

## **5 MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES**

### **5.1 INTRODUCTION**

#### **5.1.1 OVERVIEW**

As part of the United States (U.S.) Department of the Navy (Navy) and Oregon National Guard (ORNG) commitment to sustainable use of resources and environmental stewardship, the Navy and ORNG incorporate measures that are protective of the environment into all of their activities. Navy and ORNG Environmental Management Systems provide a formal management framework to help them achieve environmental goals through repeatable and consistent control of its operations. Compliance with environmental regulations and associated Department of Defense (DoD), Navy, and ORNG policies is accomplished through a variety of well-established programs and related plans, processes, and procedures.

National Environmental Policy Act (NEPA) regulations require that an Environmental Impact Statement (EIS) include analysis of appropriate mitigation measures. The intention of mitigation is to reduce the adverse effects of an action on the environment. Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations 1508.20) identify five ways to reduce or mitigate the severity or intensity of adverse impacts:

- Avoiding the impact altogether
- Minimizing impacts
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- Compensating for the impact by replacing or providing substitute resources or environments

#### **5.1.2 APPROACH**

The Navy and ORNG place a high priority on avoiding adverse effects. The process of identifying ways to reduce potential environmental effects of the Proposed Action started early in planning process for the proposed range enhancements and continued through preparation of this Final EIS. For example, sensitive resources were identified during development of conceptual plans for the proposed range enhancements and the proposed ranges were sited to avoid sensitive resources and reduce surface disturbance and site development requirements to the extent possible. In addition, several existing Navy and ORNG environmental programs and plans include established procedures, practices, or management actions that would avoid, minimize, or rectify potential impacts of the Proposed Action. In accordance with DoD, Navy, and ORNG policies, these plans are reviewed and revised on a regular basis, and would be updated to reflect changes at Naval Weapons Systems Training Facility (NWSTF) Boardman if the Proposed Action were implemented.

Accordingly, impact avoidance, minimization, and rectification measures are addressed in this EIS within the framework of existing Navy and ORNG environmental programs and plans, where appropriate. For the purposes of this EIS, these and other measures that avoid, minimize, or rectify potential impacts are referred to as management practices (MPs). Where appropriate, MPs will also be incorporated into construction contracts to facilitate implementation. The Navy and ORNG also currently employ standard practices or standard operating procedures (SOPs) to provide for the safety of personnel and equipment, as well as the success of the training and testing activities. In many cases, SOPs result in

incidental environmental, socioeconomic, and cultural benefits, but they serve the primary purpose of providing for safety and mission success, and are implemented regardless of their secondary benefits. Implementation of both MPs and SOPs has been considered in the Chapter 3 (Affected Environment and Environmental Consequences) environmental analyses for each resource.

If the analyses in Chapter 3 (Affected Environment and Environmental Consequences) indicated that potential impacts could not be avoided, minimized, or rectified to an acceptable level, then the Navy and ORNG developed additional measures to reduce or eliminate the impact over time or compensate for the impact by replacing or providing substitute resources or environments. For the purposes of this EIS, such measures are referred to as proposed mitigation measures.

### 5.1.3 MONITORING AND ADAPTIVE MANAGEMENT

The Navy and ORNG are also proposing vegetation and wildlife monitoring to support implementation of the Proposed Action. Environmental monitoring involves systematic sampling of physical and biological resources to derive knowledge of the environment, its resources, and processes or activities that affect them. Monitoring can be conducted for a number of purposes, including establishing environmental baselines and trends, informing decision-making for management actions, assessing the effects of natural and human influences, assessing the effectiveness of MPs and mitigation measures, and ensuring compliance with environmental regulations. Monitoring is an important component of the Navy's natural resources management strategy implemented under the *NWSTF Boardman Integrated Natural Resources Management Plan (INRMP)* (U.S. Department of the Navy 2012). Environmental monitoring associated with construction and operation of the proposed activities would be incorporated into an amended INRMP and implemented as part of the INRMP in accordance with the Record of Decision. Necessary updates to the *NWSTF Boardman INRMP* and associated monitoring programs would be accomplished during routine annual reviews conducted in cooperation with ORNG, U.S. Fish and Wildlife Service (USFWS), and Oregon Department of Fish and Wildlife (ODFW). This process will help to ensure that a comprehensive and consistent approach to monitoring is accomplished for the entire NWSTF Boardman property.

The CEQ issued guidance for mitigation and monitoring on January 14, 2011. This guidance affirms that federal agencies, including the Navy, should:

- commit to mitigation in decision documents when they have based environmental analysis upon such mitigation (by including appropriate conditions on grants, permits, or other agency approvals, and making funding or approvals for implementing the Proposed Action contingent on implementing the mitigation commitments);
- monitor the implementation and effectiveness of mitigation commitments;
- make information on mitigation and monitoring available to the public, preferably through agency web sites; and
- remedy ineffective mitigation when the federal action is not yet complete.

The CEQ guidance encourages federal agencies to develop internal processes for post-decision monitoring to ensure the implementation and effectiveness of the mitigation. It also states that federal agencies may use adaptive management as part of an agency's action. Adaptive management, when included in the NEPA analysis, allows for the agency to take alternate mitigation actions if mitigation commitments originally made in the planning and decision documents fail to achieve projected environmental outcomes. Adaptive management generally involves four phases: plan, act, monitor, and evaluate. This process allows the use of the results to update knowledge and adjust future management

actions accordingly. As discussed in more detail in Section 5.7.2.3 (Adaptive Management and Monitoring), the monitoring discussed in this section will be used to support adaptive management.

The following sections outline the current requirements and MPs established for each resource section. Any proposed MPs, monitoring, or mitigation measures identified in each resource section are also identified after discussion of that resource's current practices.

## 5.2 SOILS

### 5.2.1 CURRENT REQUIREMENTS AND MANAGEMENT PRACTICES

- Soils are managed from a natural resources perspective under the auspices of the *NWSTF Boardman INRMP*. Actions focus on minimizing mechanical disturbance and restoration of native habitats to minimize soil erosion, and stabilizing soils following a wildfire to the extent practicable.
- Incidental spills that could contaminate soils are avoided and minimized through the *Hazardous Waste Management Plan* (U.S. Department of the Navy 2009). Navy personnel at NWSTF Boardman receive initial and periodic refresher training in the proper storage, handling, and management of hazardous materials.
- Incidental spills from ORNG activities are addressed in Oregon Army National Guard Regulation 420-47, *Hazardous Material, Waste, and Spill Management Plan*.
- Potential soil contamination is addressed in the Range Condition Assessment and subsequent Five-year reviews, in accordance with the *Range Sustainability Environmental Program Assessment Policy Implementation Manual* (U.S. Department of the Navy 2006).

### 5.2.2 PROPOSED MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES

#### 5.2.2.1 Proposed Management Practices

The current MPs listed above would continue to be implemented under Alternatives 1 and 2, and existing programs and plans would be updated to reflect new conditions. The following MPs would be implemented to avoid and minimize potential impacts to soils under Alternatives 1 and 2:

- Applicable erosion control measures would be implemented during construction to avoid and minimize the potential for wind and water erosion in accordance with the Oregon Department of Environmental Quality *Erosion and Sediment Control Manual* (Oregon Department of Environmental Quality 2005).
- A *Post-construction Habitat Restoration Plan* (Appendix F, Additional Biological Information) would be implemented following construction to reduce soil erosion.
- An *Integrated Wildland Fire Management Plan* (Appendix H, Draft Integrated Wildfire Management Plan) would be implemented to avoid and minimize impacts associated with wildfire, including the indirect effects of soil erosion after a fire. In addition to other fire protection measures, the Plan includes proposed modifications to the existing system of fire breaks (see Figure 3.13-3). If fully implemented, the total area of fire breaks that would be maintained annually by mechanical disturbance (plowing or disking with a tractor) would decrease from 462 acres (ac.) (187 hectares [ha]) to 243 ac. (98 ha). Initial fire break restoration efforts would be limited to relatively small areas to determine if restoration on a larger scale is feasible. If successful, the proposed modifications to the fire break system (see Figure 3.13-3) could result in long-term benefits to soils at NWSTF Boardman by restoring approximately

219 ac. (89 ha) of mechanically disturbed land to native plant communities, which would reduce the potential for soil erosion.

