

**2012 Proposal for EnviroScience's Milfoil Solution®
At Paradise Lake,
Emmet and Cheboygan Counties, Michigan**



Prepared For:

The Paradise Lake Improvement Board

Prepared By:

EnviroScience, Inc.
3781 Darrow Road, Stow, Ohio 44224
(800) 940-4025 / www.enviroscienceinc.com

Project Description



Paradise Lake is a 1,900 acre lake located within Emmet and Cheboygan Counties, Michigan, which has undergone an expansion of Eurasian watermilfoil (milfoil) in recent years. EnviroScience, Inc. was first contracted at Paradise Lake to control the exotic aquatic plant using its natural predator, the milfoil weevil (*Euhrychiopsis lecontei*), with great success back in 1998. The milfoil weevil is a tiny native aquatic beetle which is the active biological control agent in EnviroScience's **Milfoil Solution®**. Milfoil weevils are native insects that are found naturally occurring on milfoil throughout most of the northern states and provinces across North America.

In addition to being environmentally safe, Milfoil Solution® is the only proven approach for sustainable control, as opposed to mechanical and chemical application, which will need to be reapplied indefinitely. Therefore, this solution is a natural and completely eco-friendly choice for addressing milfoil infestations and its sustainability saves money over the long-term.

After a two-year weevil stocking program, Paradise Lake experienced lake-wide control of the milfoil for approximately seven years. In 2007 the milfoil infestation in Paradise Lake had begun to increase, so it was apparent that the milfoil was growing at a faster rate than the weevil population could sustain. Over the past three years, approximately 45,800 weevils have been stocked in the northeastern end of the lake. The majority of these weevils (approx. 24,000) were contracted at a large discount because these stocking took place so late in the season. While not optimal, this option was the most cost-effective for the association at the time and the weevils would still produce 1-2 generations before overwintering. Results of the fall 2011 assessment performed by Lakeshore Environmental, manager of Paradise Lake, found widespread weevil-induced damage to the plants. It is at the request of Lakeshore Environmental that EnviroScience prepare this proposal for additional weevil stockings in 2012.

EnviroScience's customized Milfoil Solution® includes stocking milfoil weevils into a lake, pond, or river over the course of two or more years, depending on the size of the lake and the milfoil infestation. Although every lake responds somewhat differently, experience has demonstrated that the length of time needed for the weevils to achieve lake-wide control depends on the total number of weevils stocked. Faster results and lower management costs in subsequent years are expected if the milfoil infestation is addressed more aggressively in the first two years.

In most cases, noticeable weevil activity during the first stocking season may be limited and will be usually restricted to the immediate stocking areas. Over the course of the next two to three years the weevils will move from the stocking areas and spread out around the lake, ultimately reaching the density required to sustainably control the milfoil within three to five years. Biological control is a gradual management strategy therefore a Milfoil Solution® program requires stocking weevils over multiple years. This

minimizes seasonal variability and allows for annual adjustments to the program based on survey data.

Expected control of the milfoil utilizing the Milfoil Solution® program includes:

- ✓ reduction in the density of the milfoil (stems/m²),
- ✓ an increase in healthy native plants that serve to outcompete the milfoil,
- ✓ open areas and increased distance between milfoil stems that lead to elimination of the milfoil in the bed, and
- ✓ maintenance of the milfoil below the lake surface at a non-nuisance level

EnviroScience has prepared the following proposal which includes two options for implementing our Milfoil Solution®. The first involves EnviroScience's monitoring services. Our experts will establish the current status of the weevil population and chart its progress through field surveys and laboratory analysis. The second option includes the purchase of weevils and stocking of the organisms in the lake.

Option I – Monitoring Services

Milfoil Solution® includes three general tasks each year as outlined below. In addition to stocking milfoil weevils, baseline and post-stocking surveys allow for the continuous monitoring of the Milfoil Solution® program and the evaluation of its progress. The information collected assists in planning for any necessary adjustments for the subsequent year. Finally, an annual report provides the association with the year's accomplishments and provides recommendations for the next year. This option provides the association with the highest level of communication throughout the duration of the project. Here is a description of the three tasks preformed under option I:

