Best Management Practices to Prevent and Manage Invasive Plants
Siuslaw National Forest (03-06)

Best Management Practices for Invasive Plant Management

Management Objective	Management Practice
Incorporate invasive plant prevention measures into all projects that include ground disturbance.	1.1 Complete an invasive plant inventory and weed risk analysis for all Environmental Analyses that include ground disturbance. 1.2 Consider invasive plant factors (presence, habitat type, project type) for all projects with a medium and high weed risk and develop mitigations to reduce the risk to acceptable levels.
Protect ecosystems from the impacts of invasive plants though and integrated approach that emphasizes prevention, early detection and early treatment.	2.1 Detect new infestations of invasive plants promptly by completing up-to-date inventories of infested areas and identifying and inspecting susceptible areas not infested with invasive plants. 2.2 Periodically (at least annually) update the Forest invasive species database and spatial layer. 2.3 Control new invasive plant infestations promptly by whatever means are available, suppress or contain expansion of infestations where control is not practical. 2.4 Monitor sites where invasive plant treatment has been completed and sites where project analysis has identified a risk of introduction or spread of invasive plants.
Implement invasive plant treatment strategies that reduces loss or degradation of native habitat, protects sensitive ecosystem components and maintains biological diversity and function.	3.1 Maintain water quality while implementing invasive plant treatments. 3.2 Protect non-target plants and animals from negative effects of both invasive plants and treatments. 3.3 Design treatment projects that protect threatened, endangered and sensitive species.
Protect the health of people who work, visit or live in or near National Forests, while effectively treating invasive plants.	4.1 Avoid or minimize public exposure to herbicides. 4.2 Provide for timely public notification of all treatment sites on the Forest where herbicides will be used. 4.3 Follow all guidelines for worker health protection contained in the Forest Service Manual and Handbook (FSM 6700, FSH 2109) and the Health and Safety Codes when using storing, transporting or using herbicides.

Best Management Practices for Engineering/Road Maintenance

Management Objective	Management Practice
Incorporate invasive plant prevention measures into all engineering and road maintenance projects.	5.1 Environmental Analyses that include road construction, maintenance and decommissioning must consider weed risk in the development of alternatives and mitigations. 5.2 Consider invasive plant factors (presence, habitat type) when planning road construction and road decommissioning.
Implement appropriate prevention practices to reduce the introduction, establishment and spread of invasive plants during road construction or decommissioning activities.	6.1 Roads proposed for decommissioning should have a plan to treat any existing invasive plant sites once the road is not drivable. 6.2 If invasive plants are present on-site at the time of decommissioning, all equipment and vehicles shall be free of all soil, vegetative matter and other material that could contain or hold plant seeds or parts before leaving the area. The Forest will specify cleaning areas, either on-site or at a facility with a catch basin. 6.3 To reduce the spread of invasive plants, maintain canopy cover to the extent possible when building, reopening, stabilizing or decomminssioning roads. 6.4 Ensure areas of soil disturbance revegetate promptly and seed as necessary. Seed originating from a locally collected native species is preferred. If none is available, seed with a non-persistent non-native species. 6.5 Use only weed-free plant materials and seed for revegetation and erosion control. 6.6 Locate and use project staging areas that are free of invasive plants.
Implement appropriate prevention practices to reduce the introduction, establishment and spread of invasive plants during road maintenance activities.	7.1 Existing invasive plant infestations within the road clearing distance should be considered before the maintenance activity occurs. 7.2 Invasive species that can be spread through vegetative reproduction should be treated before the maintenance activity occurs. 7.3 Invasive species that spread from seed should be treated before the maintenance activity occurs unless the activity can be timed to reduce weed cover with no risk of spreading seed. 7.4 If invasive plants are present at the time of maintenance, all equipment and vehicles shall be free of all soil, vegetative matter and other material that could contain or hold plant seeds or parts before leaving the area. The Forest will specify cleaning areas, either on-site or at a facility with a catch basin. 7.5 Within small infested areas, consider using alternative methods to accomplish maintenance (e.g. cleaning hand

