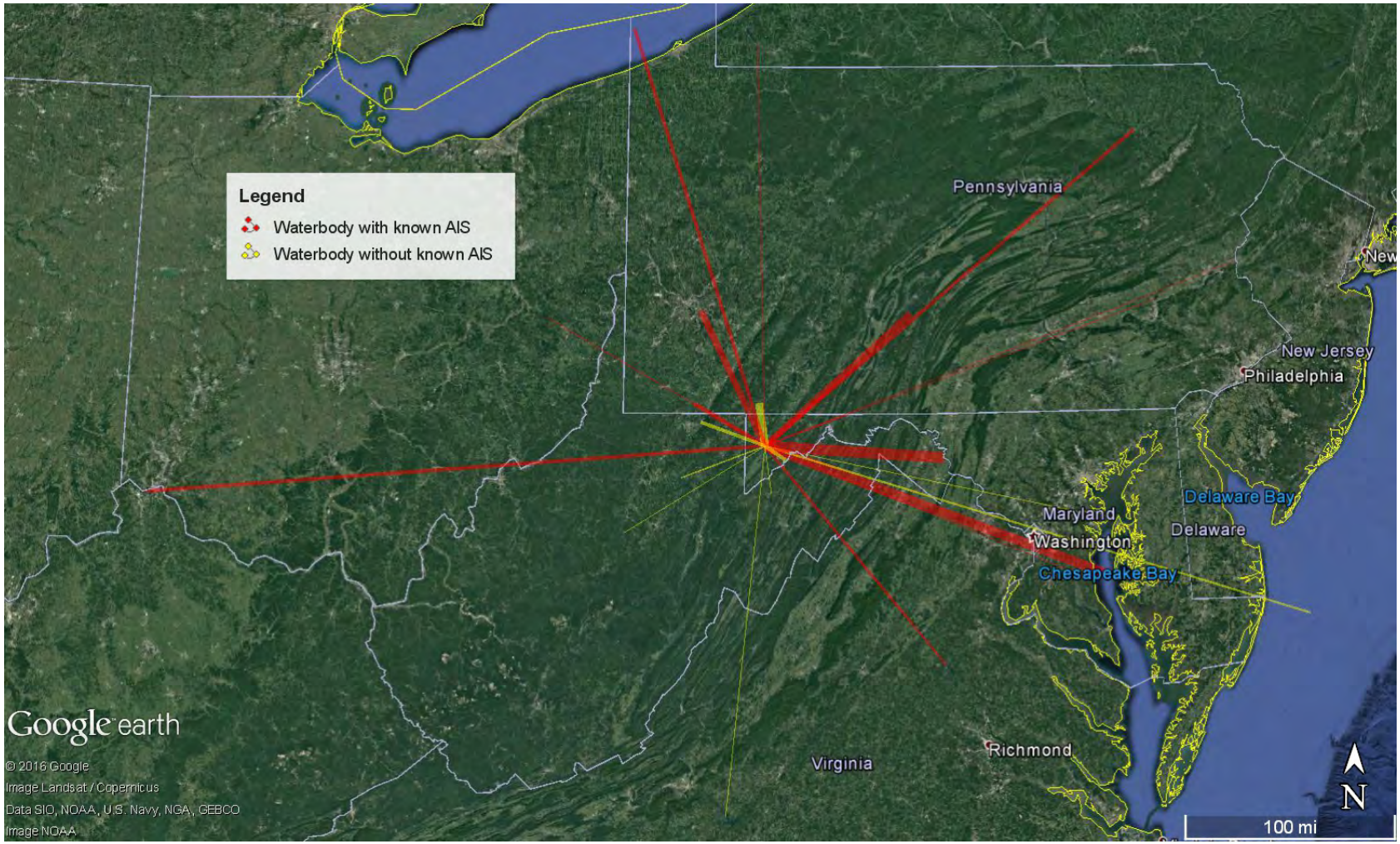
by Deep Creek Lake boaters

(based on 2016 Launch Steward data)



