South Gifford Pinchot Collaborative

working together for the greater good

Zones of Agreement

Post-Fire Salvage Logging

Gifford Pinchot National Forest

South Zone Planning Area

[DOCUMENT APPROVED ON 7/24/23]

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Acknowledgments

This document was written by the SGPC Executive Director with contribution from and editing by the ZOA Subcommittee, and ongoing input from the full Collaborative. The SGPC appreciates the ongoing support from the *Washington Department of Natural Resources'* (WA DNR) *Building Forest Partnerships* grant, which has funded our efforts to find agreement around this important issue over the past two years.

ZOA Subcommittee Members

- Jon Paul Anderson, WKO/High Cascade
- Jeremy Grose, Green Diamond Resource Co
- Ashley Short, Cascade Forest Conservancy
- Emily Stevenson, Skamania County Noxious Weed Control Program
- Sue Wright, Concerned Citizen

- Joshua Petit, SGPC Executive Director

About the South Gifford Pinchot Collaborative

In the fall of 2008, Skamania County Commissioners formed the Mt. Adams District Collaborative and the Lewis River Collaborative in an effort to explore how collaboration with the U.S. Forest Service (USFS) and the Stewardship Sale Authority could improve forest health and provide economic benefits to local communities on the southern end of Gifford Pinchot National Forest (GPNF). Recognizing they were often working on similar issues with shared members, the two groups combined to form the South Gifford Pinchot Collaborative (SGPC) in December of 2011.

The SGPC's mission is to collectively improve development, facilitation, and implementation of projects that enhance economic vitality, forest ecosystems, outdoor recreation, and public safety on the south end of GPNF and surrounding communities. Collaborative members include conservation/environmental organizations, recreation groups, small-scale forest contractors, large timber companies, retired USFS employees, and individual community members (i.e., concerned citizens).

The SGPC works closely with the USFS' GPNF South Zone National Environmental Policy Act (NEPA) Planner and Interdisciplinary Team (IDT) during the planning stage of vegetation management projects. In this advisory role, the SGPC provides ongoing feedback during monthly meetings and often submits written comments during the scoping or other public comment periods within the NEPA process.

The SGPC is also involved with the development of Stewardship Timber Sales that generate retained receipts which are used forest-wide for restoration projects such as meadow and fish habitat improvement, road drainage improvement, and invasive species treatment. The SGPC coordinates the review process for these restoration project proposals and offers recommendations to the District Ranger. Over the past several years, the SGPC has broadened its programmatic scope to include sustainable recreation, project monitoring, and statewide forest health planning efforts that are not reflected in this document.

Document Purpose

The purpose of this Zones of Agreement (ZOA) document is to provide the USFS with a record of the SGPC's current areas of agreement on *post-fire salvage logging* in the South Zone planning area of GPNF. Although not exhaustive, this document highlights the SGPC's rationale and recommendations where agreement has and has not yet been reached. The USFS may use this document as sideboards when considering project locations and treatments to help expedite time-sensitive work on the Forest. We are happy to provide additional input as project-specific concerns arise that are not covered herein and recognize that the USFS retains full decision-making authority and discretion to follow or deviate from these recommendations.

In support of the overarching goal to increase the pace and scale of restoration on the South Zone of GPNF, this ZOA effort is guided by the following approach:

Comprehensive Decision-Making
The SGPC is committed to using a comprehensive decision-making process that considers the best available science, as well as ecological, economic, and social values.

Living Document
This ZOA is intended to be a "living document" that is reviewed periodically and updated as the SGPC reaches new areas of agreement.

Historical Record
This document serves as a historical record of the SGPC's work on vegetation projects within the GPNF South Zone planning area. New members, partner organizations, and the USFS can utilize this document to better understand the work and history of the SGPC. This ZOA does <u>not</u> reflect the full range of the SGPC's projects and involvement on the Forest.

Post-Fire Salvage Logging

BACKGROUND INFORMATION

Forest Disturbances

Ecological disturbances are temporary environmental changes that result in more prominent transformations within ecosystems. Forest disturbances can include wildfires, ice and wind events, insect outbreaks, diseases, and drought, among others. Additionally, anthropogenic climate change can catalyze or exacerbate these forest disturbance agents.

