

**FINDING OF NO SIGNIFICANT IMPACT**  
**FIRE MANAGEMENT PROGRAM ENVIRONMENTAL ASSESSMENT**  
***North Cascades National Park Service Complex***  
***May 2007***

***Purpose and Need***

The purpose of this proposed federal action is to further develop a fire management program in the North Cascades National Park Service Complex that restores and maintains ecosystem processes, while minimizing the negative impacts of fire to the public, firefighters, natural and cultural resources, Wilderness, and private property. This action is needed to 1) protect lives, health, and property in the park complex; 2) restore fire-dependent ecosystem processes in areas that are outside their historical range of variability; and 3) maintain natural fire processes in areas that are not yet outside their historical range of variability.

**1. Protect lives, health, and property.** The following forest characteristics have been found to significantly increase potential for high severity fires: 1) ladder fuels, which are dead branches, shrubs and seedlings that provide continuity between surface fuels (dead and downed wood, litter and duff) and tree crowns; 2) dense and continuous canopy cover of trees that allows fire to spread from crown to crown; and 3) heavy and continuous fine surface fuel loading (small diameter dead and downed wood, litter, and duff), which increases fire intensity and facilitates fire spread on the surface. These forest conditions are considered to be *hazardous fuels* in the wildland urban interface where potential fire behavior puts lives, health and property at risk. Fuels treatments (thinning and prescribed burning) aimed at reducing hazard fuels are currently performed in the Forest Fuel Reduction Areas (FFRAs) that were designated in the 1995 Stehekin Plan. Additional thinning around structures and along roadsides is also performed in the Stehekin Valley in order to create defensible space.

Monitoring of the thinning and prescribed fire treatments in Stehekin demonstrates that the 1995 plan's objectives are being met on the 780 acres of dry Douglas fir/ponderosa pine forest where treatments have occurred to date. In 2000, results from the peer review of the 1995 Stehekin Plan included recommending that additional measures are needed to provide greater community protection in areas at risk; for example, larger acreages of fire adapted conifer stands along the valley walls (Stehekin Contours) could be prescribe burned.

**2. Restore fire-dependent ecosystem processes.** The historical range of variability is the natural range of conditions occurring in key ecosystem components (species composition, structural stage, stand age, canopy closure, and fuel loadings) in an ecosystem unaffected by human influence. The identification of the historical range is dependent on the fire regime (e.g., low severity fire regimes are shorter and their imprint on the landscape is only perceptible for centuries rather than millennia, whereas high severity fire regimes are longer and occur at the millennial time scale). All of these components show signs of alteration in the Douglas fir/ponderosa pine forests of Stehekin. Prescribed burning and thinning in non-wilderness areas (Stehekin FFRAs), or prescribed burning only in Wilderness (Stehekin Contours) could be used to restore stand structure and composition. Thinning, where it is applied, can efficiently reduce stand density to a desired future condition within the historical range of variability which also meets hazard fuel reduction goals; however, it does not replace the need for prescribed burning to reduce surface fuels, and stimulate regeneration of fire-adapted plant species.

**3. Maintain natural fire processes.** Managing for wildland fire use in areas that are still within their natural range of variability will help to maintain fire as a natural process in those

ecosystems. It is important to note that wildland fire use is not beneficial to areas in which fuel loads have increased beyond their historical range, causing un-naturally severe fire behavior during wildland fire. These areas are targeted for prescribed burning so that wildland fire use can be considered as a management alternative in the future. Additionally, prescribed burning is needed to reduce fuel loads in areas that may be within their historical range of variability, but that are adjacent to resources at risk (Hozomeen, Stehekin). Until these areas have been treated, wildland fire use cannot be safely implemented.

### ***Selected Management Alternative***

Of the three management alternatives evaluated in the Environmental Assessment (EA), Alternative 3, the Preferred Alternative and the Environmentally Preferred Alternative, will be implemented. The proposed actions under the Preferred Alternative, as detailed in the EA, remain unchanged except for two details: 1) the number of proposed acres of prescribed burning in the Stehekin Contours will be reduced by 1,967 acres; and 2) prior to prescribe burning each unit, the extent of cheatgrass (*Bromus tectorum*), an invasive and non-native grass, will be mapped and containment strategies will be implemented. Both of these changes are within the scope of the original environmental impact analysis and do not affect significance determinations. No substantive comments were received during the public review, nor did any of the comments necessitate changes to the original proposal.

The number of proposed acres in the Stehekin Contours will be reduced because the Flick Creek Fire of 2006 completely burned four of the proposed contour burns (Flick Creek, Maxwell, Hazard Creek, Imus Creek) and a portion of a fifth (Buellers). The remaining burn units of the Stehekin Contours, totaling 2,881 acres, will be burned according to prescription. Cheatgrass surveys and containment strategies will be implemented because since the EA was published, the extent of the invasive plant was found to be more widespread than previously thought in some of the burn units in both Stehekin and Hozomeen.