Task 1: Site selection, mapping and initial survey, and weevil stocking

Stocking sites are selected, in part, by input from the client, and in part by the presence of conditions in and around the site that would contribute to a successful propagation of the weevil population. At the time of the initial annual visit (Mid-May through early July), EnviroScience biologists will tour the lake to determine potential stocking locations. Selected sites will be marked using Global Positioning System (GPS) technology and a buoy. A survey of the milfoil bed will be conducted followed by the stocking of milfoil weevils. The same protocol is used for each survey to allow our biologists to track the progress of the weevil population. This includes taking random plant samples back to our laboratory for our technicians to look for adult weevils and its life stages – egg, larvae, and pupae –to determine the population density. At the lake, our biologists will determine the density of the milfoil and record the presence of any native plants in and around the stocking sites. Tracking the native plant community is a key component of the success of the program. The native plants will start to out-compete the milfoil and fill-in areas once dominated by milfoil. Additionally, native plants provide a food source and habitat for other aquatic life which is important for biodiversity and ensuring a healthy, balanced ecosystem. In addition to stocked sites, one or more monitoring sites not stocked with weevils, can be established to gauge the progress of the program in other parts of the lake.



Task 2: Follow-up Survey

The EnviroScience team will return to the lake 5-8 weeks later (August – September) to survey the stocking areas using the same protocol as the initial survey. The data from initial and follow-up survey will be used to track the progress of the program over the summer and from year to year. The final year of the Milfoil Solution® program includes one visit between July and early September to assess the overall effects of the multiple-year program.



Milfoil Damage as a result of direct weevil augmentation

Task 3: Reporting

A report summarizing the progress of the Milfoil Solution® program is generated at the end of each stocking year (September – December) and pursuant to the final follow-up survey. The reports include the evaluation of the data collected from the surveys, a detailed map of the project sites, and recommendations for the subsequent year's management.

Option II – Purchase of Weevils and Stocking

For Option II, EnviroScience will perform two general tasks each year that weevils are stocked. No monitoring or follow-up is included in this option and is generally not recommended because our biologists would not be able to communicate the progress of the weevil activity. For large projects, this communication is crucial for managing expectations of the biological control process and planning for stockings in subsequent years. Here is a description of the two tasks preformed under option II:

Task 1: Weevil stocking

Beds of aquatic vegetation, which are dominated by EWM, are stocked with *E. lecontei* and marked using Global Positioning System (GPS) technology (June – July) and an orange buoy. Project sites are selected in part by input from the client and in part by the presence of conditions in and around the site that would contribute to a successful propagation and overwintering of the weevil population. A minimum of five units of weevils are stocked per site.

Task 2: Mapping and Summary

A detailed map will be generated each year that weevils are stocked. The map will indicate the location of the project sites. Included in this task is a one page summary of qualitative information observed during the stocking event.

2012 Pricing for Paradise Lake



The following tables include costing for both Options I and II:

Option I – Monitoring Services Included (recommended)

Task 1: Initial survey and weevil stocking				
Labor				\$1,360.00
Other Direct Cost (GPS Rental, travel, per diem)				\$250.00
Total Cost of Task 1				\$1,610.00
Task 2: Follow-up Survey				
Labor				\$1,088.00
Other Direct Cost (GPS Rental, travel, per diem)				\$250.00
Total Cost of Task 2				\$1,338.00
Task 3: Report and Map Generation				
Report Generation				\$340.00
GIS Map Generation				\$170.00
Total Cost of Task 3				\$510.00
Total Cost of Tasks 1-3:				
				\$3,458.00
Weevils				
Year	Unit	# Of Units	Unit Cost	Total
2012	1,000 eggs & larvae	See Below	\$1,200.00	-
Total Cost with 5,000 weevils				
				\$9,458.00
Total Cost with 10,000 weevils				
				\$15,458.00
Total Cost with 15,000 weevils				
				\$21,458.00
Total Cost with 20,000 weevils***				
				\$23,458.00

***The cost per unit decreases to \$1,000/unit starting at 20 units.

Remember, as with any biological control, the more organisms stocked, the faster results can be expected.



Option II – Weevil purchase and stocking activities

Task 1: Initial survey and weevil stocking				
Labor				\$950.00
Other Direct Cost (GPS Rental, travel, per diem)				\$250.00
Total Cost of Task 1				\$1,200.00
Task 2: Summary with Map				
Summary Generation				\$200.00
GIS Map Generation				\$170.00
Total Cost of Task 2:				\$370.00
Total for Task 1 & 2				\$1,570.00
Weevils				
Year	Unit	# Of Units	Unit Cost	Total
2012	1,000 eggs & larvae	See Below	\$1,200.00	-
Total Cost with 5,000 weevils				\$7,570.00
Total Cost with 10,000 weevils				\$13,570.00
Total Cost with 15,000 weevils				\$19,570.00
Total Cost with 20,000 weevils*				\$21,570.00

*****The cost per unit decreases to \$1,000/unit starting at 20 units.
Remember, as with any biological control, the more organisms stocked, the faster results can be expected.**

Terms and Agreement

EnviroScience, Inc. will provide services and organisms for application of the **Milfoil Solution®** to Paradise Lake as outlined in the attached proposal. The following paragraphs outline terms of payment.

