

March 2023

INVASIVE PLANT MANAGEMENT PROGRAM MANUAL

THE MAINE DEPARTMENT OF AGRICULTURE, CONSERVATION AND FORESTRY
MAINE FOREST SERVICE

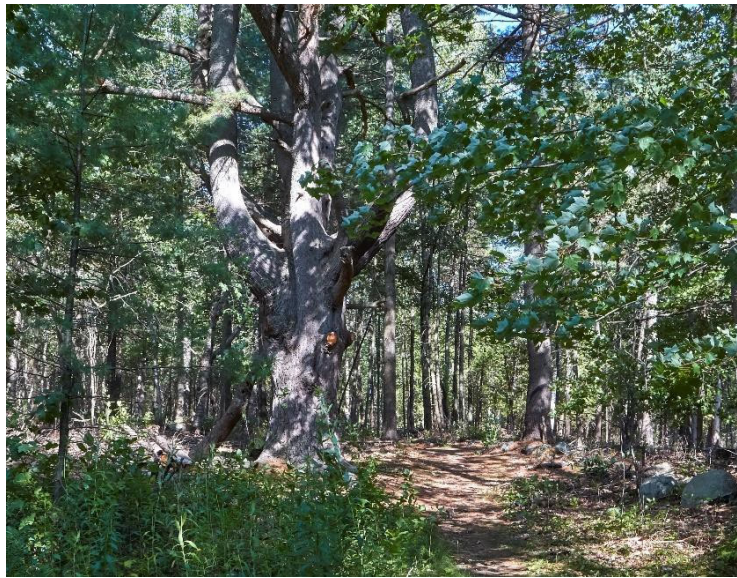
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LANDSCAPE SCALE RESTORATION GRANT PROGRAM



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Executive Summary

Overview: Maine has a unique opportunity for the eastern United States in our ability to significantly reduce and slow the spread of exotic invasive plants in our forest ecosystems. The Maine Forest Service (MFS) is seeking participation by municipalities, non-profit organizations, and private family woodland owners who are looking to address invasive plants on their properties. The primary emphasis will be in the Southern, Western and Eastern Megaregions as delineated by the USDA Forest Service's Forest Inventory and Analysis program. This project will support:

- a) invasive plant surveys by a trained professional to create Invasive Plant Control Practice Plans (IPCPP); and
- b) treatment of invasive plants on a sub-set of properties with approved IPCPPs.

MFS and the Maine Natural Areas Program (MNAP) will provide education and outreach to family woodland owners, foresters, municipalities, land trusts, loggers and other resource professionals to raise awareness of the issue and the program and recruit landowners and forest professionals to develop and implement practice plans and treatments.

Planning: MFS and MNAP will enlist a corps of trained foresters and other resource professionals (FORPs) who will contract with woodland owning entities (clients) to prepare IPCPPs. These professionals will participate in an Invasive Plant Academy (IPA), and demonstrate competence in writing an IPCPP. Graduates of the IPA will write parcel specific IPCPPs for landowners, with financial incentives offered to the landowner by MFS. These IPCPPs will include mapping (using iMapInvasives or other pre-approved format,) proposed method(s) of treatment, and preliminary treatment priorities. Woodland owners may then perform the treatments themselves, look for sources of funding other than this program, or apply to MFS for competitively allocated treatment funds. All landowners with IPCPPs will be required to report on their next steps.

Treatment: MFS will solicit applications for treatment from landowners with IPCPPs. MFS will rank the applications and determine which plans to implement, based on priority geographies, invasive species present (e.g., Early Detection species not yet widespread in the state), wildlife habitat values, and other parameters. MFS will select the contractor and use program funds to pay contractors directly; treatment work will not be cost-shared via landowners. Where possible the treatment work will be combined with similar work on public demonstration forests, allowing for economies of scale and landscape level coordination and impact. MFS will field-check the selected treatment sites to verify results.

Desired outcomes: The program will increase the number of acres where invasive species are contained or eradicated and reduce the number of acres of new infestation. This will protect and maintain native wildlife habitat and increase the ability of forests to regenerate trees and maintain timber value. Ultimately, it should become a standard of woodland stewardship to incorporate management and control of invasive plants into forest management planning and operations. MFS estimates that approximately \$236,400 will be available for this program, some of which will be available as financial incentives to landowners (for IPCPPs) and some as funding for on-the-ground invasive plant treatment performed by licensed applicators who contract with the State of Maine. This amount is contingent on federal and state funding levels. Financial incentives for IPCPPs will be 50% of actual cost, with not to exceed rates.

Invasive Plant Academy (IPA)

The purpose of the Invasive Plant Academy (IPA) is to prepare foresters and other natural resource professionals (FORPs) who wish to offer Invasive Plant Control Practice Plans (IPCPPs) as a business service to landowners who participate in this program. The IPA will be a multi-day, field-heavy learning event where FORPs will be trained in all aspects of the program: program requirements and procedures; invasive plant identification; preparation of Invasive Plant Control Practice Plans (IPCPP), including field survey techniques, mapping using iMapInvasives, treatment methods and considerations, and prioritization strategies. There will be an application process for potential attendees, to ensure that slots are filled with FORPs who will go on to participate in the program by preparing IPCPPs for eligible landowners. The IPA provides qualification/certification to prepare IPCPPs as part of this program. Financial incentives to landowners for IPCPPs, and subsequent eligibility to apply for on-the-ground treatment, will not be available unless the plan preparer has successfully completed the IPA.

