

Managing Nuisance Aquatic Plant

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Aquatic Plants

Aquatic plants are an important, integral part of a healthy aquatic ecosystem

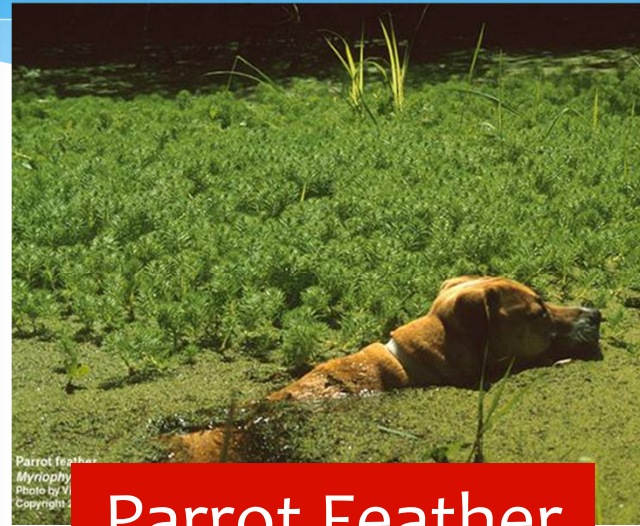
- Source of oxygen
- Habitat for fish and wildlife
- Create and maintain a stable shoreline
- Intercept and filter pollutants and sediments
- Add to the overall aesthetics

However . . .



Excessive densities of non-native invasive species may trigger need for control

Some of The Bad Guys

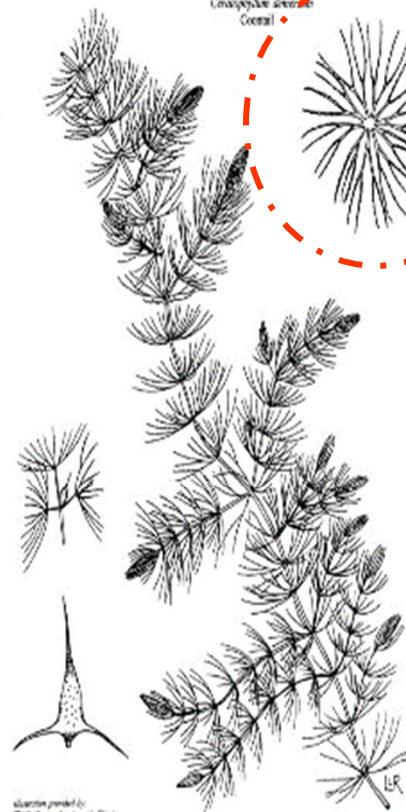


Myriophyllum spicatum
Eurasian water milfoil



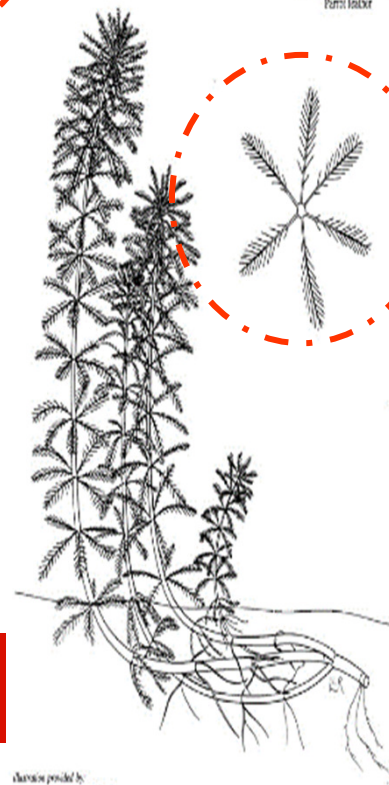
Eurasian Milfoil

Ceratophyllum demersum
Coontail

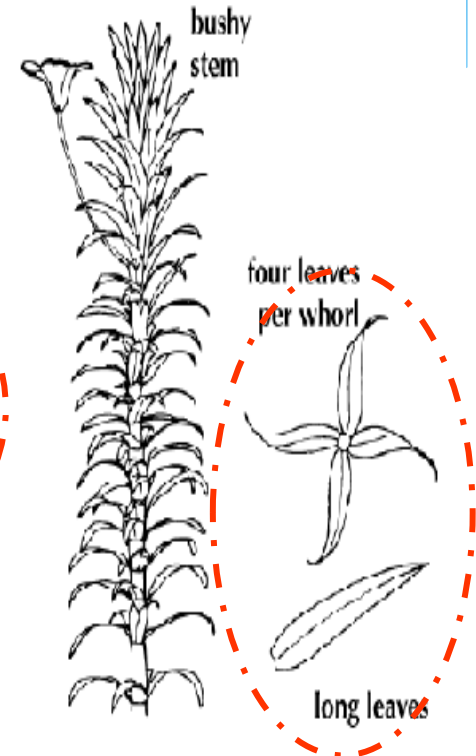


Coon Tail

Myriophyllum aquaticum
Parrot Feather



Parrot Feather



Hydrilla

Why Control Invasive Weeds?

