

Monhegan Associates, Inc. An Island Land Trust
2016 Stewardship Management Plan *

DRAFT 8-13-16

**an update of the 2005
Monhegan Forest Stewardship
Management Plan by Mark Miller*

During the last eleven years, Monhegan Associates, Inc. An Island Land Trust (MAI), has used the Forest Stewardship Management Plan compiled by Mark Miller as a guide in fulfilling the organization’s original goals. This document builds on those recommendations and more recent assessments of the challenges MAI faces in its mission to preserve the over 300 acres of MAI’s wild-lands. Keys to success include MAI’s monetary, volunteer, and employee resources.

The highlights of this updated plan are:

- ~~continue to maintain, rehabilitate, and/or relocate trails so residents and visitors can access the enduring beauty of the forest and the cliffs
- ~~prevent invasive plants from dominating native species
- ~~research best practices in invasives and trails management and document all interventions using spreadsheets and contributing to iMapinvasives
- ~~provide relevant ecological information to the community
- ~~work with the community members and organizations on initiatives consistent with MAI’s mission
- ~~collaborate with naturalists and forge relationships with other local land trusts in mid-coast Maine
- ~~communicate MAI’s mission in a variety of ways, from the roadside cart to the world wide web
- ~~engage friends of Monhegan to further MAI’s goals through monetary contributions and greater participation in volunteer efforts
- ~~seek funding for large projects approved by the Trustees through grant applications

Since its inception in the 1950s, the mission of Monhegan Associates, Inc. has been, “to preserve for posterity the natural wild beauty, biotic communities, and desirable natural, artificial, and historic features of the so-called ‘wild-lands’ portion of Monhegan Island, Maine, and its environs, as well as the simple, friendly way of life that has existed on Monhegan as a whole.” For the founder, Theodore Edison, retaining the natural wild state of the undeveloped land on the island was the goal that informs all policies.

The term “wild-lands” was understood at the founding of Monhegan Associates – and is still understood today – as a type of stewardship that allows nature to take its course with the least practicable interference. Monhegan is unique. And though it can be useful to solicit “expert” advice on how best to deal with invasive plants or how to maintain trails, **every human intervention in the wild-lands should be judged against how well it preserves the natural wild beauty of the island.**

In addition to MAI's charge to preserve the so called "wild-lands," the certificate of organization also requires MAI "to collect, collate, maintain, and preserve for posterity, records and archives respecting the flora, fauna, and human inhabitants and sojourners on said island, and to make the same publicly available for educational, literary, scientific, and historical research, study, and consultation." MAI's Stewardship Plan must meet this standard as well.

Monhegan Associates, Inc. has always approached stewardship in a uniquely minimalist manner; trails are rugged and trail markings are discrete to preserve a natural environment for those enjoying the high cliffs and quiet forested paths. Visitors and residents enjoy the peace and beauty of the wild lands with little intrusion from human interference.

Despite the desire to allow the undeveloped lands evolve naturally, certain areas of the island are becoming overgrown with invasive plants. Species such as oriental bittersweet, black swallowwort, multi-flora rose, Himalayan balsam, Japanese knotweed, shrubby honeysuckle, and Japanese barberry crowd out native species and, left alone, may create monocultures. These ecologically compromised environments may lack appropriate food and habitat for native insects and birds. (See invasives map in appendix)

Because the island once was home to many grazing animals, much of the original forest canopy near the town and in the south end was removed in the 18th and 19th centuries. In the early 20th century as the farms were abandoned and the livestock was no longer needed, grasses, shrubs, spruce, and hardwood began to grow back. Deer were brought to the island in the mid-20th century, became overpopulated, and ate much of the new growth. They were removed in the 1990s. So into a landscape first disturbed by agriculture and then overrun by deer, invasive plant species began to spread.

Today MAI has undertaken the task of controlling these invasive plants so they do not crowd out the native species. Thanks to the help of individual volunteers, community service organizations, our forestry stewardship crew, and collaboration with various naturalists, we have begun the task of removing invasives from the relatively unaffected north end of the island and – as resources have permitted – removing invasives that may threaten the forest canopy, from the southern end of the island to allow native trees, shrubs, grasses, and wildflowers to flourish broadly again. MAI has established relationships with scientists and other environmental experts who have provided advice on best practices for invasives management and trail maintenance and rehabilitation. These connections have helped MAI make great progress in maintaining a healthy trail system. The work of combatting invasives is perhaps a greater challenge, but with their help MAI will continue to refine its methods. This task will require extensive effort and resources over the coming decade.