- Incidental fuel spills would be avoided during construction and training by conducting all refueling activities in a secondary containment area.
- Drip pads would be placed under equipment when parked to avoid soil contamination from leaking fluids.
- A Spill Prevention, Control, and Countermeasures Plan would be developed if quantities of fuel and other petroleum products above the spill prevention, containment, and countermeasures quantity threshold were stored at NWSTF Boardman or a Heavy Expanded Mobility Tactical Truck or fuel tanker truck were parked on NWSTF Boardman. The Plan would help to ensure rapid and effective response to incidental spills and avoid contaminant migration to groundwater.
- Any spills would be managed and cleaned up in accordance with Oregon Army National Guard Regulation 420-47; a Spill Prevention, Control, and Countermeasures Plan, if deemed necessary; AR 200-1; and applicable state and federal regulatory requirements. If the ORNG is unable to contain a spill or the spill exceeded 42 gallons (gal) (158.9 liters [L]) of regulated material, the event would be immediately reported to the Oregon Emergency Response System.
- The NWSTF Boardman *Operational Range Clearance Plan* would be updated and implemented to address requirements for the new ranges.
- Under the Navy's Range Sustainability Environmental Program Assessment (RSEPA), Range Condition Assessment Five-year Reviews would continue to be conducted, and appropriate steps would be taken to analyze environmental conditions on the range and to prevent or respond to a release or substantial threat of a release of munitions constituents of potential concern to off-range areas that could pose risks to human health or the environment. RSEPA focus would be expanded to incorporate new range activities and new training areas under periodic assessments.
- Assessments would be conducted for Digital Multipurpose Training Range (DMPTR) (under Alternative 1), the Multipurpose Machine Gun Range (MPMGR), and both Convoy Live Fire Ranges (CLFRs) in accordance with the Army's Operational Range Assessment Program (ORAP). These assessments would first determine qualitatively if munitions constituents were leaving the operational range footprint and whether pathways exist for human or ecological receptors. A quantitative assessment would be conducted if the qualitative assessment were inconclusive. The assessments would be conducted on a 5-year review cycle, even if the initial qualitative assessment identified no issues. In addition, ORNG would proactively manage the new ranges using applicable strategies outlined in the *Army Small Arms Training Range Environmental Best Management Practices Manual*.

#### **5.2.2.2 Proposed Monitoring**

No specific monitoring needs were identified for soils. However, the need for soil sampling, analysis, or monitoring would continue to be considered during Range Condition Assessment Five-year Reviews conducted under the Navy's RSEPA and during Operational Range Assessments conducted by ORNG.

#### **5.2.2.3 Proposed Mitigation Measures**

No mitigation measures are warranted for soils based on the analysis presented in Section 3.1.3 (Environmental Consequences), implementation of current MPs, and implementation of proposed MPs.

## 5.3 AIR QUALITY

### 5.3.1 CURRENT REQUIREMENTS AND MANAGEMENT PRACTICES

Equipment used by military units in the study area, including aircraft and vehicles, are properly maintained in accordance with applicable Navy and ORNG requirements. Operating equipment meets federal and state emission standards, where applicable.

### 5.3.2 PROPOSED MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES

#### 5.3.2.1 Proposed Management Practices

The Navy and the ORNG propose the following MPs to avoid and minimize impacts to air quality under Alternatives 1 and 2:

- Water or another dust palliative product would be employed as necessary to minimize generation and downwind migration of fugitive dust, especially on dry, windy days and in disturbed areas where construction equipment is being used.
- Generation of dust would be minimized by placing and maintaining crushed rock or gravel on the road surfaces that are used for training. In addition, conditions would be evaluated prior to starting a training event and water or another dust palliative product would be used to minimize dust, if warranted.

#### 5.3.2.2 Proposed Monitoring

No specific monitoring needs were identified for air quality.

#### 5.3.2.3 Proposed Mitigation Measures

No mitigation measures are warranted for air quality based on the analysis presented in Section 3.2.3 (Environmental Consequences) and implementation of proposed MPs.

## 5.4 WATER QUALITY

### 5.4.1 CURRENT REQUIREMENTS AND MANAGEMENT PRACTICES

- Incidental spills that could contaminate groundwater are avoided and minimized through the *Hazardous Waste Management Plan* (U.S. Department of the Navy 2009). Navy personnel at NWSTF Boardman receive initial and periodic refresher training in the proper storage, handling, and management of hazardous materials.
- Potential groundwater contamination issues are addressed in the Range Condition Assessment (U.S. Department of the Navy 2004) and subsequent Five-year reviews (U.S. Department of the Navy 2011), in accordance with the *Range Sustainability Environmental Program Assessment Policy Implementation Manual* (U.S. Department of the Navy 2006) (see Section 3.1.1.2.3, Range Sustainability Environmental Program Assessment) for a general description of Range Condition Assessment).
- Incidental spills from ORNG activities are addressed in Oregon Army National Guard Regulation 420-47, Hazardous Material, Waste, and Spill Management Plan.
- An *Operational Range Clearance Plan* (U.S. Department of the Navy 2014) is implemented at NWSTF Boardman in compliance with DoD Directive 4715.11 Environmental and Explosives Safety Management. The *Operational Range Clearance Plan* includes provisions for safe management and removal of unexploded ordnance, and recycling of training munitions, munitions debris, and range scrap that has been rendered safe. It includes quality assurance and

surveillance procedures (see Section 3.1.1.2.4, Operational Range Clearance, for a general description of operational range clearance).

## **5.4.2 PROPOSED MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES**

### **5.4.2.1 Proposed Management Practices**

The current MPs listed above would continue to be implemented under Alternatives 1 and 2, and existing programs and plans would be updated to reflect new conditions. The following MPs would be implemented to avoid and minimize potential impacts on water quality under Alternatives 1 and 2:

- Incidental fuel spills would be avoided during construction and training by conducting all refueling activities in a secondary containment area.
- Drip pads would be placed under equipment when parked to avoid soil contamination from leaking fluids.
- A Spill Prevention, Control, and Countermeasures Plan would be developed if quantities of fuel and other petroleum products above the spill prevention, containment, and countermeasures quantity threshold were stored at the NWSTF Boardman or a Heavy Expanded Mobility Tactical Truck or fuel tanker truck were parked on NWSTF Boardman. The Plan would help to ensure rapid and effective response to incidental spills and avoid contaminant migration to groundwater.
- Any spills on bare ground would be managed and cleaned up in accordance with Oregon Army National Guard Regulation 420-47; a Spill Prevention, Control, and Countermeasures Plan, if deemed necessary; AR 200 1; and applicable Navy, state and federal regulatory requirements. If the ORNG is unable to contain a spill or the spill exceeded 42 gal. (158.9 L) of regulated material, the event would be immediately reported to the Oregon Emergency Response System.
- Under the Navy's RSEPA, Range Condition Assessment Five-year Reviews would continue to be conducted, and appropriate steps would be taken to analyze environmental conditions on the range and to prevent or respond to a release or substantial threat of a release of munitions constituents of potential concern to off-range areas that could pose risks to human health or the environment. RSEPA focus would be expanded to incorporate new range activities and new training areas under periodic assessments.
- Assessments would be conducted for DMPTR (Alternative 1 only), the MPMGR, and both CLFRs in accordance with the Army's ORAP. These assessments would first determine qualitatively if munitions constituents were leaving the operational range footprint and whether pathways exist for human or ecological receptors. A quantitative assessment would be conducted if the qualitative assessment were inconclusive. The assessments would be conducted on a 5-year review cycle, even if the initial qualitative assessment identified no issues. In addition, ORNG would proactively manage the new ranges using applicable strategies outlined in the *Army Small Arms Training Range Environmental Best Management Practices Manual*.

### **5.4.2.2 Proposed Monitoring**

No specific monitoring needs were identified for water quality. However, the need for groundwater sampling, analysis, or monitoring would continue to be considered during Range Condition Assessment Five-year Reviews conducted under the Navy's RSEPA program and during ORAP conducted by ORNG.

### **5.4.2.3 Proposed Mitigation Measures**

No mitigation measures are warranted for water quality based on the analysis presented in Section 3.3.3 (Environmental Consequences), implementation of current MPs, and implementation of proposed MPs.

## 5.5 NOISE

### 5.5.1 CURRENT REQUIREMENTS AND MANAGEMENT PRACTICES

Activities at NWSTF Boardman comply with numerous established procedures to ensure that neither participants nor non-participants engage in activities that would endanger life or property. Aircraft SOPs are largely oriented toward safety, which also provide significant noise abatement benefits. For example, many SOPs involve flight routing and minimum altitudes. Each of these procedures increases the range of the noise source from human receptors, thus reducing noise impacts. Noise control and abatement programs are developed to minimize noise impacts whenever practicable through implementation of operational alternatives that do not degrade mission requirements or aircraft safety to identify and address incompatible development in areas that are in the vicinity of air installations.