- Loss of native aquatic plants
- Impaired recreational use
- Declining aesthetics
- Impacted water quality
- Restricted water flow and circulation
- Declining fishery
- Fouled irrigation and aeration equipment

Herbicide Treatment Programs

- When properly utilized, can be a safe, ecologically sound and cost effective, way to control nuisance aquatic plants.
- Registered herbicides have low bio-toxicity to fish, birds, amphibians, pets, humans.
- When timed and done correctly will not cause an algae bloom or HAB.

Why Chemical Control?

- Mechanical/biological not practical/permitable.
- Can control diversity of nuisance species.
- Cost effective, can achieve season-long control w/ 1 or 2 applications.
- Potential for selective control of pest species and maintenance of desirable native species.
- Potential for actual eradication.

Advantages Compared To Mechanical Control

- Less expensive
- Faster
- Weeds don't need to attain maximum biomass
- Doesn't disturb bottom
- Fewer physical site access and operational restrictions
- Can manage plants in very shallow areas inaccessible to harvester

Disadvantages Compared To Mechanical Control

- Introducing a chemical in the water
- Timing is critical to success
- Effectiveness and efficacy affected by weather
- Biomass and nutrients remain in lake
- Certain herbicides not as selective as mechanical control...higher likelihood of affecting desirable plants
- Potential for fish kill /algae bloom if improperly conducted

IPM Key to Successful Chemical Control

- Learn to live with some weeds; “tolerance level”
- Correctly match “pest” and “product”
- Beware of water use restrictions
- Beware of potential impacts to “good plants”
- Treat early
 - Avoid a massive die off
 - Minimize product use and cost
- Integrate with biological and physical controls
- Address cause...Reduce sediment and nutrient loading

Application of Herbicides

- Must be done by a NJDEP licensed Category V applicator and as per specs/limitations in NJDEP permit
- Must match targeted plants with correct product
- Must account for environmental factors

Flushing rate

Turbidity

Weed types, densities and distribution

Water users and herbicide water use restrictions

Maintenance of fish habitat

Two Groups of Herbicides

CONTACT HERBICIDES

- Kills foliage on contact (i.e., destroys cell wall), is not absorbed and translocated through the plant.
- Application must be targeted and precise.
- Rapid die off...may trigger algae blooms
- Somewhat non-selective

SYSTEMIC HERBICIDES

- Absorbed and translocated through plant
- Alters cellular processes
- Slow die off...rarely triggers algae blooms
- Somewhat selective, target plants by dose and timing

Commonly Used Herbicides

Name	Active Ingredient	Pro/Con	S/C
Nautique	Copper	No use restriction, moderate effectiveness for submerged plants, multiple treatments needed	C
ProcellaCOR	Florpyrauxifen-Benzyl	Fast acting, targets milfoils, species selective, 3 day irrigation restriction	S
Reward	Diquat di-bromide	10-14 days to kill off plants, broad spectrum, 1-3 day irrigation restriction	C
Clipper	Flumioxazin	Broad spectrum, fast acting, pH limited, 1-5 day irrigation restriction	C
Aquathol	Endothall	Similar to Reward, not impacted by turbidity, 7 day irrigation restriction	C
Sonar (various formulations)	Fluridone	Slow acting 30-45 days, target species by dose, very effective on coontail and milfoil, 30 day irrigation restriction, impacted by high flow	S
			S

Mode of Application

Based on size of site and treatment goal

- Back pack
- Pressurized tank sprayer
 - Boat
 - Truck
 - Amphibious vehicle
- Airboat and other water craft