The selected alternative includes four fire management strategies: suppression, wildland fire use, prescribed fire and manual/mechanical thinning. These strategies are the basis for the Fire Management Plan, which will guide fire management within the Complex for the next 10 years, at which time it will be re-evaluated and refined as necessary based on new environmental information, experience from project implementation, and/or advances in fire management practices which could not be foreseen. Projects and program elements include:

1. *Wildland Fire Use.* An assumed average of 200 acres will burn each year as a result of lightning ignitions that would be allowed to burn for the benefit of the resources.
2. *Suppression.* An assumed average of 260 acres will burn each year as suppression fires, i.e., unwanted fires that are actively extinguished by fire management staff.
3. *Stehekin Forest Fuel Reduction Areas.* Up to 200 acres will be thinned and prescribe burned per year to reduce hazard fuels in the Stehekin valley bottom, for a total of 1,209 acres.
4. *Corridor Thinning.* Ten to 15 acres will be thinned and pile-burned per year along the Stehekin road corridor, for a total of 124 acres.
5. *Safety Zone Thinning.* Ten to 15 acres will be thinned and pile-burned per year within the Orchard and Ranch safety zones in Stehekin, for a total of 24 acres.
6. *Wyden Amendment Thinning/Burning.* Two to 10 acres of privately-owned land in Stehekin will be thinned and pile-burned or prescribe burned per year, at the landowner's request, and when such action would benefit both the NPS and the landowner.

7. *Stehekin Contours*. Between 153 and 604 acres along the south facing slopes above Stehekin will be prescribed burned per year, for a total of 2,881 acres.
8. *Hozomeen Contours*. Between 1,630 and 3,039 acres above Ross Lake near Hozomeen will be prescribed burned per year, for a total of 5,219 acres.
9. *Re-ignition of Suppressed Fires*. Up to 200 acres will be burned through the re-ignition of suppressed fires per year.

All of the projects and program elements described above that would take place in designated Wilderness have been deemed essential for managing the area as wilderness. Activities associated with these necessary projects and/or program elements would utilize the minimum tools required to accomplish the objectives.

### ***Other Alternatives Considered in the Environmental Assessment***

Two other alternatives were considered and evaluated:

**Alternative 1 (No Action):** Continue current management under 1991 Wildland Fire Management Plan and 1995 Stehekin Valley Forest Fuel Reduction/Firewood Management Plan. This alternative would utilize all fire management strategies, including prescribed burning for hazard fuel reduction on 822 acres in Stehekin. This alternative was not chosen because it does not allow for larger scale treatments aimed at protecting the Stehekin community under severe fire conditions, nor does it meet the need to restore and maintain ecosystem function throughout the Complex.

**Alternative 2:** Continue current direction under 1991 Wildland Fire Management Plan and 1995 Stehekin Valley Forest Fuel Reduction/Firewood Management Plan, with an increase in acreages of forest fuel reduction areas in Stehekin. This alternative would also utilize all fire management strategies. The forest fuel reduction areas in Stehekin would increase from 822 acres to 1,209 acres. Roadside thinning of conifers totaling 124 acres and thinning along safety zones totaling 24 acres would also occur. This alternative would allow thinning and prescribed fire treatments on up to 440 acres of privately owned property in Stehekin under the Wyden Authority. An increase in treatment acreage for hazard fuel reduction in Stehekin would help to further protect Stehekin; however, it does not attempt to restore altered ecosystems in wilderness adjacent to Stehekin. This alternative would perpetuate the effects of fire exclusion on stand structure and composition, and as a result, wildland fire use near this community would not be an option given the threat of fire spread toward the community.

### ***Environmentally Preferred Alternative***

Alternative 3, the selected management alternative, is the “environmentally preferred” alternative. This alternative causes the least damage to the biological and physical environment, and best protects, preserves, and enhances historic, cultural, and natural resources. Both alternatives 1 and 2 concentrate project work on the Stehekin valley bottom and fail to address the broader impacts of fire suppression and exclusion surrounding Stehekin and Hozomeen. Alternative 3 treats additional altered acres surrounding Stehekin and Hozomeen, which will help to restore natural processes and relationships in designated Wilderness so that they can be maintained indefinitely into the future.

### ***Mitigation Measures and Best Management Practices***

The following mitigation measures and best management practices (BMPs) were developed to minimize the impacts or effects of fire management activities on the environment. The measures are identical to those listed by resource in the EA, except for the fish and wildlife section, which was updated according to the Conservation Measures outlined in the Biological Opinion issued by the US Fish and Wildlife Service in March 2007.