Navy occupational noise exposure prevention procedures (Chief of Naval Operations Instruction 5100.23, *Navy Safety and Occupational Health Program Manual*) are required at NWSTF Boardman for those military personnel who might be exposed to occupational hearing hazards (e.g., military aircraft operations or land detonations). These measures are designed to minimize occupational hearing hazards and ensure there is no risk of hearing impacts from occupational noise exposure.

### 5.5.2 PROPOSED MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES

#### 5.5.2.1 Proposed Management Practices

The Navy and the ORNG propose the following MPs to avoid and minimize impacts from noise under Alternatives 1 and 2:

- Explosive Ordnance Disposal measures for reducing noise impacts during land detonation training include typically conducting detonation training during normal working hours (10:00 a.m.–4:00 p.m.). Demolition Training Range (DTR) activities will not take place after dark.
- DTR training includes additional MPs to help reduce noise levels for training with charges 100 pounds (lb.) (45.4 kilograms [kg]) net explosive weight (NEW) or greater. These could include training during times with optimal weather conditions to attenuate noise, burying the explosive charge, or bunkering the charge with sand bags. Additionally, and to the maximum extent possible, detonation training would be conducted only during days when the weather is favorable. Studies have shown that variation of temperature and wind velocity with altitude can cause a noise event to be inaudible at one time (favorable) and audible at another time (unfavorable). A number of factors affect noise propagation during training events and are considered by range managers and users when planning and conducting activities to help mitigate noise impacts. Conditions that can enhance the propagation of sound include steady winds; clear days on which “layering” of smoke, fog, or clouds are observed; cold, hazy, or foggy mornings; large temperature swings on the previous day; and high barometer/low temperatures. These conditions are avoided to the maximum extent possible when scheduling demolition activities.

#### 5.5.2.2 Proposed Monitoring

No specific monitoring needs were identified for noise.

#### 5.5.2.3 Proposed Mitigation Measures

- Due to hibernation patterns of the Washington ground squirrel and the nesting of migratory birds, detonations of NEWs above 50 lb. (22.7 kg) are restricted between January through

August. Detonations of NEWs greater than 50 lb. will be performed between September and December unless necessitated by operational or disposal requirements. Public notice would be given prior to detonation of 100 lb. (45.4 kg) NEW or greater.

## 5.6 VEGETATION

### 5.6.1 CURRENT REQUIREMENTS AND MANAGEMENT PRACTICES

- Vegetation is managed under the *NWSTF Boardman INRMP*. Actions focus on minimizing disturbance, controlling invasive plants and weeds, and restoring native habitats.
- All training and facility operation actions at NWSTF Boardman are reviewed by the Naval Air Station (NAS) Whidbey Island/NWSTF Boardman Natural Resources Manager for potential invasive plant and noxious weed issues.

### 5.6.2 PROPOSED MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES

#### 5.6.2.1 Proposed Management Practices

The current MPs listed in Section 5.6.1 (Current Requirements and Management Practices) would continue to be implemented under Alternatives 1 and 2, and existing programs and plans would be updated to reflect new conditions. The following MPs would be implemented to avoid and minimize potential impacts to vegetation under Alternatives 1 and 2:

- Surveys would be conducted during the project design phase to identify existing vegetation communities and evaluate habitat quality. This information would be used during project design to support micro-siting decisions. Areas of higher quality habitat (e.g., undisturbed areas with a relatively high percentage of native plant cover) would be avoided in favor of areas of lower quality habitat (e.g., disturbed areas with a relatively high percentage of non-native plant cover), to the extent practicable. Micro-siting efforts would be limited to buildings and structures, as opposed to targetry or other range components, because even minor changes to the range design could affect the associated surface danger zone or impact range safety in other ways. The survey data would also be used to support post-construction restoration efforts.
- Vegetation temporarily disturbed during construction would be restored in accordance with the proposed post-construction restoration plan (Appendix F, Additional Biological Information). The restoration plan would be implemented by the ORNG in accordance with the Host-Tenant that would be updated prior to implementing the selected alternative.
- Invasive plants would continue to be managed and controlled under the *NWSTF Boardman INRMP*. The Plan would be updated in cooperation with ORNG, USFWS, and ODFW during routine annual reviews to reflect the evolving invasive plant management situation associated with construction and operation of the new ranges. Updates to the Plan would include provisions for short- and long-term monitoring of invasive plants (Section 5.6.2.2, Proposed Monitoring); responsibilities and procedures for integrating efforts of the Navy, ORNG, and The Nature Conservancy; criteria for prioritizing management actions and adaptive management strategies to control invasive plants; and annual work plans, including funding requirements and funding sources.
- Transport of invasive plant seeds by ORNG vehicles and equipment would be minimized by washing vehicles and equipment before and after training events. Washing would normally occur at the unit's home station.
- The *NWSTF Boardman Draft Integrated Wildland Fire Management Plan* (Appendix H) would be finalized and implemented. In addition to other fire protection measures, the Plan includes

proposed modifications to the existing system of fire breaks. The width of some fire breaks would be reduced to the width of the adjacent road, some fire breaks that do not follow roads would be eliminated, and some new fire breaks would be created (see Figure 3.13-3). If fully implemented, the total area of fire breaks that would be maintained annually by mechanical disturbance (plowing or disking with a tractor) would decrease from 462 ac. (187 ha) to 243 ac. (98 ha). Areas removed from mechanical maintenance would be planted with native bunchgrasses, primarily Sandberg's bluegrass with some needle and thread or bluebunch wheatgrass, to provide a low-structure and low-fuel load area next to the road/fire break. Initial fire break restoration efforts would be limited to relatively small areas to determine if restoration on a larger scale is feasible.

- As part of the *NWSTF Boardman INRMP*, the Navy, in cooperation with The Nature Conservancy, is proposing to relocate Research Natural Area (RNA)-A to a more suitable location. Three RNAs (A, B, and C; see Figure 1-5) were established on NWSTF Boardman in 1978 and are co-managed by The Nature Conservancy under a Memorandum of Understanding with the Navy. The RNA program was created to (1) preserve examples of all significant natural ecosystems for comparison with those influenced by man, (2) provide educational and research areas for ecological and environmental studies, and (3) preserve gene pools of threatened and endangered plants and animals. RNA-A encompasses the Main Target Area at NWSTF Boardman, which must be used and maintained to meet mission requirements. Portions of the Main Target Area are highly disturbed by military use. While the rationale for originally establishing RNA-A within the Main Target Area is uncertain, it has become clear that this area is not functioning as an RNA and is not providing the intended scientific and educational benefits of an RNA. Therefore, the Navy, in coordination with The Nature Conservancy, is proposing to relocate RNA-A to one or more suitable locations on NWSTF Boardman. The new RNA would be sited to avoid possible conflicts with military activities and the new location would be more representative of the unique habitat types RNAs are designed to protect. Similar to existing RNA-B and RNA-C, access to the relocated RNA would normally be limited to research activities, invasive plant control, and emergency response. Vegetation communities would benefit from the increased protection and management provided by relocating RNA-A to a more suitable location.

### 5.6.2.2 Proposed Monitoring

Environmental monitoring involves systematic sampling of physical and biological resources to derive knowledge of the environment, its resources, and processes or activities that affect them. Monitoring can be conducted for a number of purposes, including establishing environmental baselines and trends, informing decision-making for management actions, assessing the effects of natural and human influences, and ensuring compliance with environmental regulations. Accordingly, monitoring is an important component of the Navy's natural resources management strategy implemented under the *NWSTF Boardman INRMP*. The current Plan includes vegetation monitoring project recommendations, which will be implemented subject to the availability of funds properly authorized and appropriated under Federal law.

To the extent possible, vegetation monitoring conducted under the current *NWSTF Boardman INRMP* will be designed to support the Proposed Action, as well as existing management needs. In addition, the Plan would continue to be the primary means of designing and implementing vegetation monitoring to address the evolving management situation associated with construction and operation of the new ranges. Necessary updates to the Plan and associated monitoring would be accomplished during routine annual reviews conducted in cooperation with ORNG, USFWS, and ODFW. This process will help to

ensure that a comprehensive and consistent approach to vegetation management and monitoring is accomplished for the entire NWSTF Boardman property.

