



Meeting Notes
September 17, 2020, 1:00-3:00 P.M.
Zoom Remote Meeting

Participants:

1. Jon Paul Anderson, High Cascade, Inc.
2. Erin Black, Mt. Adams District Ranger, USFS
3. Lucy Brookham, Cascade Forest Conservancy
4. Gary Collins, Backcountry Horsemen of Washington
5. Jon Day, GPNF Vegetation Program Manager, USFS
6. Kate Day, GPNF Watershed and Hydropower Program Manager, USFS
7. Sharon Frazey, Mt. Adams Resource Stewards
8. Jeremy Grose, SDS Lumber
9. Jessica Hudec, Mt. Adams Ranger District Ecologist, USFS
10. Mackenzie Karnstein, OSU Student
11. Sarah Kohout, Senator Cantwell's Office
12. Tom Lannen, Skamania County Commissioner
13. Tom Linde, Gifford Pinchot Accountability Group
14. Ryan Ojerio, Washington Trails Association
15. Dave Olson, GPNF Restoration and Stewardship Staff Officer, USFS
16. David Peterson, University of Washington
17. Josh Petit, SGPC Coordinator
18. Dan Richardson, Underwood Conservation District
19. Bryan Stebbins, Senator Patty Murray's Office
20. Emily Stevenson, Skamania County Noxious Weed Control Program
21. Mark Swanson, WSU School of the Environment
22. Jim White, Underwood Conservation District
23. Sue Wright, Community Member

Meeting Purpose: This meeting will feature two guest speakers: (a) Dr. Mark Swanson (WSU) will present on early seral forest ecology and his related work and (b) Dr. Dave L. Peterson (UW) will talk about his (and colleagues') work on a climate change assessment of GPNF.

Approve August Meeting Notes:

- Edits needed for Tom Lannen's presentation:
 - Comparison of wages – income
 - 25% of receipts – applies to regular timber sales

Student Researcher: Mackenzie Karnstein (OSU undergrad) requested verbal consent for participation in her research study: A Case Study in the Role of Values in Discourse and Consensus in Pacific Northwest Forest Collaboratives.

- She will take audio recordings of meetings.
- She attached the consent form to the chat window and Josh sent in email to the group earlier in the week.
- Dr. Reem Hajjar (OSU), Principal Investigator
- Please contact Mackenzie with questions at 503-799-6372 or karnstem@oregonstate.edu.

Guest Speaker: Dr. Mark Swanson (WSU) presented a review of early seral versus late seral dependent species (state-listed in CA, OR, WA) and will discuss his time working in the Indian Heaven Wilderness and how this shaped his understanding of early seral ecosystems.

- Collaborative model will hopefully yield forward progress; hope to be productive and build consensus
- Studied under David Peterson at UW
- Defining the Messy Stage of Forest Development: recognizing distinctive early seral compositional and structural attributes
- PhD at UW under Jerry Franklin; worked on Wind River Canopy Crane; explored GP
- WSU, Pullman faculty; forest inventory consulting, past participant in Pinchot Partners
- Classic east wind, Western Cascade fire event – Big Hollow Fire – studied in this area
- Yacolt Burn, 1902 – east wind driven event – succeeding back to late seral
- Indian Heaven and Sawtooth berry fields were given composition by past fire events – including anthropogenic fires. Cultural fire use has prolonged early seral habitat.
- Early succession on forest sites
 - Period between disturbance event and crown closure over 90% or more of disturbed area.
 - Primary characteristics – herb/shrub dominance & diversity; rapid nutrient cycling; abundance of woody debris and snags; temperature/wind speed extremes; high mammal/bird/insect diversity
- Processes in development time (seral)
 - Stand initiation; stem exclusion; understory re-initiation; complex/old growth
 - Stand initiation diverse of process and organisms
- Why so variable?
 - Different disturbance types; different pre-disturbance stand structures; if large extent -> variable biophysical template; seed dispersal and germination dynamics
- Why so variable?
 - Timber harvest mosaic Western WA