Note, COVID-19 may influence IPA delivery and online instruction may be required.

IPA Agenda/components – DRAFT, final agenda to be provided separately:

Program overview / administrative aspects

- Landowner eligibility

- Financial assistance for IPCPPs – how to apply, rules, etc.

- Treatments – application and process:

 - Applications from properties that received IPCPPs (how to apply)

 - Ranking of applications, selection by MFS

 - Site meeting aka Pre-Implementation Conference

 - Contractor-applied treatment

 - Required follow-up monitoring by MFS personnel

- Monitoring and reporting requirements for FORPs and landowners

Invasive plant ID and ecology

- Invasive plant ecology

- Invasive plant management framework

- Maine Invasive Plants Field Guide* – how to use

- Other plant ID resources

Practice with ID, both indoors and out

Competency quiz

iMapInvasives boot camp

Overview of iMapInvasives

Data confirmation process

Required data: points, polygons, and searched area

Datasheets

Mobile App

Data entry workflows

Multi-Record Searched Area: searched area, points, and polygons all in one

Individual Presence Records: App (points only); browser (points, lines, and polygons)

Making maps for the IPCPP from iMap data

Required minimum maps

Simple screenshot maps

Data download, make maps in another tool

How to survey a site to prepare an IPCPP

Minimum required field survey efforts

Highly Probable Areas

High quality areas

Realistic minimum mapping unit

Flagging plants and treatment area delimitation in expectation of treatment

FYI, emerging technology for remote survey

How to prioritize and set goals for invasive plant management

Prevention

High quality areas: high-value timber stands, special wildlife habitat, key recreational areas (places where invasives have highest potential to impact landowner and/or ecological values)

Early Detection – Rapid Response or Early Management species

Triage and Suppression (what are reasonable goals in very badly infested areas?)

- Containment

- Suppression of seed set

- Keeping vines from killing trees

- Reaching a goal of recruitment of X # of many sapling trees of desired species

Best Practices / priorities specifically for timber harvest / FMP context

- Preventing new introductions

- Harvest planning and layout

Examples to discuss, field sites (site visit to a place with an IPCPP or CIG plan)

Writing an Invasive Plant Control Practice Plan – putting it all together

- Required components of the written portion of the IPCPP

- Required maps

- Review and discuss multiple examples of IPCPPs

- Required review of IPCPPs that a FORP prepares (by program staff – MNAP, MFS)

- Required reporting to MFS upon IPCPP completion

- Practice – each FORP will draft an IPCPP based on one of the sites visited.

Control methods: how to select them

- No silver bullets, no matter what method used!

- Different methods of control

 - Mechanical: manual or with machines

 - Herbicide: foliar, cut-stem, basal bark, hack/frill, injection

 - Flame weeding with propane torch

 - Smothering/sheet mulching for herbaceous plants

 - Combinations of the above

Recommending specific control methods for invasive plants

- Integrated Pest Management (“Think First, Spray Last”) for invasive plants

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Multiple methods can be used on 1 property

Sensitive areas where additional rules apply e.g., Shoreland Zone, riparian areas

Need to incorporate landowner preferences/constraints (some LOs do not wish to use herbicides, some certifications prohibit certain products e.g., organic) and any neighborhood issues, e.g., adjacent organic landowner or landowner on Maine Pesticide Notification Registry

Town pesticide ordinances – check these before prescribing herbicide treatments

“Menu” of treatment options – *Maine Invasive Plants Field Guide*, other sources

Pesticide/herbicide “boot camp”*

* *This will NOT qualify IPA attendees to be licensed applicators*

Modes of action

Selective vs non-selective

Residual vs not soil active

Pre-emergent

Most commonly used active ingredients for invasive plant treatment and formulations of each including aquatic formulations; timing considerations

Application techniques: foliar, basal bark, cut-stem, hack and squirt

BPC, DEP, and SLZ: rules in or near wetlands, rules for soil disturbance and vegetation removal

Pesticide safety/toxicity: BPC

Landowner Requirements/Criteria to Participate

Private family woodland owners, municipalities, utility districts, soil and water conservation districts, educational institutions, land trusts and other non-profit entities, may apply for financial assistance and contractor-applied treatment that meets program guidelines. For treatment, preference will be given to applicants from the following counties: York, Cumberland, Oxford, Androscoggin, Franklin, Sagadahoc, Lincoln, Kennebec, Knox, Waldo, Penobscot, Hancock, and Washington.