**Table 1: Mitigation Matrix**

| <i>Resource</i>              | <i>Impact Mitigation and Best Management Practices</i>   | <i>Responsible Party</i>      |
|------------------------------|--|-------------------------------|
| Air Quality                  | Same-day burn approval from the Washington State Department of Natural Resources will be sought for all prescribed burns involving over 100 tons of fuel   | Fire Management Officer (FMO) |
|                              | Local air quality will be monitored during the fire season using equipment at Ross Dam and Stehekin  | FMO, Park Physical Scientist  |
|                              | Interagency Monitoring of Protected Visual Environments (IMPROVE) data (e.g., aerosols) will be analyzed to build an understanding of air quality effects from local fires   | Park Physical Scientist       |
| Water Resources (Draw-down)  | Only approved dip lakes will be used for bucket operations (high lakes that have been identified as sensitive during research conducted for the Mountain Lakes Fishery Management Plan EIS (pending) are not approved for dipping) | FMO, Resource Advisor         |
|                              | Limit the quantity of water that can be drawn from any of the approved lakes if it appears that normal water level fluctuations may be exceeded  | Resource Advisor              |
|                              | Monitor impacts to lakes during suppression operations and determine whether or not they can continue to be used as a water source   | Resource Advisor              |
| Water Resources (Retardants) | The superintendent of the Complex is the only NPS official who can authorize the use of fire retardant chemicals   | Superintendent                |
|                              | Avoid direct drops of retardant or foam into rivers, streams, lakes, or along shores. Establish ¼ mile buffer zones around all water bodies, within which chemicals cannot be applied unless human lives are at stake              | FMO, Resource Advisor         |
|                              | During training or briefings, inform field personnel of the potential danger of fire chemicals, especially foam concentrates, in surface water   | FMO                           |
|                              | Locate mixing and loading points for fire retardants where contamination of natural water, especially with the foam concentrate, is extremely unlikely   | FMO                           |
|                              | Maintain all equipment in good working condition and use a pump system equipped with check valves where appropriate to prevent release of foam concentrate into any body of water  | FMO                           |
|                              | Exercise particular caution when using any fire chemical in watersheds where federal- or state-listed species exist  | Resource Advisor              |
|                              | Dip from a tank rather than directly from a body of water, to avoid releasing any foam into these especially sensitive areas   | FMO                           |
|                              | Make sure all buckets/containers that have carried chemicals are completely cleaned before resuming dipping in natural water bodies)   | FMO                           |
|                              | The FMO will monitor and record the types of chemicals used, their amounts, dates of application, and areas where applied  | FMO                           |
|                              | Water chemical analysis of nutrients, surfactants, and other significant chemical components of these products will be monitored shortly after application in the vicinity of any water body                                       | Physical Scientist            |

| <i>Resource</i>                                    | <i>Impact Mitigation and Best Management Practices</i>   | <i>Responsible Party</i>   |
|--|--|----------------------------|
|  | Notify proper authorities promptly if any fire retardant chemical is used in an area where there is likelihood of negative impacts   | Resource Advisor           |
|  | Insist that manufacturers provide pertinent information on the chemical content of their products  | FMO, Resource Advisor      |
| Water Resources (Riparian)                         | All prescribed burns require a burn plan, in which specific direction regarding riparian areas of concern will be discussed. This may include buffer distances to avoid burning or cutting any riparian vegetation                                   | Prescribed Fire Specialist |
|  | All thinning projects are conducted using approved silvicultural prescriptions   | Prescribed Fire Specialist |
|  | Both prescribed burn and thinning project proposals require review by the Complex's Inter-disciplinary Team (IDT), and approval by the superintendent. Mitigation for impacts to water resources could be required prior to approval of the proposal | Superintendent             |
|  | Use alternative methods of fire line building in sensitive areas   | Resource Advisor           |
| Topography and Soils                               | Avoid digging line across, and especially down, steep slopes whenever possible   | FMO, Resource Advisor      |
|  | Construct water bars along fire line that crosses steep slopes   |                            |
|  | Set aside the removed topsoil and organic debris for later restoration   |                            |
|  | Rake over fire lines as soon as possible, and/or before fall rains   |                            |
|  | Use ignition patterns and weather conditions that will result in reduced fire intensities and residence time. This will prevent excessive heat pulses that could penetrate lower soil levels   |                            |
|  | Use aeration and raking to relieve soil compaction and promote re-growth   |                            |
|  | Leave woody material when prescribed burning for nutrient cycling and fungal (e.g., mycorrhizal) function  |                            |
|  | Avoid, if possible, any activity in areas covered by cryptobiotic crusts, including helispot locations, fire line digging, foot traffic, and camp locations  |                            |
|  | Educate field personnel on how to identify cryptobiotic soil crusts and how to avoid impacts   |                            |
| Fish and Wildlife (Fish Species & Aquatic Habitat) | <b><i>Fire Suppression and Wildland Fire Use</i></b>   |                            |
|  | A resource advisor will be consulted on fires greater than 1.0 acre regarding the presence of Federally listed fish species  | Resource Advisor           |
|  | Avoid using retardants, foams, and surfactants near lakes or flowing streams (e.g. not to be applied within ¼ mile of waterways with listed fish species)  | FMO, Resource Advisor      |
|  | Avoid water withdrawals from fish bearing streams whenever possible. Helicopter bucket dipping from streams in or adjacent to spawning should be avoided, including inlet streams to lakes   | FMO, Resource Advisor      |
|  | Direct the spraying of foam away from waterways whenever possible  | FMO                        |
|  | Avoid backflushing pumps and charged hoses into surface water. Utilize check bleeder valves whenever possible. Direct flow away from water sources when draining pumps or charged hoses  | FMO                        |
|  | Consult with Physical Scientist prior to installing temporary check dams   | Physical Scientist         |