Best Management Practices for Engineering/Road Maintenance

Management Objective	Management Practice
	tools used on small sites is quicker than cleaning large equipment). 7.6 When feasible, work from relatively infestation-free areas into the infested area rather than vice-versa. 7.7 Do not maintain ditches, brush, mow, or do similar maintenance activities 2 weeks before and after herbicide application. This will minimize herbicide use and increase the effectiveness of the herbicide. 7.8 Locate and use project staging areas that are free of invasive plants.
Reduce the introduction and establishment of invasive plants and seed via the use of infested material.	8.1 Use only gravel, fill, sand, and rock from sources judged to be free of invasive species by the District or Forest weed specialists.
Avoid the transport of invasive plant seed and material to the Siuslaw National Forest.	9.1 Specify cleaning of heavy equipment (C/CT6.36) before entering the Siuslaw National Forest if it will be used outside the limits of the road prism. Equipment shall be free of all soil, vegetative matter and other material that could contain or hold weed seeds or plant parts.
Encourage awareness of invasive plants and prevention efforts among agency personnel.	10.1 Train Forest personnel how to recognize invasive plants and take measures to reduce the risk of establishment and spread on National Forest System lands.

Best Management Practices for Vegetation Management

Management Objectives	Management Practices
Incorporate invasive plant prevention measures into all vegetation management projects.	11.1 Environmental Analyses that include vegetation management projects must consider weed risk in the development of alternatives and mitigations. 11.2 Consider invasive plant risk and prevention factors (e.g. minimize soil disturbance, maximize shading) in all silviculture prescriptions and alternative development.
Implement appropriate prevention practices to reduce the introduction, establishment and spread of invasive plants during vegetation management activities.	12.1 Avoid the placement of landings, yarding facilities and equipment staging areas in areas infested with invasive plants or mitigate to prevent further spread of the infestation. 12.2 Work from infestation-free areas into infested areas rather than vice-versa. 12.3 Conduct validation monitoring for all vegetation management projects where weeds were identified as a concern for a minimum of 3 years. Apply appropriate control measures. 12.4 Assure funding sources (appropriated funding, KV) are identified to allow for any post-project monitoring and treatment.

Best Management Practices for Vegetation Management

Management Objectives	Management Practices
Minimize the creation of habitat favorable to invasive plants.	13.1 Choose fuel treatment methods that will be least favorable to invasive plants. Generally, the order from least favorable (best) to most favorable (worst) is chipping, broadcast burning, small piles, large piles. 13.2 Helicopter logging and other suspended systems are favorable to ground-based systems. 13.3 Minimize ground disturbance to the extent possible and ensure areas of soil disturbance revegetate promptly, seeding as necessary. Seed originating from a locally collected native species is preferred. If none is available, seed with a non-persistent non-native species.
Avoid the transport of invasive plant seed and material into the Siuslaw National Forest.	14.1 Specify cleaning of heavy equipment (C/CT6.36) before entering the Siuslaw National Forest if it will be used outside the limits of the road prism. Equipment shall be free of all soil, vegetative matter and other material that could contain or hold weed seeds or plant parts.
Reduce the introduction and establishment of invasive plants and seed via the use of infested material.	15.1 Use only weed-free plant materials and seed for revegetation and erosion control.
Encourage awareness of invasive plants and prevention efforts among agency personnel.	16.1 Train Forest personnel how to recognize invasive plants and take measures to reduce the risk of establishment and spread on national forest.

Best Management Practices for Habitat Restoration Projects

Management Objectives	Management Practices
Incorporate invasive plant prevention measures into all habitat restoration projects.	17.1 Environmental Analyses for habitat restoration must consider weed risk in the development of alternatives and mitigations. 17.2 Consider invasive plant factors (presence, habitat type) when developing habitat restoration projects.
Minimize the creation of habitat favorable to invasive plants.	18.1 Minimize ground disturbance to the extent possible and ensure areas of soil disturbance revegetate promptly, seeding as necessary. Seed originating from a locally collected native species is preferred. If none is available, seed with a non-persistent non-native species.
Reduce the introduction and establishment of invasive plants and seed via the use of infested material.	19.1 Use only gravel, fill, sand, and rock from sources judged to be free of invasive species by the District or Forest weed specialists. 19.2 Use only weed-free plant materials and seed for revegetation and erosion control.

