

## **-Environmental Management Plan-**

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### **1.0 Introduction**

#### *Mission Statement:*

- The Emmet County Sportsmens Club (ECSC) is committed to managing its shooting ranges in a manner which protects the environment and assures future generations the opportunity to participate in the shooting sports well into the future.

#### *Purpose:*

- Identify issues of potential environmental concern.
- Identify, evaluate, and prioritize appropriate actions to manage these issues.
- Select appropriate “Best Management Practices” (BMP) for implementation.
- Develop a BMP implementation schedule.
- Identify ways to measure the “Environmental Management Plan” (EMP) success.
- Annually evaluate the progress of the EMP in achieving the environmental goals.

#### *Goals:*

- Prevent off-site migration of lead through groundwater and surface water runoff.
- Discourage ingestion of lead by wildlife.
- Maintain soil pH between 6.5 and 7.5 in the shot fall zone.
- Enroll in the “Michigan United Conservation Club (MUCC) Shooting Range Environmental Stewardship Program” (MUCC SRESP).

### **2.0 Site Assessment**

#### *Description of Ranges and Support Facilities:*

The Emmet County Sportsmens Club (ECSC) was founded shortly after World War II and was located on a site east of Petoskey, Michigan on US Highway 31. In the early 1990’s it became increasingly apparent that the site, while conveniently accessible to town, was too small to support any expansion and was rapidly being surrounded by commercial development. A search was initiated to find a more suitable location and in November of 1996 a 91 acre parcel located in

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Readmond Township was obtained from the Michigan Department of Natural Resources (MDNR) through a land exchange.

The new site is an irregularly shaped parcel that surrounds another shooting club, the Harbor Springs Outdoors Club (HSOC), on three sides. It has approximately one-half mile of frontage on West Robinson Road, the primary east-west corridor through this portion of the county, and shares its north, east, and southerly borders with State of Michigan owned land. It is approximately three (3) miles east of Lake Michigan and ranges from 510 to 560 feet above Lake Michigan's mean lake elevation. The depth of ground water based on area well logs is approximately 525 to 575 feet. The site is entirely wooded with northern hardwood species such as Maple, Beech, Ash, Basswood, and Cherry. Wildlife known to frequent the property includes deer, turkey, numerous bird species, and small mammals such as squirrel and porcupine.

The use of the property as a Shooting Range was approved by the Readmond Township Board at their July, 1997 meeting. The range site-plan was reviewed by the Emmet County Planning and Zoning Board and the Club received its approval by a letter dated July 15, 1997.

During the summer of 1997 an access road and parking area were built, power was brought in and a combination storage barn and clubhouse completed. The range sites were cleared and graded, and two combination skeet-trap ranges and a five-stand range constructed. The facility was sufficiently complete to begin shooting during the fall of 1997.

During the ensuing eight years the Club has acquired eleven (11) new traps, three (3) of which are used on the skeet-trap fields and the balance on the five-stand. A voice release system for trap shooting was installed several years ago and the five-stand is computer controlled providing "button" target release and automatic scoring.

The Club has recently undergone a legal review wherein the bylaws were revised and brought up to date and our tax status clarified. We are now a 501(c)(7) corporation and have been ruled property tax exempt by Emmet County. In addition we are in the final stages of reaching an agreement with the Little Traverse Conservancy (LTC) for the sale of a Conservation Easement on our property.

The Club is oriented entirely for shotgun shooting with no provision for a rifle or pistol range. Our sister club, the Harbor Springs Outdoors Club, which is contiguous to the Emmet County Sportsmens Club, is devoted entirely to rifle and pistol shooting and we have an agreement wherein we share each others facilities.

At present we have approximately 64 members and based on target usage we shoot approximately 100,000 rounds a year. (See attached Aerial Photo of Club property - Exhibit 1).

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### *Existing Environmental Conditions:*

The two (2) combination trap and skeet fields and one (1) five-stand sporting clays field are located on approximately 6.5 acres of cleared and graded land within our 90+ acre site. The entire site is upland northern hardwood forest, with moderate to moderately steep topography and well drained sandy-loam soils. (See attached Aerial Photo and Soils Map - Exhibits 1 & 2).

In general those areas in Emmet County within 3 to 4 miles of Lake Michigan are forest covered ancient sand dunes. A log done on a water well located approximately ¼ mile west of our shooting fields indicates layers of sand, gravel, clay, and hardpan to a depth of 597 feet, with hardpan or clay stratum distributed throughout the entire soil profile. Based on surface soil samples taken in January, 2006 the soil pH in the shot fall zone averages 5.8. (See attached Soils Report - Exhibit 4)

The maximum lead shot fall zone has been estimated to be between 375 and 600 feet from the shooting stations and for the most part lies within the woods and at least partly within moderately steep topography. (See attached Aerial Photo - Exhibit 1) There are no water courses or wetlands on the entire 90+ acre site. The cleared shooting area was planted to grass shortly after it was graded and erosion from rain run-off has never been a problem. The soil in the remaining forested area is totally stabilized by forest ground cover and presents no erosion problems.

At the present time we estimate that we are depositing approximately 350 pounds of shot per acre per year into an overall shot fall zone of approximately eighteen (18) acres. The densest accumulation, estimated at 500 pounds per acre, falls within an area of approximately ten (10) acres. No evidence of spent lead shot has ever been found do in part to the fact that each year leaf fall covers the entire shot fall zone. Shot reclamation has never been undertaken at this range.

The environmental impact resulting from the deposition of lead shot is presumed to be negligible at this time. The pH of the soil in the shot impact area is not significantly lower than the optimum range of 6.5 - 7.5 and probably has little or no effect on the solubility, mobility, and bioavailability of the lead shot being deposited. In addition the limited amount of shooting activity anticipates a low level of shot accumulation, and the heavily forested and vegetated shot fall area virtually eliminates lateral and vertical shot migration.

