

Boise National Forest

Sage Hen Integrated Restoration Project

Appendix A: Activity Cards

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Non-Commercial Tree Thinning Activity Card

Non-Commercial Tree Thinning	
Description:	Tree thinning without product removal (non-commercial). Felling trees to reduce density and improve the vigor of residual trees. This activity typically occurs in plantations, in natural stands where harvest is not economically viable or allowed (e.g., portions of riparian conservation area), and following timber harvest to thin the sub-merchantable trees.
Objectives:	Trend vegetative conditions and associated wildlife habitat towards desired conditions, while reducing the risk for uncharacteristic wildfire.
Condition/ Situation Trigger	When tree densities exceed what is needed to implement prescribed fire, what is desired for wildfire, insect and disease hazards, or if needed to improve desired species composition. Also, when there is not a market, or it is not economically feasible, to utilize wood products associated with vegetation treatments.
Related Actions:	Other activities that may occur along with non-commercial tree thinning, on an as-needed basis, include hazardous fuel reduction (mechanical or non-mechanical) and prescribed burning.
Methods:	Use of hand crews to fell trees; typically a service contract.
Equipment Used:	Chainsaw.
Timing:	Year round, but typically from July 1 through November 15 and/or dependent on timing restrictions identified by resource specialists.
Duration:	Multiple years.

Non-Mechanical Hazardous Fuels Reduction Activity Card

Non-Mechanical Hazardous Fuels Reduction	
Description:	<ol style="list-style-type: none"> 1: Hand piling: Piling residual fuels and slash from harvest and non-commercial activities; hand piling on any percent slope. 2: Non-commercial thinning: Thinning non-commercial trees. 3: Pruning: Pruning ladder fuels. 4: Slash re-arrangement: Pullback of slash from leave trees and reducing slash depth across a unit. 5: Hazard tree removal: Removing hazardous trees in high value areas, along travel corridors or control lines. 6. Riparian Condition and Water Quality: Idaho Shade Rule relative stocking requirements will be maintained.
Objectives:	<ol style="list-style-type: none"> 1: Reduce surface fuels from commercial and non-commercial activities by piling fuels to be burned. 2: Thin non-commercial trees to reduce stand densities and overstory mortality, as well as improve species composition and plant vigor. 3: Reduce ladder fuels to discourage crown fire and torching potential. 4: Increase survivability of leave trees by pulling back residual slash and reducing slash depth. 5: Remove hazardous trees for public and firefighter safety and fireline control mitigation measures.
Condition/ Situation Trigger	<ol style="list-style-type: none"> 1: After commercial and non-commercial activities when fuels/slash are above levels needed to achieve desired conditions. 2: Dense pockets of understory stands or plantations that need thinning to reduce competition and/or improve plant vigor and species composition. 3: Prior to prescribed fire treatments in conjunction with non-commercial thinning activities to discourage crown fire and torching. 4: During commercial and non-commercial thinning activities and prior to prescribed fire implementation in those areas. 5: During timber harvest activities or prior to prescribed fire implementation.
Related Actions:	These actions could occur after timber harvest or prior to prescribed burning.
Methods:	Contractors or agency employees using equipment described below.
Equipment Used:	Chainsaws and hand tools.
Timing:	Any time of year when objectives could be met and around timing restrictions for wildlife or resource protection.
Duration:	Multiple years depending on harvest sales and thinning contracts.