Given the frequency and potential scale of modern-day "megafires," the SGPC focused our efforts on finding agreement around post-*fire* salvage. Other common forest disturbances are briefly described below, which may be addressed when this document is revisited/updated.

Wildfires

Fires can impact forests in many ways. Although fire is a natural component of forested ecosystems with positive effects on landscapes, large, modern "megafires" can be uncharacteristically destructive due to factors such as historic fire suppression, drought, high winds, and encroachment into the wildland/urban interface (WUI).

Following high severity fires (HSV), forest ecosystems are more susceptible to damage caused by select management practices. Soil conditions, biodiversity, wildlife, water quality, and other forest ecosystem services are vulnerable to subsequent disturbances caused by management practices. Therefore, extra caution must be taken when conducting post-fire operations in HSF-affected areas.

Wind events

High winds can damage trees and create downed wood in forested landscapes. In extreme cases, this abundant downed woody debris can serve as fuel for future wildfires. Additionally, wind events can both exacerbate existing forest disturbances (e.g., active wildfires), and allow new wildfires to ignite more readily. High wind events can also stress adjacent areas by exposing trees to the effects of high winds when they were previously sheltered.

Ice events

Ice is another abiotic stressor that can kill trees. Ice events can structurally damage trees beyond recovery when their branches face rapidly increasing loads.

Drought

Extended periods of drought can result in root damage and tree death. Additional impacts include wood rot, stunted growth, and branch dieback.

Insects

Insect outbreaks can lead to high mortality rates in many tree species. Examples include the mountain pine beetle (*Dendroctonus ponderosae*), emerald ash borer (*Agrilus planipennis*), hemlock wooly adelgid (*Adelges tsugae*), etc. Insects can bore into a tree's bark to "mine" phloem and hatch larvae, which prevents nutrient flow and eventually leads to death.

Diseases

Similar to insect outbreaks, forest pathogens can lead to high tree mortality. Examples of pathogens impacting trees in the western US include sudden oak death (*Phytophthora ramorum*), Swiss needle cast (*Phaeocryptopus gaeumannii*), red band needle blight (*Dothistroma needle blight*), Western gall rust (*Endocronartium harknessii*), etc. Many tree diseases are fungal in nature and can damage a trees' leaves, stems, or roots and often impair water and nutrient uptake.

Other disturbances

Additional disturbances impacting WA forests include flooding, volcanic eruptions, landslides, avalanches, and other natural stressors.

Climate change

Anthropogenic climate change can impact wide-ranging weather patterns and exacerbate the aforementioned forest disturbances. For

example, climate change can lead to both drought and extreme wind events–a volatile combination that can fuel megafires. Insect outbreaks have also been associated with climate change where less-extreme and/or shorter winters do not kill as many insect larvae, leading to larger subsequent hatches.

Post-Disturbance Vegetation Management

To address forest disturbances, managers employ a variety of vegetation strategies after a given forest disturbance. Depending on the disturbance type, scale, severity, and other factors, strategies can include natural regeneration, artificial replanting, herbicide application, and salvage logging, among others (see descriptions below). The SGPC recognizes that a multifaceted approach is necessary for managing forests after disturbances. However, given the breadth of forest disturbances and their potential associated management prescriptions, the ZOA Subcommittee focused on **post-fire salvage logging**. Although a contentious topic, this work will allow the USFS to make more streamlined decisions in the wake of future fires, benefiting local communities and economies (i.e., mills, revenue to counties and schools).

Natural regeneration

Allowing natural forest succession to run its course is the most "hands-off" management approach following a disturbance. In some circumstances or locations on the landscape (e.g., sensitive wildlife habitat, riparian areas), natural regeneration can be a useful strategy. This may involve leaving downed woody debris to serve as habitat, supply additional soil nutrients, and provide a mosaic of structure and function.

Replanting

Planting trees in disturbed areas is a common management practice. This involves removing any existing dead trees and downed woody debris remaining after a low or medium severity fire before replanting an area when soil conditions allow. Managers can elect to replant the same species or a different species (i.e., assisted migration) that may be deemed better-suited to changing climate conditions.