2016 Launch Steward Data for DCL

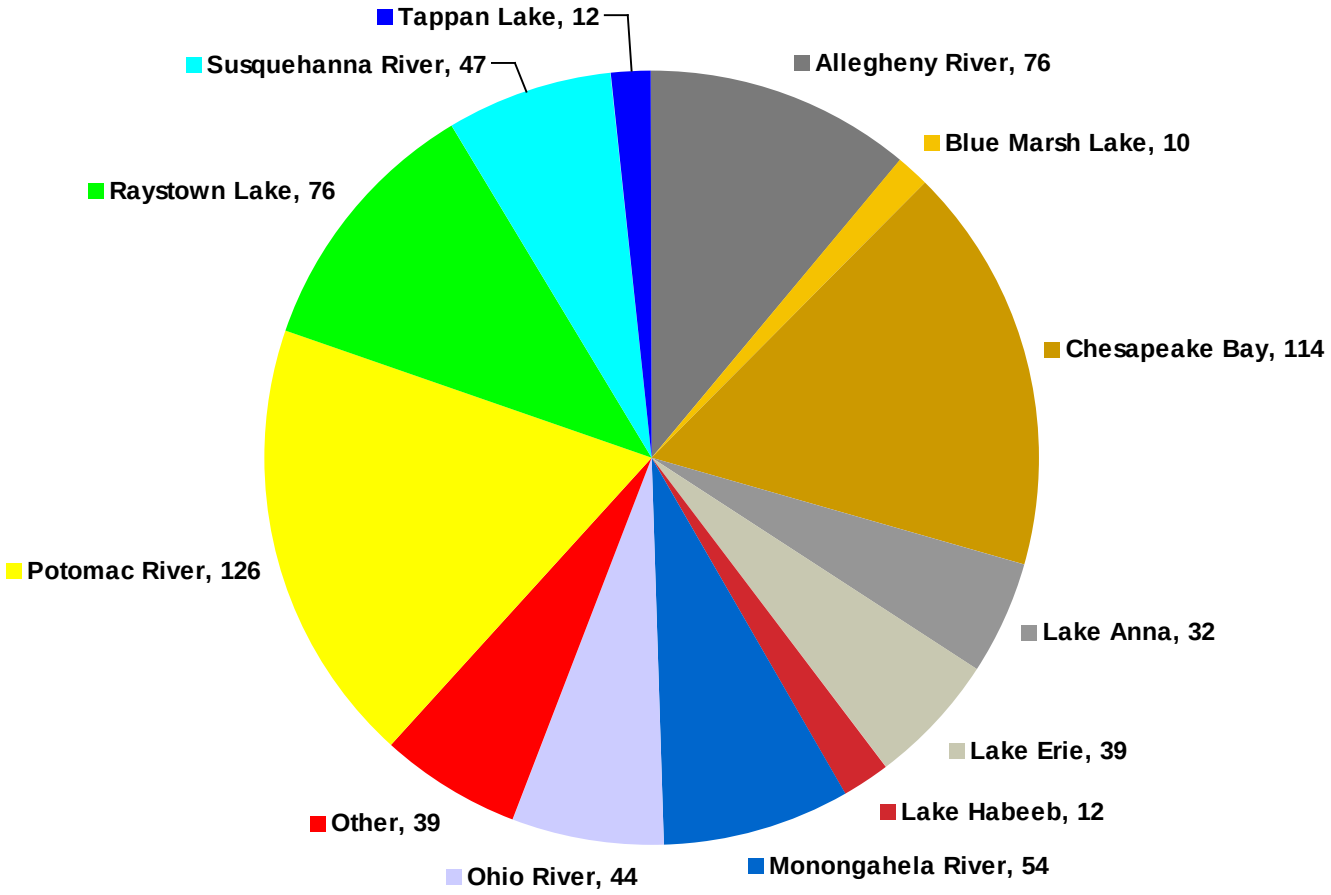
Locations where boats launching on DCL
Were Last Used



Excluding boats that last used Deep Creek Lake and boats that did not specify a last used waterbody, **70.7%** of boats came from a waterbody with known AIS.