### **5.6.2.3 Proposed Mitigation Measures**

Based on the analysis presented in Section 3.5.3 (Environmental Consequences), and implementation of proposed MPs and monitoring efforts for vegetation, additional mitigation measures are not required to further reduce adverse impacts on vegetation. However, mitigation measures proposed to reduce adverse impacts on the Washington ground squirrel (see Section 3.6.3.4, Proposed Management Practices, Monitoring, and Mitigation Measures) would also result in benefits to vegetation communities at NWSTF Boardman. These proposed mitigation measures include restoration of native shrub steppe and grassland habitats at NWSTF Boardman and are discussed in detail in the USFWS Conference Opinion (Appendix B, Regulatory Correspondence).

## **5.7 WILDLIFE**

### **5.7.1 CURRENT REQUIREMENTS AND MANAGEMENT PRACTICES**

Current requirements and MPs applicable to wildlife at NWSTF Boardman are described in the *NWSTF Boardman INRMP*. Actions focus on minimizing disturbance, restoring native habitats, and monitoring.

### **5.7.2 PROPOSED MANAGEMENT PRACTICES, MONITORING, AND MITIGATION**

This section presents MPs, monitoring, and mitigation measures currently proposed by the Navy and ORNG to avoid and minimize or reduce potential impacts to wildlife. As discussed above, the Navy and ORNG engaged in conferencing with the USFWS for the Washington ground squirrel. As part of the conferencing process and following publication of the Draft EIS, the Navy, ORNG, and USFWS developed additional MPs, monitoring, and mitigation measures, which are included in this Final EIS.

An adaptive management and monitoring process was also developed through conferencing with USFWS to help reduce uncertainty associated with the anticipated effects of the action and monitor the anticipated effectiveness of the proposed MPs and mitigation measures. Adaptive management is a decision process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies or operations as part of an iterative learning process (Williams et al. 2009). The *NWSTF Boardman INRMP* currently provides a mechanism to adaptively manage natural resources cooperatively with USFWS and ODFW. If a decision is made to implement the Proposed Action, commitments to fund and implement specific MPs, mitigation measures, and an adaptive management process would be made in the Record of Decision. As each individual proposed action is funded and constructed, mitigation measures and adaptive management of the area involved with that action would be implemented. The INRMP would continue to provide the overall management structure for implementing adaptive management. After the Record of Decision is signed, the INRMP would be updated to include applicable commitments made in the Record of Decision, including monitoring and mitigation. The INRMP would continue to be reviewed and updated annually through natural resources metrics meetings with USFWS, ODFW, and other stakeholders. This process will help to ensure that a comprehensive and consistent approach to adaptive management and monitoring is accomplished for the entire NWSTF Boardman property.

### 5.7.2.1 Proposed Management Practices

The current MPs contained in the *NWSTF Boardman INRMP* and other applicable plans would continue to be implemented, and existing programs and plans would be updated to reflect new conditions. The following additional MPs would be implemented to avoid and minimize potential impacts under the Proposed Action:

- Applicable erosion control measures would be implemented during construction to avoid and minimize the potential for wind and water erosion in accordance with the Oregon Department of Environmental Quality *Erosion and Sediment Control Manual* (Oregon Department of Environmental Quality 2005).
- Drip pads would be placed under equipment when parked to avoid soil contamination from leaking fluids.
- Under the Navy's RSEPA, Range Condition Assessment Five-year Reviews would continue to be conducted and appropriate steps would be taken to analyze environmental conditions on the range and to prevent or respond to a release or substantial threat of a release of munitions constituents of potential concern to off-range areas that could pose risks to human health or the environment. RSEPA focus would be expanded to incorporate new range activities and new training areas under periodic assessments.
- Assessments would be conducted for the DMPTR (under Alternative 1), the MPMGR, and both CLFRs in accordance with the Army's ORAP. These assessments would first determine qualitatively if munitions constituents were leaving the operational range footprint and whether pathways exist for human or ecological receptors. A quantitative assessment would be conducted if the qualitative assessment were inconclusive. The assessments would be conducted on a 5-year review cycle, even if the initial qualitative assessment identified no issues. In addition, ORNG would proactively manage the new ranges using applicable strategies outlined in the *Army Small Arms Training Range Environmental Best Management Practices Manual*.
- Project-specific monitoring would be conducted during the project design phase to identify existing habitat, evaluate habitat quality, and identify wildlife currently using these habitats. This information would be used during project design to support microsite decisions. Areas of higher quality habitat (e.g., undisturbed areas with a relatively high percentage of native plant cover) or high wildlife use (e.g., existing Washington ground squirrel burrows) would be avoided in favor of areas of lower quality habitat (e.g., disturbed areas with a relatively high percentage of non-native plant cover), to the extent practicable. Micrositing efforts would be limited to buildings and structures, as opposed to targetry or other range components, because even minor changes to the range design could affect the associated surface danger zone or impact range safety in other ways. The survey data would also be used to support post-construction restoration efforts.
- Habitat temporarily disturbed during construction would be restored in accordance with the proposed post-construction restoration plan (Appendix F, Additional Biological Information). The restoration plan would be implemented by the ORNG in accordance with the Host-Tenant Agreement and Inter-Service Support Agreement that would be updated prior to implementing the proposed action.
- The MPs contained in the *NWSTF Boardman INRMP* and other applicable plans that are relevant to Washington ground squirrel conservation would continue to be implemented.
- Invasive plants would continue to be managed and controlled under the *NWSTF Boardman INRMP*, with an increase in control effort to reflect new threats introduced by the Proposed

Action. The Plan would be updated in cooperation with ORNG, USFWS, and ODFW during routine annual reviews to reflect the evolving invasive plant management situation associated with construction and operation of the new ranges. Updates to the Plan would include provisions for short- and long-term monitoring of invasive plants; responsibilities and procedures for integrating efforts of the Navy, ORNG, and The Nature Conservancy; criteria for prioritizing management actions and adaptive management strategies to control invasive plants; and annual work plans, including funding requirements and funding sources. After ranges become operational, qualitative surveys would be conducted annually within the range footprint to detect noxious weeds (Morrow County list of noxious weeds) within the identified affected areas. The purpose of these surveys is to detect noxious weeds so that they can be controlled immediately, most likely through targeted application of a glyphosate herbicide. Surveys would continue indefinitely, and controls would be implemented as necessary.

- The *NWSTF Boardman Draft Integrated Wildland Fire Management Plan* (Appendix H) would be finalized and implemented. In addition to other fire protection measures, the Plan includes proposed modifications to the existing system of fire breaks. The width of some fire breaks would be reduced to the width of the adjacent road, some fire breaks that do not follow roads would be eliminated, and some new fire breaks would be created. The total area of fire breaks that would be maintained annually by mechanical disturbance (plowing or disking with a tractor) would decrease from 462 ac. (187 ha) to 243 ac. (98 ha). Areas removed from mechanical maintenance would be planted with native bunchgrasses, primarily Sandberg's bluegrass with some needle and thread or bluebunch wheatgrass, to provide a low-structure and low-fuel load area next to the road/fire break. Initial fire break restoration efforts would be limited to relatively small areas to determine if restoration on a larger scale is feasible.
- Explosive detonations, pyrotechnics, and live fire are not conducted when the fire danger rating is unacceptable based on the Fire Danger Rating and Wildland Fire Risk Management Matrix contained in the *NWSTF Boardman Draft Integrated Wildland Fire Management Plan* (Appendix H), unless approved by the Commanding Officer, NAS Whidbey Island. Explosive demolition training is not normally scheduled from June through September to minimize wildfire risk.
- Demolition Training Range training MPs include:
  - Conducting training during days when the weather is favorable. Studies have shown that variation of temperature and wind velocity with altitude can cause a noise event to be inaudible at one time (favorable) and audible at another time (unfavorable). A number of factors affect noise propagation during training events, and are considered by range managers and users when planning and conducting activities to help mitigate noise impacts. Conditions that can enhance the propagation of sound include steady winds; clear days on which 'layering' of smoke, fog, or clouds are observed; cold, hazy, or foggy mornings; large temperature swings on the previous day; and high barometer/low temperatures. These conditions are avoided to the maximum extent possible when scheduling explosive detonation training. Charges greater than 50 lb. (22.7 kg) NEW would not be detonated from January through August to avoid and minimize noise impacts on Washington ground squirrels and nesting birds, unless necessitated by operational or disposal requirements.
  - To help reduce noise levels for training with charges of 100 lb. (45.4 kg) NEW or greater additional MPs include training during times with optimal weather conditions to attenuate noise, burying the explosive charge, or bunkering the charge with sand bags.
- On NWSTF Boardman, to improve vehicle operation safety, be protective of wildlife, and reduce dust emissions, the vehicle speed limit for the range is 25 miles per hour (mph) (40.2 kilometers per hour [kph]) unless otherwise posted; however, emergency situations, operational

necessities, and certain training events may require vehicle speeds to exceed this standard speed limit. At all times on the range, vehicle operators shall use extreme caution and operate at a slow, safe speed consistent with the mission, safety, and current road and environmental conditions. Vehicle operators shall be cognizant and protective of pedestrians and wildlife while conducting all range activities.