Another dynamic that affects the health of Monhegan's wild-lands is the increasing number of hikers who enjoy the trails. From Memorial Day to Columbus Day six ferry trips each day bring visitors from Port Clyde, Booth Bay Harbor, and New Harbor creating the potential for hundreds of visitors on any given day. Keeping the trails open requires many hours of maintenance every season. Over time erosion takes its toll making trail rehabilitation or relocation advisable. Trail signage, trail maps, information on the MAI cart in the village, information from the captains of the ferries and ecology lectures all help to educate visitors. Finding ways to better use these opportunities for education will help protect the land and provide visitors with the information they need to have the best possible experience in the wild-lands.

In order to continue fulfilling its mission, MAI is working with forestry experts, university scientists, and conservation organizations to determine how best to responsibly care for the land

held in trust. The challenge MAI faces is to develop a sustainable plan that makes the best use of its funding and labor resources as well as increasing the volunteer base. These challenges require research, consultation, observation, documentation, planning, outreach, and finally hard physical work to foster a diverse environment, undeveloped and available for all to enjoy.

Looking Back

MAI has made tangible progress toward accomplishing the recommendations set out in **2005** in the *Monhegan Forest Stewardship Management Plan* written by Mark Miller based on research by Dr. Bill Livingston and Richard Dyer from the University of Maine. The recommended management activities from that report are:

1. *Develop an invasive species control and monitoring program.* A comprehensive control strategy and monitoring program should build on past work and that of Livingston and Dyer. Regular monitoring will assess efficacy of treatments, and assist in scheduling and project prioritization. Restoration of degraded plant communities may be needed.

2. *Trail maintenance and user education.* Trails should be maintained for user safety and appreciation, as well as for environmental protection. Heavily used routes should be hardened to protect soil and water quality. Interpretive signing at trailheads should educate trail users about environmental impacts.

3. *Mark boundaries.* Boundary lines should be blazed and painted. Surveying may be required for some segments.

Working toward these goals over the last ten years, MAI has striven to remain consistent with its original mission. Largely through volunteer efforts, friends of MAI have maintained trails, managed invasive infestations, and worked in partnership with the town to foster the strength of the community as well as care for the wild lands.

Highlights of accomplishments:

Invasives control

- + Reduced barberry on Alder #6 , White Head #7, Maple #16, Underhill #3, Trail #1/1A at Burnt Head, Red Ribbon #9, Evergreen #15, Station Hill #18, and Lobster Cove,
- + Bittersweet abatement on White Head #7, Trail 1A north of White Head #7, Underhill #3, Trail #1 at Calf Cove
- + In addition to Japanese barberry, Japanese knotweed, Asiatic bittersweet, black swallowwort, deadly lightshade, and Japanese honeysuckle which Livingston/Dyer mentioned, other aggressive invasive plants have been identified such as purple loosestrife, multi-flora rose, shrubby honeysuckle and Himalayan balsam.

Trail maintenance and user education:

- + Under the guidance of trails consultant, Lester Kenway, MAI prioritized several trails projects
- + Bog bridges have been constructed in the following locations: Underhill #3, Gull Cove #5, Maple #16, Black Head #10, Trail #1 at Calf Cove, Gull Cove, and between Burnt Head and Lobster Cove.

- + Trail rerouting and/or hardening due to erosion and to avoid wet areas Alder #6, Trail #1 at Pebble Beach, Lobster Cove, Underhill #3, Cathedral Woods #11, and Station Hill #18, Pebble Beach #14
- + Constructed water bars to curtail erosion on Lobster Cove trail, White Head #7, Underhill #3, Gull Cove #5
- + Revised the Trail Map to encourage day trippers to use White Head #7, Burnt Head #4, and Lobster Cove trails
- + Informational displays on the MAI cart on the main road through town Boundaries
- + Trail rerouting to correct property encroachment Pebble Beach #14, Trail #1 Calf Cove, Trail #1 near Cooper property, Lobster Cove trail
- + All of MAI's property has been surveyed