Herbicide application

The application of herbicides is another practice often used in conjunction with other management strategies. This is often aimed at preventing non-native species encroachment or to support shade intolerant species.

Salvage logging *(focus area)*

Salvage logging is defined as: "*The removal of dead trees or trees damaged or dying because of injurious agents other than competition, to recover economic value that would otherwise be lost*" (Helms, 1998). Harvesting hazardous, dangerous, and/or commercially-viable trees after disturbances–especially fires–was the primary focus of our work.

Research has shown both potential benefits and risks associated with post-fire salvage logging (see Appendix B). For example, some research suggests that salvaged stands might be less susceptible to reburns and that subsequent fires can burn at a lower severity due to less downed woody debris. Other research, however, has cautioned against post-fire salvage due to concerns for potential impacts to sensitive soils (e.g., compaction, erosion) and watersheds (i.e., runoff).

Activities associated with salvage logging include *hazard tree removal*, *danger tree removal*, *area salvage near roads*, and *landscape salvage beyond roadsides*. These practices are briefly described below:

- *Hazard tree removal:* The removal of dead or dying trees that *pose a risk in developed recreation areas*.
- *Danger tree removal*: The removal of dead or dying trees that *pose a risk along roadsides*.
- *Area salvage*: The removal of timber from disturbed areas primarily for commercial gain (i.e., versus safety). For the purposes of our work, we differentiated between salvage logging at the landscape scale (and away from roads), versus

smaller scale area salvage near existing road systems.

- *Over 250 acres:* “Landscape” salvage logging of more than 250 acres (i.e., landscape-scale) of commercially viable timber, which can take place far from existing roads. This type of salvage is contentious due to environmental concerns toward accessing and removing timber from disturbed/sensitive landscapes (e.g., soil compaction, erosion, runoff). Furthermore, landscape salvage projects are unlikely to be approved given the NEPA requirements and timelines for projects exceeding the current 250-acre categorical exclusion (CE), and associated concerns related to wood degradation and economic viability. Therefore, the SGPC will address potential landscape salvage projects on a case-by-case basis (see Appendix C).
- ***Under 250 acres:*** Smaller scale area salvage projects that are limited by the 250-acre CE and contained to areas nearby existing roads. When the requisite conditions are present (see following sections and Decision Tree in Appendix C), we view area salvage near roads as a novel category of salvage logging and as a compromise or “middle ground” where meaningful timber value can be captured after fires while also protecting sensitive resources. Therefore, this was **our main focus** in seeking agreement around post-fire salvage logging.

ZOA: Post-Fire Salvage Logging

METHODS USED TO REACH AGREEMENT

To find agreement on the topic of post-fire salvage logging, the SGPC employed the following approach:

- Monthly ZOA Subcommittee meetings lasting 60-90 minutes (USFS invited as needed)
- Hosted expert guest speakers with relevant expertise related to salvage logging at monthly full Collaborative meetings
- Interpretive field tour of Cougar Creek Fire salvage sites (6/22/23)

Over the past two years (Summer 2021-2023), the ZOA Subcommittee has worked to find agreement around post-fire salvage logging. This involved **monthly meetings** to discuss this topic in a small group setting. USFS staff were occasionally invited to answer questions related to management policies and sideboards. Meetings were held via Zoom or as hybrid meetings (i.e., Zoom and in-person). At these meetings, outstanding concerns were addressed and relevant science was discussed in an effort to find commonalities around specific aspects of post-fire salvage logging. The Subcommittee's progress and ongoing activities, and any barriers encountered, were periodically shared with the full Collaborative at monthly meetings for broader input.

The SGPC also hosted several **guest speakers** with relevant and diverse areas of expertise (listed below). These speakers communicated the drawbacks and merits of post-fire salvage logging and fielded related questions to help educate our membership. Collectively, these guest speakers helped inform the full group and ZOA Subcommittee's thinking, along with building a shared understanding of this topic.