- Mixed-severity mosaic, west Sierra Nevadas
 - Different biological or ecological attributes
- Spatial heterogeneity – different geophysical environments
 - Extent; biological legacies; recolonization; spatial heterogeneity of disturbance event; micro-scale disturbance → early seral composition, structure
- High and mixed severity – Biscuit Fire in the Siskiyou Mountains
- Avalanche track – Nevada
 - Aspen, white fir – 2500 trees per acre
 - Abundant legacies
 - Hotspot of biological activity
 - Cross-slope fire break
 - Range of shade tolerance; role of shrubs: Acer, Alnus – unique environment – interactions of disturbance types
- Volcanic eruptions: Mt. St. Helens
 - Expected large areas of primary succession
 - Large majority in secondary succession – large wood, snags, raptors, prey
 - Biological legacies – elements of pre-disturbance forest survived to enrich and diversify post disturbance system
- Meta Lake Area, Mt. St. Helens
 - Near tropical levels of point diversity
 - Forest flora survived + disturbance species
- Biological legacies: snags and down woody debris – different trajectories depending on forest type and disturbance type
- High plant diversity – seeds + pre-disturbance plants persisting
- Nutrient cycling – e.g. nitrogen from lupine; decay/organic material
- Shrub dominance – greater diversity, more than adequate light available
- Flower/fruit resources - produce more in high light
- High fruit and seed production
 - High light levels->excess photosynthate
 - Higher proportion of plants w fruits/seeds
 - Insects, birds, mammals
 - Cultural resources
- High bird diversity
 - three-toed woodpecker, mountain bluebird, black-backed woodpecker, lazuli bunting, raptors
- Ungulates – attracted by food resources, longer sight lines (security element)
- Tillamook Burn, 1931-33 – highest density of blacktail deer on record after burn – in places to 60/sq. mile - open shrub and broadleaf tree
- Migration corridors and winter habitat for montane ungulates, and pika - rockslides
- Size of disturbance effects rate closed forest returns; small gap cuts important too
- Productive landscape element for top carnivores – need abundant deer and elk forage – need areas dedicated to slow recovery for forage

- Lepidoptera – moths and butterflies - need plants for larvae and nectar for adults
- Even rodents! – black pocket gopher – in coastal disturbed areas where Native Americans kept open
- Multiple requirements: northern hawk owl – needs nest/perching structures; hunts by day – needs long sight lines, forage-prey trophic cascade – by forest age 10 owls leave
- Repeat disturbance in ESFEs
 - Enhance mortality of shrubs/trees
 - Prolonged succession
 - Herbaceous vegetation
- Spatial attributes
 - Beneficial fragmentation of pests, pathogens
 - Internal heterogeneity-refugia, surviving trees
 - Complex edges
- Interactions between habitats: late seral vs. early seral
 - Spotted owls in southern portion of range
 - Vaux's swift (snags in OG, feed in open)
 - Bats
 - Lepidoptera
- Climate change response: expedite elevational and positional migration
 - Aspect, elevation
- Future large patches of quality late seral
 - Dan Donato (2012) – can a forest be born complex? Yes
 - Can set stage for earlier developmental complexity
- Swanson et al. 2014. For Ecol Mgmt. - State-listed species in WA, OR, N. CA
 - Dependent on mature forest: amphibians, mollusks, some birds
 - Shade, moisture, specific food sources
 - Early Seral Forest Environment (ESFE): insects, especially Lepidoptera, and some birds – obligates on complex ESFE
 - Larval host plants, adult nectar sources, down wood
 - Beargrass pollinators
 - Snags – black-backed woodpecker
 - Many (50% of listed) ESFE-facultative species!
 - No significant difference in proportion of species between ESFE and OG/mature

