McDonald & Dunn Forest Management Planning Process

Spring 2022 – Fall 2023

OSU College of Forestry
McDonald-Dunn Research Forest Faculty Planning Committee Meeting #10
316 Peavy Forest Science Center or Zoom (Join Zoom Meeting)
6 March 2023, 11am-1pm

Agenda

Meeting Purpose:

- *Finalize underlining principles and definitions for each 'management strategy'*
- *Consider criteria used to evaluate tradeoffs among 'scenarios'*
- *Develop list of 'scenarios' to be modeled*

Start Time	Activity
11:00am	**Welcome and introductions** **Overview of recent and upcoming events**
11:05am	**Discuss SAC input on guidelines for the 5 new 'management strategies'**
11:45am	**Revisit criteria to be used to evaluate tradeoffs among 'scenarios'**
12:00pm	**Develop list of 'scenarios' to be modeled**
12:45pm	**Revisit the draft Table of Contents for the new plan**
12:55pm	**Next steps**
1:00pm	**Adjourn**

MCDONALD-DUNN RESEARCH FOREST PLANNING PROCESS

MCDONALD-DUNN RESEARCH FOREST PLANNING PROCESS

The OSU College of Forestry is developing a new management plan for the McDonald and Dunn Research Forests, which is anticipated to be ready for implementation in 2024. This new plan will determine how the forests provide opportunities for teaching, research and outreach efforts of the College of Forestry. The new research forest plan will reflect the college's diverse values, and will position the McDonald-Dunn Research Forest to be a model example of multiple value forest management. Management decisions and activities on the McDonald-Dunn Research Forest will be driven by College of Forestry research agendas, education and demonstration opportunities, and considerations of an inclusive balance of forest uses and values.

The process of developing the new management plan will involve opportunities for public input, and two committees working in tandem from spring 2022 through fall 2023.

- Public input opportunities include three Community Listening Sessions, a webform through which written comments can be provided, and an email to which written questions can be sent.
- Two committees will assist in the development of the new plan: an external Stakeholder Advisory Committee (SAC) and College of Forestry Faculty Planning Committee (FPC). Comments submitted through the webform will be forwarded to these committees.

Upcoming Meetings & Events:

- March 6, 2023, 11:00am – 1:00pm – Faculty Planning Committee Meeting (agenda, open to the public to listen remotely through Zoom but not comment; video recording will be posted online after the meeting). Zoom link: https://oregonstate.zoom.us/j/8948549218?pwd=Uko4L2hYNnpQU0dIWlhWWGxhcFZFZz09

Past Meetings & Events:

- June 14, 2022, SAC and FPC Joint Kickoff Meeting (agenda, video, meeting summary)
- Aug 30, 2022, SAC Meeting (agenda, presentation, meeting summary)
- Aug. 31, 2022, Community Listening Session (agenda, presentation, meeting summary)
- Sept. 16, 2022, Faculty Planning Committee Meeting (agenda, presentation, meeting summary)
- Sept. 20, 2022, Stakeholder Advisory Committee Meeting (agenda, presentation, video recording, meeting summary)
- Oct. 11, 2022, Faculty Planning Committee Meeting (agenda, presentation, video recording, meeting summary)
- Oct. 25, 2022, Faculty Planning Committee Meeting (agenda, presentation, video recording, meeting summary)
- Nov. 7, 2022, Community Listening Session (agenda, presentation, video recording, meeting summary)
- Nov. 22, 2022, Faculty Planning Committee Meeting (agenda, presentation, video recording, meeting summary)
- Dec. 5, 2022, Stakeholder Advisory Committee (agenda, presentation, video recording, meeting summary)
- Dec. 6, 2022, Faculty Planning Committee Meeting (agenda, presentation, video recording, meeting summary)- Remarks made by an individual during the Dec 6 Faculty Planning Committee meeting do not reflect the values of the university or the College of Forestry, or our shared commitment to respectful discussion and engagement. The College appreciates all input being provided in planning the future of the McDonald-Dunn Research Forests and is committed to listening to and considering all perspectives with respect. An apology for these remarks was made during the Stakeholder Advisory Committee meeting on Dec 13.
- Dec. 13, 2022, Stakeholder Advisory Committee Meeting (agenda, video recording, meeting summary)
- Dec. 20, 2022, Faculty Planning Committee Meeting (agenda, presentation, video recording, meeting summary)
- Jan. 18, 2023, Stakeholder Advisory Committee (agenda, presentation, video recording, meeting summary)
- Jan. 23, 2023, Faculty Planning Committee Meeting (agenda, presentation, video recording, meeting summary)
- Feb. 6, 2023, Faculty Planning Committee Meeting (agenda, presentation, video recording, meeting summary)
- Feb. 20, 2023, Faculty Planning Committee Meeting (agenda, presentation, video recording)
- Feb. 25, 2023, SAC and FPC Joint Field Tour
- Mar. 1, 2023, Stakeholder Advisory Committee Meeting (agenda, presentation, video recording)