- Dr. Morris Johnson (USFS) - 11/18/21
  Modeling post-fire salvage impacts on future fires
- Dr. Laura Burkle (Montana State University) - 12/16/21
  Salvage impacts (i.e., positive, negative) on pollinators

- Andy Geisler (American Forest Resources Council) - 2/17/22
  Economic and other benefits associated with salvage logging
- Dr. Dick Hutto (University of Montana) - 3/17/22
  Avian impacts from salvage logging
- Graham Frank & Dr. Meg Krawchuk (Oregon State) - 5/19/22
  Salvage logging and early seral habitat

In addition to monthly meetings and hosting guest speakers, the group conducted a **post-fire salvage project field tour** on the Forest on 6/22/23. This trip into the Cougar Creek fire (2015) area in the Upper White watershed allowed our members to see an example of post-fire salvage logging firsthand. At this field tour, our members asked questions to the USFS and discussed outstanding concerns to help inform the ZOA Subcommittee's efforts to finalize this document. See Appendix E for photos.

ZOA: Post-Fire Salvage Logging

AREAS OF AGREEMENT

The ZOA Subcommittee has reached agreement around post-fire salvage logging under certain circumstances. While the SGPC fully supports both danger and hazard tree removal, the group also supports *area salvage logging projects near existing roads under 250 acres* when conditions are appropriate (e.g., fire severity, land use allocation, minimal resource impacts). This will capture a portion of timber value in burned areas and provide opportunities for habitat improvement, creating fuel breaks, and enhancing potential operational delineation containment/travel vectors when conditions allow. Our recommended salvage logging management sideboards and associated acceptable resource conditions are outlined below and in the Decision Tree (Appendix C).

Area salvage logging near existing roads *(main focus)*
In addition to roadside danger tree removal, the SGPC supports *post-fire area salvage logging* projects near roads when the following conditions and considerations are met (see Appendix C):

> ***Matrix:*** Beyond hazard and danger tree removal, we support post-fire area salvage logging near roads in matrix plantations. We recognize that these areas were designated for timber production and not intended for creating the mature forest characteristics found in late seral reserve (LSR) or old growth forests. See the SGPC's existing *ZOA for Plantation Thinning* for details. Any proposed post-fire salvage logging in late seral reserve (LSR) or old growth stands will be reviewed on a case-by-case basis to better understand the ecological rationale behind such management actions and address related concerns.
>
> ***Categorical exclusion:*** We support post-fire area salvage logging projects near roads that are limited to 250 acres. This acreage mirrors the existing USFS CE for salvage logging 36 CFR 220.6(e)(13), which allows for "*Salvage of dead and/or dying trees not to exceed 250 acres, requiring no more than ½ mile of temporary road construction. The proposed action may include incidental*

removal of live or dead trees for landings, skid trails, and road clearing." While we recognize the low probability of larger salvage projects due to NEPA timelines/requirements and social buy-in, we feel that 250 acres is also an acceptable limit for executing salvage projects in a timely fashion (i.e.,1-2 year turnaround before wood deterioration) while also ameliorating concerns related to landscape-sized projects. However, we also support the USFS examining more than 250 acres in preliminary assessments to identify and manage candidate stands that eventually total no more than 250 acres.

Younger and middle-aged stands: We support area salvage logging near roads in younger and middle-aged stands. That said, we recognize the challenge in designating hardline metrics (e.g., number of years old, diameter at breast height) for determining the acceptability of proposed harvests given the diversity of species present on the Forest and associated differences in growth rates. Where age/size considerations are ambiguous, therefore, the SGPC will make determinations on a case-by-case basis.

Dead and dying versus green trees: We understand that post-fire salvage operations can require harvesting some live trees for incidental purposes (e.g., landings, skid trails). However, we suggest that harvests otherwise be limited to dead or dying trees to provide a seed source for future growth.

Proximity to roads: We recognize that existing USFS policy sideboards dictate that "roadside" salvage is technically limited to a specific distance from the road. On the other hand, we support post-fire *area* salvage *adjacent to* roads when other conditions are appropriate. This will provide site-specific management flexibility when needed. The SGPC will address any proposed projects further afoot from existing roads on a case-by-case basis.

