

FINAL ADVICE  
 Terrestrial Natural Resources Subcommittee  
 Adopted by the Hanford Reach National Monument Federal Advisory Committee  
 January 15, 2004

1) <i>Conserve and restore the plants, animals and shrub-steppe and other upland habitats native to the Columbia Basin.</i>			
Alternative A – No Action	Alternative B – Restoration Emphasis	Alternative C – Perimeter Concentration of Facilities	Alternative D – Public Use Emphasis
<p>Spatial data <del>is</del><u>are</u> being assembled from <u>USDOE</u>, subcontractors, and other agencies.</p> <p><u>[Note: Research and monitoring in the biological goals and objectives should feed into the activities occurring under other programmatic goals (i.e. fire, recreation, etc.)]</u></p>	<p>Evaluate existing research and monitoring data for all upland habitats and identify information gaps and research needs within one year of the CCP being adopted. <u>Research and monitoring will focus on preservation and restoration of native plants and animals.</u></p>	<p>Evaluate existing research and monitoring data for all upland habitats and identify information gaps and research needs within one year of the CCP being adopted. <u>Initial research will focus on identifying areas, which are suitable for recreation and have minimal impact on wildlife and native plants. Recreational activities will be monitored and managed to protect wildlife and native plants. Long term research and monitoring will focus on preservation and restoration of native plants and animals.</u></p>	<p>Evaluate existing research and monitoring data for all upland habitats and identify information gaps and research needs within one year of the CCP being adopted. <u>Initial research will focus on identifying areas, which are suitable for recreation and have minimal impact on wildlife and native plants. Recreational activities will be monitored and managed to protect wildlife and native plants. Long-term research and monitoring will focus on the impacts of recreation to native plants and animals, and focusing on opportunities for preservation and restoration.</u></p>
	<p>Based on data gap analysis and threats <u>analysis</u>, prioritize research needs, <del>and</del> <u>conduct an inventory inventories to fill data gaps, develop monitoring plans</u> and share existing research within three-<del>five</del> years of the CCP being adopted. Focus inventory priorities around <del>suspected biologically important areas</del><u>areas and species of greatest ecological sensitivity and/or greatest risk.</u></p>	<p>Based on data gap analysis <u>and threats analysis</u>, prioritize research needs, <del>and</del> <u>conduct an inventory inventories to fill data gaps</u>, develop monitoring plans, and share existing research within three-<del>five</del> years of the CCP being adopted. Focus inventory priorities around <u>areas and species of greatest ecological sensitivity and/or at greatest risk, including the perimeter</u>/areas where facilities are to be located.</p>	<p>Based on data gap analysis <u>and threats analysis</u>, <u>prioritize research needs</u>, <del>conduct an inventory</del><u>inventories</u>, develop monitoring plans, and share existing research within three-<del>five</del> years of the CCP being adopted. Focus inventory priorities around <u>areas and species of greatest ecological sensitivity and/or at greatest risk, including</u> proposed facilities and use areas.</p>
<p>Select conservation targets (species and habitats) on which to conduct a threats analysis; develop threat abatement strategies as time allows.</p>	<p>Select conservation targets (species and habitats) on which to conduct a threats analysis; develop threat abatement strategies within <del>three-two</del> years of the CCP being adopted, <u>and feed this information into developing the step-down habitat management plan. Understand the range of natural variability and manage and manage for that with current weather patterns.</u></p>	<p>Select conservation targets (species and habitats) on which to conduct a threats analysis; develop threat abatement strategies within <del>five-two</del> years of the CCP being adopted, <u>and feed this information into developing the step-down habitat management plan.</u></p>	<p>Select conservation targets (species and habitats) on which to conduct a threats analysis; develop threat abatement strategies within <del>seven-two</del> years of the CCP being adopted, <u>and feed this information into developing the step-down habitat management plan. More utilitarian approach. Understand that certain conditions will remain unchanged, and that restoration activities will occur when appropriate.</u></p>

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<p>Integrated Pest Management methods (manual, chemical, biological, cultural, mechanical) are implemented as time allows on an average of 1,000-10,000 acres per year.