- The only road posted above 25 mph (40.2 kph) is the Admin Main road from the main gate access to the range from Bombing Range Road to the on-range road known as “The Interstate.” Speed limit on the Admin Main Road is 30 mph (48.3 kph).
- It is not expected that training requirements will require speeds in excess of 25 mph (40.2 kph) on a routine basis; however, in some training events, vehicles need to be able to react to changing tactical situations in training as they would in actual combat. Training differently than that which would be needed in an actual combat scenario would decrease training effectiveness and reduce the crew's abilities. During these activities, the 25 mph (40.2 kph) speed limit may need to be exceeded for brief periods.

### 5.7.2.2 Proposed Mitigation Measures

The proposed MPs described above would be implemented to avoid, minimize, and rectify impacts on natural resources. Nonetheless, the analysis presented in Section 3.6 (Wildlife) indicates that the Preferred Alternative (Alternative 2) would result in unavoidable impacts on historically occupied Washington ground squirrel habitat. Therefore, mitigation measures would be implemented to compensate for these unavoidable impacts from the Preferred Alternative, as described in the Final Conferencing Opinion with USFWS. The mitigation goal is no net loss of habitat quantity or quality, and to provide a net benefit of habitat quantity or quality, which would be achieved through in-kind and in-proximity habitat restoration and enhancement.

Despite being one of the largest remaining blocks of predominantly native shrub-steppe and grassland habitats in Oregon’s portion of the Columbia Plateau Ecoregion, non-native plant species invasions have degraded plant communities and wildlife habitat at NWSTF Boardman. Lightning-caused wildfire, historic livestock grazing, plowing, and other land uses have contributed to the spread of non-native plant species on NWSTF Boardman. Non-native plant species were identified as one of the greatest threats to the Boardman Grasslands (Kagan et al. 2000), because they replace native vegetation and degrade wildlife habitat.

In particular, cheatgrass (*Bromus tectorum*) is a serious threat because it alters natural fire regimes by creating more abundant and continuous fine fuels (fast-drying fuel that is rapidly consumed by fire when dry) that can result in more intense, larger, and frequent fires. Intense fires that burn through high-quality native habitats can convert a diverse multi-story habitat of cryptogams, perennial grasses and forbs, and shrubs to a monoculture of cheatgrass and other invasive species that is difficult to reverse without active restoration (Elseroad 2007). Since 1998, more than 85 percent of NWSTF Boardman has been burned by wildfires, which have caused short- and long-term habitat alterations. Cheatgrass is a factor that has contributed to the intensity, size, and frequency of wildfire at NWSTF Boardman.

Restoring habitats on NWSTF Boardman that have been degraded by wildfire, non-native invasive plants, plowing, and other causes offers opportunities for in-kind and in-proximity habitat mitigation. Successful restoration or enhancement efforts on ample acreage at NWSTF Boardman could increase available native habitat for the Washington ground squirrel and other wildlife, decrease the frequency

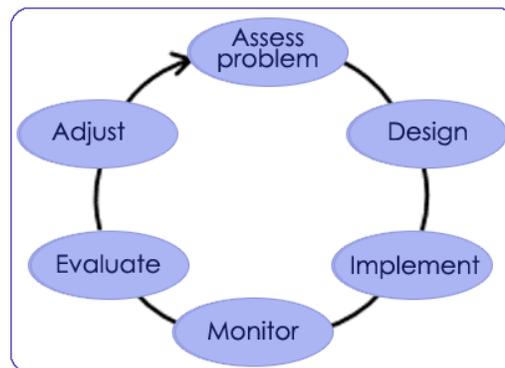
and intensity of wildfire, and improve long-term stability of the ecosystem, thus ensuring no net loss and a net benefit of habitat quantity and quality at NWSTF Boardman.

Although not required under the Endangered Species Act, the Navy and ORNG (acting as the National Guard Bureau's agent) engaged in early conferencing with the USFWS to address impacts on the Washington ground squirrel and develop conservation measures to avoid, minimize, and mitigate impacts on this candidate species. Proposed mitigation measures are based on the outcome of the conference process and are provided in the Conference Opinion issued by USFWS on December 2, 2013 (Appendix B, Regulatory Correspondence).

### 5.7.2.3 Adaptive Management and Monitoring

#### 5.7.2.3.1 Introduction

Adaptive management is a decision process (Figure 5.7-1) that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. Adaptive management requires stated management objectives to guide decisions about what to try, and explicit assumptions about expected outcomes to compare against actual outcomes. It is important to know what the available management options and alternative assumptions are, in case the action that is tried does not work as expected (Williams et al. 2009).



**Figure 5.7-1: Adaptive Management Process**

This section outlines the Navy and ORNG's proposed adaptive management process that would be used to help reduce uncertainty associated with the anticipated effects of the action and the anticipated effectiveness of the proposed MPs and mitigation measures. As discussed above, the *NWSTF Boardman INRMP* currently provides a mechanism to adaptively manage natural resources cooperatively with USFWS and ODFW. If a decision is made to implement the Proposed Action, specific commitments to an adaptive management process would be made in the Record of Decision. These commitments would be incorporated into the INRMP, and the INRMP would continue to provide the overall management structure for implementing adaptive management. This management structure includes a requirement to review and update the INRMP annually through natural resources metrics meetings that include the USFWS and ODFW. The remainder of this section and the Conference Opinion (Appendix B, Regulatory Correspondence) outlines the proposed adaptive management process, including expected outcomes and uncertainties, management objectives and decision points, monitoring, and alternative management actions.

#### **5.7.2.3.2 Expected Outcomes and Uncertainties**

Adaptive management requires explicit assumptions about expected outcomes to compare against actual outcomes (Williams et al. 2009). The anticipated effects of the action and associated uncertainties are analyzed in detail in Section 3.6.3 (Environmental Consequences). Following is a very brief summary of the expected outcomes of implementing the Preferred Alternative, including the proposed MPs and mitigation measures:

- Proposed range construction and military readiness activities would result in permanent habitat loss (25 ac. [10 ha]) and long-term habitat degradation of (561 ac. [227 ha]). Washington ground squirrel use of the affected area would decline, foraging and breeding would be adversely affected, and the Washington ground squirrel population on NWSTF Boardman could decline. Uncertainties that can be addressed through adaptive management include the possibility that impacts could be overestimated or underestimated.
- MPs would avoid and minimize impacts. Mitigation measures (habitat restoration and enhancement) would compensate for lost habitat functions and values and provide a net benefit. Ecosystem stability would improve in restored/enhanced areas, and Washington ground squirrels would persist and possibly increase in numbers in these areas. Uncertainties that can be addressed through adaptive management include the effectiveness and benefits gained from the proposed restoration.

#### **5.7.2.3.3 Management Objectives and Monitoring**

An adaptive approach requires explicit and measurable objectives. Uncertainty about how to achieve objectives is what motivates adaptive management and drives the design of the monitoring system. To address this uncertainty, stakeholders must agree on the objectives (Williams et al. 2009). The management objectives for the Proposed Action are grouped under two broad management goals that are focused on: (1) reducing uncertainties associated with potential impacts of the Proposed Action, and (2) reducing uncertainties associated with the effectiveness and benefits gained by the proposed restoration. Specific management objectives under these broad goals would serve as decision points that could trigger evaluation and adjustment phases of the adaptive management process, based on monitoring. Management objectives and monitoring are provided in the USFWS Conference Opinion provided in Appendix B (Regulatory Correspondence).

#### **5.7.2.3.4 Alternative Management Actions**

Like any iterative decision process, decision making in adaptive management involves the selection of an appropriate management action at each point in time, given the status of the resources being managed at that time (Williams et al. 2009). Potential alternative management actions for NWSTF Boardman include:

- Review of ongoing training activities to determine if additional measures or MPs, such as seasonal adjustments to training schedules, could be implemented to avoid or minimize impacts on the resources of concern while still meeting training and readiness requirements. Additionally, if no effects are observed then the monitoring could be reduced.
- Modify or refine restoration methods. For example, use more aggressive invasive plant controls on restoration sites such as pre-emergent herbicides, alter planting strategies, or restore additional acreage.
- Refine fire prevention and suppression methods.