Best Management Practices for Habitat Restoration Projects

Management Objectives	Management Practices
Avoid the transport of invasive plant seed and material into the Siuslaw National Forest.	20.1 Specify cleaning of heavy equipment (C/CT6.36) before entering the Siuslaw National Forest if it will be used outside the limits of the road prism. Equipment shall be free of all soil, vegetative matter and other material that could contain or hold weed seeds or plant parts.
Reduce the introduction, establishment and spread of invasive plants during habitat restoration projects.	21.1 When feasible, work from infestation-free areas into the infested area rather than vice-versa. 21.2 Locate and use project staging areas that are free of invasive plants.
Minimize the creation of habitat favorable to invasive species.	22.1 Ensure areas of soil disturbance revegetate promptly and seed as necessary. Seed originating from a locally collected native species is preferred. If none is available, seed with a non-persistent non-native species. 22.2 Limit soil disturbance to no more than is needed to complete the project.
Encourage awareness of invasive plants and prevention efforts among agency personnel.	23.1 Train Forest personnel how to recognize invasive plants and take measures to reduce the risk of establishment and spread on national forest.

Best Management Practices for Recreation

Management Objectives	Management Practices
Incorporate invasive plant prevention measures into all recreation projects.	24.1 Environmental Analyses for recreation projects must consider weed risk in the development of alternatives and mitigations. 24.2 Incorporate invasive plant prevention as an important consideration in all recreational land use and access decisions. 24.3 Place greater emphasis on managing previously "unmanaged recreation (OHVs, dispersed recreation) to help reduce conditions that favor invasive plants (soil disturbance) and reduce transport of seed and propogules.
Implement appropriate prevention practices to reduce the introduction, establishment and spread of invasive plants by stock and pack animals (e.g. horses, mules, llamas, goats).	25.1 Use weed-free or pelletized feed only when feeding stock on National Forest System lands. 25.2 Encourage stock users to not graze animals in weed-infested areas 72 hours prior to traveling on National Forest System lands. Hair and hooves should be free of soil, seeds and plant material prior to entering national forest.
Encourage invasive plant awareness and prevention efforts among forest users.	26.1 Distribute informational materials that explain the effect invasive plants have in the environment and simple prevention measures that forest users can take to reduce weed establishment and spread. These material can be located at Visitor Centers, Ranger District offices, trailheads, campgrounds and boat launches.

Best Management Practices for Recreation

Management Objectives	Management Practices
Avoid the introduction and spread of invasive plants during construction, reconstruction and maintenance activities.	27.1 Use only gravel, fill, sand, and rock from sources judged to be free of invasive species by the District or Forest weed specialists. 27.2 Use only weed-free plant materials and seed for revegetation and erosion control. 27.3 Locate and use project staging areas that are free of invasive plants.
Minimize the creation of habitat favorable to invasive plants.	28.1 Minimize ground disturbance to the extent possible and ensure areas of soil disturbance revegetate promptly, seeding as necessary. Seed originating from a locally collected native species is preferred. If none is available, seed with a non-persistent non-native species.
Avoid the transport of invasive plant seed and material to the Siuslaw National Forest.	29.1 Specify cleaning of heavy equipment (C/CT6.36) before entering the Siuslaw National Forest if it will be used outside the limits of the road prism. Equipment shall be free of all soil, vegetative matter and other material that could contain or hold weed seeds or plant parts.
Keep developed sites free of invasive plants.	30.1 Consider any existing invasive plant infestation in a developed site a high priority for treatment and take appropriate action to control and eradicate the infestation. 30.2 Periodically conduct inventory for invasive plants in developed sites and appropriately treat any infestation located.
Encourage weed awareness and prevention efforts among agency personnel.	31.1 Train Forest personnel how to recognize and report invasive plants and take measures to reduce the risk of establishment and spread on National Forest System lands.