</p>	<p><u>Within 15 years, identify, map and prioritize treatments on all invasive species populations on Monument lands and implement adaptive management principles using Integrated Pest Management strategies. Monitoring protocols will be implemented on all IPM treatments to evaluate treatment effectiveness. Treatments will prevent populations from expanding and will be implemented to achieve invasive species control and eradication. Inventory, map (GIS), and prioritize treatment areas for all invasive species in upland habitats and write an Integrated Pest Management plan for invasive plant species within one year of the CCP being adopted. Write an integrated pest management plan for all other invasive species within two years. A primary goal of the Integrated Pest Management (IPM) Plan should be to insure that the plant community composition and structure is maintained within a range of natural variability at the end of the CCP period (Heidi will add language on the goal from the current IPM plan) to prioritize actions for effective control or elimination of invasive species. As stated in the existing IPM Plan, the highest priority is given to the current extent of the infestation of the priority species listed in the IPM Plan; second, the current and potential impacts of the invasive species; third the value of the infested habitats or areas and surrounding and adjacent areas; and last the effectiveness of available control technologies. Treatment success will be carefully monitored and management plans will be modified based upon evaluation of these findings. Ensure treatment technology does not pose health hazards to human consumption of native roots and herbs.</u></p>	<p><u>Within 15 years, identify, map and prioritize treatments on all invasive species populations on Monument lands and implement adaptive management principles using Integrated Pest Management strategies. Monitoring protocols will be implemented on all IPM treatments to evaluate treatment effectiveness. Treatments will prevent populations from expanding and will be implemented to achieve invasive species control and eradication. Inventory, map (GIS), and prioritize treatment areas for all invasive species in upland habitats and write an integrated pest management plan for invasive plant species within one year of the CCP being adopted. Write an integrated pest management plan for all other invasive species within two years. A primary goal of the Integrated Pest Management Plan should be to prioritize actions for effective control or elimination of invasive species. As stated in the existing IPM Plan, the highest priority is given to the current extent of the infestation of the priority species listed in the IPM Plan; second, the current and potential impacts of the invasive species; third the value of the infested habitats or areas and surrounding and adjacent areas; and last the effectiveness of available control technologies. Treatment success will be carefully monitored and management plans will be modified based upon evaluation of these findings. Ensure treatment technology does not pose health hazards to human consumption of native roots and herbs. (Heidi will add language on the goal from the current IPM plan). Also need a way to monitor the use of the IPM plan. The plan should insure the survival and enhancement of all rare, threatened or endangered native plant and animal species. Priority should be given to the control and elimination of invasive plant species.</u></p>	<p><u>Within 15 years, identify, map and prioritize treatments on all invasive species populations on Monument lands and implement adaptive management principles using Integrated Pest Management strategies. Monitoring protocols will be implemented on all IPM treatments to evaluate treatment effectiveness. Treatments will prevent populations from expanding and will be implemented to achieve invasive species control and eradication. Inventory, map (GIS), and prioritize treatment areas for all invasive species in upland habitats and write an integrated pest management plan for invasive plant species within one year of the CCP being adopted. Write an integrated pest management plan for all other invasive species within two years. A primary goal of the Integrated Pest Management Plan should be to prioritize actions for effective control or elimination of invasive species. As stated in the existing IPM Plan, the highest priority is given to the current extent of the infestation of the priority species listed in the IPM Plan; second, the current and potential impacts of the invasive species; third the value of the infested habitats or areas and surrounding and adjacent areas; and last the effectiveness of available control technologies. Treatment success will be carefully monitored and management plans will be modified based upon evaluation of these findings. Ensure treatment technology does not pose health hazards to human consumption of native roots and herbs. (Heidi will add language on the goal from the current IPM plan). Also need a way to monitor the use of the IPM plan. The plan should insure the survival and enhancement of all rare, threatened or endangered native plant and animal species. Priority should be given to the control and elimination of invasive plant species.</u></p>
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<p>Through partnerships, non-native invasive <del>species</del> <del>are</del> <del>species</del> <del>are</del> mapped, identified and prioritized for treatment annually.</p>	<p><del>Map, Treat and monitor 20,000 acres</del> of the Monument annually for invasive species.  <del>[20,000 acre figure is arbitrary and probably unrealistic. The objective of controlling invasive species is laudable and necessary, but should be focus on the outcomes of treatment, not necessarily the extent of acreage. Would rather see smaller acreage treated effectively than see a larger acreage treated with methods that cannot succeed. Treating infestations when small is the tactic most likely to lead to success in invasive species management. Strongly support incentives for the Monument to mount an aggressive campaign against invasive species, but worry that the 20,000 acre figure misses the mark. Would substitute conditions such as (examples only) “a) treatment of all new infestations &lt;0.1 ha; b) treatment of all infestations directly threatening high priority conservation targets; c) etc....., according to principles of integrated pest management.”]