Applicants who apply for program participation must meet specific criteria:

1. Type of ownership: Applicants must be private family woodland owners, municipalities, utility districts, soil and water conservation districts, educational institutions, land trusts and non-profit entities, or other entities that hold title to land, including joint owners or tenants in common, groups, associations, corporations, Indian tribes or other native groups, or other private legal entities. A married couple are considered one owner. **Corporations whose stocks are publicly traded, owners principally engaged in the processing of wood products from their ownership, and properties where the ownership of the timber is different from the fee ownership of the land are excluded.** Limited Liability Corporations, 501(c) 3 corporations, family partnerships, and similar entities that otherwise meet program requirements will be considered on a case-by-case basis. Such applicants may be asked to provide further documentation supporting their application.
2. Acreage limitations:
 - a. Applicants must own at least 10 contiguous wooded acres, but not more than 10,000 wooded acres statewide.
 - b. Applicants must include all owned woodland, in a contiguous parcel, in an Invasive Plant Control Practice Plan.
 - c. Eligible landowners may apply concurrently or otherwise for separate Invasive Plant Control Practice Plans on separate, non-contiguous parcels. Such applications may be approved at the discretion of the Maine Forest Service Landowner Outreach Forester, if in his/her estimation the parcels are sufficiently separated by distance, market area, forest type/region, landowner objectives, or other factors to warrant separate management.
3. Legal standing: Landowners who have violated federal, state, or local laws, regulations, rules, or ordinances regarding land use may be ruled ineligible by the State Forester. In any case, program funds may not be used to mitigate an existing violation or to satisfy any settlement agreement, consent decree, judgment, or other legal requirement or order resulting from a violation.
4. Employees of the Department of Agriculture, Conservation and Forestry and their spouses are ineligible to participate in this program as landowners or as Foresters or Other Natural Resource Professionals providing services to clients. Employees of the Department of Agriculture, Conservation and Forestry will recuse themselves from approval, evaluation, inspection, and other official action on plans or treatment practices by landowners to whom their relationship is that of a parent, child, sibling, aunt/uncle, in-law, grandparent or grandchild, to avoid the appearance of a conflict of interest.

All participants will be required to adhere/agree to the following program requirements:

1. Ownership: IPCPPs must be developed for, and on-the-ground practices must be carried out on, land owned by the landowner. In applying for program funds, landowners are representing that they own and/or have sole or legally delegated decision-making authority to implement and maintain the practices for the full practice period (minimum 5 years). Rights-of-way or similarly held lands with multiple owners of separable rights are **not** eligible, except for lands where the development rights are held separately for the express purpose of conserving land.
2. Forest land: Program policy is to offer plans and potentially on-the-ground treatment for:
 - a. Woodland with existing tree cover, including forested riparian areas and forested wetlands.
 - b. Existing or abandoned roads or trails that access forest land, and whose primary purpose is to access forest lands for forest management activities.
 - c. Rural lands that impact wooded land where invasive plants are a threat. For example, old fields, shrub thickets, and/or hedgerows adjacent to wooded land. If the applicant has questions about what lands are covered, please contact one of the program managers at MFS: Allyssa Gregory (Allyssa.Gregory@maine.gov, 441-2895) or Jan Santerre (Jan.Santerre@maine.gov, 287-4987).
3. Reimbursement: All MFS administered financial assistance payments for IPCPPs shall be a reimbursement for costs actually incurred, based on established reimbursement rates. Program related costs incurred prior to approval are not eligible. MFS Reimbursement payments to eligible landowners may not be assigned to others, including FORPs.
4. Payment Limitations: No landowner shall be eligible to receive more than \$1,200 annually in financial incentive payments for Invasive Plant Control Practice Plans.
5. Regulations: Any landowner that carries out treatment practices on their own shall be responsible for obtaining the authorities, rights, permits, or other approvals necessary to the performance and maintenance of the practices in keeping with applicable laws and regulations.
6. Forest land conversion: Recipients of financial incentives and/or program-funded on-the-ground treatment must agree to maintain the wooded acres covered in the IPCPP as forest land for a minimum of five years from the time of program application. Landowners who fail to do so will be required to repay the Maine Forest Stewardship Program for the amount of the financial incentive and/or the contracted cost of the treatment, with interest at the statutory rate. Applicants will take reasonable measures to protect wooded areas included in the IPCPP from destructive fire and destructive grazing.
7. Stewardship: In addition, program participants will avoid activities which:
 - a. impair soil productivity;
 - b. degrade water quality, wetlands, or riparian forest condition;
 - c. impair forest health;
 - d. have an adverse effect on threatened or endangered species;
 - e. introduce non-native invasive species;
 - f. result in unsustainable practices including reduction/elimination of desirable growing stock, or failure to assure adequate regeneration of desirable species.
8. Inspection: MFS Foresters and/or Maine Natural Areas Program personnel shall be granted permission for access to the owner's property to inspect areas covered by IPCPPs and/or contractor-applied treatments for the purposes of determining compliance with specifications, and to monitor

treatment maintenance for a period of five years from the date of the plan or the date of the treatment, whichever is longer.

9. **Monitoring:** During the project period, program participants are required to monitor any areas where contractor-applied treatments occur, and to report on this monitoring to MFS when requested in a survey at the close of the project. Project participants are also strongly encouraged to work with a FORP or other contractor to continue treating the invasive plants identified in their IPCPP, since a single bout of invasive plant treatment, while a good start, is not sufficient to gain control of most well-established invasive plant infestations.

Foresters and Other Natural Resource Professionals (FORPs) – Requirements / Criteria to Participate

IPCPPs prepared under this program are developed by private consulting foresters, and other natural resource professionals (FORPs), who have voluntarily agreed to participate in this program. Maine Forest Service will list eligible FORPs, and refer landowners requesting assistance to this list as appropriate.