Q&A

- Josh: what are ways managers (e.g., USFS) can mimic diverse mosaics to create high quality early seral habitat on landscapes?
 - Mark – pile burns with slash – for fire dependent regenerators – buckbrush – need some Rx fire to crack seeds
 - Plant native plants – huckleberry; don't plant dense conifers; plant diverse trees (read Joan Hagar – importance of broadleaf trees)
- Tom Linde: issues sees is FS given direction; full closure recovery planting

- Mark - different kinds of forest recovery; Precommercial Thin valuable especially if create gaps to help persist; continue wood supply – create variance program to create ES habitat
- Yacolt required years of replanting
- Sociological – purpose for habitat or wood supply – do we need to plant the same way as the 1930s-60s?

Guest Speaker: Dr. Dave Peterson (UW) discussed a climate change assessment conducted on GPNF and associated implications and takeaways.

- With colleague Jessica Hudec (USFS)
- Mark’s presentation great setup for diversity of landscapes; ecology of area
- Climate Change assessment for GPNF and Southwest Washington
 - Hudec et al. 2019 – PNW-GTR-977- Climate Change Vulnerability and Adaptation in Southwest Washington
 - Adding empirical data to substantiate work
 - Vegetation work doing with DNR
 - Considering original planting density
 - Monitoring and maintenance
 - Please offer feedback
 - Working on specific next steps; adaptation options
- Projected temperature in PNW
 - Departure from 1950-2005 mean temperatures
 - High emission scenario “business as usual”
 - Trends diverge here
 - Moderate emission scenario
 - Need to change emissions
- Summer water-balance deficit will increase -> more drought
- Context
 - Over 90% of all forests at lower elevation have been harvested at least once
 - Most forest landscapes have been fragmented
 - Some forests have significant amount of non-natives
 - Droughts have been uncommon in PNW since the 30s, compared to previous centuries
- How will trees grow in warmer climate?
 - Low elevation, westside forest – moisture limited
 - growth will decrease: Douglas fir, western hemlock, western red cedar, Sitka spruce
 - Eastside coniferous forest– moisture limited
 - growth will decrease: ponderosa pine Douglas fir, western larch
 - High-elevation coniferous forest - energy limited
 - growth will increase: subalpine fir, mountain hemlock, lodgepole pine
 - Riparian areas, wetlands, groundwater dependent systems - water controlled

- growth and regeneration will change: bogs, fens, species composition, fire susceptibility
- Veg trends from state-and-transition models
 - Subalpine decline due to competition
 - Mountain hemlock doesn't change
 - Hemlock might decline a bit
 - Douglas fir – drought tolerant – might be winner because dominance/competition
 - Same with grand fir
- Disturbances will likely increase with climate change
 - Change in probability of mountain pine beetle survival
- More very high fire danger days
 - By middle 21st century 20+ more days
- Drought and fire in the NW
 - 2015 – 1.7 million acres burned in OR & WA
 - 2020 – 1.6 million acres burned in OR & WA
 - 5 million acres burned in 4 years – size of NJ
- Wildfires are colliding
 - SW WA fires have burned some areas 3 times since 2008
- More early seral habitat – change age and physical structure
- Reburns may inhibit regeneration
- How do we manage for resilient forests in a warmer climate?
 - Bounce back, maintain processes
- Concepts for building resilience
 - Incorporate climate change information in planning and management
 - Use future range of variation as a guide
 - Use forest structure and function as targets for success
 - Implement across large spatial scales
- Regeneration is a critical stage
- Good practice – pamper seedlings and saplings
- Good practice – select drought tolerant species where possible
- Hardwoods add diversity
- Good practice – increase species diversity and structure
- Good practice – diversify landscape pattern: partition species by water needs
- Good practice – be more flexible with seed zones
- Plant species from other regions? (assisted migration/managed relocation)
- Good practice – Keep forests healthy: manage stand density (and fuels)
 - collaborate with neighbors
- Good practice – variable density thinning – e.g. 20% open, 20% dense, 60% thin
- Good practice – plan for disturbances – plan for action after wildfire
- In summary – what will happen?