Number of boats coming from Waterbodies with known AIS

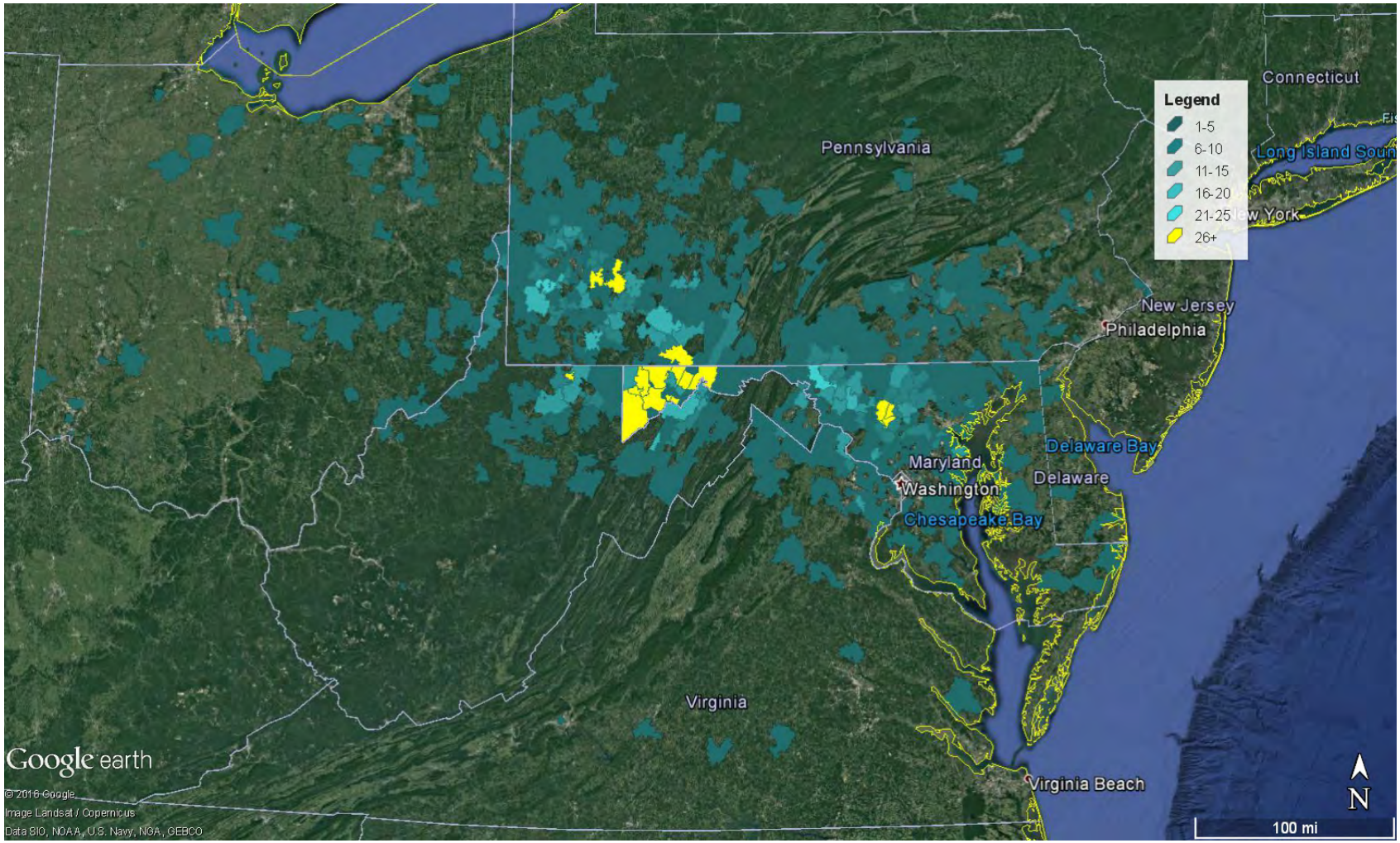
(Based on "last used" from 2016 Launch Steward Data)