Mechanical Hazardous Fuels Reduction Activity Card

Mechanical Hazardous Fuels Reduction	
Description:	<p>1: Machine piling and/or 2: Hand piling: Piling residual fuels and slash from harvest and non-commercial activities.</p> <p>3: Chipping and/or 4: Mastication: Reducing fuel loading and continuity by chipping or grinding slash, brush, understory trees with chippers or equipment with masticating heads. Material is ground into chips and small debris reducing fuel bed depth, continuity, arrangement and potential fire behavior.</p> <p>5: Pruning: Pruning ladder fuels to discourage crown fire and torching.</p> <p>6: Slash re-arrangement: Pullback of slash from leave trees and reducing slash depth across a unit.</p> <p>7: Hazard tree removal: Removing hazardous trees in high value areas, along travel corridors or control lines.</p>
Objectives:	<p>1 and 2: Reduce surface fuels from commercial and non-commercial activities by piling fuels to be burned.</p> <p>3 and 4: To create fuels breaks along private property and around administrative sites prior to prescribed fire implementation to reduce risk to those resources during prescribed fire activities. This could also be a standalone treatment in some cases to mitigate fire hazards by reducing fuels along roads for control lines.</p> <p>5: Reduce ladder fuels to discourage crown fire and torching potential.</p> <p>6: Increase survivability of leave trees by pulling back residual slash and reducing slash depth.</p> <p>7: Remove hazardous fuels for public and firefighter safety and fireline control mitigation measures.</p>
Condition/ Situation Trigger	<p>1 and 2: After commercial and non-commercial activities. Machine piling less than 45 percent slope; hand piling on any percent slope.</p> <p>3 and 4: Prior to prescribed fire treatments and any time that it could meet resource objectives around high value areas such as wildland urban interface, administrative sites, private property or along roads.</p> <p>5: Dense pockets of understory stands or plantations that need thinning to reduce competition and/or improve plant vigor and species composition.</p> <p>6: Prior to prescribed fire treatments in conjunction with non-commercial thinning activities.</p> <p>7: During commercial and non-commercial thinning activities and prior to prescribed fire implementation in those areas.</p> <p>8: During timber harvest activities or prior to prescribed fire implementation.</p>
Related Actions:	These actions could occur after timber harvest, prior to prescribed burning or in conjunction with non-commercial thinning.
Methods:	Contractors or agency employees using equipment as described below.
Equipment Used:	Chainsaws, excavators, chippers, skid-steers, feller-buncher, and mastication/grinding heads.

Mechanical Hazardous Fuels Reduction	
Timing:	Any time of year when objectives could be met and around timing restrictions for wildlife or resource protection.
Duration:	Multiple years depending on timber harvest sales and thinning contracts.

Prescribed Burning Activity Card

Prescribed Burning	
Description:	<p>1: Prescribed Burning: Includes understory, broadcast, jackpot and pile burning.</p> <p>2: Machine/Hand Line: Machine line could be constructed in high slash areas or hand line could be used.</p> <p>3: Hazard Tree Removal: Removal could occur prior to or during implementation when trees are deemed safety hazards.</p>
Objectives:	<p>1: Reintroduce fire as a disturbance process in these ecosystems and move vegetation toward desired conditions defined in the forest plan. Reduce the risk of uncharacteristic and undesirable wildland fire, with an emphasis on restoring and maintaining desirable plant community attributes including fuel levels, fire regimes and other ecosystem processes. Improve wildlife habitat for identified species.</p> <p>2: To effectively contain fire and minimize chances of torching and escape fires.</p> <p>3: To ensure firefighter and public safety.</p>
Condition/Situation Trigger	When prescribed fire is determined to be the appropriate tool for achieving desired conditions, as described in silvicultural prescriptions and/or the Boise National Forest’s Vegetation Condition-Based Management Guide.
Related Actions:	Prescribed fire could occur prior to or after timber harvest or after non-commercial thinning.
Methods:	<p>1: Prescribed fires would be ignited using ground and/or aerial based ignitions.</p> <p>2: Hand line will be used wherever needed for containment lines. Placement will vary but natural and manmade features will be utilized where feasible to minimize ground disturbance to soils, plants and trails. Construction specifications will vary depending on fuel arrangement and continuity but in general line will be 18 to 24 inches wide scrape to bare mineral soil with saw line removing brush and understory trees on both sides of the line. Water bars would be constructed as needed depending on slope and resources guidelines. Line would also be rehabilitated seasonally as needed or after the burn was declared out.</p> <p>Machine line would be confined to high value areas such as wildland-urban interface, administrative sites, plantations, harvest/no-harvest areas, high slash loadings, outside the inventoried roadless area with the exception of on an existing roadbed in the roadless area and would be limited to slopes less than 45 percent. Machine line specifications would vary depending on fuel accumulations and continuity but in general would be a 2 to 4 feet scrape to bare mineral soil with slash along the line being dispersed and placed off of the containment line. Dozer line is an option and the width could be as much as 12 feet. Water bars would be installed according to resource specifications during the construction. These lines would also be rehabilitated once the burn was declared out or when feasible to do so.</p> <p>3: Hazard tree removal could occur along containment lines for firefighter and public safety. Removal would be confined to high value areas (as previously described above) or where there are threats to containment lines.</p>