In order to be eligible to deliver or administer services covered by this program, FORPs must meet the following criteria:

1. Accreditation: Foresters must be active Maine Licensed Foresters; or they must be Intern Foresters under the supervision of an active Maine Licensed Forester. Other natural resource professionals will be considered for participation, including Certified Wildlife Biologists, Licensed Arborists, landscape professionals, and others at the discretion of program staff.
2. Agreement: FORPs must enter into a written Agreement with the Maine Forest Service to:
 - a. Attend an Invasive Plants Academy presented and/or approved by the Maine Forest Service and the Maine Natural Areas program.
 - b. Provide services to landowners that meet all standards and specifications of services eligible under this program.
 - c. Enter into written agreements with clients that describe the services to be provided and the estimated cost or applicable fee structure.
 - d. Provide program services to client landowners solely on the client's behalf.
 - e. Refer clients to other professionals where specialized expertise is in the client's best interest.
 - f. Make a reasonable effort to assist participating landowners in completing all administrative/procedural requirements for financial assistance in a timely manner and submitting documentation as needed on the landowner's behalf.
3. Reporting: FORPs will be required to complete a survey on related forestry practices and accomplishments, including summary information on the amount and nature of services provided by the FORP to landowners. The information gathered in the survey will be used for MFS reporting to the USDA-Forest Service (the program funding grantor) and other public agencies. Reporting will include aggregated data only, not specific to individuals or firms. Since private FORPs play a critical role in program delivery, the information will be used to help demonstrate outreach and assistance to landowners, as well as overall program impact, delivered by FORPs.

Maine Forest Service will:

1. Print and distribute contact information on FORPs to landowners and others, on request and in regular distribution of forest management information
2. Promote the use of FORPs by landowners seeking program related advice/services.
3. Update FORPs on program developments or changes in a timely manner via email and/or other mailings.
4. Report on the accomplishments/effectiveness of the program and seek continued funding.

Maine Forest Service will maintain the integrity of the program by supporting FORPs who adhere to the above agreement.

FORPs may remove themselves from listing at any time. MFS will remove FORPs from the program list in the event that, in the estimation of the Director, MFS Division of Forest Policy and Management, they are found to have violated the terms of this agreement or demonstrated a disregard for its provisions in letter or in spirit.

FORPs who are removed from the list may appeal the decision to remove them in writing, at which time the Director of the Maine Forest Service will review the circumstances and issue a written finding of his/her decision.

FORPs who are removed from the list will be excluded from participation indefinitely, at the discretion of the Director of the Maine Forest Service, or until such time that they can demonstrate, in the estimation of the Director of the Maine Forest Service, that their re-listing would be in the best interests of the program and the landowners it serves.

Employees of the Department of Agriculture, Conservation and Forestry and their spouses are ineligible to participate in this program as landowners or as Foresters or Other Natural Resource Professionals providing services to clients. Employees of the Department of Agriculture, Conservation and Forestry will recuse themselves from approval, evaluation, inspection, and other official action on plans or treatment practices by landowners to whom their relationship is that of a parent, child, sibling, aunt/uncle, in-law, grandparent or grandchild, to avoid the appearance of a conflict of interest.

Invasive Plant Control Practice Plans (IPCPPs)

IPCPPs – Financial Incentive

The IPCPP program provides financial incentive to the landowner of **up to 50% of the actual cost** of preparing an IPCPP with not-to-exceed rates based on the surveyed acreage, as shown in Table 1. Foresters and other resource professionals (FORPs) set their own rates and the actual cost of IPCPP preparation may be higher or lower than these estimated costs. The cost estimates will be reviewed from time to time and may be adjusted if they are found to be out of line with average actual costs.

Table 1. Estimated costs of IPCPPs and program Not to Exceed (NTE) financial incentive payment based on those estimated costs.

Surveyed Acres	IPCPP Cost Estimate	Incentive Payment NTE
10-100	\$ 1000	\$ 500
101-250	\$ 1400	\$ 700
251-500	\$ 2000	\$ 1000
501-1000	\$ 3200	\$ 1600
>1000	Contact MFS to discuss	

Example 1 – A landowner with 75 surveyed acres retains a FORP to prepare an IPCPP. The bill from the FORP for the IPCPP is \$600. When all boxes are checked and correct forms submitted, MFS will provide a financial incentive of \$300 to the landowner.

Example 2 – A landowner with 445 surveyed acres retains a FORP to prepare an IPCPP. The bill from the FORP for the IPCPP is \$2,000. When all boxes are checked and correct forms submitted, MFS will provide a financial incentive of \$1000 to the landowner.

IPCPPs – Eligible and Ineligible Costs

The only costs eligible for financial incentive reimbursement are fees charged by consulting foresters or other resource professionals (FORPs).

IPCPPs – Application Overview and Instructions for Landowners

Procedures:

The following procedures apply to Invasive Plant Control Practice Plans.

1. Applications:
 - a. All applications for financial incentives will be made on the required MFS form, will include all required information, and will be signed by the landowner.
 - b. All applications for financial incentives will accurately represent the ownership as reflected in the deed, including the identity of the landowner, the location of the property, and the area of land included in the IPCPP, to the best of the landowner’s knowledge.