</del></p>	<p><del>Map, Treat and monitor 15,000 acres</del> of the Monument annually for invasive species.  <del>[15,000 acre figure is arbitrary and probably unrealistic. The objective of controlling invasive species is laudable and necessary, but should be focus on the outcomes of treatment, not necessarily the extent of acreage. Would rather see smaller acreage treated effectively than see a larger acreage treated with methods that cannot succeed. Treating infestations when small is the tactic most likely to lead to success in invasive species management. Strongly support incentives for the Monument to mount an aggressive campaign against invasive species, but worry that the 15,000 acre figure misses the mark. Would substitute conditions such as (examples only) “a) treatment of all new infestations &lt;0.1 ha; b) treatment of all infestations directly threatening high priority conservation targets; c) etc....., according to principles of integrated pest management.”]</del></p>	<p><del>Map, Treat and monitor 10,000 acres</del> of the Monument annually for noxious weeds.  <del>[10,000 acre figure is arbitrary and probably unrealistic. The objective of controlling invasive species is laudable and necessary, but should be focus on the outcomes of treatment, not necessarily the extent of acreage. Would rather see smaller acreage treated effectively than see a larger acreage treated with methods that cannot succeed. Treating infestations when small is the tactic most likely to lead to success in invasive species management. Strongly support incentives for the Monument to mount an aggressive campaign against invasive species, but worry that the 10,000 acre figure misses the mark. Would substitute conditions such as (examples only) “a) treatment of all new infestations &lt;0.1 ha; b) treatment of all infestations directly threatening high priority conservation targets; c) etc....., according to principles of integrated pest management.”]</del></p>
<p>Develop and implement an adaptable habitat management plan within three years.</p>	<p>Develop and implement an <del>adaptable</del> habitat management plan within two years of the CCP being adopted.</p>	<p>Develop and implement an <del>adaptable</del> habitat management plan within two years of the CCP being adopted.</p>	<p>Develop and implement an <del>adaptable</del> habitat management plan within two years of the CCP being adopted.</p>
<p>Restoration is limited to efforts following a disturbance event (e.g., fire or construction). Based upon emergency funding allocations, restoration includes the stabilization and rehabilitation of fire impacted lands within three years of fire occurrence.</p> <p>Coordinate conservation and restoration activities with adjacent land ownerships, federal, state and public land management agencies.</p>	<p><del>Conduct restoration activities annually on upland habitats to retain and restore stable functioning ecosystems that support diverse biotic communities. Conduct restoration activities on 6,000 acres of upland habitat annually to retain and restore the potential natural ecosystems. reestablish pre-European settlement conditions. (Write a statement that ensures management activities address the biological imbalance of elk.)</del>  <del>[Support incentives for the Monument to implement an aggressive, effective program of habitat restoration. The 6,000 acre annual figure is arbitrary and unrealistic over the life of the CCP. Restoration activities must be conceived, prioritized, and planned within a context of landscape conditions, threats to biological resources, and available restoration technology. Tying evaluation of this objective’s success to an acreage figure risks forcing the Monument into activities designed to provide ‘treated acres.’]</del></p>	<p><del>Conduct restoration activities annually on upland habitats to retain and restore stable functioning ecosystems that support diverse biotic communities. Conduct restoration activities on 4,000 acres of upland habitat annually to retain and restore the potential natural ecosystems. reestablish pre-European settlement conditions. (Write a statement that ensures management activities address the biological imbalance of elk.)</del>  <del>[Support incentives for the Monument to implement an aggressive, effective program of habitat restoration. The 4,000 acre annual figure is arbitrary and unrealistic over the life of the CCP. Restoration activities must be conceived, prioritized, and planned within a context of landscape conditions, threats to biological resources, and available restoration technology. Tying evaluation of this objective’s success to an acreage figure risks forcing the Monument into activities designed to provide ‘treated acres.’]</del></p>	<p><del>Conduct restoration activities annually on upland habitats to retain and restore stable functioning ecosystems that support diverse biotic communities. Conduct restoration activities on 2,000 acres of upland habitat annually to reestablish pre-European settlement conditions retain and restore the potential natural ecosystems. (Write a statement that ensures management activities address the biological imbalance of elk.) [Support incentives for the Monument to implement an aggressive, effective program of habitat restoration. The 2,000 acre annual figure is arbitrary and unrealistic over the life of the CCP. Restoration activities must be conceived, prioritized, and planned within a context of landscape conditions, threats to biological resources, and available restoration technology. Tying evaluation of this objective’s success to an acreage figure risks forcing the Monument into activities designed to provide ‘treated acres.’]</del></p>