Sensitive species: We support post-fire salvage practices that protect any sensitive species in a planning area, especially after large-scale disturbances. As such, we support salvage in areas that

are *unsuitable* to sensitive species, including mammals, birds, fish, amphibians, mollusks, and plants.

Higher elevations and steep slopes: We suggest avoiding areas with sensitive plant species and slope stability issues.

Riparian areas: We support roadside area salvage outside of riparian areas in accordance with existing USFS policies and management practices to avoid impacts to sensitive aquatic species (e.g., fish, invertebrates, plants) and protect watershed health more broadly. For details on standards and management restrictions in riparian areas, see the *Aquatic Conservation Strategy* outlined in The Northwest Forest Plan here: https://www.fs.usda.gov/r6/reo/acs/.

Fire severity: Fire severity is a measure of the effects of a fire on the environment and can relate to damage to vegetation and/or soil impacts. While we trust the USFS to make appropriate management decisions relative to salvage projects in areas with medium to high severity fire *vegetation impacts*, areas experiencing HSF *soil* impactsshould generally be avoided to prevent erosion and associated watershed impacts (e.g., increased turbidity).

We also recognize that fires have variable impacts across landscapes with pockets of fire refugia, low severity fire, moderate severity fire, and HSF. As such, we recommend careful post-fire impact assessments to locate stands and implement salvage logging in locations where post-fire salvage logging impacts are anticipated to be minimal.

Minimize erosion: We support management practices that reduce soil impacts from post-fire salvage operations. For example, we support salvage operations during winter months (December through February) and over snow when project timing allows (see section below). In dry months when post-fire salvage over the snow is not possible, we support using slash mats to reduce soil impacts from heavy machinery. Collectively, these actions will help prevent erosion and associated watershed impacts (e.g., faster runoff rates).

Heavy equipment use: We recognize that some heavy equipment (e.g., feller bunchers) must leave the road during salvage logging operations. However, we support efforts to minimize the distance that heavy equipment leaves mainline roads after fires. These actions will help mitigate erosion, associated watershed impacts, and potential damage to habitat adjacent to mainline roads.

Economic viability and project timing: We strongly support roadside commercial salvage projects that are economically viable and that benefit local logging contractors and communities. For example, harvesting second-generation Douglas firs would be more profitable than younger trees of a different species. We also support projects whereby local mill infrastructure exists with the capacity to process salvaged trees after fires without stressing normal operations. Finally, projects should be completed within 1-2 years (varies by species), or as soon as possible, to maximize wood quality and profitability.

Danger tree removal

Although our focus has been post-fire area salvage near roads, we also fully support the commercial sale and *removal of 'danger trees'* that pose a risk along roadsides as determined by USFS designations and assessments (Appendix D).

Hazard tree removal

We also fully support the commercial sale and *removal of* '*hazard trees'* that pose a risk within developed recreation sites, as determined by USFS assessments and existing policies (Appendix D). Although often conflated, 'hazard' trees are distinct from 'danger' trees. While individuals are generally only briefly exposed to danger trees (e.g., drivers on road passing by a dead tree), developed recreation site users might be exposed to 'hazard' trees for a much longer duration (e.g., campers at a campground camping/picnicking beneath a dead or dying tree).

ZOA: Post-Fire Salvage Logging

AREAS CURRENTLY LACKING AGREEMENT

While efforts to find agreement over many aspects of post-fire salvage logging were successful, the group also identified areas where differing opinions persist. These principally related to broader landscape salvage and salvage logging in older stands (i.e., LSR, old growth). Such projects, therefore, will be addressed by the SGPC on a case-by-case basis.

Landscape salvage (>250 acres and away from roads): We were unable to find broad agreement over salvage logging beyond roadsides or over 250 acres in size. Outstanding concerns exist toward landscape salvage due to potential impacts to sensitive ecosystems being magnified at a larger scale.

Salvage in LSR or old growth: We were unable to find broad agreement over salvage logging in LSR or old growth forests. Outstanding concerns primarily relate to an effort to protect late seral habitat that will eventually become old growth habitat, which can then harbor associated dependent species.

Proportion of acceptable green tree harvesting: We were unable to find agreement over the extent to which we support taking a portion of live trees during post-fire area salvage near roads. This topic will continue to be discussed as the SGPC revisits this document.

