

Climate Change Vulnerability Assessment & Action Plan for Forest Landowners

Purpose: This worksheet is designed to help you assess potential impacts of a changing climate on management of your woodland or forest and develop a plan to address or mitigate these impacts. The form focuses on climate impacts related to wildfire, drought, insects and diseases, and extreme weather events. It does not address every possible climate change vulnerability but focuses on those most likely to affect forest landowners in SW Oregon.

Steps to complete the assessment/action plan:

1. Review projected or expected climate impacts related to the resource concern identified (e.g., wildfire or drought).
2. Review and assess specific factors to consider / things to look for using the checklist provided.
3. Now list and briefly describe your key concerns based on the expected climate impacts and factors to consider. What stand out as the most important problems to address? We suggest boiling it down to a list of 3-6 items.
4. Now consider the list of options to address your concerns. Check those that you plan to implement.
5. How will you pay for it (if costs are involved)? Check financing options you plan to use or consider further.
6. List and briefly describe you planned actions to address the concerns listed above.
7. Note which actions you plan to complete immediately, in the short term, and in the long term.

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CLIMATE IMPACT—**WILDFIRE**

Use this section to assess your increased fire risk. Consider using aerial and topographic maps of your property to identify priority locations. Projected climate impacts include longer fire seasons and hotter, drier summers, both leading to increased potential for large-scale, severe wildfires.

SPECIFIC FACTORS TO CONSIDER / THINGS TO LOOK FOR

- | | | | |
|---|---|--|--|
| <input type="checkbox"/> Condition/status of home ignition zone/defensible space | <input type="checkbox"/> Access (ingress/egress, roads, driveways) | <input type="checkbox"/> Condition of adjacent properties/stands | <input type="checkbox"/> Topographic factors influencing fire behavior |
| <input type="checkbox"/> Likely direction(s) of fire spread | <input type="checkbox"/> Potential sources of ignition | <input type="checkbox"/> Ladder fuels | <input type="checkbox"/> Density of tree canopy |
| <input type="checkbox"/> Surface fuel loads (slash, woody material, espec. 1"-3") | <input type="checkbox"/> Stands/sites/habitats that are priorities for protection | <input type="checkbox"/> Other: _____ | <input type="checkbox"/> Other: _____ |

LIST AND BRIEFLY DESCRIBE KEY FIRE CONCERNS ON YOUR PROPERTY

MANAGEMENT OPTIONS *Check options you plan to implement (Check all that apply)*

- | | | | |
|---|--|---|--|
| <input type="checkbox"/> Firewise landscaping & maintenance practices within the home ignition zone | <input type="checkbox"/> FUELS REDUCTION: <input type="checkbox"/> Thinning/brushing (chainsaw, hand tools) <input type="checkbox"/> Pruning <input type="checkbox"/> Mowing / Mastication <input type="checkbox"/> Chipping <input type="checkbox"/> Controlled underburning <input type="checkbox"/> Maintenance treatments <input type="checkbox"/> Use of livestock to manage fuels <input type="checkbox"/> Salvage dead trees | <input type="checkbox"/> SLASH ABATEMENT <input type="checkbox"/> Lop & scatter <input type="checkbox"/> Pile, cover, burn <input type="checkbox"/> Swamper burn <input type="checkbox"/> Chip <input type="checkbox"/> Underburn | <input type="checkbox"/> TREATMENT PRIORITY LOCATIONS: <input type="checkbox"/> High fuel loads <input type="checkbox"/> Adjacent to homes, outbuildings <input type="checkbox"/> Adjacent to roads/driveways <input type="checkbox"/> Ridgelines <input type="checkbox"/> Adjacent/within vulnerable stands or habitats <input type="checkbox"/> Vulnerable topography based on probable direction of fire spread <input type="checkbox"/> Opportunities to tie into low-fuel natural features or previous fuels treatments |
|---|--|---|--|

MANAGEMENT FINANCING OPPORTUNITIES *Check options you plan to explore*

- ☐ Cost Share: _____ ☐ As part of timber sale ☐ Offset by biomass sale ☐ Other: _____
(Program/Organization)

PLANNED ACTION SPECIFICS

TIMELINE *I plan to implement these actions:*

| Immediately (within next 3 months) | Near Term (within the next year) | Long Term (Next year or beyond) |
|---------------------------------------|-------------------------------------|------------------------------------|
| | | |

CLIMATE IMPACT—**DROUGHT, INSECT PESTS & DISEASES**

Use this section to assess your increased vulnerability of trees, stands and vegetation to drought/heat stress (“hot drought”), insect pests, & diseases; leading to reduced growth & mortality. Consider using aerial and topographic maps of your property to identify priority locations.

SPECIFIC FACTORS TO CONSIDER / THINGS TO LOOK FOR

Check the factors requiring further investigation

- | | | | |
|--|--|---|---|
| <input type="checkbox"/> Crown condition of trees within the stand (crown ratio, foliage color & density); average crown ratio | <input type="checkbox"/> Species within the stand that appear to be performing well or poorly (consider drought, | <input type="checkbox"/> Specific insect pests known to be present in the general area & potential host | <input type="checkbox"/> Specific diseases known to be present in the general area & potential host |
| <input type="checkbox"/> Species mix in the stand; relative drought/heat tolerance of species within the mix | <input type="checkbox"/> Presence/absence of insect pests/diseases (signs & symptoms visible in trees) | <input type="checkbox"/> Evidence of past or recent branch dieback or tree mortality | <input type="checkbox"/> Stand structure (uniform, patchy, even-aged, variable, uneven-aged) |
| Site factors: | <input type="checkbox"/> Age of trees within the stand; age class distribution | <input type="checkbox"/> Density of the stand | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Aspect <input type="checkbox"/> Soil depth & texture | | | _____ |
| <input type="checkbox"/> Slope <input type="checkbox"/> Slope position (ridge, upper slopes, mid slope, toe slope) | | | _____ |