Origin of Deep Creek Lake boaters

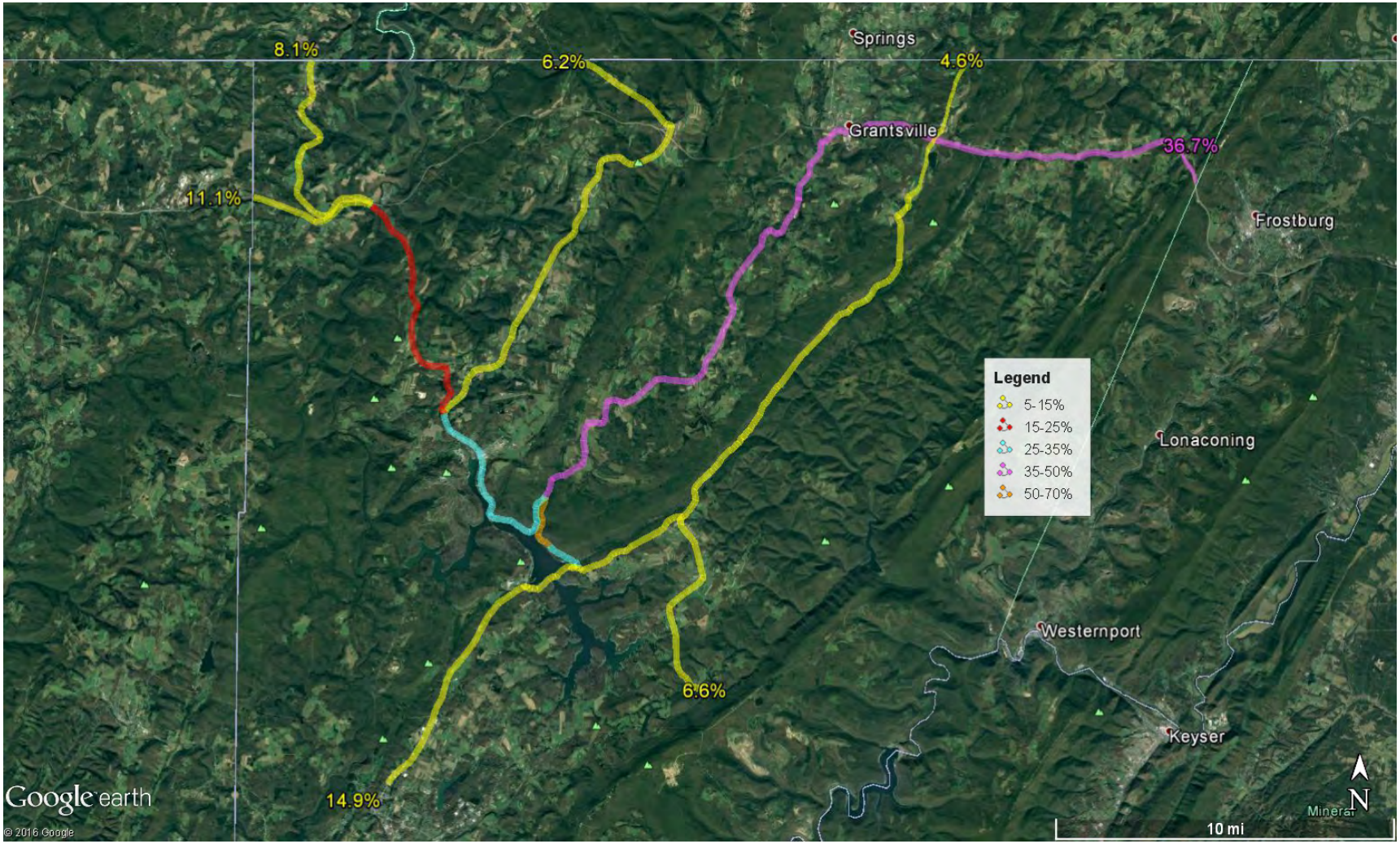
According to zip code of origin

(based on 2016 Launch Steward Data)



Only boaters from MD, PA, WV, VA, DE, and OH were included.

Most frequently traveled roads
of boats launching at DCL State Park
(based on 2016 Launch Steward Data)



Routes for boaters to Deep Creek Lake SP boat launch were determined using Google Maps.

AIS Efforts are On-Going….

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Good STEWARDSHIP along with Education and Awareness of AIS issues CONTINUES to be the KEY to protection

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Maryland Aquatic Invasive Species
Vessel Self-Certification Form
All vessels (motorized and non-motorized) must be free of Aquatic Invasive Species.

STOP AQUATIC HITCHHIKERS!™

Prevent the transport of nuisance species.
Clean all recreational equipment.
www.ProtectYourWaters.net

When you leave a body of water:
- Remove any visible mud, plants, fish or animals before transporting equipment.
- Eliminate water from equipment before transporting.
- Clean and dry anything that comes into contact with water (boats, trailers, equipment, clothing, dogs, etc.).
- Never release plants, fish or animals into a body of water unless they came out of that body of water.

Stopping the Spread of Invasive Species
youtube.com/watch?v=yqQ7P4M6Hoc

It's the law!
A. A person may not place or attempt to place upon or into State waters a vessel or associated equipment with attached or contained aquatic plants, zebra mussels, or other prohibited species of nonnative organisms.
B. Water taken from waters infested by prohibited nonnative species may not be diverted, appropriated, or transported on public roads except in the following circumstances:
(1) In an emergency declared by appropriate local or State authorities, such as a fire emergency;
(2) As specified in water appropriation or public waters work permits; or
(3) Under a permit issued by the Secretary.
In addition to any other penalty provided under law, a person who violates a provision of this section or a regulation adopted under this section is guilty of a misdemeanor and on conviction is subject to imprisonment not exceeding 30 days or a fine not exceeding $ 2,500 or both for each offense, but not exceeding a total of $ 25,000 for offenses arising out of the same enforcement action.

Before launching your vessel, please read the following statements, fill out the information and sign below:

My vessel and trailer were last on _____ Date:_____
(most recent water body and state) (month/day/year)

I am planning to launch my vessel onto _____ Date_____
(planned water body and state) (month/day/year)

If you plan to launch your vessel onto a **DIFFERENT** body of water from where you were last, **PLEASE** read the instructions on the back of this form and **properly wash and decontaminate your vessel and trailer** prior to launch to avoid the potential spread of invasive species. Please check each box below when completed:

- ☐ Has your vessel/trailer been thoroughly **cleaned**; any dirt, plant, animal material, and grit removed from the vessel/trailer and boat?
- ☐ Have you **drained** and dried all engines, ballasts, live wells, bilge areas, and/or other equipment?
- ☐ Has the vessel/trailer been allowed to completely **dry**? (If not, please see the back of this paper and follow additional cleaning methods.)