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<b>1) Conserve and restore the plants, animals and shrub-steppe and other upland habitats native to the Columbia Basin.</b>			
<b>Alternative A – No Action</b>	<b>Alternative B – Restoration Emphasis</b>	<b>Alternative C – Perimeter Concentration of Facilities</b>	<b>Alternative D – Public Use Emphasis</b>
On a case by case basis, collect native seed and propagate one year prior to needs in order to produce locally adapted species for rehabilitation efforts.	Establish, <u>either individually or in cooperation with other federal and state land management agencies in the Lower Columbia Basin</u> , a locally derived native seed collection, nursery, and storage program within <u>three-five</u> years of the CCP being adopted. <u>[This objective is critical for the success of restoration and mitigation activities included in the CCP, as well as for as yet unforeseen fire stabilization and rehabilitation imperatives. Needs to be established in as timely a manner as possible.]</u>	Establish, <u>either individually or in cooperation with other federal and state land management agencies in the Lower Columbia Basin</u> , a <u>locally derived</u> native seed collection, nursery, and storage program within <u>seven-three-five</u> years of the CCP being adopted. <u>[This objective is critical for the success of restoration and mitigation activities included in the CCP, as well as for as yet unforeseen fire stabilization and rehabilitation imperatives. Needs to be established in as timely a manner as possible.]</u>	Establish, <u>either individually or in cooperation with other federal and state land management agencies in the Lower Columbia Basin</u> , a <u>locally derived</u> native seed collection, nursery, and storage program within <u>10-three-five</u> years of the CCP being adopted. <u>[This objective is critical for the success of restoration and mitigation activities included in the CCP, as well as for as yet unforeseen fire stabilization and rehabilitation imperatives. Needs to be established in as timely a manner as possible.]</u>
Annual monitoring of T&E and sensitive species is conducted to fill in data gaps <u>on population dynamics</u> , threats, and system stresses for the development of long-range management plans.	Develop and implement monitoring plans for terrestrial habitats and plant/animal populations. Utilize monitoring results for adaptive management actions.	Develop and implement monitoring plans for terrestrial habitats and plant/animal populations. Utilize monitoring results for adaptive management actions. <u>Prior to opening areas for recreation, sufficient baseline data should be gathered to enable monitoring plans to provide early detection of degradation.</u>	Develop and implement monitoring plans for terrestrial habitats and plant/animal populations. Utilize monitoring results for adaptive management actions. <u>Prior to opening areas for recreation, sufficient baseline data should be gathered to enable monitoring plans to provide early detection of degradation.</u>
Seeps, springs and washes are protected from project disturbance through the implementation of a minimum 500 foot buffer zones for management activities.	<u>Repeat Alt A</u>	<u>Repeat Alt A</u>	<u>Repeat Alt A</u>
Wildlife inventories are conducted by WDFW, WDNR and WNHP annually through cooperative partnerships to obtain baseline population information on Regional Bird, terrestrial and amphibian species.	<u>Repeat Alt A</u>	<u>Repeat Alt A</u>	<u>Repeat Alt A</u>
Through partnerships with TNC, DNR, NHP, vegetation inventories are conducted annually to identify rehabilitation treatment success/failure; collect baseline information on species diversity, cover and plant community health; monitor the health and recovery of rare and endangered plant/animal species and their habitats; and identify/prioritize habitat restoration sites.	<u>Repeat Alt A</u>	<u>Repeat Alt A</u>	<u>Repeat Alt A</u>

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<b>3) Enhance Monument resources by establishing and maintaining connectivity with neighboring habitats.</b>			
<b>Alternative A – No Action</b>	<b>Alternative B – Restoration Emphasis</b>	<b>Alternative C – Perimeter Concentration of Facilities</b>	<b>Alternative D – Public Use Emphasis</b>
No actions are undertaken to compromise the existing connectivity within and adjacent to the Monument.	Establish working groups to identify habitats and species with high potential to benefit from connectivity with areas outside the Monument within one year of the CCP being adopted.	Establish working groups to identify habitats and species with high potential to benefit from connectivity with areas outside the Monument within one year of the CCP being adopted.	Establish working groups to identify habitats and species with high potential to benefit from connectivity with areas outside the Monument within one year of the CCP being adopted.