Prescribed Burning	
	4. Firelines will be promptly reclaimed. Firelines will not be placed in the riparian conservation area unless necessary to control fire spread.
Equipment Used:	Helicopters, engines, trucks, utility-terrain vehicles, unmanned aerial vehicles (i.e., drones), crews, aerial firing devices (plastic sphere dispensers), helitorches, drip torches, terra-torches, etc. Tracked heavy equipment, such as excavator or dozer. Hand tools.
Timing:	Prescribed burning, machine and handline construction and hazard tree removal could take place any time of year that objectives could be met. This is typically the spring, summer and fall.
Duration:	Multiple years depending on timber harvest sales and contracts

Reforestation Activity Card

Reforestation	
Description:	Artificial (planting) and natural regeneration of seral tree species, such as ponderosa pine, western larch, aspen, whitebark pine, and in some cases Douglas-fir to trend vegetative conditions towards desired species composition. Most planting is completed in the spring, except high elevation sites, such as whitebark pine. Site preparation could include Salmon River Blade (less than 45 percent slopes and outside of the roadless area), prescribed fire or hand scalping.
Objectives:	Trend vegetative conditions and associated wildlife habitat towards desired conditions, while fostering long term resilient landscapes with diverse, well-represented early seral species compositions.
Condition/ Situation Trigger	When a stand is not fully stocked (relative tree density equal to or less than 25 percent SDI_{max}), the need for site preparation and likelihood for natural regeneration would be assessed. If natural regeneration of desired species (e.g., lacking seed sources) is not likely or monitoring indicates it is not occurring, artificial regeneration would be planned. In some cases, successful natural regeneration can be sufficiently accomplished with site preparation (e.g., prescribed fire or Salmon River Blade) alone.
Related Actions:	Other activities that may occur along with reforestation on an as-needed basis include timber harvest (planting or site prep post-harvest), prescribed burning and snow plowing (to access planting sites in spring).
Methods:	Hand crew, typically service contract. Pack animals or helicopters may be used to transport equipment to high elevation sites. Site preparation using tracked equipment.
Equipment Used:	Hoedad hand tool, auger, Salmon River Blade on tracked dozer, or equivalent equipment.
Timing:	Most planting is primarily completed in the spring, from March through May, following snowmelt. High elevation planting, such as whitebark pine, is typically completed in the fall once fall storms start but before snowfall.
Duration:	Reforestation is typically completed within 5 years of timber harvest, contingent on successful prescribed fire site preparation.

Timber Harvest Activity Card

Timber Harvest	
Description:	Timber harvest involves timber sale area preparation (e.g., marking sale area boundaries, marking trees to be felled or left standing, etc.), felling of trees and the removal of timber from the sale area. Removal of timber requires whole tree yarding, skidding, landings and log haul, which includes road maintenance activities. Road maintenance includes road prism blading and shaping, roadway vegetation clearing, roadway ditch and culvert cleaning, drainage culvert replacement and installation, water bar removal and installation, road aggregate resurfacing, dust abatement, and surface repair including spot aggregate placement. Commercial users will maintain the roads commensurate with use.
Objectives:	The objectives of timber harvest are to: <ul style="list-style-type: none"> • Facilitate achievement of desired vegetation conditions and associated wildlife habitat. • Utilize sustainable forest products in a manner that supports local and regional economies.
Condition/ Situation Trigger	Timber harvest would occur when existing vegetation conditions indicate a need for management activities, as described in silvicultural prescriptions and/or the Boise National Forest’s Vegetation Condition-Based Management Guide, and it is determined to be the appropriate implementation tool.
Related Actions:	Other activities that may occur along with timber harvest on an as-needed basis include: <ul style="list-style-type: none"> • Road reconstruction and/or temporary or permanent road construction • Road decommissioning and/or unauthorized route removal • Prescribed fire • Mechanical hazardous fuels reduction • Snow plowing if winter harvest is occurring • Reforestation
Methods:	Silvicultural prescriptions would be completed for meadow restoration, group selection with reserves, improvement cutting, large tree improvement cutting, variable density thin from below and salvage harvesting (also refer to Boise National Forest’s Vegetation Condition-Based Management Guide). Timber crews would use these silvicultural prescriptions during timber sale area preparation.
Equipment Used:	Cable (Skyline) Harvest System: Involves various types of cable-yarding equipment to facilitate wood product removal. Allows for steep slope operations but is highly dependent on adequate road densities, acceptable road locations and, suitable slope/terrain profiles. May require larger landings than a conventional ground-based operation and is highly dependent on local availability of specific yarder types and configurations. Landings are often a wide section or turnout of the system road or temporary road prism and are not considered a constructed landing. Constructed landings typically occur when and where multiple skyline corridors converge at a single landing location, which are typically located at a highpoint or ridgeline topographic