Other disturbance types: We were unable to find broad agreement over salvage logging projects after forest disturbances other than wildfires, although this was largely outside the scope of our work. As such, the group may address other disturbances (e.g., insects, diseases, drought, wind) as they become more relevant and/or when revisiting this document in the future.

APPENDICES

Appendix A: SGPC Project History

The SGPC has been involved with nine USFS vegetation management projects since 2009. This involvement has ranged from consultation to formal letters written and submitted during the public comment phase of the NEPA process.

- Pepper Cat Thin
- Wildcat Thin
- Cave Bear Restoration
- Coyote Thin
- Bear Creek Restoration Thin
- Swift Thin
- Upper White Salmon River Restoration
- Middle Wind Thin
- Upper Wind Thin

Appendix B: Salvage Logging Shared Resources

Documents

- Kirkland, John; Johnson, Morris. 2022. Passive or active management Understanding consequences and changes after large stand-replacing wildfires. Science Findings 247. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 6p.
- Nemens, Deborah G.; Varner, J. Morgan; Johnson, Morris C. 2019. Environmental effects of postfire logging: an updated literature review and annotated bibliography. Gen. Tech. Rep. PNW-GTR-975. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 35 p.
- Evaluating the ecological impacts of salvage logging: can natural & anthropogenic disturbances promote coexistence? Ecology 97(6), 2016, 1566-1582 https://www.fs.fed.us/nrs/pubs/jrnl/2016/nrs_2016_royo_002.pdf
- The effect of post-salvage logging on bird communities in Mediterranean pine forests: the benefits for declining species, Journal of Ecology, Vol. 49, 644-651 https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2664.2012.02127.x
- Hillslope sediment production after wildfire & postfire forest management in Northern California, Hydrological Processes, Vol. 34, 5242-5259 https://onlinelibrary.wiley.com/doi/abs/10.1002/hyp.13932
- Long-term hydrologic recovery after wildfire & post-fire forest management in the interior Pacific Northwest, Hydrological Processes, Vol. 34, 1182-1197 https://onlinelibrary.wiley.com/doi/abs/10.1002/hyp.13665
- Evaluating postfire logging slash cover treatment to reduce hillslope erosion after salvage logging using ground measurements & remote sensing, Hydrological Processes, Vol. 34, 4431-4445 https://www.fs.usda.gov/treesearch/pubs/61506
- Hastening the return of complex forests following fire: the consequences of delay, Journal of Forestry, Vol. 102, 38-45 https://academic.oup.com/jof/article/102/3/38/4613157?login=true
- Postfire logging reduces surface woody fuels up to four decades following wildfire, Forest Ecology & Management, Vol 338, 84-91 https://www.sciencedirect.com/science/article/abs/pii/S0378112714006823
- Mega fire causes persistent loss of an old forest species, Animal Conservation, May 2021 https://zslpublications.onlinelibrary.wiley.com/doi/abs/10.1111/acv.12697
- Environmental Effects of Postfire Logging & An Updated Literature Review & Annotated Bibliography https://doi.org/10.2737/PNW-GTR-975