| <i>Resource</i> | <i>Impact Mitigation and Best Management Practices</i>   | <i>Responsible Party</i>             |
|-----------------|--|--------------------------------------|
|                 | Stream profile will be restored in areas where temporary check dams were constructed   | Physical Scientist                   |
|                 | If tactically possible, use of foam or retardant will be limited to upslope areas  | FMO                                  |
|                 | Helicopter bucket dipping should be conducted only after chemical injection systems have been removed, disconnected or rinsed clean if foam is not needed for that fire suppression activity   | FMO                                  |
|                 | If foam application is necessary, crews will consider whether to use a remote dip tank away from water sources   | FMO                                  |
|                 | Pump intakes placed in streams will be covered with 1/8 inch or less screened material to prevent harm to amphibians and young fish  | FMO                                  |
|                 | Avoid the use of riparian areas (300 feet from flowing water) as landing areas and refueling areas for helicopter operations whenever possible   | FMO, Resource Advisor                |
|                 | Locate fire camps at least 200 feet away from riparian areas whenever possible   | FMO                                  |
|                 | <b><i>Sediment Control</i></b>   |                                      |
|                 | Limit fire lines to 3 feet in width, construct erosion control structures (e.g., water bars), and rehabilitate them as soon as possible to minimize sediment delivery to streams whenever possible   | FMO, Resource Advisor                |
|                 | To protect fisheries resources, stream disturbing activities shall generally be limited to the dry season from July 15 through August 15   | FMO                                  |
|                 | Erosion control methods shall be used to prevent silt-laden water from entering the stream whenever deemed necessary. On larger fires, Federal Burned Area Emergency Rehabilitation (BAER) Standards may be utilized   | Resource Advisor, Chief of Resources |
|                 | Wastewater from project activities and water removed from within the work area will be routed to an area landward of the ordinary high water line to allow for removal of fine sediment and other contaminants prior to being discharged to the stream                                 | FMO                                  |
|                 | <b><i>Water Quality</i></b>  |                                      |
|                 | In the event of a hazardous fuel spill, the Complex will adhere to the Spill Prevention Control and Countermeasures Plan   | FMO, Resource Advisor                |
|                 | On larger pumping and helicopter operations, spill prevention kits will be available onsite to control, absorb, or contain the spill for cleanup and disposal  | FMO                                  |
|                 | Any machinery maintenance involving potential contaminants (fuel, oil, hydraulic fluid, etc) will occur greater than 200 feet from the riparian area whenever possible. This measure is designed to avoid/minimize the introduction of chemical contaminants associated with machinery | FMO                                  |

| <i>Resource</i>                                     | <i>Impact Mitigation and Best Management Practices</i>  | <i>Responsible Party</i> |
|---|---|--------------------------|
|   | Prior to starting work each day, all machinery will be inspected for leaks (fuel, oil, hydraulic fluid, etc) and all necessary repairs will be made before the commencement of work. This measure is designed to avoid/minimize the introduction of chemical contaminants associated with machinery used in project implementation  | FMO                      |
|   | Heavy equipment should not enter streams except in extreme circumstances. Any equipment that does enter a stream should be rinsed clean and should only use vegetable-based hydraulic fluids  | FMO                      |
|   | Removal of mature coniferous and deciduous trees within 250 feet of a wetland, stream, or river will be minimized when possible. In the event that trees need to be felled, trees should be felled so that they stay in the floodplain, instead of upslope, if this can be safely accomplished. If requested by a Resource Advisor, the crew will directionally fall trees towards the waterway                         | FMO, Resource Advisor    |
|   | Helicopter landings in stream and river channels will occur on gravel bars outside the active channel whenever possible   | FMO                      |
| Fish and Wildlife (Terrestrial Species and Habitat) | A resource advisor will be assigned to fires as needed to minimize impacts to threatened and endangered species   | Resource Advisor         |
|   | A wildlife biologist will be part of the Wildland Fire Situation Analysis team to provide input to mitigate impacts of fire fighting tactics in listed species habitat and an up to date map of listed or sensitive species (e.g., spotted owl, marbled murrelet, and bald eagle) habitat and survey results. This information will be provided to the Incident Commander for consideration in planning fire activities | Wildlife Biologist       |
|   | Fire management personnel will use "minimum impact techniques" when suppressing fires in the Complex  | FMO                      |
|   | When possible, crews will hike into and out from a fire rather than flying  | FMO                      |
|   | When possible, hand tools will be used rather than power equipment  | FMO                      |
|   | When possible, helicopters will avoid staging within threatened and endangered species habitat in the Complex   | FMO, Resource Advisor    |
|   | When possible, helicopters will fly higher than 1,500 feet over threatened and endangered species habitat   | FMO, Resource Advisor    |
|   | Retardant will only be used when required to protect human life and property and is considered only when all other efforts have failed  | FMO                      |
|   | Explosives will not be used to manage fires in the Complex  | FMO                      |
|   | Mechanized equipment, such as dozers, will not be used in preparation work for or during the implementation of prescribed fire or fire suppression. Any preparation will follow the minimum impact tactic guidelines developed for the Complex described in the EA  | FMO                      |
| Bald Eagle Mitigation                               | Removal of mature coniferous and deciduous trees will be minimized  | FMO                      |