Looking Ahead – Goals

Much work remains to be done. As Monhegan attracts more visitors who hike the trails and as invasive species threaten the biodiversity of the forest, MAI faces growing challenges in its mission to preserve the health of the island's wild-lands. MAI's first responsibility is to preserve the wild-lands. The purpose of the preservation is to make the forest available in the present and in the future for people to enjoy and to find solace in the natural world and sometimes to gain a greater understanding of that world. In order to remain true to its mission, over the next ten years, MAI must focus on the following imperatives:

- ~~keep the trails open
- ~~stop the spread of invasive plants currently gaining ground in the forest
- eliminate new invasive plants before they gain a foothold
- areas currently overrun by invasive plants some of which, if left unchallenged, create a monoculture, destroy habitat and foods for insects and birds, and alter soil biology.
- ~~detect and
- ~~reclaim
- may

This updated Stewardship Management Plan will focus on goals in the following areas:

1. Trails

A. Maintenance

- Maintain bridges and bog bridges yearly
- Maintain water bars yearly
- Use gas powered trimmer for more efficient maintenance of grassy trails seasonally
- Revise signage policy for clarity/information/uniformity

B. Rehabilitation

- Rehabilitate and or reroute Trail #1 Little Whitehead steep slope.
(long term goal, grant \$ needed)
- Rehabilitate/reroute Trail #1A south of Long Swamp due to beaver flooding, fall 2016
- Reroute or repair areas of erosion on Trail #1 from Calf Cove to Evergreen Trail #15,
long term
- Lay stepping stones on wet area of Fern Glen Trail #17, long term

Construct a bridge on Trail #1 north of Squeaker where currently a log rests over a ravine, fall 2016

Create a trail “app”

Add “To Town” signs where some trails intersect with town roads

C. Volunteers

Maintain and increase volunteer base for Friday mornings and Adopt-a-Trail and recognize their contributions more widely

Maintain relationships with current volunteer groups and recruit more

2. Ecology

A. Education

Continue the Summer Ecology Lecture Series

Seek opportunities for collaborative research and education such as our ongoing relationships with Barry Logan from Bowdoin College who continues to research the effect of Dwarf Mistletoe on both white and red spruce on Monhegan, Nancy Sfterra of the Nature Conservancy, Nancy Olmstead of Maine Natural Areas Program, and Heather Deece of the Island Institute

Educate the community and visitors about invasive plants on Monhegan

Through lectures, nature walks, publications and notices encourage good stewardship of the land

B. Invasives

Periodically revisit areas cleared of invasive plants to prevent regrowth

Educate property owners so they may choose to remove invasive plants from their property

Identify and remove any invasive plants on the north end of the island and along trails using best practices for time of removal, method of removal, and disposal

Be vigilant to identify new invasive plants and use EDRR (early detection rapid response) to eradicate the first signs of new invasives and currently targeted invasives in new areas

Establish a 15’ X 30’ tree nursery near the Underhill Trail #3 to grow a variety of hardwood and white pine seedlings and transplanted red spruce

Retain/build on relationships with scientists to advise MAI on ways to approach invasives management and evaluate priorities for intervention

Current Targeted Invasive Plants:

black swallowwort	Japanese barberry	purple loosestrife
Himalayan balsam	Oriental bittersweet	multi-flora rose
shrubby honeysuckle		

Invasive Species to Look Out for

wild parsnip	garlic mustard	
giant hogweed	Japanese knotweed	phragmites
autumn olive	common buckthorn	glossy buckthorn
Norway maple	burning bush	

(See appendix for a complete list of invasive plants in Maine)

3. Research/Records

- Research best practices for managing invasive plants including removal methods, disposal, and maintenance of cleared area, develop a library
- Map all invasive infestations using iMapInvasives
- Keep detailed records to track the efficacy of the methods used including photographs
- Record trail projects on the MAI Trails Maintenance Spreadsheet
- Record invasive control efforts on the MAI Invasives spreadsheet
- Set up and maintain photo plots to monitor growth and see how the succession and advance of plants is progressing. Collate and examine results in 2026

4. Community Engagement / Outreach

- Increase membership 5%-10% yearly
- Print and post a map of Monhegan with MAI's boundaries delineated (display place needed)
- Print and post a map of Monhegan with areas of invasive infestation on MAI land highlighted and identified (display place needed). Make the map available on-line.
- Update MAI's website to be easier to navigate and more informative. Consider hiring a consultant.
- Recognize volunteers more prominently (individuals, groups, families, Adopt-A-Trail)
- Utilize resources such as other land trusts in the greater Maine community to facilitate accomplishing goals. Continue to support community initiatives and goals such as those promoted by MISCA and the Community Farm Project
- Develop a policy to allow abutters to MAI land to clear invasives along the boundary, 2016

How will MAI achieve the above goals?