- Evaluate the feasibility of offsite mitigation by initiating a search for suitable properties to serve as a compensatory mitigation site that could be acquired under the Navy's Readiness and Environmental Protection Initiative or the Army's Compatible Land Use Buffer Program.

## **5.8 LAND USE AND RECREATION**

### **5.8.1 CURRENT REQUIREMENTS AND MANAGEMENT PRACTICES**

#### **5.8.1.1 Access Restrictions**

- Persons authorized to access NWSTF Boardman are all military and civilian employees of DoD, or authorized contractors and personnel from research organizations. Recreational use of NWSTF Boardman is not authorized at this time due to the nature of the facility being used as an active training range. However, the Well Springs site, Pioneer Cemetery, and a portion of the Oregon Trail on the southern range boundary are open to the public (approximately 200 ac. [80.9 ha]).
- Special Use Airspaces (SUAs) consist of airspace with defined vertical and lateral limits established for the purpose of separating certain military training activities from Instrument Flight Rules (IFR) traffic. Whenever a Military Operations Area (MOA) is being used, or is activated, nonparticipating IFR traffic may be cleared through the MOA if IFR separation can be provided by Air Traffic Control. Otherwise, Air Traffic Control will reroute or restrict nonparticipating IFR traffic. At the cessation of military use of the MOA, the airspace is deactivated and nonparticipating IFR traffic is no longer restricted in the area.
- According to Federal Aviation Administration (FAA) and DoD policy, SUA should be made available for use by nonparticipating aircraft when all or part of the airspace is not needed by the using agency. To accommodate the joint use of SUA, a Letter of Agreement or a Letter of Procedure is drafted between the controlling agency and the using agency. In the case of R-5701 [A-E] and R-5706 above NWSTF Boardman, a Letter of Agreement is in place between Seattle Center Air Route Traffic Control Center (ARTCC) and NAS Whidbey Island. Any new MOA, upon designation by the FAA, would be addressed through an update to the existing or a new letter of agreement. Through the Letter of Agreement, the Navy establishes the activation/deactivation procedures for the SUA and may outline periods when the FAA, with the Navy's concurrence, may route IFR traffic through the active SUA (NAS Whidbey Instruction 3770.1, FAA JO 7400.8).
- The aviation easements established to the east, west, and southwest of NWSTF Boardman (see Figure 3.7-1) grant the right-of-flight including the right to noise and dust inherent in aircraft flight; the right to restrict or prohibit lights, electromagnetic signals, and bird-attractants; the right to unobstructed airspace; and the right of entry upon the land to exercise those rights. Additionally, each of these aviation easements allows improvements so long as they are less than 100 ft. (30.5 m) in height and do not interfere with line of vision of pilots and as long as there are no overhead lines that exceed 35 ft. (10.7 m) in height.

#### **5.8.1.2 Fire Management**

Commander, Navy Region Northwest (CNRNW) has implemented a regional Fire Management Plan. The Navy is currently revising, updating, and expanding the specific portion of that plan applicable to NWSTF Boardman. The current fire strategy is to use the existing road system as the staging lines at which fires will be fought. The Navy currently maintains a system of 60 ft. (18.3 m) wide fire breaks throughout NWSTF Boardman. A detachment of six Navy personnel is stationed at NWSTF Boardman. Their responsibilities are to maintain the buildings, roads, wells, fences, and other infrastructure and provide security in accordance with NAS Whidbey Instruction 3120.6 (NWSTF Boardman Standard Operating Procedures).

The Navy previously had a mutual aid agreement for wildland fire response with Umatilla Chemical Depot (UCD) fire department. However, the Depot completed its mission in late 2011 and was closed down through the Base Realignment and Closure process. The fire department responsibilities have been transferred to the Oregon Military Department (OMD), and a Mutual Aid Agreement was drafted and signed in 2013 and is effective through 2018.

## **5.8.2 PROPOSED MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES**

### **5.8.2.1 Proposed Management Practices**

Management practices in place for other resources (e.g., Acoustic Environment, Biological Resources, Wildfire), which affect land use on NWSTF Boardman, would continue to be implemented. These MPs would also serve to prevent impacts on land use surrounding NWSTF Boardman. No additional MPs are warranted for land use and recreation based on the analysis presented in Section 3.7.3 (Environmental Consequences).

### **5.8.2.2 Proposed Monitoring**

No monitoring measures are warranted for land use and recreation based on the analysis presented in Section 3.7.3 (Environmental Consequences).

### **5.8.2.3 Proposed Mitigation Measures**

No mitigation measures are warranted for land use and recreation based on the analysis presented in Section 3.7.3 (Environmental Consequences), and implementation of current MPs.

## **5.9 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE**

### **5.9.1 CURRENT REQUIREMENTS AND MANAGEMENT PRACTICES**

There are no current mitigation measures related to socioeconomics or environmental justice. However, current requirements and MPs as well as mitigation measures in place for other resources (e.g., Air Quality, Water Resources, Noise, and Public Health and Safety) ensure that non-participants are not affected by actions on NWSTF Boardman.

## **5.9.2 PROPOSED MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES**

### **5.9.2.1 Proposed Management Practices**

Management practices in place for other resources (e.g., Air Quality, Water Quality, and Noise) would continue to be implemented. These MPs would also serve to prevent impacts to socioeconomics and environmental justice. No additional MPs are warranted for socioeconomics and environmental justice based on the analysis presented in Section 3.8.3 (Environmental Consequences).

### **5.9.2.2 Proposed Monitoring**

No specific monitoring needs were identified for socioeconomics and environmental justice.

### **5.9.2.3 Proposed Mitigation Measures**

No mitigation measures are warranted for socioeconomics and environmental justice based on the analysis presented in Section 3.8.3 (Environmental Consequences).

## **5.10 TRANSPORTATION**

### **5.10.1 CURRENT REQUIREMENTS AND MANAGEMENT PRACTICES**

The Navy strives to ensure that it retains access to training areas and SUA as necessary to accomplish its mission, while facilitating joint military-civilian use of such areas to the extent practicable and consistent with safety. These goals of military access, joint use, and safety are promoted through various coordination and outreach measures, including:

- In the case of R-5701 [A-E] and R-5706 within NWSTF Boardman, a Letter of Agreement is in place between Seattle Center ARTCC and NAS Whidbey Island. Through the Letter of Agreement, the Navy and FAA establish the activation/deactivation procedures for the SUA. (NAS Whidbey Instruction 3770.1). R-5701, R-5706, and Boardman MOA are activated from 7:30 a.m. to 11:59 p.m. Monday through Friday; and at other times by Notices to Airmen (6 hours advance notice).
- Any new MOA, upon designation by the FAA, would be addressed through an update to the existing or a new Letter of Agreement.
- Non-participating aircraft are prohibited from entering Restricted Areas at NWSTF Boardman unless they have prior approval from the controlling authority (Seattle ARTCC). Non-military aviators are required to coordinate any flight activities that require entrance at any time into the Restricted Airspace with Seattle ARTCC, who in turn works with local aviators and the military training schedule to determine available flight times. If scheduling conflicts arise, Seattle ARTCC contacts the local aviator. Future requirements may be requested with NAS Whidbey Island Range Schedules and accommodated with a “non-activation” of the airspace if it is not otherwise scheduled.

### **5.10.2 PROPOSED MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES**

#### **5.10.2.1 Proposed Management Practices**

No adverse transportation impacts were identified; therefore, no proposed MPs are warranted. There are measures in place or proposed for other resources (e.g., Noise, Section 3.4; and Wildlife, Section 3.6) that also apply to transportation at NWSTF Boardman, mainly through the stipulation of training parameters.

#### **5.10.2.2 Proposed Monitoring**

No specific monitoring needs were identified for transportation.

#### **5.10.2.3 Proposed Mitigation Measures**

No mitigation measures are warranted for transportation based on the analysis presented in Section 3.9.3 (Environmental Consequences).

## **5.11 CULTURAL RESOURCES**

### **5.11.1 CURRENT REQUIREMENTS AND MANAGEMENT PRACTICES**

Cultural resources at NWSTF Boardman are managed in accordance with the NHPA, the Archaeological Resources Protection Act, the Archeological and Historic Preservation Act, the American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act (NAGPRA), appropriate Navy Instructions, and the *NWSTF Boardman Integrated Cultural Resources Management Plan (ICRMP)* (U.S. Department of the Navy 2015).