| <i>Resource</i>                 | <i>Impact Mitigation and Best Management Practices</i>  | <i>Responsible Party</i>                  |
|---------------------------------|---|---|
| Measures                        | Maintain mature trees to protect forage, perch, alternate nest and roost habitat within a 0.25 mile radius of a known nest site   | FMO, Wildlife Biologist                   |
|                                 | Avoid fire management activities that result in increased pedestrian activity within 0.5 mile of nest sites, and carefully manage public trail use and camping within that distance   | FMO, Wildlife Biologist, Resource Advisor |
|                                 | Avoid tree cutting and other activities that produce noise above ambient levels within 0.25 mile (0.5 mile if line of sight) of an active nest during the breeding season (January 1 to August 31)  | FMO, Wildlife Biologist                   |
|                                 | Maintain high tree density and moderate canopy closure to visually buffer bald eagle nests from human activities  | FMO, Wildlife Biologist                   |
|                                 | Helicopter pilots and crew will watch for and avoid bald eagles and their nests when dropping water from buckets  | FMO, Wildlife Biologist                   |
|                                 | There will be no prescribed fire or thinning treatments from January 1 through August 31 within 0.5 mile of any known bald eagle nest. No trees greater than 9 inches DBH will be removed   | FMO, Wildlife Biologist                   |
| Spotted Owl Mitigation Measures | Removal of mature coniferous trees will be minimized  | FMO                                       |
|                                 | Maintain all suitable spotted owl habitat within 0.7-miles of known nest trees/site centers. If there is an owl management plan in place for a specific territory, it will take precedence over this conservation measure   | Wildlife Biologist, FMO                   |
|                                 | Wildland fire use will be excluded within the 100-acre core of suitable habitat around any nest tree/site center at any time of year  | FMO, Wildlife Biologist                   |
|                                 | Wildland fire use will be excluded within 0.7-mile radius of any known nest tree/site centers before August 1 to protect eggs and nestlings. After August 1, wildland fire use is permitted, provided that all suitable spotted owl habitat within 0.7-miles of known nest trees/site centers is maintained (see second bullet above) | FMO, Wildlife Biologist                   |
|                                 | After August 1, maintain 55 percent of suitable habitat within any known owl territory within 1.8 miles (outside of the 0.7-mile radius) of any known nest tree or site center. If there is an owl management plan in place for a specific territory, it will take precedence over this conservation measure                          | FMO, Wildlife Biologist                   |
|                                 | Limit the use of wildland fire use and disturbing activities within 0.25 mile of unsurveyed suitable owl habitat to after August 1  | FMO                                       |
|                                 | Avoid tree cutting and other noises that are above ambient noise levels within 0.25 mile of an active nest during the breeding season (March 1 to September 30)   | FMO, Wildlife Biologist                   |
|                                 | Lightning fires detected before August 1 burning in suitable spotted owl habitat will be managed using a suppression strategy   | FMO                                       |
|                                 | Lightning fires detected in the "red zones" (i.e., the low elevation spotted owl habitat within the Stehekin Valley, United States/Canada International boundary, and Skagit River corridor portion of the Wildland Fire Use Zone) will be managed using a suppression strategy   | FMO                                       |
|                                 | Prescribed fires, re-ignition fires, and/or thinning projects occurring near suitable spotted owl habitat will be scheduled for after August 1  | FMO                                       |