Timber Harvest

feature. Skyline corridors (narrow linear clearings) are a by-product of the skyline yarding process. Most skyline operations will have 6 pieces of heavy equipment, described below, and supporting equipment required for transportation, such as lowboys and log trucks.

Equipment Used:

Yarder – Track Mounted and/or Rubber tired equipment that uses cables to facilitate wood product removal. Large yarders in the local area are both tracked and rubber tire mounted with either a swing and/or static tower. The maximum yarding distance is 2,000 feet, but economically feasible rigging distances in this geographic area are 1,400 feet or less. Track mounted carriages are typically 14 feet in width and require a road template at least that wide. This piece of equipment is mostly restricted to operating from a road surface but can operate off-road in limited instances from flat ridgelines.

Processor – Track-mounted log processor used to delimb and cut whole trees into log lengths for transport. It is typically configured with a swinging boom and dangle head or stoke style method for processing. This equipment is restricted to road and landing surfaces.

Log Loader – Typically a track mounted excavator style piece of equipment used to load log trucks on landings with a grapple and is also used to pile landing slash once log loading is completed. This piece of equipment is typically restricted to operating from a road or landing surface.

Rubber Tired Skidder – Used to skid logs from yarder to an appropriately sized and located landing. This activity and equipment is typically located on an existing road or temporary road template with skidding occurring over short distances 200 to 500 feet.

Landing Tractor – Tracked dozer used to construct or improve landing locations and is also used for the anchoring of the Yarder or as a tail hold for the skyline cable when and if inadequate rigging features exist for yarder spar or tail holds.

Tree Felling – this activity is accomplished mostly by tree fallers using chainsaws. In some instances, where slopes are less than 45 percent and access points to the unit exist a tracked feller buncher can be utilized to fell and bunch trees prior to skidding.

Ground Based (Tractor/Off-road Jammer) Harvest System: Involves various types of ground-based equipment to facilitate wood product removal. Allows for operations on slopes less than 45 percent but off-road Jammers can be utilized on short slopes/pitches (less than 300 feet) that are greater than 45 percent slope. Ground based operations are dependent on an adequate road density to provide access and minimize skidding distances. Typically does not require constructed or large landing locations. Landings are often a wide section or turnout of the system road or temporary road prism and are not considered a constructed landing. Constructed landings typically occur when and where multiple skid trails converge at a single landing location. Skid trails are a by-product of ground-based operations and require mitigation, such as scarification and erosion control measures. Most operations will have 6 to 8 pieces of heavy equipment and supporting transportation.