Once you are able to check ALL boxes above, **please fill out the information below, sign and date it, and have it available at your launch site**. Thank you for helping to protect Maryland waters!

Boat Owner Name:_____ Cell Phone:_____

Email Address:_____ Zip code_____

Signature:_____ Date:_____

*** **Note: You should fill out a new certificate with the current date each time you launch your vessel!*****

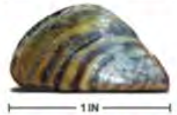
STOP AQUATIC HITCHHIKERS!™

BEFORE You Launch...BEFORE You Leave...

CLEAN
Clean plants and debris from your boat and trailer. Discard plant material and bait in this disposal station.

DRAIN
Drain water from all equipment before leaving. Do not dump bait or plant material into the water.

DRY
Dry your boat, trailer and all equipment completely.



IT'S THE LAW!

Prevent the transport of nuisance species.
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www.ProtectYourWaters.net

New bed of Hydrilla found

Arrowhead Cove August 4, 2017

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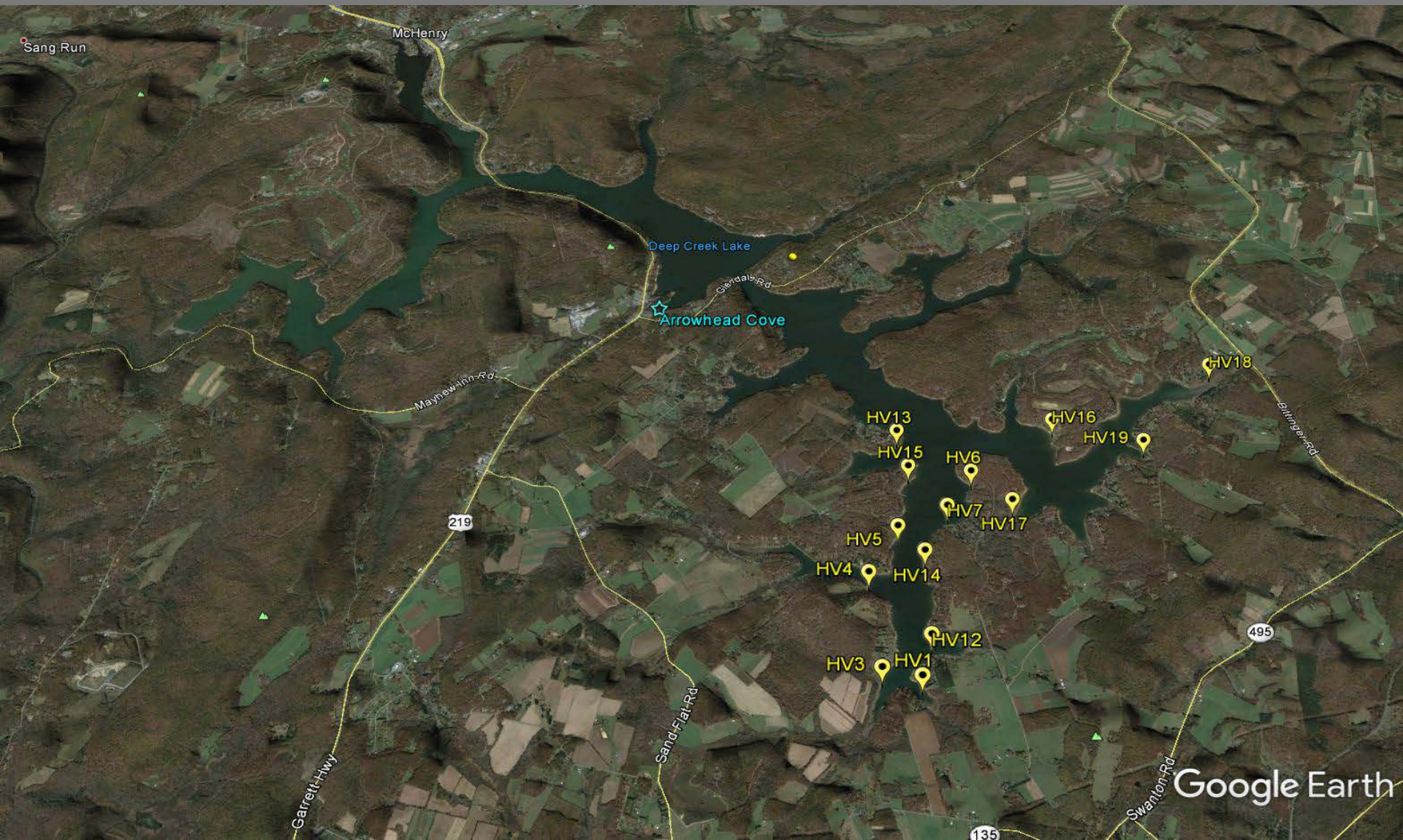

Why are we concerned?