- c. All applications for financial incentives will identify the FORP who has agreed to prepare the IPCPP.
2. Approval:
 - a. Maine Forest Service shall review all applications to establish eligibility, feasibility, and priority, consistent with state priorities. MFS reserves the right to request additional information or make an on-site visit to evaluate an application.
 - b. MFS will not approve financial incentives for work completed prior to approval.
 - c. MFS will not approve applications unless funds are available.
 - d. MFS will establish reimbursement rates and maximum incentives available, and funds will be obligated at the time of approval.
 - e. Upon approval, MFS will inform the landowner and FORP that work may begin, and the maximum amount of financial incentive approved. Approval of an application constitutes an agreement between the Maine Forest Service and the landowner to incentivize a completed IPCPP on a reimbursement basis, upon verification that the IPCPP meets standards.
 3. Performance period (time period in which plan must be completed once approved):
 - a. The performance period for all plans will be the field season of the calendar year of approval, e.g., if approved to prepare an IPCPP in 2021, field survey must be completed between June 1 and October 1, and plans are to MFS due upon completion or by latest November 1.
 - b. MFS reserves the right to institute other performance deadlines with appropriate notice.
 4. Cancellation:
 - a. Approved applications may be cancelled by the applicant at any time.
 - b. Applications may be cancelled by the Maine Forest Service at any time prior to expiration of the performance period for cause, including but not limited to ineligibility of the applicant or FORP. Applications may be cancelled upon expiration of the performance period.
 5. Certification of performance:
 - a. Landowners shall claim reimbursement payment for completed Plans in accordance with MFS procedures.
 - b. Proof of payment (described separately below) will be required for all plans.
 - c. MFS will review all plans. Additional information may be requested by MFS.
 - d. Financial incentive reimbursement will subsequently be approved by Maine Forest Service. and sent in the form of a check or direct deposit from the Maine State Treasurer.
 6. Rates:
 - a. Financial incentive reimbursement rates for IPCPPs will be 50% of actual documented costs incurred by the landowner, with not to exceed amounts as shown in Table 1, as determined by the MFS.
 - b. Financial incentive payment rates are established to represent the maximum eligible payment. Such rates should not be construed to represent appropriate costs/fees in all circumstances. Participants are encouraged to use sound business practices when contracting for services, including plan development and/or any recommended activities. Participants are also strongly

encouraged to use written contracts with detailed work specifications, and to seek multiple estimates of the costs of the work.

7. Recipients will be required to participate in MFS follow-up survey(s) for program evaluation, monitoring, and outcomes reporting.
8. Prohibited Practices.
 - a. No funds will be authorized for capital investments, capital improvements, purchase of land, or any interest in land. Purchase of tools and equipment, transport of personnel or materials, repairs to equipment, and similar costs will not be approved.
 - b. No funds will be authorized for:
 - i. Activities required by law (except as specifically identified in this document) or pursuant to a notice of violation, settlement agreement, or any type of enforcement action.
 - ii. Forest restoration/improvement needs arising from the willful actions of the landowner which directly contravene principles of silviculture, natural resource protection, and forest sustainability.
 - c. No funds will be authorized for repeating planning practices on the same site by the same owner which have been accomplished under any federal, state, or local government program, except where the life span of the original practice has elapsed. Exceptions will be considered on a case-by-case basis.
9. Recapture of financial assistance payments. Payments made to landowners may be recaptured under one or more of the following circumstances:
 - a. If any landowner, successor, or assignee uses any scheme or device to unjustly benefit from financial assistance. A scheme or device includes, but is not limited to, coercion, fraud or misrepresentation, false claims, or any business dissolution, reorganization, revival, or other legal mechanism designed for or having the effect of evading the requirements of this program
 - b. If any landowner or successor takes any action or fails to take action, which results in the destruction or impairment of a program-funded plan or project.
 - c. If a landowner sells, conveys, or otherwise loses control of the land (unless determined by the State Forester to have been beyond the landowner's control), upon which there has been an investment of program funds for an IPCPP, and the new landowner does not maintain forested acres as forest. In such cases, the original landowner who received a financial incentive payment shall be liable for repayment of funds.
 - d. In cases as described in a-d, financial incentive payments shall be withheld or a recapture of all or part of any financial assistance payments shall be secured. Nothing in this section requiring the withholding or refunding of financial assistance payments shall preclude any penalty or liability otherwise imposed by law.
 - e. Any landowner, successor, or assignee who is dissatisfied with any determination made under MFS financial assistance programs may request reconsideration by the Director, Maine Forest Service, and if the matter is not resolved, by the Responsible Official of the USDA Forest Service. All requests for reconsideration shall be in writing and shall contain factual information explaining the basis for the request. All decisions on reconsideration shall be issued in writing.

IPCPPs – Payment Process

Financial incentive payments for IPCPPs will be awarded on a reimbursement basis only. This means that all expenses for the IPCPP have been paid in full and the IPCPP is complete before filing for reimbursement. Payment shall be made to the landowner entity as provided in the Application.

IPCPPs – Required components of the IPCPP

The IPCPP is a written document that has its basis in a careful field survey. To prepare an IPCPP, certain data must be collected and entered to the online mapping tool, iMapInvasives. Maps must be made, and specific prioritized management recommendations must be provided.