Equipment Used:

Off-Road Jammer – Typically a track mounted excavator style piece of equipment used to cable skid logs/trees on steep slopes within a ground-based harvest unit. Utilizes

Timber Harvest	
	<p>ridgelines, excavated trails, and roads as “sets” (locations for yarding). Equipment tosses or throws log tongs on a single cable downhill and an individual in the woods hooks the log with the tongs before the log or whole tree is cabled to the set located adjacent to a skid trail location. Often, the jammer has grapples and is used to load log trucks on landings and it can be used to pile landing slash once log loading is completed.</p> <p>Processor – Tracked mounted log processor used to delimb and cut whole trees into log lengths for transport. It is typically configured with a swinging boom and dangle head or stoke style method for processing. This equipment is restricted to road and landing surfaces.</p> <p>Log Loader – Typically a track mounted excavator style piece of equipment used to load log trucks on landings with a grapple and it can also be used to pile landing slash once log loading is completed. This piece of equipment is typically restricted to operating from a road or landing surface.</p> <p>Rubber Tired Skidder – Used to skid/forward logs on skid trails to an appropriately sized and located landing. Typically used on slopes or terrain less than 30 percent slope.</p> <p>Tractor – Tracked dozer style equipment used for skidding logs/trees either directly to a landing or to a primary or secondary skid trail location. Typically does not have a blade on the front to prevent damage to the residual trees. Typically used to skid logs to locations for secondary skidding by rubber-tired skidders.</p> <p>Landing Tractor – Tracked dozer used to construct or improve landing locations, temporary roads and construct skid trails for skidding. Also used post-harvest for rehabilitation of the same feature listed above.</p> <p>Tree Felling – this activity is accomplished mostly with mechanized feller-bunchers. This equipment will cut trees on terrain less than 45 percent slope and bunch logs along a skid trail for skidding by rubber-tired skidders and/or tractors. Typically only makes one pass on the ground during active felling operations as it moves from tree to tree. Chainsaws will be used where slopes are greater than 45 percent slope and oversized trees are to be felled for skidding.</p>
Timing:	Timber harvest could occur year-round, depending on weather conditions and any timing restrictions indicated in the design features by resource specialists.
Duration:	Timber harvest typically takes 3 to 5 years to complete, depending on the size of the timber sale area and timing restrictions driven by design features and weather conditions.

Snowplowing Activity Card

Snowplowing	
Description:	Snowplowing is the removal of snow from the surface of the roadway.
Objectives:	The objective of snowplowing is to provide vehicle and equipment access during winter months.
Condition/ Situation Trigger	Snowplowing is needed when snowfall is deep enough to prevent vehicle passage and when passage is needed to accomplish resource or administrative management objectives.
Related Actions:	Timber harvest, reforestation, and fuels reduction.
Methods:	Heavy equipment with an attached blade removes snow from the roadway while maintaining the snow floor and providing for adequate drainage.
Equipment Used:	Snowplowing is accomplished using heavy equipment, such as dozers or graders with an attached blade.
Timing:	During winter months as needed for timber harvest, reforestation, or other access, typically from November through April.
Duration:	Hours to days depending on depth of snow, length of road and terrain.

Temporary Road Construction Activity Card

Temporary Road Construction	
Description:	<p>Temporary roads are constructed on National Forest System lands only for the duration needed to accomplish a given activity, typically a timber harvest or a permitted activity. Temporary roads are not part of the Boise National Forest Transportation System and are constructed to the minimum level necessary to accomplish the management action and objective. Existing prisms or unauthorized routes could be used as temporary roads. Temporary roads are not open to public motorized use.</p> <p>When the activity is completed, the temporary road is decommissioned. The time between the construction and decommissioning of temporary roads shall be minimized to the extent practicable. When practical, both activities (construction and decommissioning) should take place during the same field season.</p>
Objectives:	To provide short-term access for activities within National Forest System lands.
Condition/ Situation Trigger	Temporary roads may be constructed for timber harvest or other short-term resource management or specified needs.
Related Actions:	Timber harvest, road and trail decommissioning
Methods:	Construct to the minimum level necessary. Clear vegetation, rocks and other obstacles. Rock drilling and blasting. Grade and compact soils to form the road base. Place surface aggregate to reduce dust, increase durability or improve drivability if needed. Install cross-drains and construct ditches and drivable dips to facilitate road drainage. Where feasible and to the extent possible, utilize existing templates, construct outside of riparian conservation areas and minimize the number of stream crossings. If required, install culverts, temporary bridges or other structures (e.g., constructed fords) at stream crossings. Contour slopes adjacent to the road for slope stability.
Equipment Used:	Heavy construction equipment such as excavators, dump trucks, dozers, graders, water trucks and compaction equipment; rock drills; cranes; and sawyers to remove trees.
Timing:	Seasonal; typically occurs from late spring to late fall. Earthwork is performed when soils are not frozen or saturated.
Duration:	Temporary road construction can take several weeks to months to complete, depending on the length of the new road, proximity to suitable materials, site access, and site conditions.