Payment- Payments for each year's costs are due in accordance with the following schedule (unless otherwise provided in writing):

- 20% of the total cost is due at the time of contract submittal.
- 80% (remaining balance of annual cost) is due at the time of the initial stocking or survey each year.



Please note: If Special Assessment District (SAD) monies do not come until a fall or winter tax bill, EnviroScience, Inc. will upfront the work and allow one payment for the total cost when the SAD monies become available. If interested in this option, please provide a written statement of the new payment terms.

Should the project be cancelled, delayed or otherwise postponed after May 1st of any year due to factors outside of the control of EnviroScience, Inc., 20% of the annual project cost for the year in question will be kept as a cancellation fee to defray costs associated with start up of the laboratory cultures. Any additional balance will be retained and applied to the project costs for the following year. Factors beyond EnviroScience's control may include, but are not limited to adverse weather, high water level, and actions of outside contractors hired by the client.

Stocking priority is determined by the date we receive a signed contract and deposit. The price in this proposal is valid for 120 days from the date of issuance.

Respectfully submitted by:



Rebecca McMenamin
Marketing Manager
EnviroScience, Inc.

Accepted and Authorized to Proceed by the Paradise Lake Improvement Board:

Signature

Print Name

Date

Send invoices to:

Name, Title and Address or Email (if preferred)



EnviroScience, Inc.
3781 Darrow Road, Stow, OH 44224 (800) 940-4025
Proposal Number: TBD

Standard Terms and Conditions

1. General

The following Standard Terms and Conditions, together with the attached Proposal and Fee Schedule constitute the Agreement between EnviroScience, Inc. ("ES") and the entity or person to whom the proposal is addressed ("Client") for the performance of professional services outlined in the proposal. The Standard Fee Schedule may be omitted for Lump Sum type Agreements.

2. Performance of Services

ES's services will be performed in accordance with generally accepted practices of engineers and/or scientists providing similar services at the same time, in the same locale, and under like circumstances. No warranty, express or implied, except as specified in Section 9 below, is included or intended by this Agreement.

3. Invoices, Payments

ES will submit invoices to Client monthly for work completed during the previous month and a final invoice upon completion of services. Payment will be due within thirty (30) days from invoice date. Client agrees to pay a service charge of one and one-half (1½) percent per month (18% per annum) on past due payments. If an invoice remains unpaid for a period in excess of sixty (60) days, ES reserves the right to pursue all appropriate remedies including stopping work and retaining all drawings and information without recourse. In the event ES must engage counsel to enforce overdue payments, Client will reimburse ES for all reasonable attorney's fees and court costs.

4. Insurance

ES is protected by Workers' Compensation Insurance, Commercial General Liability Insurance, Professional Liability and Automobile Liability Insurance coverages. ES will furnish certificates of insurance upon Client's request. Client agrees that ES will not be liable or responsible for any loss or damage beyond the amounts, limits, exclusions, and conditions of such insurance.

5. Disclosure of Hazards

ES will take reasonable precautions for the health and safety of ES's employees while at the Client's Site with consideration for the available information regarding existing hazards. Client will furnish to ES at the time of the Client's authorization to proceed, all information known to the Client, Client's Counsel, or Site Owner concerning physical hazards, oil, hazardous, toxic, radioactive or asbestos material in, on or near the site. If hazards are known to exist and the Client fails to advise ES of such substance or condition, and during the course of the work they are discovered, and such discovery in ES's opinion results or may result in injury or a health risk to persons, whether ES's employees or others, Client agrees to assume full responsibility and liability and shall hold ES harmless for any and all claims, demands, suits, or liabilities for personal injury including disease, medical expenses, including but not limited to, continued health monitoring, and/or

death, or property damage, and for economic loss, including consequential damages.

6. Confidentiality

ES will hold confidential all business and technical information obtained or generated in performance of services under this Agreement. ES will not disclose such information without Client's written and/or verbal consent except to the extent required for: 1) performance of services under this Agreement; 2) compliance with professional standards of conduct for the preservation of public safety, health, and welfare; 3) compliance with any court order, statute or law, or governmental directive; and/or 4) protection of ES against claims or liabilities arising from the performance of services under this Agreement. ES's obligations hereunder shall not apply to information in the public domain or lawfully obtained on a non-confidential basis from others.

