

Eelgrass Seed Harvesting and Processing Guide

March 11, 2025 Update

Stephen Schott, Cornell Cooperative Extension
ss337@cornell.edu

Overview

- A summary presentation on the draft guide being developed for the LIS Eelgrass Collaborative
- The draft will be distributed for review in the near future with a final draft being available prior to the 2025 harvest season.

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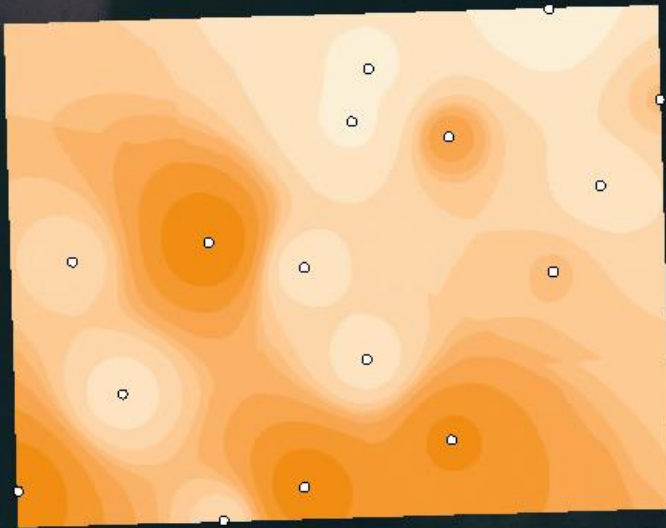
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Seed Harvesting

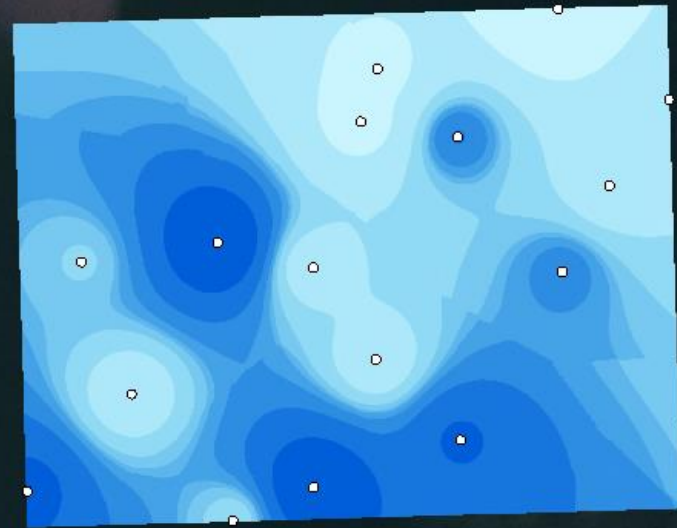
1. Meadow Selection/Assessment/Monitoring
 - Delineation and Characterization of Meadow (aerial/satellite imagery)
 - Meadow size
 - Relative density and patchiness
 - Surveys (transect and/or quadrat sampling)
 - Collaborative Eelgrass Flower Survey transect method
 - Track seed development and harvest window
 - Collects flower density and seed potential for small, discrete section of meadow.
 - Random Point Sampling
 - Quadrat sampling of flower shoots
 - Provides flower and seed density across the meadow
 - Estimate total potential seeds within meadow (determining 10% harvest limit)
 - Produce “heat map” that may help with targeting productive vs. less productive areas of the meadow.

“Heat” Map Characterization of Meadow

Flowers per m²



Seeds per m²



Random point sampling (16 stations; 0.25 m² quadrats) within a 6-acre section of a meadow.

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Seed Harvesting

2. Flower Shoot Harvest

- Conventional harvest methods focus on hand collection by snorkeling or SCUBA.
 - Low impact to meadows
 - Targeted harvest
 - Labor intensive
 - Liabilities
- Mechanical harvest methods (e.g. boat-mounted harvesters, “sleds”)
 - No in-water personnel
 - Expensive (initially)
 - Higher impact to meadow
 - Deep meadows may be difficult to harvest

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1. Flower Shoot Holding
 - Flow-thru tanks/raceways
 - Stagnant pool (Churchill method)
2. Seed Cleaning/Processing
 - Washing and Sieving separates seeds from organics
 - Mechanical Separation Techniques
 - Vertical Flume (Infantes)
 - Horizontal Flume (VIMS)
 - Vortex Separator (Delft University)
3. Seed Sterilization
 - Sodium hypochlorite (1%)
 - 70% Ethanol
4. Seed Storage
 - Cold Storage, High Salinity (0°C, 40-50 psu)
 - Copper sulfate
 - Nano-silver
 - Tannic acid

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5. Seed Viability

- Tetrazolium Chloride
- Sinking Rate (5-5.5cm/sec)
- Germination Tests