Target debris, while discernible, slowly disappears into the ground due to our regular mowing of the target impact area. In addition, we are now using **Lawry Non-Toxic**, PAH free targets which are considered to be environmentally “friendly”. Spent plastic wads, in the areas of greatest concentration, are periodically gathered into piles and picked-up.

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### 3.0 Combination Trap and Skeet Ranges and Five-Stand Range Action Plan

#### *Potential Management Alternatives:*

- Review preliminary soil test results and discuss alternatives.
- Establish test plots in the area of densest shot fall.
- Monitor test plots annually for soil pH and visible shot accumulation.
- Apply lime in varying amounts to test plots to determine the optimum application rate and frequency required to maintain, or bring the soil pH to an acceptable level.
- Seek professional advice and analysis regarding soil pH levels and their relationship to lead accumulations.
- Seek and review professional journals and documentation specifically related to shooting ranges and environmental issues, with a focus on lead accumulation and its impact.
- Continue gathering and pick-up of plastic wads when appropriate and necessary.
- Establish a fund with the specific purpose of accumulating monies to offset the costs of future environmental remediation activities.

#### *Selection of "Management Alternatives" to be implemented:*

- Selection of Management Alternatives were prioritized on both short and long term goals, cost, and positive environmental impact.

#### *Alternatives Selected:*

Based on the stewardship goals of the plan, the benefits obtained, and the current availability of funds, the following alternatives were selected for implementation during the first two (2) year MUCC SRESP enrollment period.

- Review preliminary soil test results and discuss alternatives.
- Review professional journals and documentation specifically related to shooting ranges and environmental issues, with a focus on lead accumulation and its impact.
- Establish test plots and annually monitor them for soil pH and lead shot accumulation.
- Experiment with lime application rates and methods to determine the most appropriate procedure required to maintain, or bring the soil pH to an acceptable level.
- Continue gathering and pick-up of plastic wads when appropriate and necessary.
- Establish a fund with the specific purpose of accumulating monies to offset the costs of future environmental remediation activities.

These alternatives were selected to address immediate environmental concerns, and to initiate management practices that will create long term benefits. In order to achieve the goals of the EMP the following actions are necessary.

- Management Actions: Assign personnel responsible for initiating, conducting, and completing the alternatives selected.

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- Operational Actions: Continue monitoring the test plots and collecting soil samples for pH analysis on an annual basis, and consult with the Emmet County Cooperative Extension Service (MSU) for recommendations on lime application rates to maintain, or bring the soil pH to an acceptable level.

### *Schedule for Implementation:*

- 2006 - Obtain soil samples and contact Emmet County Cooperative Extension Service (MSU) immediately, and annually thereafter for pH soil testing and analysis. (Documentation to be attached under Appendix A - Record Keeping)
- 2006-07 - Establish test plots in the area of densest shot fall.
- 2006 - Within the first MUCC SRESP enrollment period of two (2) years, the results of monitoring the test plots for pH level, along with additional considerations and recommendations, will assist the ECSC Board in determining the potential need for soil stabilization.
- 2006 - Based on professional recommendation and analysis, test plot lime application experiments, and other determining factors, an appropriate application method, rate, and frequency will be established and implemented, if necessary.
- 2006 - Continue gathering and pick-up of plastic wads when appropriate and necessary... Year over year.
- 2006 - Establish by ECSC Board action an "Environmental Remediation Fund" (ERF) with an appropriate funding formula. (Documentation to be attached under Appendix A - Record Keeping)

### *Responsibilities:*

- The ECSC Board of Directors, or a Committee appointed by the Board of Directors will be responsible for overseeing the implementation of the actions listed above. If and when necessary and appropriate, volunteers from the Club or a reputable contractor will apply lime to balance the soil pH, and continue gathering and pick-up of plastic wads.

## **4.0 Measuring Success**

*The "Measure of Success" will be determined by documenting the following:*

- The soil pH in the shot fall zones is maintained at an acceptable level with supporting soil testing reports.
- When appropriate and necessary, spent plastic wads will be gathered and picked-up with supporting documentation.
- An "Environmental Remediation Fund" (ERF) will be created by ECSC Board action, documented by the Treasurer, and recorded by the Secretary in the monthly Meeting Minutes.

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- Appropriate written records will be created documenting actual implementation, completion dates, responsible persons, etc. (See Appendix A - Record Keeping).

### **5.0 Plan Review and Revisions**

While the present level of use and the unique physical features of the Range-Site do not result in any serious environmental issues (with the possible exception of soil pH), the ECSC Board is committed to addressing, preventing or mitigating any and all environmental problems that may arise in the future.

We will continue to assess the environmental conditions of the Range Site, review the plan on an annual basis, update the EMP as necessary, and set new goals as appropriate.

It is anticipated that the Club will expand its facilities and membership, and use will increase. Any expansion will be carefully reviewed to determine its impact on the environment. The design and construction of any expansion will be accomplished in such a manner as to reduce or eliminate its environmental impact. The increased use of the facility will be reviewed annually to determine lead shot accumulation. When it is technically and economically feasible, a lead shot reclamation program will be investigated. We will continue to meet the requirements of the MUCC SRESP for re-enrollment every two years.

### **6.0 Supporting Documentation**

**EXHIBIT 1 - AERIAL PHOTOGRAPH OF THE ECSC**

**EXHIBIT 2 - EMMET COUNTY SOILS MAP**

**EXHIBIT 3 - ECSC RANGE PHOTOGRAPHS**

**EXHIBIT 4 - SOIL TESTING REPORTS**

**EXHIBIT 5 - WATER WELL LOG**

**APPENDIX A - RECORD KEEPING**