## **5.11.2 PROPOSED MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES**

### **5.11.2.1 Proposed Management Practices**

Cultural resources at NWSTF Boardman would continue to be managed in accordance with the NHPA, the Archaeological Resources Protection Act, the Archeological and Historic Preservation Act, the American Indian Religious Freedom Act, NAGPRA, appropriate Navy Instructions, and the NWSTF Boardman ICRMP (U.S. Department of the Navy 2015) under Alternatives 1 and 2.

### **5.11.2.2 Proposed Monitoring**

No monitoring is required for cultural resources during construction or operation of the range enhancements proposed under Alternative 1 or Alternative 2 because no National Register of Historic Places (NRHP)-eligible or -listed archaeological resources, historic trails, architectural resources, or American Indian traditional cultural properties are located in the direct Area of Potential Effect (APE). However, if during development activities the Navy or ORNG inadvertently discovers any cultural material (i.e., prehistoric or historic), all activities shall cease immediately and the NAS Whidbey Island Cultural Resources Manager shall be contacted to evaluate the discovery.

No monitoring is required for archaeological resources, historic trails, or architectural resources in the indirect APE because the Proposed Action has no potential to cause physical damage to or deterioration of these resources within the indirect APE. Potential adverse effects within the indirect APE would be limited to transient noise and visual intrusions that would affect the setting of traditional cultural properties. The Navy, Oregon State Historic Preservation Office (SHPO), Confederated Tribes of the Umatilla Indian (CTUIR), and Advisory Council on Historic Preservation (ACHP) prepared and signed a Memorandum of Agreement (October 2015) (Appendix C, Tribal and Cultural Correspondence) to resolve potential adverse effects on traditional cultural properties and establish protocols for protection and management of these resources, including a monitoring plan, in accordance with Section 106 of the NHPA. The Memorandum of Agreement includes stipulations for monitoring traditional cultural properties in cooperation with the CTUIR.

### **5.11.2.3 Proposed Mitigation Measures**

No mitigation measures are required for archaeological resources, historic trails, or architectural resources because no NRHP-eligible or -listed archaeological resources, historic trails, or architectural resources would be impacted. Potential adverse effects on traditional cultural properties have been identified by the Navy in consultation with the CTUIR. The Navy, Oregon SHPO, CTUIR, and ACHP prepared and signed a Memorandum of Agreement (October 2015) to resolve adverse effects on traditional cultural properties and establish protocols for protection and management of these resources in accordance with Section 106 of the NHPA.

## **5.12 AMERICAN INDIAN TRADITIONAL RESOURCES**

### **5.12.1 CURRENT REQUIREMENTS AND MANAGEMENT PRACTICES**

The Navy manages the protection of American Indian traditional resources at NWSTF Boardman and conducts government-to-government consultation with the CTUIR, the Confederated Tribes of the Warm Springs of Oregon, the Confederated Tribes and Bands of the Yakama Nation, and the Nez Perce Tribe in accordance with the American Indian Religious Freedom Act, NAGPRA, and appropriate Navy Instructions. Plant and wildlife resources are managed in accordance with the *NWSTF Boardman INRMP* (U.S. Department of the Navy 2012).

## **5.12.2 PROPOSED MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES**

### **5.12.2.1 Proposed Management Practices**

The Navy would continue to manage the protection of American Indian traditional resources at NWSTF Boardman and conduct government-to-government consultation with the CTUIR, the Confederated Tribes of the Warm Springs of Oregon, the Confederated Tribes and Bands of the Yakama Nation, and the Nez Perce Tribe in accordance with the American Indian Religious Freedom Act, NAGPRA, and appropriate Navy Instructions. Plant and wildlife resources would continue to be managed in accordance with the *NWSTF Boardman INRMP* (U.S. Department of the Navy 2012).

### **5.12.2.2 Proposed Monitoring**

Government-to-government consultation with CTUIR did not identify a need for additional monitoring of specific effects to American Indian traditional plant and animal resources. Therefore, no additional monitoring is proposed for American Indian traditional resources under the No Action, Alternative 1, or Alternative 2.

### **5.12.2.3 Proposed Mitigation Measures**

Government-to-government consultation with CTUIR did not identify a need for mitigation measures for effects to American Indian traditional plant and animal resources. Therefore, mitigation measures are not proposed for American Indian traditional resources under the No Action, Alternative 1, or Alternative 2.

## **5.13 PUBLIC HEALTH AND SAFETY AND PROTECTION OF CHILDREN**

### **5.13.1 CURRENT REQUIREMENTS AND MANAGEMENT PRACTICES**

There are specific and documented procedures in place to ensure that nonparticipants are not endangered by training actions. Medically trained personnel and first aid kits are on site for each training activity in the unlikely event of an injury. Monitored fences around NWSTF Boardman, and the use of gates and signs to control access, protect the public from potentially hazardous training activities. Monitoring of training events serves to identify potential public health and safety risks and avoid them.

- Current range control procedures at NWSTF Boardman limit unanticipated interactions with the public. Public access to NWSTF Boardman is controlled per NAS Whidbey Instruction 8020.8 Ground Entry/Access to NWSTF Boardman. NWSTF Boardman areas are fully fenced; entrance into these areas is controlled by unmanned gates. Signs also are posted to warn the public of potentially hazardous activities. Trainers and exercise participants are responsible for assuring that nonparticipants are not close enough that they are at risk during all training activities.
- NWSTF Boardman has a Hazardous Control and Management Plan, Authorized Use List, and a Hazard Communication Program. Material Safety Data Sheets are available for the hazardous materials stored there. Navy personnel at NWSTF Boardman receive initial and periodic refresher training in the proper storage, handling, and management of hazardous materials. NWSTF Boardman maintains a Conditionally Exempt Small Quantity Generator status for hazardous waste, and the facility is not required to have an Environmental Protection Agency Hazardous Waste Generator Identification number. Hazardous wastes are disposed of through local vendors (e.g., Safety Kleen provides a parts-cleaning service for vehicle maintenance). Some hazardous materials that are no longer needed at NWSTF Boardman are transported to NAS Whidbey Island for reassignment in compliance with the Hazardous Materials Transportation Act, U.S. Department of Transportation and Oregon Department of

Transportation regulations. Some of these materials may be determined to be excess at that point and may then be generated as hazardous wastes, but this would occur at NAS Whidbey Island.

- Currently, users on the ground of NWSTF Boardman are made aware of unexploded ordnance hazards by signage warning of areas where unexploded ordnance clearance has not been confirmed as well as safety briefings provided prior to conducting activities on NWSTF Boardman.

## **5.13.2 PROPOSED MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES**

### **5.13.2.1 Proposed Management Practices**

Current measures in place to ensure that nonparticipants are not endangered by actions at NWSTF Boardman would continue (see Section 3.12.3.5, Proposed Management Practices, Monitoring, and Mitigation Measures). The following MPs would be implemented to reduce hazards associated with unexploded ordnance:

- Post signs warning of areas where unexploded ordnance clearance has not been confirmed
- After range development, restrict movement of Soldiers using the training range to designated areas that are known to be free of any unexploded ordnance. In addition, supplemental unexploded ordnance clearance operations would be conducted prior to construction of range enhancements and operation of the proposed training ranges.

### **5.13.2.2 Proposed Monitoring**

No additional monitoring needs were identified for public health and safety.

### **5.13.2.3 Proposed Mitigation Measures**

Mitigation measures for other resources that affect public health and safety (e.g., Section 3.4, Noise) would be implemented. No additional mitigation measures are warranted.

## **5.14 WILDFIRE**

### **5.14.1 CURRENT REQUIREMENTS AND MANAGEMENT PRACTICES**

CNRNW has implemented a regional *Wildland Fire Management Plan*. The Navy is currently revising, updating, and expanding the specific portion of that plan applicable to NWSTF Boardman. The current fire strategy is provided below.

- Use the existing road system as the staging lines at which fires will be fought. The Navy currently maintains a system of 60 ft. wide fire breaks throughout NWSTF Boardman.
- A detachment of six Navy personnel are stationed at NWSTF Boardman. Their responsibilities are to maintain the buildings, roads, wells, fences, and other infrastructure and provide security in accordance with NAS Whidbey Instruction 3120.6 (NWSTF Boardman Standard Operating Procedures).
- Navy personnel stationed at NWSTF Boardman are required to hold Wildland Firefighting Red Cards. Additionally, the Navy personnel stationed at NWSTF Boardman are equipped with appropriate wildland protective clothing and NWSTF Boardman firefighters have nine vehicles assigned to them. However, three are used for actual firefighting operations: a dedicated firefighting vehicle (Type VI Brush truck), a General Services Administration truck that has a 250-gallon firefighting skid unit mounted (a "skid" is a water pump with a large water capacity

that sits in the rear of a flatbed truck), and a Model 19 fire engine (600-gallon tank). In addition, the Navy leases a tractor and disc during the four month fire season to maintain fire/fuel breaks. In extreme situations, the tractor could also be used for incipient wildland fire suppression efforts when the application of foam lines is unavailable, exhausted, or ineffective.