Please also refer to the *Invasive Plant Control Practice Plan – Specifications and Checklist* provided in the Appendices.

1. Survey of Highly Probable Areas as well as some survey in less likely areas.

Minimum required field survey efforts apply. From past MNAP fieldwork, we estimate that a FORP with good familiarity with invasive plants can expect to survey a maximum of 100-250 acres per day. The lower end of the range can be expected for properties that are badly infested, where it takes more time to gather data during the survey. The higher end can be expected for lightly infested properties where survey proceeds more rapidly (since FORPs are not recording a lot of data). See Table 2 below for more detail. For example, for a property with 100 eligible acres to survey, you should budget one day of survey, but more time may be needed if the property is very badly infested. For a property that has 50 eligible acres, you might expect to spend a ½ day surveying the property. For a 250-eligible-acre property, you should spend *at least* 10 hours surveying. These are *minimums* only; a FORP who needs more time to identify plants will take longer, and a property with rugged topography may also take longer to survey, etc.

Table 2. *Minimum* survey effort based on 100-250 acres/qualified FORP/day

Level of infestation	Acres:	50	100	150	200	500
Low		2-4 hours	4 hours	6 hours	8 hours	20 hours
Medium		3-4 hours	5-8 hours	7-12 hours	9-16 hours	22-32 hours
High		4+ hours	8+ hours	12+ hours	16+ hours	32+ hours

It will be a requirement of the IPCPP to state the dates, # of hours of field survey, survey route, and the # of surveyed acres, so that survey effort can be reviewed. If the MFS reviewers feel that survey has been inadequate more survey may be required, and MFS reserves the right to reject an IPCPP if survey effort appears to be inadequate.

2. Mapping and recording data using iMapInvasives

iMapInvasives is the central repository for invasive plant records in Maine and helps everyone know what is where on the Maine landscape. Data are required to be submitted to iMap as part of this project. Landowner permission is required.

There is no “bulk upload” to iMap – records must either be created with the iMap App (point records) or entered manually at a computer.

iMap can show point, line, and polygon presence data. iMap also shows Searched Area data, i.e., an outline of the eligible, surveyed areas.

The following data must be entered for every participating property, at a minimum:

Point records to represent the specific locations of individual invasive plants encountered during the survey (except where using polygon data to represent larger areas of infestation).

Polygon data are required when infestations are greater than a small cluster of plants.

Searched Area record(s) to indicate the surveyed acres (that is, all the eligible land that is included in the plan and which you have searched for invasive plants). [A second Searched Area record may be entered in iMap to show the survey route (aka track) through the property if desired; note, if not entered in iMap, you must have some other way of showing the survey route for the required Survey Route map.]

3. Required maps

These will be the minimum required maps for the IPCPP. FORPs are encouraged to go beyond the minimum where useful, for example, when the property is large, breaking the property into several smaller areas may make invasive plant maps (Maps E) more legible and useful. Minimum required maps:

- A. **Property boundary map** showing property boundaries. The property boundary map can be in any format that is accurate; tax maps may be used if nothing better is available.
- B. **Surveyed acres map** showing the surveyed acres that are included in survey and IPCPP. The surveyed acres map can be in any format that is accurate.
- C. **Survey route map** (aka track map) showing the path walked when searching for invasive plants. Areas where no survey was done cannot be guaranteed to be free of invasive plants, that is why it is important to show your track on a map. The survey route map can be in any format that is accurate.
- D. **Overall map of all invasive plant species** mapped on the property; and
- E. **Individual maps for each invasive plant species** present, one species per map. Species only found in 1 location may be grouped into a single map, see example reports.

Maps A, B, and C may be combined into one-two map(s) if desired, however the map(s) must clearly show the difference (if any) between the surveyed acres and the property boundary.

The invasive species maps (Overall and Individual Species) can be created in iMap and placed into PowerPoint slides for annotation (title, notes, etc.). Examples and a PowerPoint template will be provided at the IPA. However, maps can be in any format that is accurate (Google Maps, ArcGIS, etc.); maps do not have to be made in iMap.

Confirmed iMap data can be exported into other map-making software to create more complex maps showing different species on the same map in different symbols or colors, e.g., ArcGIS software, Google Earth, etc.

4. Prioritized management recommendations

Invasive plants are not all equally threatening. In addition, certain areas of a site may have higher natural resource values (high-quality timber stands, wildlife habitat, wetlands, areas of unusual plants/natural communities) or be of higher priority to the landowner for various reasons (e.g., parts of the property where the landowner likes to recreate). Prioritization is helpful because it is not usually realistic to remove every invasive plant from every acre of land. In general, the highest priority in invasive plant management is prevention – keeping new species out. In the example plans provided, you will find text regarding how invasive plants might arrive at woodlands and steps that can be taken to avoid accidental introductions – you should include this type of text in the management recommendations you provide to the landowner. After invasive plants become established, invasive plant management usually follows a three-tiered prioritization:

1. Early Detection and Rapid Response to eliminate species which are new to the area or only present in small patches. Goal is eradication from the site. Hopefully can be achieved over a short timeframe (several years). Best return on treatment investment. *Any species can be considered a candidate for site-level “EDRR,” even if it is common in the region, if only a few plants are present on the site.
2. Early Management to control modest patches of more common invasive plants. Goal is to expand the “clean” habitat and prevent it from being re-infested through monitoring over time. This work may need to be repeated every several years (2-5 year interval) if there are nearby sources of propagule pressure. Areas of special concern (important timber resources, rare/exemplary natural features, special wildlife habitats) may be targeted first or more often. *Any species could be considered a candidate for site-level EM if it is in low abundance on the site.
3. Suppress and Contain areas of dense infestation. Goal is to reduce the spread of seeds or other plant propagules and prevent the infestation from expanding. This is ongoing, maintenance work which is repeated every several years or as resources permit, e.g., simply cutting down large shrubs every 5-10 years. Infestations near areas of special concern may receive more frequent or more intense attention. If a species is

expanding from an area considered “the motherlode,” (densest aggregation of mature plants) the general practice is to recommend working from the outside in to control outliers/the advancing front, while at the same time (if possible) suppressing the motherlode to prevent additional seed production.

To create prioritized management recommendations, we suggest that you review the species found and first establish whether there are any *species that are not yet widespread in Maine* (see target species list in Appendices). If so, these are obvious candidates for top priority action. If not, are there species which are present only in limited areas or as isolated plants? Are any of those located near *key natural resources* that are a top priority for the landowner (timber stands, wetlands, vernal pools, unusual natural community)? Check the [Beginning with Habitat map viewers](#) online to identify these, and contact maine.nap@maine.gov if you have questions or need more information. Those might be the “next tier” of priority. Invasive plants which are widespread on the property and which impact natural resource values are a real concern (e.g., glossy buckthorn growing at 5% cover throughout an entire woodlot), but it might be a higher priority to take care of the 10’x10’ patch of Japanese knotweed growing streamside! The landowner can always return to the glossy buckthorn after she has nipped the smaller patches in the bud.

Management recommendations do not have to be species-specific, nor do they need to apply to all infestations of a species. For example, there might be one patch of Japanese knotweed which is small and impacting a stream. This would be assessed differently than a 1-acre patch beside the road; since there is a much greater chance of success with the small patch, and it is impacting a natural resource, it would be a higher priority!

Sometimes it is less clear how to prioritize management. Feel free to reach out to brainstorm with any of the IPA instructors.

Triage and Suppression (what are reasonable goals in very badly infested areas?), e.g.,

- Containment

- Suppression of seed set

- Keeping vines from killing trees

- Reaching a goal of recruitment of X # of seedling/sapling trees of desired species

Best Practices/priorities specifically for timber harvest / FMP context

- Preventing new introductions

- Harvest planning and layout

5. Recommending specific control methods for invasive plants – other considerations

- Integrated Pest Management (“Think First, Spray Last”) for invasive plants

- Multiple methods can be used on one property

Sensitive areas where additional rules apply e.g., Shoreland Zone, riparian areas, proximity to organic agricultural areas

Need to incorporate landowner preferences/constraints (some LOs do not wish to use herbicides, some certifications prohibit certain products e.g., organic) and any neighborhood issues, e.g., adjacent organic landowner or landowner on Maine Pesticide Notification Registry

Town pesticide ordinances – check these before prescribing herbicide treatments

“Menu” of proven treatment options – At the IPA we will cover a variety of resources where you can learn proven methods for treating invasive plants, such as: *Maine Invasive Plants Field Guide*, [Penn State Extension factsheet series](#), [Cal-IPC BMPs for Non-Chemical Weed Control](#); other sources. Note, “proven” does not mean foolproof, 100 efficacy, or one-time. “Proven” means that in certain circumstances and following all directions, the treatment is at least mostly effective; it should be assumed that re-treatments or at least monitoring will be required.

6. Timeline – include a 5-year (minimum) timeline for treatment and monitoring, recognizing that invasive plant management is a multi-bout process, not a one-time application, in the great majority of cases.

7. Reporting to MFS upon IPCPP completion

When a FORP completes an IPCPP, she/he is required to provide that IPCPP to the MFS (written document + all required maps).

All required iMap data must be in iMap at the time the plan is finalized (Searched Area, points, polygons).

Federal reporting requires that the woodlands covered by IPCPPs be mapped in a Geographic Information System (GIS). This information will be considered confidential, the same as any and all personally identifiable information (PII) in the IPCPP. The polygons are being collected for federal reporting purposes only, and will be used in an aggregate form only. There are several options for plan writers to meet this requirement:

- a) Provide a list of the latitude and longitude coordinates of the corners of the property boundary [parcel(s) surveyed in the IPCPP]. The coordinates must be listed in a consecutive order around the perimeter of each area. The datum (NAD 83 or WGS 84) must be stated.
- b) Provide a polygon shapefile of the corners of the property boundary [parcel(s) surveyed in the IPCPP], with the following coordinate system: Datum NAD83, Projection UTM Zone 19N. The shapefiles must be attributed with sufficient information to uniquely identify the landowner with the land in the plan.
- c) Provide a Google Earth .kml or .kmz file of the corners of the property boundary [parcel(s) surveyed in the IPCPP]. Make sure to use an appropriate

scale that clearly depicts the land on current aerial photography. Mark enough vertices in the polygon so the land is depicted accurately. Include sufficient information in the label so the landowner is uniquely identified with the polygon.