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What are the reasons for concern in Deep Creek Lake?

Hydrilla can outcompete native plants along shore in shallow areas and coves, and because it has lower light requirements, also has the potential to grow deeper without competition.

By outcompeting native plants, *Hydrilla* may lead to changes in water temperature and oxygen availability for aquatic organisms, not only lowering plant diversity , but also lowering diversity of both fishes and aquatic invertebrates.

Hydrilla can create dense surface mats that interfere with water flow, boat traffic, and fishing, and also limits the light available to native species.

Hydrilla fragments can sprout roots and establish new plants, so boats with outboard motors easily spread it to other parts of the lake and other waterbodies.

Impacts of Hydrilla

- Hydrilla can often "top out" meaning it grows to the surface and fills the entire water column
  - making it hard for fish to move through a bed; literature suggests dense hydrilla beds can lower average size of fish
  - Dense vegetation can cause low oxygen levels at night and thus harm fish and biota
  - Difficult to near impossible to boat through dense mats, clogs waterways
  - Outcompetes native vegetation for space and resources; reduces diversity

How does it spread?

Leslie J. Mehrhoff, Univ. of Connecticut, Bugwood.org

Robert Vidéki, Doronicum Kft., Bugwood.org

- Hydrilla can spread rapidly from fragments; fragments will float and produce roots, once they settle in shallow water, the plants can take hold in the sediment and rapidly spread via roots/rhizomes and runners
  - The plant can then put down tubers or overwintering structures that can remain viable in the sediment for up to 10 years
  - A boat motoring over a bed can produce potentially hundreds of additional plants
- It is most common in shallow water but can grow in waters up to 20-30ft deep depending on the clarity of water

US Distribution of Hydrilla

Provided by USGS

https://nas.er.usgs.gov/viewer/omap.aspx?SpeciesID=6)

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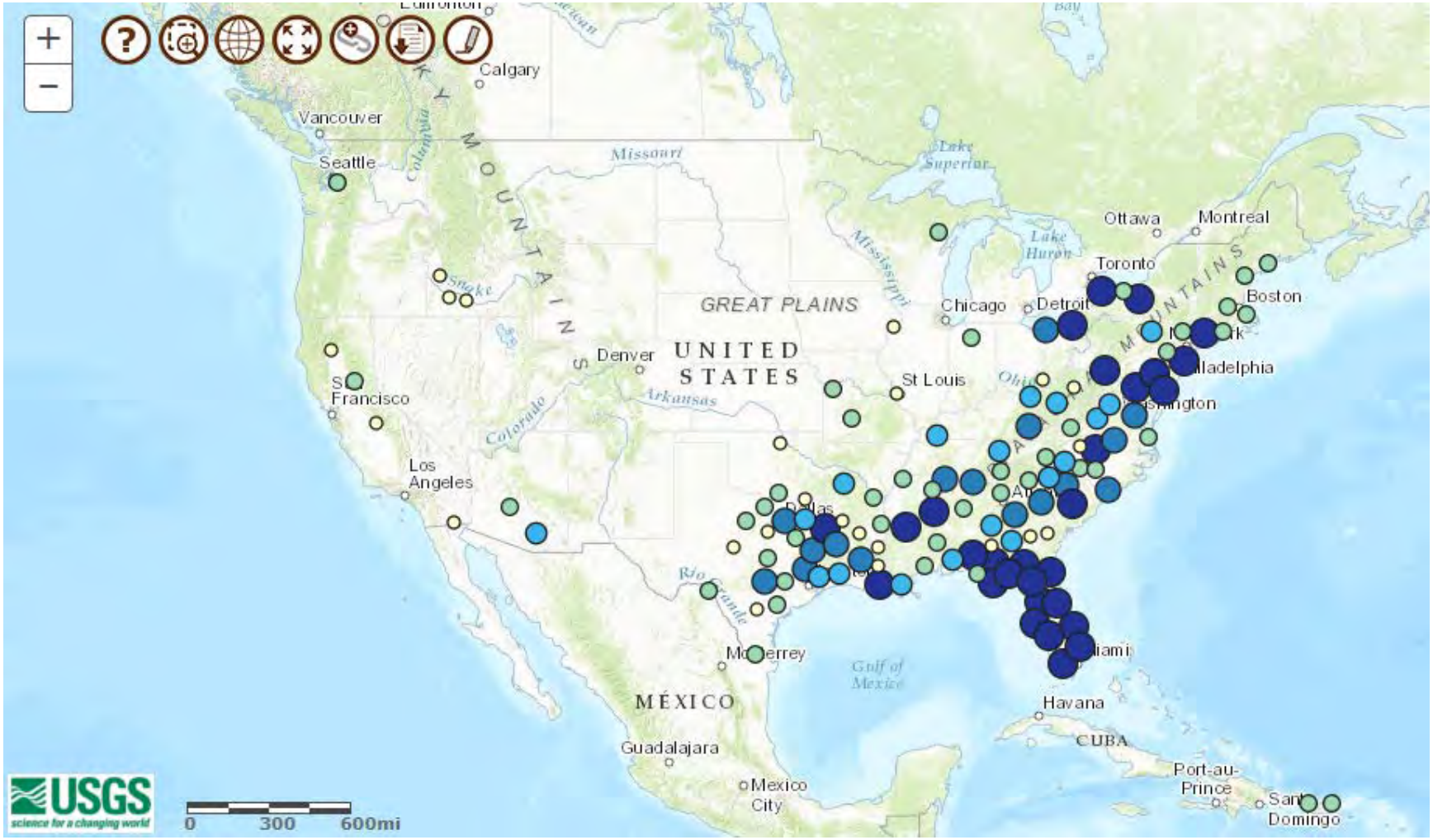