- The Navy previously had a mutual aid agreement for wildland fire response with UCD fire department. However, the Depot completed its mission in late 2011 and was closed down through the Base Realignment and Closure process. The fire department responsibilities have been transferred to the OMD, and a Mutual Aid Agreement was drafted and signed in 2013 and is effective through 2018.
- According to the CNRNW *Wildland Fire Management Plan*, a risk management decision process should be established that will determine the need for special orders and closures for work/training during extreme fire conditions. The goal of risk management is to safely sustain long term military use and training activities over short term work or training tasks. Planning and scheduling of appropriate training activities and matching supporting fire protection resources to training level of training activity during fire season are possible tools to reduce and mitigate wildfire risk. The risk management decision process will consider: military work/training priorities and minimum requirements; fire weather and fuel conditions; appropriate management responses; availability of wildland firefighting resources; military, public and community safety; and fire management zone priorities.
- Oregon Revised Statutes (ORS) require owners and operators of forestland to take appropriate action to control, extinguish, and report wildland fires regardless of origin (ORS §477.066). In addition, state law indicates that the ORNG shall be subject to the duties, requirements or penalties of ORS §477.068 (Liability for cost of abatement), ORS §477.085 (Liability for cost of protecting land within a forest protection district) and ORS §477.090 (Civil liability), where the origin or subsequent spread of a fire was the direct result of training activity by the ORNG. (ORS §477.095). For regulatory purposes, any undeveloped wildland is considered forestland, whether or not trees are present. In summary, the ORNG is liable for wildland fire control when the origin or subsequent spread of a fire was the direct result of training activity by the ORNG.

## **5.14.2 PROPOSED MANAGEMENT PRACTICES, MONITORING, AND MITIGATION MEASURES**

### **5.14.2.1 Proposed Management Practices**

After an internal study, the DoD in 2001 signed and adopted standards contained within the Review and Update of the 1995 Federal Wildland Fire Management Policy. The Department of the Army subsequently issued its Army Wildland Fire Policy Guidance in 2002. The Army Wildland Fire Policy Guidance adopted the following policies and standards:

- Review and Update of the 1995 Federal Wildland Fire Management Policy (2001)
- National Wildfire Coordinating Group: PMS 310-1, Wildland Fire Qualification System Guide, June 2011 (or current version)
- National Fire Protection Association (NFPA): Standard 1051 – Standard for Wildland Fire Fighter Professional Qualifications, 2007 (or current version)
- NFPA: Standard 1143 – Standard for Wildland Fire Management, 2009 (or current version)
- NFPA: Standard 1144 – Standard for Reducing Structure Ignition Hazards from Wildland Fire, 2008 (or current version)
- NFPA: Standard 1561 – Standard on Emergency Services Incident Management System, 2008 (or current version)

- DoD Instruction 6055.06: DoD Fire and Emergency Services Program, December 21, 2006 (or current version)

In addition to the above policies and standards, the U.S. Army Wildland Fire Policy requires the development and implementation of an Integrated Wildfire Management Plan for all facilities and training lands subject to potential wildland fires.

The Navy has implemented the *Navy Region Northwest Fire Management Plan*. The Navy is currently revising, updating and expanding the specific portion of that plan applicable to NWSTF Boardman. The Navy, ORNG, and other range users would implement the *Draft NWSTF Boardman Integrated Wildland Fire Management Plan* (Appendix H) as part of the Proposed Action. The following MPs would be applied.

- The use of tracer rounds and other incendiary devices would be limited to periods when the risk of wildfire is at acceptable levels. Tracer rounds would be restricted during the fire season from May to October and use would require appropriate approval from NAS Whidbey Island. Tracer ammunition (tracer rounds) are bullets that are built with a small pyrotechnic charge in their base. Ignited by the burning powder, the pyrotechnic composition burns very brightly, making the projectile visible to the naked eye. This enables the shooter to follow the bullet trajectory in order to make aiming corrections.
- To determine if the wildfire risk is at an acceptable level for the use of aerial flares, smoke-grenades, and tracer rounds outside of the fire season, an internal Fire Danger Rating and Wildland Fire Risk Management Matrix would be utilized. This protocol utilizes weather data (temperature, relative humidity and precipitation), fire danger rating (low through extreme), military activity, firefighting assets available on site and other special considerations to identify the appropriate use of aerial flares and smoke-grenades.
- Use of aerial flares and smoke-grenades would be addressed on a case-by-case basis based on the risk assessment, application of ammunition, and timing during the fire season. Pyrotechnic devices, such as smoke grenades, are to be used in metal containments during high fire risk periods.
- Restrict mechanical equipment and weapons used during training to graveled surfaces. No off road driving would be allowed except for rare circumstances (e.g., firefighting) and with authorization.
- Parking would be allowed only in graveled pullouts or parking lots.
- Past agricultural-related fences that are no longer needed (internal to NWSTF Boardman's perimeter fence) would be removed, which would reduce fuel loading (by reducing the amount of fuel that can build up on the windward side of a fenceline) and increase fire response.
- Establish or repair and maintain water storage capabilities.
- The Navy currently maintains a system of 60 ft. (18.3 m) wide fire breaks throughout NWSTF Boardman. In addition to these fire breaks, roads and trails that are already part of NWSTF Boardman would act as minor fire breaks in the event of low intensity fires. However, approximately 219.6 ac. (88.9 ha) of existing fire breaks will be no longer be maintained by disking, and will be revegetated to native short grasses. The fire break system will also be modified with the addition of 19.2 ac. (7.8 ha) of new fire breaks. Section 3.13 (Wildfire) and Appendix H (Draft Integrated Wildfire Management Plan) present the recommended modifications to the NWSTF Boardman fire break system.
- Smoking during operation or use of the proposed training ranges would be banned except in authorized smoking areas.

- Fire prevention protocols developed in the Draft NWSTF Boardman Integrated Wildfire Management Plan would be included in the SOPs and emphasized during the facility orientation and safety briefing.
  - All units training at NWSTF Boardman are to be briefed on wildfire hazards. Briefings include instructions on reporting fires to Range Control, and procedures for fires occurring down range.
  - All maintained roads within NWSTF Boardman are considered fire breaks. A number of roads also have additional fire breaks disked alongside the road. Range Operations personnel also clear vegetation from roads and reduce tumbleweed accumulations along fence lines annually.
  - On high, very high, and extreme fire danger days, the Oregon Army National Guard (ORARNG) Fire Captain will recommend either modifying, limiting, or prohibiting the use of pyrotechnics.
- The possibility of yearly fires exists within the heaviest use areas (i.e., weapons training ranges). Proper implementation of the *Draft NWSTF Boardman Integrated Wildfire Management Plan* would reduce the risk of large spread fires. The Draft NWSTF Boardman Integrated Wildfire Management Plan would be reviewed, and appropriate changes considered on an annual basis.

Additionally, NAS Whidbey Island is currently working on a wildfire response plan for Boardman to request response from NAS Whidbey Island for large-scale fires. This NAS Whidbey Island wildland fire response would include seven qualified personnel, equipment and vehicles. Because of the distance between NWSTF Boardman and NAS Whidbey Island, it would be expected to have a 6- to 8-hour response time.

The ORNG would have a trained, dedicated fire crew and a wildland fire truck on-site during weapons training during times of high fire risk. The ORNG also would have CH-47 or CH-60 helicopter with aerial firefighting capability available or a Single Engine Air Tanker contracted for use during high fire risk seasons. During live fire operations, the ORNG would typically have one Type VI Brush Truck. In extreme situations, the OMD can provide one Type VII and up to three Type VI Bush Trucks with water and WFFF (Foam) capability, two to six personnel with Wildland Fire Red Card training, one Lead Forest Officer/Fire Captain, as well as ORNG aviation assets.

#### **5.14.2.2 Proposed Monitoring**

Military personnel would monitor for fire at all times during range operations from observation towers and while on patrols. Post-operation fire monitoring training would be conducted by range operators while conducting range clearance duties.

#### **5.14.2.3 Proposed Mitigation Measures**

No mitigation measures are warranted for wildfire based on the analysis presented in Section 3.13.3.4 (Proposed Management Practices, Monitoring, and Mitigation Measures) and implementation of proposed MPs and monitoring.