- Solicit the advice of naturalists, scientists, and forestry experts*** as consultants for the Trustees who will develop a policy for management of invasives, and other flora or fauna hazardous to the environment and/or the people who pass through it considering the risk/benefit of any such policy prescriptions.
- Hire a Forest Steward who has experience in managing the invasive species identified in this document as threats to the Monhegan's ecosystem.
- Prioritize eliminating patches of invasives on the north end of the island, and remain vigilant for new incursions to respond quickly when any are found
- As time and resources permit, work to control invasive plants on the south end of the island, focusing especially on vines that strangle trees
- Establish a method and maintain oversight for keeping and maintaining forest records and research
- Continue to utilize the skills and experience of the Fall Forestry Crew for invasive control and trail projects
- Continue the MAI intern program for summer projects

Maintain invasives map yearly to reflect types of invasives, areas of infestation, and areas cleared of invasives on all MAI property
Recruit more volunteers (i.e. adopt-a-trail, individuals, families, organizations)
Hire independent contractors as needed (ie. poison ivy control, grant writing)
Research and apply for grants to facilitate the goals listed above
Establish a Fund Raising Committee
Increase revenues by:
~installing an Iron Ranger for donation collection for a period of experimental use
~posting information about projects on website and in MAI Newsletter to inform the public aware MAI's efforts in maintenance, rehabilitation, and invasive management
~increasing membership
~prioritizing donations on MAI website

The successful implementation of this plan will require establishing priorities and strategizing to determine where MAI can show the greatest impact for the efforts expended. Visible progress is a necessary component in accomplishing the goals outlined above. Such progress will provide for the ongoing health of the forest; maintain the beauty of the wild-lands; and motivate planners, workers, and donors to continue in their efforts to fulfill MAI's mission.

~~***the advisory board~~ **the consultants** should be composed of professionals listed under resources such as Nancy Sferra, Nancy Olmstead, Dr. William Livingston, Heather Deece, Barry Logan, Jaret Reblin as well as others familiar with the problem of invasive species in Maine.

Resources

The following are ad hoc resources. More names can be added as we develop new relationships.

David Soule, Jr db@ssllaw.com Legal Counsel

Rebecca Fitzpatrick rebeccafitzp@yahoo.com Trail Crew Leader, MAI intern, Invasives Management

Willow Bates, willowsbates@gmail.com MAI intern, Outreach Memos

Lillian Harris lillianharris@gmail.com former Ecology Chair, Intern, Outreach Committee, author of Monhegan Nature Guide:

Nancy Sferra nsferra@tnc.org , Director of Stewardship and Ecological Management, Nature Conservancy, (Ecology talk, 2015)

Nancy Olmstead nancy.olmstead@maine.gov, Invasive Plant Biologist, Maine Dept of Agriculture, Conservation, and Forestry, Maine Natural Areas Program

forest.umaine.edu/files/2016/03/Invasive-Plants-in-Maine-Forests-Nancy-Olmstead.pdf

Heather Deece hdeese@islandinstitute.org , Vice President Research and Strategy, Island Institute, 386 Main Street, PO Box 648, Rockland, ME 04841

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Mike Falla falla@zwi.net, surveyor, prepared surveys of MAI land.

Barry Logan, Professor of Biology, Bowdoin College. Researching effect of dwarf mistletoe on white and red spruce

Jaret Reblin, Bowdoin College
Dr. William Livingston, University of Maine, Associate Professor of Forest Resources, School of Forest Resources; Associate Director of Undergraduate Programs, School of Forest Resources
Maine Land Trust Network
Midcoast Conservancy

Websites

forest.umaine.edu/files/2016/03/Invasive-Plants-in-Maine-Forests-Nancy-Olmstead.pdf
UMaine Ext. factsheets
Michigan DNR – Invasive Species Best Control Practices
stateconservation.org
iMapInvasives Meg Wilkinson, Invasive Species Database Program Coordinator,
New York Natural Heritage Program, 518-402-8983
Maine Shoreline Zoning www.maine.gov/dep/land/siz/citizenguide.pdf
EDDmapS.org -- IPANE (Invasive Plant Atlas of New England)
Maine Invasive Plants
www.maine.gov/dacf/mnap/features/invasive_plants/invsheets.htm
monheganassociates.org –_About Us – Our History – Useful References:
2005, Stewardship Management Plan by Mark Miller
2005 Trails Assessment by Lester Kenway
Dwarf Mistletoe Study – Barry Logan

This plan was developed by Judy Grey, Glenn Burdick, and Richard Farrell with advice from Nancy Sferra, George Cabot, Emily Morse, Fred Grey, and Lillian Harris.