Other methods of meeting the GIS requirement may be considered on a case by case basis. Please contact Greg Miller at (207) 287-8121, or greg.t.miller@maine.gov, with any questions regarding these requirements.

Competitive applications for Treatments

The following procedures are for treatment of invasive plants authorized under this program.

Eligibility requirements for Treatments are the same as for IPCPPs (see above section on Landowner Eligibility.)

1. Application for Treatment

Landowners applying for IPC treatments must have an MFS-approved IPC Practice Plan (IPCPP) which recommends the practice. The IPCPP must contain enough information to locate the practice area on the landowner's property and to justify the benefit(s) of applying the practice.

As part of the application, the landowner shall request, based on the IPCPP, practices, locations and timing for treatment.

Follow up treatments may be available based on time and funding, and subject to a second competitive application process.

Final determination of landowner eligibility will be made by MFS.

Timelines for ranking of applications - TBD

2. Selection of Application and Invasive Plant Treatment Contracting

Project staff will rank applications, criteria TBD but to include the priority geographies - Southern, Western and Eastern Megaregions, as delineated by the USDA Forest Service's Forest Inventory and Analysis program.

Upon selection, the landowner will enter into an Invasive Plant Treatment Agreement with their selected treatment contractor. This agreement will specify a basic schedule of practices, locations and timelines for treatment and by signing it, the landowner gives consent to treat based on the IPCPP and the Application for Treatment.

Any work performed by the landowner will not be covered by this program

3. Technical assistance tasks for IPC Practices

Pre-implementation Conference

The landowner and/or landowner's representative (e.g., FORP), contractor or contractor's representative, and MFS staff (District Forester) shall have a pre-implementation conference on site. The purpose of the conference is to verify that the right practice is applied to the right acres, agree on any pre-treatment flagging and area delimitation needed, and to determine what modifications, if any, need to be made to the treatment agreement. It is also a time for all affected parties to ask and answer any questions concerning the work to be performed. The IPTCA should be signed at this time or upon resolution of any outstanding questions.

Practice implementation

Implementation of the IPC treatments will be done by contractors selected by the landowner.

Practice completion - Upon completion of the treatment(s), the landowner and/or contractor will notify program staff and practice completion will be evaluated before payment.

4. Monitoring of completed treatment results

MFS District Foresters or other Program staff will visit each treatment site to assess the efficacy of treatments. Monitoring will include observations that document the extent of the treatment (e.g., % of target plants treated), the efficacy of treatment (e.g., % killed), collateral damage to native species, subsequent invasion by additional invasive plants and other outcome measurements.

Landowner monitoring

During the project period, program participants are required to monitor any areas where treatments occur, and to report on this monitoring to MFS when requested in a survey at the close of the project. Project participants are also strongly encouraged to work with a FORP or other contractor to continue treating the invasive plants identified in their IPCPP, since a single bout of invasive plant treatment, while a good start, is not sufficient to gain control of most well-established invasive plant infestations.

Options for Treatment Outside of this Project

Financial assistance for invasive plant control practices may be available from the NRCS, under the Environmental Quality Incentives Program (EQIP). Landowners with approved IPCPPs can contact their local USDA Service Center for more information.

Landowners may choose to implement their IPCPPs themselves, or contract with licensed applicators at their own expense. This program has no bearing on these cases.

Reporting / Survey for Landowners

There will be a comprehensive survey of participating landowners to help the project team assess outcomes and gain data needed for grant reporting. The survey will likely be administered via an online tool and will include questions about the IPCPP, any treatment(s) performed, outcomes of treatments, landowner satisfaction with the program, etc.

Key Program Staff Contact Information

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List of Program Manual Appendices

Appendix 1 — Invasive Plant Academy (IPA)

1a-IPA Application Form

1b-IPA Agenda

1c-iMapInvasives Datasheets

1d- IPA Graduate Agreement

1e-IPA Graduate Follow-up Survey (for grant reporting purposes) – Forthcoming

Appendix 2 — Invasive Plant Control Practice Plans (IPCPPs)

2a-Flowchart IPCPP

2b-IPCPP Application Ranking Criteria -- Forthcoming

2c-Target Species list

2d-IPCPP Specifications and Checklist

IPCPP Administrative Forms:

2e-IPCPP Landowner Application Form

2f-Landowner Instructions

2g-IPCPP Proof of Payment/Affidavit

2h-IPCPP Claim for Payment

Appendix 3 — Contractor-Applied Treatment

3a-Flowchart Treatment applications

3b-Treatment Application Form

3c-Invasive Plant Treatment Consent Agreement

3d-Competitive Treatment Ranking Criteria -- Forthcoming

3e-Treatment or Volunteer Cost-share Documentation/Reporting Form/Platform -- Forthcoming

3f-Survey/Monitoring Specifications -- Forthcoming

3g-Program Evaluation Forms—multiple -- Forthcoming

Appendix 4 -- List of Eligible IPCPP Preparers

Current list is posted at: https://www.maine.gov/dacf/mfs/projects/invasive_plant_mgmt/index.html

Appendix 5 -- Example Plans

Links to Example IPCPPs, with landowner identity information redacted, can be found on the Invasive Plant Management Program website:

https://www.maine.gov/dacf/mfs/projects/invasive_plant_mgmt/index.html