Best Management Practices for Fisheries Habitat Management

Management Objectives	Management Practices
Incorporate invasive plant prevention measures into all fisheries habitat management projects.	32.1 Environmental Analyses for fisheries habitat projects must consider weed risk in the development of alternatives and mitigations. 32.2 Consider invasive plant factors (presence, habitat type, shading) when developing habitat restoration projects.
Minimize the creation of habitat favorable to invasive plants.	33.1 Minimize ground disturbance to the extent possible and ensure areas of soil disturbance revegetate promptly, seeding as necessary. Seed originating from a locally collected native species is preferred. If none is available, seed with a non-persistent non-native species.

Best Management Practices for Fisheries Habitat Management

Management Objectives	Management Practices
Reduce the introduction and establishment of invasive plants and seed via the use of infested material.	34.1 Use only gravel, fill, sand, and rock from sources judged to be free of invasive species by the District or Forest weed specialists. 34.2 Use only weed-free plant materials and seed for revegetation and erosion control.
Avoid the transport of invasive plant seed and material into the Siuslaw National Forest.	35.1 Specify cleaning of heavy equipment (C/CT6.36) before entering the Siuslaw National Forest if it will be used outside the limits of the road prism. Equipment shall be free of all soil, vegetative matter and other material that could contain or hold weed seeds or plant parts.
Reduce the introduction, establishment and spread of invasive plants during habitat restoration projects.	36.1 When feasible, work from infestation-free areas into the infested area rather than vice-versa. 36.2 Locate and use project staging areas that are free of invasive plants.
Minimize the creation of habitat favorable to invasive species.	37.1 Ensure areas of soil disturbance revegetate promptly and seed as necessary. Seed originating from a locally collected native species is preferred. If none is available, seed with a non-persistent non-native species. 37.2 Limit soil disturbance to no more than is needed to complete the project. 37.3 For placement of large wood, helicopter systems are favorable to ground-based systems
Encourage awareness of invasive plants and prevention efforts among agency personnel.	38.1 Train Forest personnel how to recognize invasive plants and take measures to reduce the risk of establishment and spread on national forest.

Best Management Practices for Wildlife Habitat Management

Management Objectives	Management Practices
Incorporate invasive plant prevention measures into all wildlife projects.	39.1 Environmental Analyses that include wildlife habitat management must consider weed risk in the development of alternatives and mitigations. 39.2 Consider invasive plant factors (presence, habitat type) when developing projects.
Minimize the creation of habitat favorable to invasive plants.	40.1 Minimize ground disturbance to the extent possible and ensure areas of soil disturbance revegetate promptly, seeding as necessary. Seed originating from a locally collected native species is preferred. If none is available, seed with a non-persistent non-native species. 40.2 Retain native vegetation in and around project activity to the maximum extent possible consistent with project objectives.

Best Management Practices for Wildlife Habitat Management

Management Objectives	Management Practices
Reduce the introduction and establishment of invasive plants and seed via the use of infested material.	41.1 Use only weed-free plant materials and seed for revegetation and erosion control.
Avoid the introduction and spread of invasive plants during project activities.	42.2 Use only weed-free plant materials and seed for revegetation and erosion control. 42.3 Locate and use project staging areas that are free of invasive plants.
Avoid the transport of invasive plant seed and material into the Siuslaw National Forest.	43.1 Specify cleaning of heavy equipment (C/CT6.36) before entering the Siuslaw National Forest if it will be used outside the limits of the road prism. Equipment shall be free of all soil, vegetative matter and other material that could contain or hold weed seeds or plant parts.
Encourage awareness of invasive plants and prevention efforts among agency personnel.	44.1 Train Forest personnel how to recognize invasive plants and take measures to reduce the risk of establishment and spread on national forest.