Road Reconstruction Activity Card

Road Reconstruction	
Description:	Road reconstruction involves improving or realigning an existing National Forest System road. Road reconstruction improvements generally increase the road’s traffic service level or change the road’s original design function. Road reconstruction through realignment results in a new location of an existing road or portions of an existing road. When feasible, new road locations will be located on existing route templates. The old roadways will be restored to a more natural state.
Objectives:	To improve the condition of the road to meet defined needs, typically for timber hauling, recreational access, or permitted uses.
Condition/ Situation Trigger	Road reconstruction is needed when the existing road structure or geometry is not sufficient for current or future needs, to meet desired traffic service levels (levels of service), or to address access or resource issues. Examples include placing aggregate surfacing to provide additional durability, widening the road to accommodate recreational or commercial traffic, or realigning the road to mitigate adverse resource impacts. The need for road reconstruction may be determined through the transportation analysis process (TAP), which is conducted during the planning stage. This process is used to identify the minimum road system needed for safe and efficient travel and for administration, utilization and protection of National Forest System lands [36 CFR 212.5(b)(1)].
Related Actions:	Timber harvest, aquatic organism passage, and road storage.
Methods:	Remove brush from road and clear roadside vegetation. Rock drilling and regrade and recompact soils. Place surface aggregate to reduce dust, increase durability, or improve drivability if needed. Realign and widen roads where needed to improve safety and facilitate larger vehicles and equipment. Replace and install culverts for seasonal flow and stream crossings and reconstruct ditches, drivable dips, and cross drains to facilitate drainage away from the road. Bridges may be installed at larger stream crossings. Recontour slopes adjacent to the road for slope stability.
Equipment Used:	Heavy construction equipment such as excavators, dozers, rock drills, dump trucks, graders, water trucks and compaction equipment; cranes; and sawyers to remove trees.
Timing:	Seasonal; typically occurs from late spring to late fall. Earthwork is performed when soils are not frozen or saturated.
Duration:	Road reconstruction can take several weeks to months to complete, depending on the length of road to be reconstructed, proximity to suitable materials, site access, and site conditions.

National Forest System Road Construction Activity Card¹

National Forest System Road Construction	
Description:	Construct new roads or identify existing routes that will be added to the Forest Transportation System. These roads will be shown on the Motor Vehicle Use Map if designated for public motorized use. They may be restricted to administrative use only due to safety, resource protection or for other reasons.
Objectives:	To provide long-term access to National Forest System lands for safe and efficient travel and for administration, utilization, and protection of National Forest System lands.
Condition/ Situation Trigger	When road templates are not existing or when existing templates need improvement to meet desired traffic service levels (level of service). The need for a National Forest System road is determined through the transportation analysis process (TAP), which is conducted during the planning stage. This process is used to identify the minimum road system needed for safe and efficient travel and for administration, utilization and protection of National Forest System lands [36 CFR 212.5(b)(1)].
Related Actions:	Timber harvest, road storage, and aquatic organism passage improvement.
Methods:	Clear vegetation, rocks and other obstacles; drill and/or blast rock; grade and compact soils to form the road base; place surface aggregate or pavement to reduce dust, increase durability or improve drivability if needed; install culverts for seasonal flow and stream crossings and construct ditches and drivable dips to facilitate drainage away from the road. Bridges or other structures (for example, aquatic organism passages and constructed fords) may be installed at larger stream crossings. Contour and shape slopes adjacent to the road for slope stability.
Equipment Used:	Heavy construction equipment such as excavators, dozers, dump trucks, graders, water trucks, and compaction and paving equipment; rock drills; cranes; sawyers to remove trees.
Timing:	Seasonal; typically occurs from late spring to late fall. Earthwork is performed when soils are not frozen or saturated.
Duration:	Road construction can take several weeks to months to complete, depending on the length of the new road, proximity to suitable materials, site access, and site conditions.