Partnerships and cooperative working agreements are exercised with land owners and land managers to protect connectivity and ecological integrity of shrub-steppe habitat between the Monument and adjacent lands.	Work with partners to identify conservation and funding strategies for protection of connected habitat within three years of the CCP being adopted.	Work with partners to identify conservation and funding strategies for protection of connected habitat within four years of the CCP being adopted.	Work with partners to identify conservation and funding strategies for protection of connected habitat within five years of the CCP being adopted.
Period meetings are conducted with the general public, partners, and cooperating agencies to review specific projects for compliance with connectivity objectives.	Meet annually with adjacent landowners, <u>managers, tribes, sportsmen, and environmental groups</u> <del>and managers</del> to discuss common habitat/management objectives and future possibilities.	Meet annually with adjacent landowners, <u>managers, tribes, sportsmen, and environmental groups</u> <del>and managers</del> to discuss common habitat/management objectives and future possibilities.	Meet annually with adjacent landowners, <u>managers, tribes, sportsmen, and environmental groups</u> <del>and managers</del> to discuss common habitat/management objectives and future possibilities.
Through the review of other Federal Agency EIS's on neighboring lands, projects are evaluated annually to ensure connectivity is maintained within the Monument and on projects that impact surrounding shrub-steppe habitats.	<u>Repeat Alt A</u>	<u>Repeat Alt A</u>	<u>Repeat Alt A</u>

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<b>11) Facilitate research compatible with resource protection, emphasizing research that contributes to management goals of the Monument.</b>			
<b>Alternative A – No Action</b>	<b>Alternative B – Restoration Emphasis</b>	<b>Alternative C – Perimeter Concentration of Facilities</b>	<b>Alternative D – Public Use Emphasis</b>
Research occurs for a wide variety of purposes.	Establish operations, access and equipment maintenance protocols for the Monument within one year of the CCP being adopted.	Establish operations, access and equipment maintenance protocols for the Monument within one year of the CCP being adopted.	Establish operations, access and equipment maintenance protocols for the Monument within one year of the CCP being adopted.
	Within one year of the CCP being adopted, develop research project and prioritization standards <u>with the goal of Monument resource protection.<sup>1</sup> Standards will require that every research project when completed will restore the research area to native habitat free of trash or abandoned equipment. The standards should provide that any researcher who fails to restore their research area would be barred from future research on the Monument.</u>	Within one year of the CCP being adopted, develop research project and prioritization standards <u>with the goal of Monument resource protection.<sup>1</sup> Standards will require that every research project when completed will restore the research area to native habitat free of trash or abandoned equipment. The standards should provide that any researcher who fails to restore their research area would be barred from future research on the Monument.</u>	Within one year of the CCP being adopted, develop research project and prioritization standards <u>with the goal of Monument resource protection.<sup>1</sup> Standards will require that every research project when completed will restore the research area to native habitat free of trash or abandoned equipment. The standards should provide that any researcher who fails to restore their research area would be barred from future research on the Monument.</u>
	<u>With the help of a local, representative advisory committee group that includes scientific and academic interests, conduct an annual review/periodic reviews of research proposals, reporting results to be used in adaptive management planning and adapt management accordingly.</u>	<u>With the help of a local, representative advisory committee group that includes scientific and academic interests, conduct an annual review/periodic reviews of research proposals, reporting results and adapt management accordingly to be used in adaptive management planning.</u>	<u>With the help of a local, representative advisory committee group that includes scientific and academic interests, conduct an annual review/periodic reviews of research proposals, reporting results to be used in adaptive management planning and adapt management accordingly.</u>
	Develop a dissemination network/system to share findings of research conducted on or for the Monument within two years of the CCP being adopted.	Request researchers incorporate a public outreach/ education component into their activities. <u>Develop a dissemination network/system to share findings of research conducted on or for the Monument within two years of the CCP being adopted.</u>	Request researchers incorporate a public outreach/ education component into their activities. <u>Develop a dissemination network/system to share findings of research conducted on or for the Monument within two years of the CCP being adopted.</u>

<sup>1</sup> Note: ensure that a research area is restored to pre-disturbed habitat free of trash or abandoned equipment.