Regional distribution of Hydrilla (if reported to USGS)

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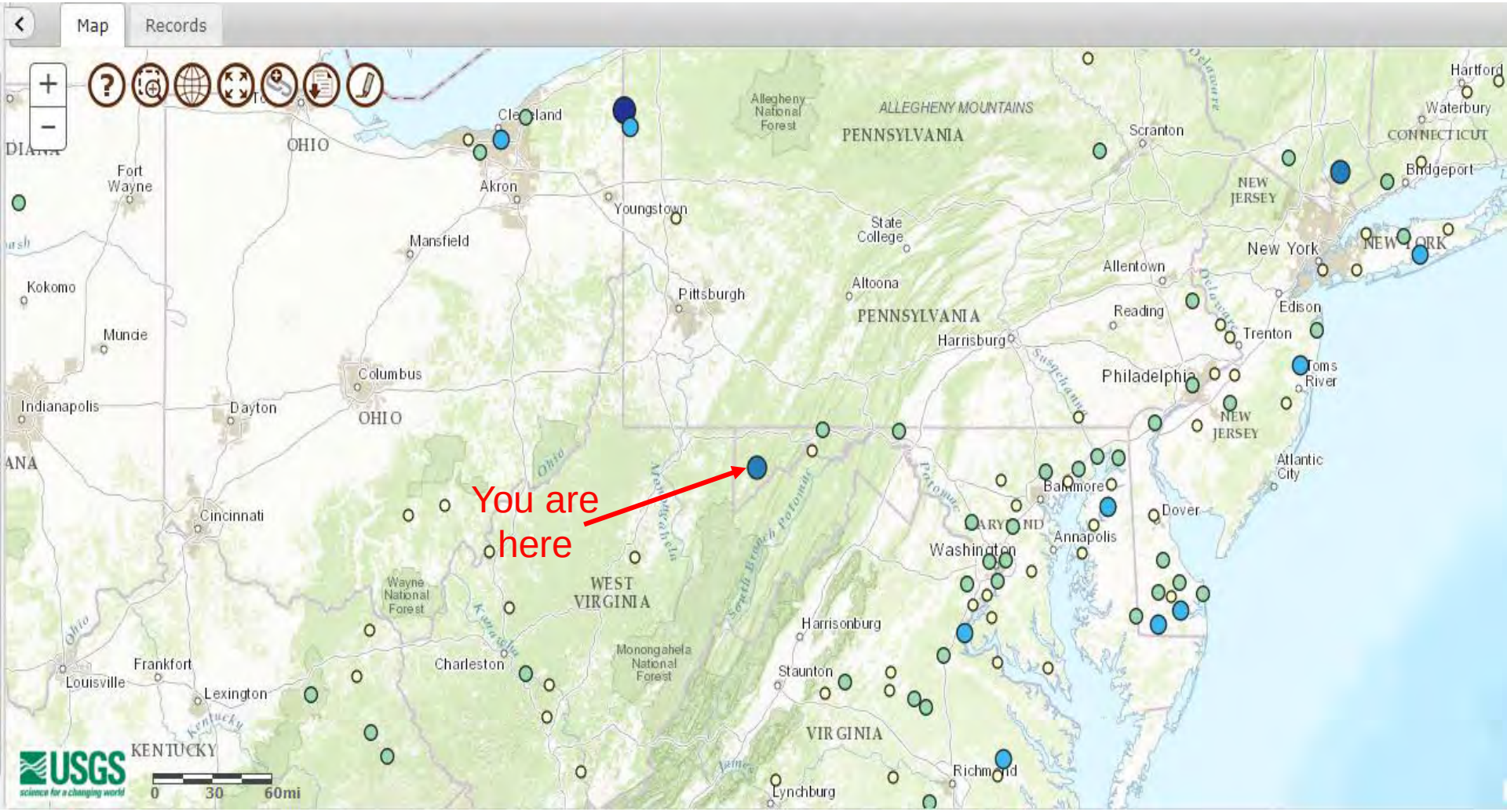

What can YOU do to help?