Appendices

1. Maine Natural Areas Program List of Invasive Plant Species of Maine
Maine Natural Areas Program
Department of Agriculture, Conservation and Forestry
2. LUPC Land Use Guidance Map
3. Survey map, Mike Falla**
4. MAI Trails Map 2016**
5. Invasives Map**
6. Abutters Policy**

**need to add these

1. Maine Natural Areas Program List of Invasive Plants Species of Maine

Section 1. Plant species currently considered invasive in Maine.

Species Common Name
Alliara petiolata Garlic mustard
Berberis thunbergii Japanese barberry
Celastrus orbiculatus Oriental bittersweet
Cynanchum louiseae Black swallowwort
Elaeagnus umbellata Autumn olive
Fallopia japonica Japanese knotweed
Frangula alnus Glossy buckthorn
Hydrilla verticillata Hydrilla
Impatiens glandulifera Himalayan balsam
Lonicera morrowii Morrow's honeysuckle
Lonicera tartarica Tartarian honeysuckle
Lythrum salicaria Purple loosestrife
Myriophyllum heterophyllum Variable milfoil
Myriophyllum spicatum Eurasian milfoil
Phragmites australis Common reed
Poa nemoralis Wood blue grass
Potamogeton crispus Curly pondweed
Rhamnus cathartica Common buckthorn
Rosa multiflora Multiflora rose

Section 2. Plant species potentially or probably invasive in Maine.

Species Common Name
Acer platanoides Norway maple
Aegopodium podagraria Goutweed
Ailanthus altissima Tree of heaven
Amorpha fruticosa False indigo
Artemisia vulgaris Common mugwort
Berberis vulgaris Common barberry
Butomus umbellatus Flowering rush
Callitriche stagnalis Starwort
Cardamine impatiens Cuckoo flower
Centaurea maculosa Spotted knapweed
Cirsium arvense Canada thistle
Cirsium vulgare Bull thistle
Cynanchum rossicum Pale swallowwort
Euphorbia cyparissias Cypress spurge
Euonymus alatus Winged euonymus
Fallopia sachalinensis Giant knotweed
Heracleum mantegazzianum Giant hogweed
Hesperis matronalis Dame's rocket
Humulus japonicus Japanese hops
Iris pseudacorus Yellow iris
Ligustrum vulgare Privet

Lonicera japonica Japanese honeysuckle
Lupinus polyphyllus Western lupine
Nasturtium officinale Watercress
Ranunculus ficaria Lesser celandine
Robinia pseudoacacia Black locust
Rosa rugosa Rugosa rose
Thymus pulegioides Wild thyme
Tussilago farfara Coltsfoot

Section 3. Plant species highly likely to be invasive, though they are currently unknown from Maine.

Species Common Name
Ampelopsis brevipedunculata Porcelainberry
Cabomba caroliniana Fanwort
Egeria densa Brazilian waterweed
Fallopia baldschuanica Chinese bindweed
Glyceria maxima English water grass
Hydrocharis morsus-ranae European frog's bit
Lepidium latifolium Tall pepperwort
Lonicera mackaii Amur honeysuckle
Lonicera x bella Bella honeysuckle
Microstegium vimineum Japanese stilt grass
Myriophyllum aquaticum Parrot feather
Najas minor Slender-leaved naiad
Nymphoides peltata Yellow floating heart
Paulownia tomentosa Princess tree
Phellodendron amurense Amur cork tree
Polygonum perfoliatum Mile-a-minute vine
Populus alba * White cottonwood
Pueraria lobata Kudzu
Rubus phoenicolasias Wineberry
Trapa natans Water chestnut
*planted in Maine, but not known to have naturalized

2. Land Use Guidance Map