| <i>Resource</i>                      | <i>Impact Mitigation and Best Management Practices</i>  | <i>Responsible Party</i>                             |
|--------------------------------------|---|--|
|                                      | All preparation work for prescribed fire within or adjacent to suitable spotted owl habitat will occur after August 1   | FMO  |
|                                      | Spotted owl surveys will be conducted prior to the initiation of any project occurring in the Stehekin drainage. Occupied territories will not be considered for prescribed fire or thinning treatments   | Wildlife Biologist, FMO                              |
|                                      | Site-specific spotted owl activity buffers will be developed by local Complex biologists, and prescribed fire and thinning treatment units altered to protect occupied spotted owl habitat  | Wildlife Biologist, FMO                              |
| Marbled Murrelet Mitigation Measures | Removal of mature coniferous trees will be minimized  | FMO  |
|                                      | Garbage and food items will be handled appropriately by firefighters to minimize attraction of corvids  | FMO  |
|                                      | Lightning fires detected before August 6 burning in marbled murrelet habitat will be managed using a suppression strategy   | FMO  |
| Vegetation                           | Equipment (hand tools, trucks, pumps, tracked equipment, tents, etc.) and personal line gear (line packs, nomex, boots, etc.) will be checked and cleaned in between movement of fire crews for invasive weed seeds and plant parts. Contracted equipment must be thoroughly cleaned before arrival and prior to departure  | FMO  |
|                                      | Disturbed sites will be monitored and invasive species will be controlled before they spread  | Plant Ecologist / Fire Ecologist                     |
|                                      | A resource advisor will monitor and document hazard tree removal along the Stehekin road corridor   | Resource Advisor                                     |
|                                      | Avoid known locations of sensitive plant species that are disturbance-intolerant during prescribed burning and thinning operations. Monitor locations before and after treatment  | FMO, Plant Ecologist / Fire Ecologist                |
| Research Natural Areas               | Manage fire perimeters (both suppression response fires and re-ignitions) using a confinement strategy, which limits the extent of the fire area to preset boundaries such as natural barriers and terrain breaks   | FMO  |
|                                      | Use a confinement strategy within the Silver Lake RNA / US Border Suppression Zone area, and use direct suppression activities (fire retardant drops, hand line construction, tree felling, back burning, etc) only when absolutely necessary to prevent a fire from spreading into Canada. Wildland Fire Use will be the preferred management strategy for the other four RNAs |  |
|                                      | Establish no large fire camps (type 3 incidents or larger) within Research Natural Areas  |  |
| Wilderness                           | Follow all Minimum Impact Techniques  | FMO  |
|                                      | Follow all Minimum Tool procedures  |  |
| Cultural Resources                   | The Park Archeologist and/or Cultural Resource Specialist will be consulted early on in the case of planned burns, and as soon as possible in the case of unplanned fire events   | FMO, Park Archeologist, Cultural Resource Specialist |
|                                      | In consultation with the Park Archeologist and/or Cultural Resource Specialist, identify any threatened cultural resources, define their boundaries, and determine the Area of Potential Effect (APE)   | FMO, Park Archeologist, Cultural Resource Specialist |

| <i>Resource</i>   | <i>Impact Mitigation and Best Management Practices</i>   | <i>Responsible Party</i>  |
|-------------------|--|---|
|                   | In consultation with the Park Archeologist and/or Cultural Resource Specialist, maintain an updated version of the Complex-wide archeological/cultural resource sensitivity map for use as a quick reference by fire management staff to assess the potential effects of new fires on cultural resources   | GIS Specialist, Park Archeologist, Cultural Resource Specialist |
|                   | In consultation with the Park Archeologist and/or Cultural Resource Specialist, identify the important qualities of the cultural resources and any potential threats to these qualities  | FMO, Park Archeologist, Cultural Resource Specialist            |
|                   | Avoid disturbances within the APE, and in particular, avoid effects to any important site qualities that are identified as threatened in consultation with Cultural Resource staff   | FMO, Park Archeologist, Cultural Resource Specialist            |
|                   | Make available to fire crews a brief workshop, conducted by the Park Archeologist and/or Cultural Resource Specialist, with the goal to train crews in the recognition, management, and preservation of cultural resources   | Park Archeologist, Cultural Resource Specialist                 |
|                   | Depending on the cultural sensitivity of the undertaking, it may be necessary for a qualified archeologist to monitor on-site during the construction of fire lines and hellspots  | Park Archeologist   |
|                   | Minimum Impact Tactics (MIT) will be used. Minimize extent of built fire lines and hellspots, and other ground-disturbing actions to mitigate damage to subsurface and surface cultural resources  | FMO   |
|                   | In prescribed burn plans, identify threatened cultural resources, or those within the APE, assess the potential fire effects and fire fighting tactics to the same, and avoid, minimize, or mitigate these effects, as required by according to 36CFR Part 800   | Park Archeologist, Cultural Resource Specialist                 |
| Visitor Use       | Perform work during shoulder seasons (spring and fall) when visitation is lower  | FMO   |
|                   | Rehabilitate areas as soon as possible to minimize visual impacts  | FMO, Plant Ecologist / Fire Ecologist                           |
| Health and Safety | Fire personnel must: <ul style="list-style-type: none"> <li>• meet qualifications for incident assignments, including all applicable medical requirements</li> <li>• meet qualification standards for the implementation of prescribed fires and for using power equipment such as chainsaws for thinning and bucking</li> <li>• be equipped with personal protective equipment</li> <li>• comply with fitness and personal protective equipment standards</li> <li>• complete a required amount of wildland fire training, including refresher safety training</li> </ul> | FMO   |
|                   | Notify the Washington Dept of Natural Resources during wildland fire use fires and discuss current and forecast smoke impacts  | FMO   |
|                   | The superintendent will make closures in areas of the Complex if a fire is posing a threat to human health or safety   | Superintendent  |
|                   | Visitors will be kept at a safe distance during fire operations, and when possible, work will be conducted during shoulder seasons when there are fewer visitors   | FMO   |

| <i>Resource</i> | <i>Impact Mitigation and Best Management Practices</i>  | <i>Responsible Party</i> |
|-----------------|---|--------------------------|
|                 | Private property owners in the vicinity of fire operations will be notified of upcoming projects and other potential disturbances         | FMO                      |
|                 | Fire retardant chemicals will only be used during emergencies that threaten life and property and only with the superintendent's approval | Superintendent           |
| Socioeconomics  | Conduct projects during shoulder season (spring and fall) to minimize impacts to tourism  | FMO                      |