¹ Includes addition of existing routes to the National Forest System Transportation System.

Road Storage Activity Card

Road Storage	
Description:	Road storage involves placing a National Forest System road into non-use status for an extended period. Roads receive custodial maintenance if needed to facilitate drainage and runoff and to preserve the road’s integrity for future use. Roads placed in storage may be dual designated as National Forest System motorized trails. These roads are not displayed as roads on the Motor Vehicle Use Map but they may be displayed as motorized trails.
Objectives:	The objective of road storage is to close a road to all motor vehicles, including administrative use, when it is not needed for short-term access but may be needed for future management needs.
Condition/ Situation Trigger	Roads are placed into storage when it is determined through a travel analysis that they will not be needed for management activities for long periods of time (i.e., longer than a year). Placing roads into storage can reduce impacts to soil, water quality and wildlife resources, as well as reduce annual maintenance costs.
Related Actions:	Timber harvest, road reconstruction, National Forest System road construction and addition of existing routes to Boise National Forest Transportation System.
Methods:	Recontour the road entrance and/or place physical barriers (other than gates). Remove culverts and other drainage structures as needed to prevent damage from runoff events and to reduce resource impacts. Construct water bars.
Equipment Used:	Heavy construction equipment such as dump trucks and excavators.
Timing:	Physical barriers can typically be installed at any time of the year, weather permitting. Earthwork is performed when soils are not frozen or saturated.
Duration:	Placement of a road into storage could take a few weeks, depending on whether drainage structures are removed or other stabilization measures are needed.

Aquatic Organism Passage Improvement Activity Card

Aquatic Organism Passage Improvement	
Description:	Replace, remove or improve migration barriers (culverts or other obstructions).
Objectives:	To restore connectivity to the aquatic organisms.
Condition/ Situation Trigger	Structure would be replaced, removed, or improved when a need has been identified to improve stream habitat connectivity.
Related Actions:	Road reconstruction, road storage, and road and trail decommissioning.
Methods:	Excavate existing culvert or remove obstruction. Install appropriate culvert or structure to allow aquatic organism passage. Utilize appropriate sediment control methods, e.g., diverting the creek water, installing downstream sedimats; post work, erosion mats, and seed is used.
Equipment Used:	Heavy construction equipment including excavators, dump trucks, and trailers.
Timing:	During low water and before August 15, if within known or potential bull trout spawning and early rearing (in coordination with regulatory agencies).
Duration:	Typically 2 weeks for instream diversion per site (in coordination with regulatory agencies).

Road and Trail Decommissioning Activity Card²

Road and Trail Decommissioning	
Description:	Decommissioning is stabilizing and restoring unneeded roads and trails to a more natural state. Unauthorized road and trail decommissioning specifically removes roads and trails that were illegally created by users or abandoned from previous management activities.
Objectives:	The objective of road and trail decommissioning is to eliminate motorized use, restore the road or trail area to a more natural state and stabilize it to minimize sedimentation and impacts to natural resources.
Condition/ Situation Trigger	Decommissioning could be implemented when a road or trail is no longer needed or when resource damage is occurring.
Related Actions:	Timber harvest, National Forest System roads, and temporary roads.
Methods:	If needed, install physical barriers such as rocks or logs to block the road or trail, scarify and seed the road or trail surface to reduce soil compaction, remove culverts and reestablish drainageways, partially or fully recontour surfaces to provide a more natural slope. The methods or treatments selected depends upon many factors, including restoration goals and current uses.
Equipment Used:	Heavy equipment such as dump trucks, dozer, graders, and excavators. Chainsaws and hand tools.
Timing:	Seasonal; typically occurs from late spring to late fall. Earthwork is performed when soils are not frozen or saturated.
Duration:	Depending on the level of road/trail decommissioning or extent of unauthorized route removal, activities could take days to several months.

² Applies to both authorized and unauthorized routes.