Bryophyte Reproduction & Dispersal in a Mixed Hardwood Forest
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Introduction

Bryophyte Importance:
- Bryophytes form extensive matts on decaying logs in forest ecosystems
- These Bryophytes
  - Important for soil formation
  - Provide moisture and shelter for invertebrates and small vertebrates
  - Serve as a seed bed

Little known about bryophyte dispersal and colonization in forest ecosystems
- Modes of Dispersal
  1. Spores
  2. Fragments
  3. Specialized Asexual Propagules
- Conventionally, Spores thought to be primary means of distant dispersal (> 5 m)
- Recent work indicates that fragments and asexual propagules may be equally capable of dispersal and subsequent colonization beyond 5 m.
  - Gemmules (Kimmerer 1991; Pohjamo et al. 2006; Rudolph 2009)
  - Brood branches (Kimmerer & Young 1995)
  - Fragments (Heinken et al. 2001; Parsons et al. 2007; Robinson 2012)

Long-term Study
- To investigate dispersal to and colonization of logs in northern forests, we established a long-term study at three properties maintained by the SUNY-Oneonta Biological Field Station (BFS).

Objectives
- Select appropriate sites for long-term study
- Collect baseline data

Methods

Initial Surveys
- We surveyed Greenwoods Conservancy, Rum Hill, & Thayer Farm to locate appropriate sites for the long-term study
- Sites determined suitable on assessment of bryophyte diversity & amount of coarse woody debris

At each site
- Central point established, representing location of log to be monitored over a period of several years
- Circular transects established around the central point at .5m intervals
  - Total radius of 10 m
- Locate & record bryophytes within each transect
- Small sample collected for identification

The results presented here represent data from two sites

Site Diagram: Sampling Method

References


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Figure 1. Total number of collections (black bars) and number of collections with sporophytes present (gray bars) for each species encountered at Rum Hill site.

Figure 2. Total number of collections (black bars) and number of collections with sporophytes present (gray bars) for each species encountered at Thayer Farm site.

Figure 3. The relationship between species abundance & sporophyte production in a linear regression based on all samples collected from Thayer Farm and Rum Hill sites.