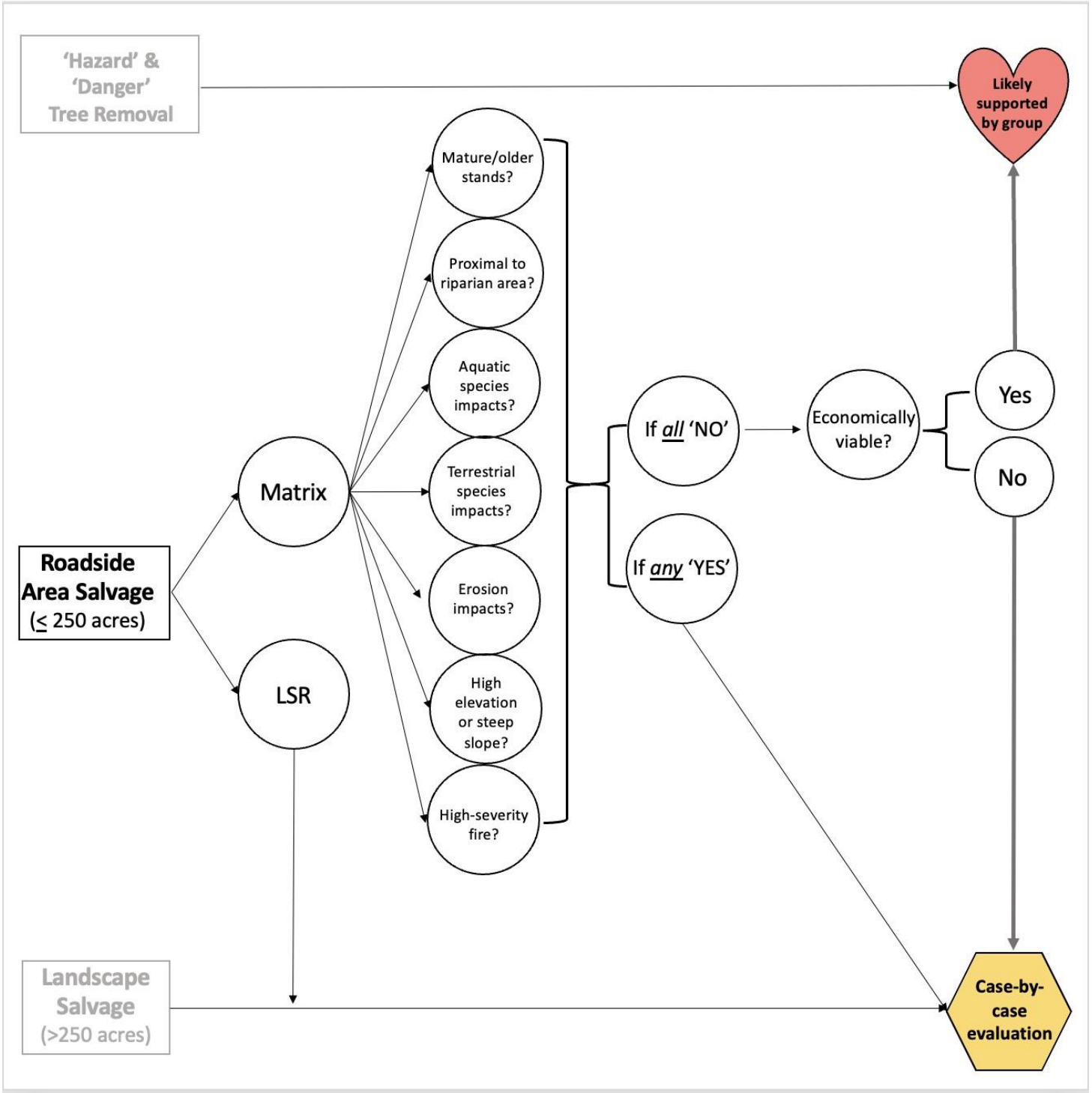
Workshops

- Northern Rockies Fire Science Network – ‘Salvage Science Series’ - https://youtube.com/playlist?list=PL-u4XN2GJZIjF-q9oTMadGpJ7z7hT-BAg https://youtube.com/playlist?list=PL-u4XN2GJZIqtKEmz0WxPWpwfUtchxvV_
- Oregon State University - Post-Fire Research and Monitoring Symposium - https://www.youtube.com/watch?v=rciQOD-HD9Y https://www.youtube.com/watch?v=1SbhqtZXFA0

Videos

- https://www.youtube.com/watch?v=MakVum6U_vE
- https://www.youtube.com/watch?v=x1Ib7zLWvLg
- https://www.youtube.com/watch?v=qdPSsLfnAYE
- https://www.youtube.com/watch?v=DrSfSvqFnlE
- https://www.youtube.com/watch?v=U6IppG3UkAg
- https://www.youtube.com/watch?v=WF6Kof2tpqk
- https://www.youtube.com/watch?v=MwCGo93nftk
- https://www.youtube.com/watch?v=_6Wfsib9Bqg

