Search for Excellence in Environmental Quality, Forestry, and Natural Resources

Watershield Weed Control in Ponds

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Abstract:

Watersheild, *Brasenia schreberi,* is a leafy floating foliage that reproduces by insects or wind cross-pollinating the flowers. With very little to no physical or biological control methods, this plant can quickly takeover ponds and lakes if not managed. Floating leaved plants, which anchor into sediment and have leaves that remain at or near the water surface, can be difficult to control. Foliar treatments can be easily washed off the leaf surface with minimal wave action, Watershield being a good example of this issue.

A survey was conducted in May 2020 to evaluate and assess the impact of Watershield to a 16 acre, 200,000+ cubic yard pond. Watershield had covered over 75% of the pond. This pond is a significant investment for the producer and the detriment from the weed was collectively destroying this asset. The producer primarily utilizes this pond for recreational purposes.

Research on Watershield has demonstrated that it can be difficult and expensive to control. Prevention is not practical since it can be brought in, unknowingly, and established by various birds, small animals, humans, wind/weather etc.

Demonstration plots were conducted on August 18, 2020 and were evaluated and rated on September 9, 2020. Reference supporting chart and photo materials.

Stingray @ 1 qt/acre, Aquatic 2,4-D @ 1 qt/acre, Aquatic Glyphosate @ 1 qt/acre, Copper Sulfate @ 1 lb/acre, and Imazapyr @ 1 qt/acre were evaluated. Our goal was to target a herbicide application that would not only be effective but that would not be cost prohibitive.

Our conclusion was that, depending on the cost that the producer was prepared to dispense versus the desired end results, Aquatic 2, 4-D or the Aquatic Glyphosate was the most practical control option.

Online social media platforms were utilized as educational resources as well as one on one consultations (Covid restrictions considered) to provide producers with the information needed to make educated decisions to combat this weed.

Educational Objectives:

The objective of the project was to educate landowners about Watershield and determine effective control measures. My data field included: how Watershield was established, what encouraged it to flourish, did it have any beneficial values, if it did have beneficial values would I be negatively impacting the ecosystem/environment by treating it. Furthermore, we wanted to know how to effectively treat the species in a way that was not cost prohibitive. In the end we needed to be able to convey the results to my landowners in a way that they could utilize the information fit their operation.

Teaching Methods:

Covid restrictions have reduced our ability to include this material in a classroom style educational situation or, even to a degree, face to face situations. However, one on one consultations have been applied (Covid restrictions considered). I, along with my colleagues, have been adamant about following Covid guidelines as they have been handed down from our agency. We have however, been able to utilize social media platforms to expand our audience outreach and maintain a congregation of ever-increasing followers. Our Facebook feed has continually increased. This is especially so for the 'Weed Wednesday' segment that we do, in which Watershield was featured. In addition to social media, phone calls, emails, Zoom, and Microsoft teams as Covid friendly educational opportunities for those participants that want and need more information or would like a more personal approach to their situation have been utilized.

Demonstration and Results:

Treatments were applied August 18, 2020 and rated on September 9, 2020
See attached document with pictures representing treatment date and rating date.

Stingray @ 1 qt/acre, Aquatic 2,4-D @ 1 qt/acre, Aquatic Glyphosate @ 1 qt/acre, Copper Sulfate @ 1 lb/acre, and Imazapyr @ 1 qt/acre were evaluated.

Stingray @ 1qt/acre worked very well and we achieved 100% control, however, at approximately $143/acre the cost was more prohibitive.

Aquatic 2,4-D @ 1qt/acre worked well achieving 70% control and with an approximate cost of $3.75/acre was very affordable.

Aquatic Glyphosate @ 1qt/acre worked very well with a control rate at 90% and at a cost around $5.88/acre, proved to be an economical option.

Copper Sulfate @ 1lb/acre was also financially economical at $6.00/acre but at a control rate of 20%, was not effective enough to be worthwhile.

Imazapyr @ 1qt/acre rated poorly at only around 20% and was also more expensive with an approximate cost around $42/acre.

Impact:

Research has shown that chemical control options are available for Watershield. Demonstrations were conducted to determine the impact of each herbicide application and could develop an overall cost vs. outcome scenario to benefit producers. My case study identified 2 chemicals that would be the preferred method of treatment in most instances. After reviewing my findings, I followed up with the landowner via phone and written consultation as well as published my results via social media platforms, sent out a statewide report to all other agents so they too would have the information needed to help combat the invasive weed, as well as providing my findings to my immediate supervisor.

With control of the invasive weed Watershield, the landowner was able to continue to utilize this resource as part of his personal operation. In addition, the data collected through the findings of my case study will provide valuable information for the producers in the surrounding area so that they may make educated decision on a treatment option that will work for them.