### ***Why the Selected Action will not have a Significant Effect on the Environment***

The NPS has determined that the selected alternative can be implemented with no significant adverse impacts or effects on air quality, water resources, topography and soils, fish and wildlife, vegetation, research natural areas, wilderness, cultural resources, visitor use, health and safety, or socioeconomics. The following criteria were used to determine the degree of significance of each potential impact:

Impacts that may have both beneficial and adverse aspects and which on balance may be beneficial, but that may still have significant adverse impacts.

Although there are short-term adverse impacts under the selected alternative, there are none that would have significant adverse impacts. Some of the short-term impacts will include noise disturbance from helicopter activity, smoke, temporary trail closures, and a transitory loss of solitude for park visitors in Wilderness during fire management activities.

Effects on public health and safety.

The selected alternative would not significantly impact human health and safety if all operational precautions and smoke mitigation measures are followed.

Unique characteristics of the area (proximity to historic or cultural resources, wild and scenic rivers, ecologically critical areas, wetlands or floodplains, and so forth).

The selected alternative will help to maintain and/or restore natural conditions across the landscape. Wildland fire use will be used to help maintain fire as a natural process in those areas that are still within their natural range of variability. Altered fire regimes in designated Wilderness surrounding Stehekin and Hozomeen will be restored so that in the future wildland fire use can be considered as a management alternative. All fire management undertaken in Wilderness will utilize Minimum Tools.

Degree to which impacts are likely to be highly controversial or are highly uncertain or involve unique or unknown risks.

Potential impacts which could result from the selected alternative are unlikely to be highly controversial. No scoping comments (oral and written) identified any controversial actions. None of three public comment letters responding to the EA identified any substantive issues nor any issues not fully considered in preparing the EA.

The procedures outlined in the Fire Management Plan ensure that work activities and their impacts are reasonably certain.

Whether the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration.

The selected alternative neither establishes a precedent for future actions with significant effects, nor represents a decision in principle about a future consideration.

Whether the action is related to other actions that may have individual insignificant impacts but cumulatively significant effects.

There are no known other actions that could contribute to cumulatively significant effects.

Degree to which the action may adversely affect historic properties in or eligible for listing in the National Register of Historic Places, or other significant scientific, archeological, or cultural resources.

Implementation of the selected alternative would not adversely affect any identified historic property, or scientific, archeological, or cultural resources.

Degree to which an action may adversely affect an endangered or threatened species or its habitat.

The US Fish and Wildlife Service concurs that the selected alternative may affect, but is not likely to adversely affect, the wolf, lynx, or grizzly bear. Authorization for an incidental take was granted for spotted owl, murrelet, bald eagle, and bull trout, and it was determined that the level of incidental take anticipated would not jeopardize the continued existence of any of the four species.

Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

The selected alternative conforms to all existing law and policy, including DO #18: Wildland Fire Management, and Director's Order #41: Wilderness Preservation and Management.

### ***Public Review and Agency Consultation***

Public scoping for the revision of the Fire Management Plan took place from October 9 to November 17, 2003. A scoping letter was sent to agencies, tribes and interested organizations and individuals. Eleven comment letters were received from landowners in Stehekin, Rockport, East Wenatchee, and North Central Washington; from the Chelan Ranger District (USFS) and Washington Department of Natural Resources; from Northwest Ecosystem Alliance; and from individuals in both Colorado and California. Comments ranged from criticism for not suppressing fires in Ross Lake National Recreation Area, to support for suppressing fires in the Stehekin Valley, to support for allowing naturally-caused fires to run their course.

The Fire Management Plan revision and proposed actions were also discussed in Stehekin community meetings since 2001. These community meetings were informal and occurred annually to discuss management issues of particular interest to Stehekin residents and property owners. Typically three to eight community members attended the meetings. In 2003, maps of the proposed alternatives were presented. The main focus of the discussion that ensued was the recent wildfire activities that had occurred in the Chelan-Stehekin watershed during the previous two years and the need to prevent such wildfires from impacting Stehekin through

proposed prescribed fire treatments. Most comment regarding the proposed prescribed fires was about the potential visual impacts (some did not care for the appearance of blackened tree trunks), others suggested that well-visited areas should be buffered from prescribed fire (i.e., Coon Lake and the popular Rainbow Falls area). Other questions or comments were primarily operational in nature. Some of these meeting attendees submitted letters commenting on the EA. All were invited to submit letters to be sure their comments were a part of the public record. Informal discussions with specific community members also occurred at their requests.

Internal scoping meetings with park staff were held to provide a forum for comment during this same period. Comments from all sources were used to identify key issues and help determine the scope of analysis in the EA.