Best Management Practices for Heritage Resources

Management Objectives	Management Practices
Implement appropriate prevention practices to reduce the introduction, establishment and spread of invasive plants during heritage resource recovery and excavation projects.	45.1 Clean handtools, equipment and gear of soil and plant parts before entering National Forest System lands. 45.2 If excavation work occurs at a site infested with weeds, tools and equipment should be cleaned of soil and plant parts before leaving the site. 45.3 Locate and use project staging areas that are free of invasive plants.
Re-establish desirable vegetation to discourage invasive plants.	46.1 When reasonable to do so, salvage the vegetation layer at the site intact and replace it immediately upon completion of the excavation.
Encourage awareness of invasive plants and prevention efforts among agency personnel.	47.1 Train Forest personnel how to recognize invasive plants and take measures to reduce the risk of establishment and spread on national forest.

Best Management Practices for Lands

Management Objectives	Management Practices
Incorporate invasive plant prevention measures into all lands projects	48.1 Include an invasive plant prevention and control provision for special use authorizations (permits, easements). 48.2 Complete a weed risk analysis for all lands considered for acquisition or exchange.

Best Management Practices for Minerals

Management Objectives	Management Practices
Avoid the introduction or spread of invasive species via the use of infested materials.	49.1 All rock quarries and borrow pits used to supply material on the Forest will be inspected for invasive plants on a periodic basis (every 2-3 years) and if necessary treated to eliminate invasive plants and seed before any material can be used. 49.2 Use appropriate treatment methods to eradicate any invasive plants found at a mineral site before considering it as a mineral source.
Encourage awareness of invasive plants and prevention efforts among agency personnel.	50.1 Train Forest personnel how to recognize invasive plants and take measures to reduce the risk of establishment and spread on national forest.

Best Management Practices for Fuels Management

Management Objectives	Management Practices
Incorporate invasive plant prevention measures into all fuel projects.	51.1 Environmental Analyses that include fuels projects must consider weed risk in the development of alternatives and mitigations. 51.2 Consider invasive plant factors (presence, habitat type) when developing projects.
Implement appropriate prevention practices to reduce the introduction, establishment and spread of invasive plants during fire suppression and prescribed burn activities.	52.1 When feasible, work from infestation-free areas into the infested area rather than vice-versa. 52.2 Identify all water sources contaminated with weeds on a map and avoid using these sources. 52.3 Locate and use project staging areas that are free of invasive plants. 52.4 Sterilized soil under burn piles is a point of invasive plant establishment. Ensure areas of soil disturbance revegetate promptly and seed as necessary. Seed originating from a locally collected native species is preferred. If none is available, seed with a non-persistent non-native species.
When firefighter or public safety will not be compromised, ensure that fire suppression and rehabilitation efforts are considered to minimize invasive plant establishment and spread.	53.1 For each incident, supply the Incident Commander with a map of invasive plant sites and consider the risk of establishment and spread in all operations.

Best Management Practices for Fuels Management

Management Objectives	Management Practices
Minimize the creation of habitat favorable to invasive plants.	54.1 Choose fuel treatment methods that will be least favorable to invasive plants. Generally, the order from least favorable (best) to most favorable (worst) is chipping, broadcast burning, small piles, and large piles. 54.2 Minimize ground disturbance to the extent possible and ensure areas of soil disturbance revegetate promptly, seeding as necessary. Seed originating from a locally collected native species is preferred. If none is available, seed with a non-persistent non-native species.
Avoid the transport of invasive plant seed and material into the Siuslaw National Forest.	55.1 Specify cleaning of heavy equipment (C/CT6.36) before entering the Siuslaw National Forest if it will be used outside the limits of the road prism. Equipment shall be free of all soil, vegetative matter and other material that could contain or hold weed seeds or plant parts.
Reduce the introduction and establishment of invasive plants and seed via the use of infested material.	56.1 Use only weed-free plant materials and seed for revegetation. 56.2 If invasive plants are present, all equipment and vehicles shall be free of all soil, vegetative matter and other material that could contain or hold weed seeds or plant parts before leaving the area.
Encourage awareness of invasive plants and prevention efforts among agency personnel.	57.1 Train Forest personnel how to recognize invasive plants and take measures to reduce the risk of establishment and spread on national forest.