- The climate will continue to warm for the foreseeable future, especially after 2050
- Droughts will be more common and longer, creating stress for vegetation, especially tree seedlings
- Some insects and pathogens will be able to take advantage of increasing stress in plants.
- Fire season will be longer, fire frequency will increase, and area burned will increase.
- There will be surprises.
- In summary – What can be done?
 - Manage for 30 years from now: warmer temperatures, higher extremes.
 - Diversify plant species, genotypes, and spatial patterns.
 - Use disturbances as an opportunity for changing trajectories and experimenting.
 - Implement risk assessment and risk management.
 - Monitor, learn, and adjust as needed.
- Q&A
 - Mary: when you noted time scale, can look out even farther
 - Dave: good to look far out – planning horizons (usually 30-50-year time frame)
 - Jim: some of timber harvest has come up with naturally regeneration – hemlock and silver fir – thought of a couple of plots to monitor
 - Dave: wonderful idea;
 - Jessica: detailer working on monitoring of early seral including Big Hollow Fire; want to monitor what you want to see
 - Sue: massive forest fires adding CO₂; how affect climate change?
 - Dave: pulse of CO₂ from fires, then uptake as forests grow back; global climate models finer scale not incorporated; assumption vegetation flux at equilibrium at large spatial scale; may never have storehouse of carbon in older forests that we have had in the past; small in relation to human impacts of greenhouse gases
 - Emily: allow natural regeneration to teach us; mimic nature
 - Tom Linde: Big Hollow fire could be good; what would be recommended for regeneration?
 - Dave: what do we want? Natural regeneration allow species to be there that weren't in past – avoid monocultures.
 - Jessica: what management allocations in the area; look at seed zones; preplanning opportunity for future fires
 - Dave: should use existing knowledge for planning
 - Mark: 1902 fire left refugial areas shade tolerant trees; fuel limited areas on ridges, regenerated well; get into to look at Dr. Keaton for data – remarkable opportunity
 - Dan: recommend planting Sequoia?

- Dave: already experimentally planting on private land; may be tough sell on NF

Update: USFS Ranger Updates (Dave Olson, USFS)

- Thanks Mark, Dave, Jessica
- Jon Day thinking about reforestation, include in conversation
- Kate Day – watershed contact
- Big Hollow Fire
 - Estimated 24,000ac w rain developing.
 - Team transition to Type III.
 - Elevated smoke
 - Don't expect perimeter to grow much.
 - Two active sales in perimeter: no equipment in areas.
 - 600 acres of Upper Wind area.
 - Looking at restoration activities.
 - Looking at potential salvage.
- Closure – IFPL IV - total closure of activities. Will be evaluated again tonight.
- Public use restrictions - No campfires; fire closures.
- Planning & Timber – finishing Upper wind.
- Hart GNA sale sold, forest completed target 50 million board feet. Earliest accomplishment in recent memory.
- Recreation – steep decline
- Vacancy – Recreation Planner, Planning Team Lead

Q&A

- Jon Paul: could you expand on salvage plan?
 - Dave Olson: consultation on management allocations and impacts; assessment and decide to do immediate salvage of decks and hazard trees or long-term opportunities of dead trees. Mostly LSR allocation so unlikely do extensive salvage.

Update: SGPC Miscellaneous Monthly Updates (Josh, SGPC Coordinator)

- Big Hollow Fire resources available on-line. Sent links in email.
- Osborne panoramas – getting feedback on subcommittee and FS to select.
- Thanks for patience with remote meetings.

Next Meeting Info & Closing

- Brainstorming October fieldtrip. Not looking good with fire. Considering remote field trip.
- Reminder: meetings will be conducted remotely until further notice.