LIST AND BRIEFLY DESCRIBE KEY CONCERNS ON YOUR PROPERTY RELATED TO DROUGHT, INSECTS AND DISEASES

MANAGEMENT OPTIONS

Check options you plan to implement

- | | | | |
|---|--|--|---|
| <input type="checkbox"/> STAND-LEVEL THINNING <i>(check all that apply)</i> <ul style="list-style-type: none"> <input type="checkbox"/> to target density levels <input type="checkbox"/> to favor better adapted species; discriminate against species less suited to future climate <input type="checkbox"/> to favor most vigorous trees <input type="checkbox"/> to maintain a mix of tree species, sizes, and ages <input type="checkbox"/> Harvest trees/stands in poor condition or poorly suited to future climate | <input type="checkbox"/> REFORESTATION <i>(check all that apply)</i> <ul style="list-style-type: none"> <input type="checkbox"/> to emphasize more drought & heat tolerant species; maintain mix of site-adapted species <input type="checkbox"/> use genetically improved seed sources <input type="checkbox"/> use local seed sources <input type="checkbox"/> assisted migration (introducing seedlings grown from non-local seed sources matched to future climate) <input type="checkbox"/> introduce non-local species (do with caution!) <input type="checkbox"/> Manage slash generated in thinning to minimize risk of insect infestations <ul style="list-style-type: none"> <input type="checkbox"/> for pine ips beetle Jan-July <input type="checkbox"/> for other species | <input type="checkbox"/> TREATMENT PRIORITIES <i>(check all that apply)</i> <ul style="list-style-type: none"> <input type="checkbox"/> within important stands (high current or future timber value, habitat, other) <input type="checkbox"/> within high risk, vulnerable stands <input type="checkbox"/> within/adjacent to high value trees (e.g, large, old conifers, oaks, other hardwoods) & tree patches <input type="checkbox"/> currently infested trees or stands <input type="checkbox"/> within stands most likely to respond to treatment <input type="checkbox"/> Remove trees currently infested with insect pests (sanitation/ salvage) | <ul style="list-style-type: none"> <input type="checkbox"/> Individual tree or local thinning to create more growing space around individual trees or clumps of favored trees; remove all or most trees and shrubs under dripline and out to pre-determined distance <input type="checkbox"/> Prune trees (blister rust, dwarf mistletoe) |
|---|--|--|---|

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CLIMATE IMPACT

Increased vulnerability of trees, stands, vegetation to drought/heat stress ("hot drought"), insect pests, & diseases; leading to reduced growth & mortality.

MANAGEMENT FINANCING OPPORTUNITIES *Check options you plan to explore*

☐ Cost Share: _____ ☐ As part of timber sale ☐ Offset by biomass sale ☐ Other: _____
(Program/Organization)

PLANNED ACTION SPECIFICS

TIMELINE *I plan to implement these actions:*

| Immediately (within next 3 months) | Near Term (within the next year) | Long Term (Next year or beyond) |
|---------------------------------------|-------------------------------------|------------------------------------|
| | | |

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CLIMATE IMPACT—EXTREME WEATHER EVENTS & EFFECTS ON ROADS/INFRASTRUCTURE

Use this section to assess your increased vulnerability to more extreme weather events (wind storms, rain storms, flooding, rain on snow, etc.) Consider using road and topographic maps of your property to identify priority locations.

SPECIFIC FACTORS TO CONSIDER / THINGS TO LOOK FOR *Check the factors requiring further investigation*

- | | | | |
|---|---|--|--|
| <input type="checkbox"/> Road drainage maintenance (ditches, cross drain culverts, dips, waterbars, etc.) | <input type="checkbox"/> Forest road and skid trail design and location | <input type="checkbox"/> Landslide and debris flow hazard zone | <input type="checkbox"/> Areas of bare and/or compacted soil |
| <input type="checkbox"/> Locations of stands vulnerable to high winds | <input type="checkbox"/> Stream crossings | <input type="checkbox"/> Stream channel erosion | <input type="checkbox"/> Culvert sizing |
| <input type="checkbox"/> Other: _____ | | | |

LIST AND BRIEFLY DESCRIBE KEY CONCERNS ON YOUR PROPERTY RELATED TO EXTREME WEATHER EVENTS AND THEIR IMPACTS ON ROADS & INFRASTRUCTURE

MANAGEMENT OPTIONS *Check options you plan to implement*

- | | | | |
|---|--|---|--|
| <input type="checkbox"/> Gradual tree thinning and release of dense stands to improve wind-firmness | <input type="checkbox"/> Winterization of roads; road maintenance | <input type="checkbox"/> Improvement of road drainage systems | <input type="checkbox"/> Cover bare areas with mulch; revegetate |
| <input type="checkbox"/> Remove road sidecast on steep slopes | <input type="checkbox"/> Locate roads in less vulnerable locations | <input type="checkbox"/> Replace or install culverts | <input type="checkbox"/> Riparian planting |

MANAGEMENT FINANCING OPPORTUNITIES *Check options you plan to explore*

- ☐ Cost Share: _____ ☐ As part of timber sale ☐ Offset by biomass sale ☐ Other: _____

PLANNED ACTION SPECIFICS

TIMELINE *I plan to implement these actions:*

| Immediately (within next 3 months) | Near Term (within the next year) | Long Term (Next year or beyond) |
|---------------------------------------|-------------------------------------|------------------------------------|
| | | |