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Remind others and yourself to REMAIN VIGILANT!

- Inspect your boat trailer and equipment ALWAYS before and after launching in any water body
- Remove any plant matter you find and dispose of it in a trash can or well above the water line
- Avoid running through dense beds of vegetation with your boat; if you do, tap reverse before leaving a cove
- If you suspect you have hydrilla near your property or have seen it in the lake,
  - identify your location (address or dock number)
  - take a picture of the plant if you can or place in ziplock bag and
  - call the Lake Management Office at 301-387-4112 or email Mark Lewandowski at Mark.lewandowski@maryland.gov

Non-native Hydrilla vs. Native/common Elodea

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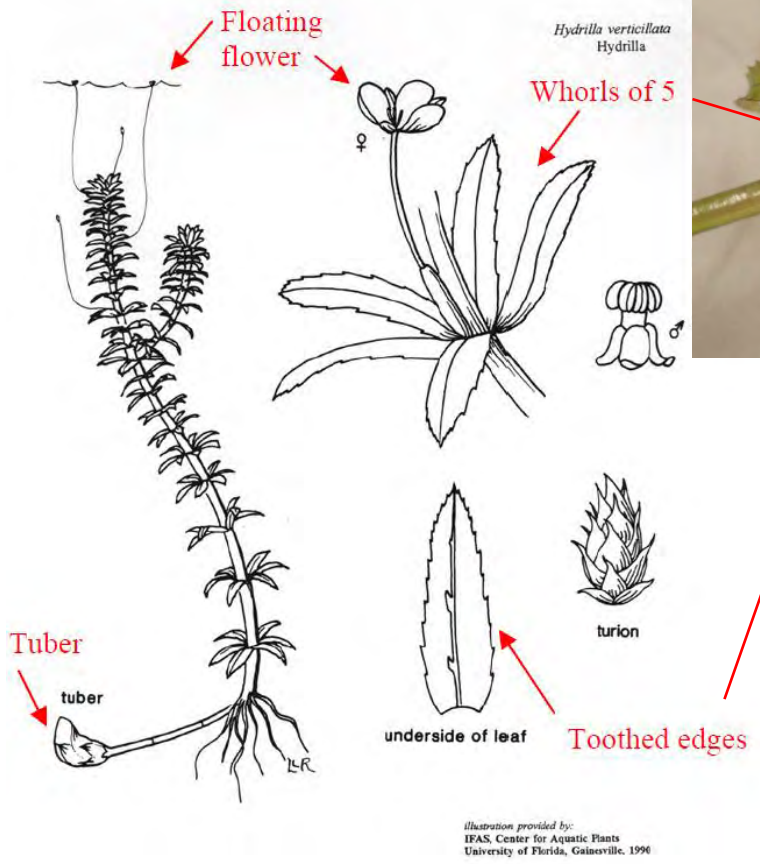
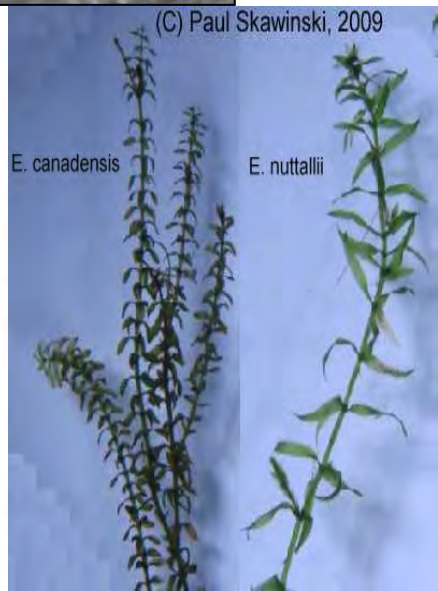
It can be distinguished from native and common Elodea species based on the serrations or teeth on the leaves

Hydrilla biology



Whorls of 3 instead of 5!



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NATURAL RESOURCES

If you see LEAVES with TEETH….

Please give us a call!

Questions?

Julie.bortz@maryland.gov

Or 301-387-4112

Quick Reminder….

- Last Scheduled Hydrilla treatment is for this coming Monday August 21st.
- If you haven't already signed up for email updates, go to https://public.govdelivery.com/accounts/MDDNR/subscriber/new?qsp=MDDNR_6