The environmental assessment was released to the public on May 18, 2005 and comments were accepted through June 20, 2005. Copies of the document were sent to 70 agencies, legislators, tribes, organizations, media, and public libraries. An additional 80 letters were sent to potentially interested individuals, informing them of the availability of the document locally and on-line via the internet. Three comment letters were received. Two of the letters (one from a private citizen in Stehekin and one from the Ministry of Environment in Canada) were in support of the preferred alternative and one (from a private citizen in Marblemount) was opposed to the entire fire management program. No substantive issues were raised in the letter of opposition. The official from the Ministry of Environment noted Canada's plan to introduce fire through prescribed burns north of the international boundary. The agency also expressed an interest in working together to establish a fire regime based on natural ecosystems rather than international boundaries. The Complex is dedicated to assisting land management agencies in Canada with the planning and implementation of prescribed fire treatments where there is mutual benefit.

#### *US Fish and Wildlife Service (USFWS)*

On September 13, 2005 the NPS submitted a Biological Assessment (BA) to USFWS on the potential effects of the proposed fire management program on listed fish and wildlife species. On October 18, 2005 USFWS requested supplemental information to the BA. After additional information was provided, formal consultation was initiated on December 12, 2005 in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended. The USFWS Biological Opinion was received on March 2, 2007. The BA evaluated the effects of the proposed action on the threatened northern spotted owl (*Strix occidentalis caurina*), marbled murrelet (*Brachyramphus marmoratus marmoratus*), bald eagle (*Haliaeetus leucocephalus*), bull trout (*Salvelinus confluentus*), Canada lynx (*Lynx Canadensis*), grizzly bear (*Ursus arctos horribilis*), the endangered gray wolf (*Canus Lupus*), and designated bull trout critical habitat. The consultation covers the time period October 1, 2006 to December 31, 2010.

The USFWS concurred with the NPS' finding that the proposed action "may affect, but is not likely to adversely affect" the wolf, lynx, or grizzly bear. Incidental take was authorized for the spotted owl, murrelet, bald eagle, and bull trout. The level of incidental take anticipated would not jeopardize the continued existence of any of the four species. The following reasonable and prudent measures were identified as necessary and appropriate to minimize the incidental take of the four species:

1. Monitor project implementation
2. Report monitoring results to the USFWS

*Washington State Historic Preservation Office (SHPO) and affected Tribal Historic Preservation Office (THPO)*

The environmental assessment was sent to the Washington State Historic Preservation Office (SHPO) and affected tribes for review and comment on May 18, 2005. No comments were received. Consultation with the Washington SHPO and any affected Tribal Historic Preservation Offices (THPO) for all planned fire-related undertakings will be conducted according to the National Historic Preservation Act as amended (NHPA; 16 USC 470 et seq.) and the regulations of the Advisory Council on Historic Preservation (ACHP) (36 CFR 800). For unplanned future wildfire events, the Cultural Resource Manager and/or Archeologist will, upon notification of the fire event, contact the SHPO and any affected THPO and initiate consultation if an identified historic/cultural resource is at risk from a wildfire or related activities.

*United States Forest Service (USFS)*

The Okanogan-Wenatchee National Forest, Mount Baker-Snoqualmie National Forest, and North Cascades National Park Service Complex wrote their respective fire management plans concurrently. Specific plans for fire management options in areas adjacent to the Complex that are managed by the USFS are contained in the Complex's Fire Management Plan.

**Non-impairment of Park Resources and Values**

The Environmental Assessment found that the selected alternative will have no major adverse impacts or effects to any resource or value whose conservation is 1) necessary to fulfill the specific purposes identified in the park's enabling legislation; 2) key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or 3) identified as a goal in the park's General Management Plan or other relevant planning documents. The impacts resulting from implementation of the selected alternative will not impair park resources or values and will not violate the Organic Act of 1916.

**Determination**

Based on the environmental impact analysis contained in the Environmental Assessment; the mitigation measures designed to avoid, reduce, or eliminate potential impacts; and the results of public review and agency coordination, the National Park Service has determined that the selected alternative does not constitute a major federal action that would significantly affect the quality of the human environment. The selected alternative is not without precedent, nor is it similar to an action which normally requires an environmental impact statement. No connected actions with potential significant impacts were identified. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality, an Environmental Impact Statement will not be prepared.

**RECOMMENDED**

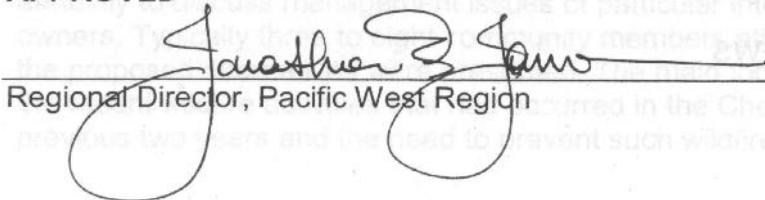


Superintendent, North Cascades National Park Service Complex

May 5, 2007

Date

**APPROVED**



Regional Director, Pacific West Region

5/17/07

Date