Back Pack and Tank Sprayer



Air Boat



Summary

Aquatic Plant Control

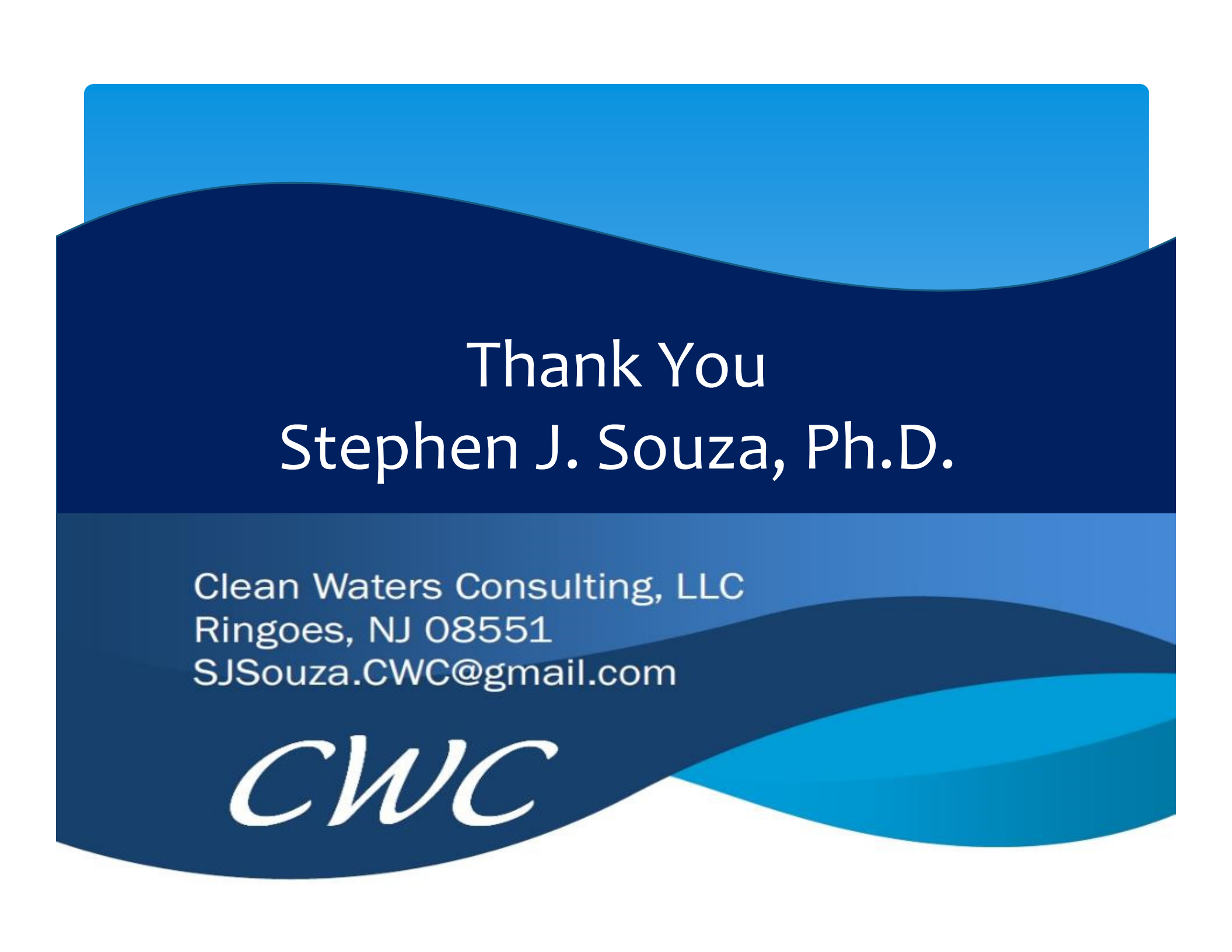
- Not all are bad...
- Actually an important element of a healthy lake environment.
- Invasive non-native species though can impact chemistry, biology and hydrology of a lake.
- Herbicides are EPA licensed chemicals used to kill, control or severely disrupt plant growth.
- Must be applied by NJDEP licensed applicator following limitations set forth in treatment permit.

Follow An Ecologically Sound Approach

- Learn to live with some weed growth.
- Know mode of action, dose rate and application technique....use right product for targeted “pest”.
- Use low-dose application approach.
- ID water use restrictions / pay attention to weather.
- Try to integrate with physical, mechanical and biological control techniques
- Control causes of growth – sediment and nutrient loading.

For More Information

- NALMS - www.nalms.org
- NE Aquatic Plant Management Society - www.neapms.net
- NYSFOLA - <https://nysfola.org/>
- Deal Lake Commission



Thank You
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