7. Ownership of Documents and Processes

All documents (including drawings, specifications, estimates, field notes, and other data) and all processes (including scientific, technological, software, and other concepts, whether or not patentable), created, prepared or furnished under this Agreement by ES or ES's independent contractors and consultants pursuant to this Agreement, are instruments of service in respect of the project and shall remain the property of ES whether or not the Project is completed. ES shall retain ownership of all documents, drawings, specifications, estimates, field notes, other data, and developed technology or processes and any copyright or right to patent thereto. Client may make and retain copies thereof as is necessary; however, such documents are not intended or represented to be suitable for additions, extension, alterations, or completion of the project by others, or use in any other project. Any reuse without written verification or adaptation by ES for the specific purpose intended is at Client's sole risk without liability or legal exposure to ES or its independent contractors or consultants. Client shall indemnify, defend, and hold harmless ES and its independent contractors, and consultants from all claims, damages, losses, and expenses, including attorney's fees arising out of or resulting therefrom. Any such verification or adaptation will entitle ES to further compensation.

8. Trade Secrets and Proprietary Information

Client acknowledges that ES has developed a number of protocols, techniques, and procedures, as well as specialized equipment for performing and ensuring the quality of laboratory and field services that it provides. Further, the Client acknowledges that ES regards this technical information as being its trade secrets. Client agrees not to use or disclose, directly or indirectly, any such trade secret to any person or organization, unless expressly authorized by ES.

9. Milfoil Solution® Process-specific Terms, Conditions and Warranty

a). Any written or verbal information, other than published scientific studies or written ES sales literature, transferred by ES to the Client concerning the methodology used to rear and stock organisms used in the Milfoil Solution® process are considered

proprietary by ES, and are specifically considered to be trade secrets. In addition to the conditions set forth in Section 8, to protect these trade secrets and comply with state and federal regulations, the Client agrees not to remove, transfer, culture, or otherwise use Milfoil Solution® organisms supplied by ES in any other location or for any other purpose.

b). Client hereby agrees to allow ES access to the waterbody for a period ten years from the date of this contract for the purposes of continued research. Client also authorizes ES to collect limited numbers of adult Milfoil Solution® organisms from the waterbody for culturing purposes. In the event that ES collects organisms for this purpose, ES agrees to provide a written report detailing its activities, and furthermore agrees to restock within the same season two times the number of organisms removed.

10. References

Client agrees that ES has authority to utilize Clients name and general descriptions of the project work or service performed as references to other clients.

11. Limitation of Liability/Dispute

To the fullest extent permitted by law, the total liability of ES to Client, and anyone claiming by, through, or under Client, for any and all injuries, claims, losses, expenses, or damages whatsoever arising out of or in any way related to ES's services, from any cause or causes whatsoever, including, but not limited to, negligence, errors, omissions, strict liability, breach of contract, or breach of warranty, shall be limited to an amount of \$50,000 or ES's fee, whichever is greater.

If Client prefers not to limit ES's liability to this sum, ES may increase this limitation upon Client's written request.

12. Dispute Resolution

All claims, disputes or controversies arising out of or in relation to the interpretation, application or enforcement of this Agreement shall be first submitted to non-binding mediation pursuant to the Rules for Commercial Mediation of the American Arbitration Association.

13. Legal Action

All legal actions by either party against the other for any cause or causes, including but not limited to breach of this Agreement, negligence, misrepresentation, breach of warranty or failure to perform in accordance with the standard of care, however denominated, shall be barred five (5) years from the day after completion of ES's services or the time that the party knew or should have known of this claim, whichever is sooner. In the event that Client institutes a suit against ES, and if such suit is not successfully prosecuted, or if it is dismissed, or if a verdict is rendered for ES, Client agrees to pay ES any and all costs of defenses, including attorney's fees, expert witnesses' fees, and court costs and any and all other expenses of defense which may be reasonably necessary, immediately following dismissal of the case or immediately upon judgment being rendered in favor of ES.

14. Precedence

These Terms and Conditions shall take precedence over any inconsistent or contradictory provisions contained in any proposal, contract, purchase order, requisition, notice to proceed, or like document.

15. Severability

If any of the Terms and Conditions are finally determined to be invalid or unenforceable in whole or part, the remaining provision shall remain in full force and effect and be binding upon the parties. The parties agree to reform these Terms and Conditions to replace any such invalid or unenforceable provision with a valid and enforceable provision that comes as close as possible to the intention of the stricken provision.

16. Survival

These conditions shall survive the completion of ES's services on this project and the termination of services for any cause.

17. Governing Law

This Agreement shall be governed and construed in accordance with the laws of the state of Ohio.