Appendix C: Post-Fire Salvage Logging Decision Tree



Appendix D: USFS Guidelines/Resources for Salvage Logging

- Region 6 Fire Salvage Guidelines: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd814664.pdf
- Northwest Forest Plan Resources: https://www.fs.usda.gov/r6/reo/library/
    - Aquatic Conservation Strategy: https://www.fs.usda.gov/r6/reo/acs/

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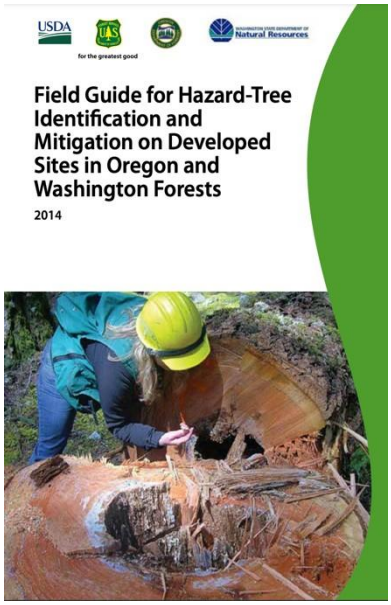

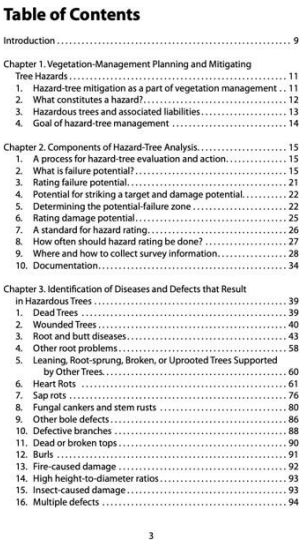

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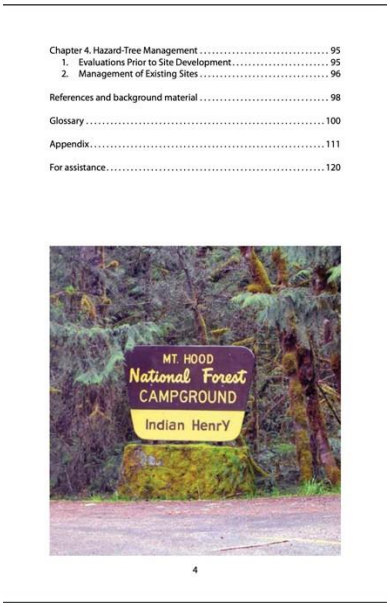

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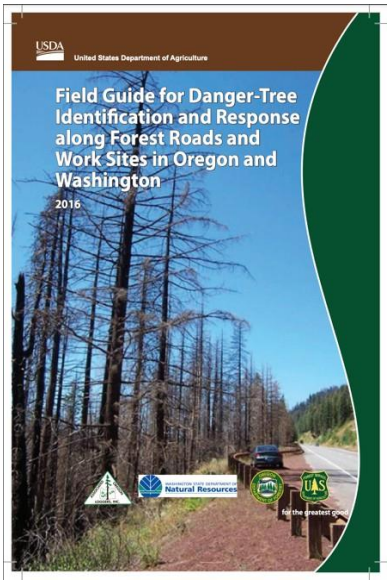

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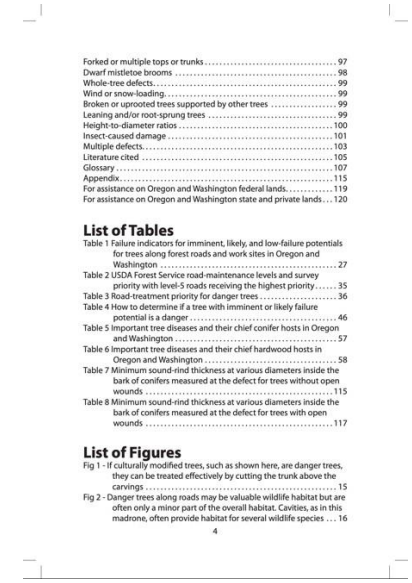

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Appendix E:: Photos of SGPC field tour of Cougar Creek Fire salvage logging sites in the Upper White watershed on 6/22/23