SUBMIT YOUR COMMENTS

SUBMIT YOUR QUESTIONS

STAY CONNECTED

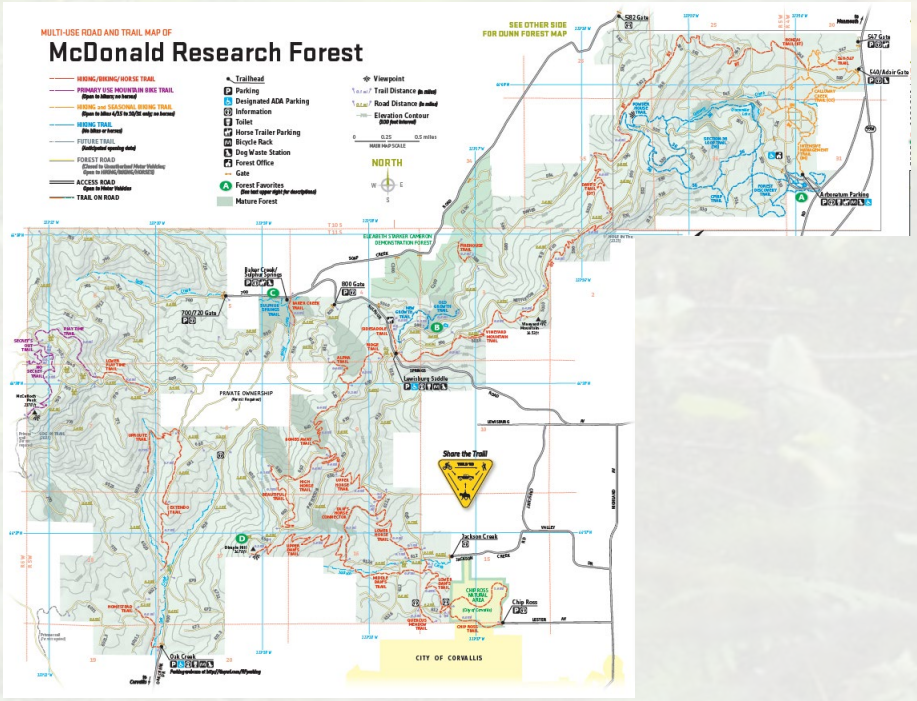
READ PUBLIC COMMENTS

HISTORIC DOCUMENTS - MCDONALD-DUNN RESEARCH FOREST PLANNING 2004-PRESENT


SAC-FPC field tour – Sat, Feb 25

Past & Upcoming Events

- Field Tour
  - weekend option: Sat, Feb 25, 8:30am-12:30pm
  - weekday option: ~~Tues, Feb 28, 1-5pm~~ TBD: poll



- SAC Meeting
  - Wed, Mar 1, 1-4pm

- Academic User Listening Session – Open Forum
  - Faculty, staff, students
  - Intent of better understanding constraints in using the forest for R/T/O
  - Hybrid drop-in sessions
  - March 21 evening & March 22 morning

Oregon State University

Have you personally used the McDonald-Dunn Research Forests for an academic purpose (research, teaching, or outreach)?

- ○ Yes
- ○ No

How have you used the research forests?

- ☐ Research
- ☐ Teaching
- ☐ Outreach

If you have faced any challenges in using the forest for research, teaching, or outreach, please describe them below.

What changes to forest management, policies, or infrastructure could increase the likelihood that you use the forests for research, teaching or outreach in the future?

If there are any other ideas you'd like to share about changes that could be made to increase use of the research forests to provide learning opportunities, please do so in the box below.

Draft questions for faculty, staff, and students regarding use of the forests for research, teaching, & outreach

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This survey will be included in announcements about the Academic User Listening Sessions, as an alternative means for individuals unable to attend a live open forum to provide input.

McDonald & Dunn Research Forests Management Planning Process

Phase I: Information gathering, Discussions, Assessment of former FMP (Spring-Summer 2022)

Initial Interviews	Inventory of COF Academic Use	Community Listening Session I	Stakeholder Advisory Committee Meetings	Faculty Planning Committee Meetings	Comment / Question Submission

Phase II: Synthesizing, Modeling, Writing, Refining (Fall 2022-Summer 2023)

Stakeholder Advisory Committee Meetings	Faculty Planning Committee Meetings	Community Listening Session II	Academic User Listening Session	Community Input Sessions I & II	Comment / Question Submission

Phase III: Finalizing (Fall 2023)

Presentation of draft plan to the Dean & Forestry Executive Committee for review	Forest management plan refinement	Forest management plan approval by Dean

McDonald & Dunn Research Forests Management Planning Process

PHASE 2	SYNTHESIZING, MODELING, REFINING, WRITING
2a	**Synthesizing**
	SAC meetings *-write synthesis document to share with FPC* *-identify new 'management strategies' & 'scenarios'* *-consider structure & components of the new plan* FPC meetings *-write overarching principles document to share with SAC* *-identify new 'management strategies' & 'scenarios'* *-consider structure & components of the new plan*
2b	**Modeling, Refining**
	Round 1: Modeling Evaluation of merits of each scenario (SAC, FPC, Community Input Session I)
	Round 2: Modeling Evaluation of merits of each scenario (SAC, FPC, Community Input Session II)
2c	**Writing**
	Drafting of chapters (various work groups and individuals)

Detailed view of Phase 2 of the plan development process

Defining each new ‘Forest Management Strategy’

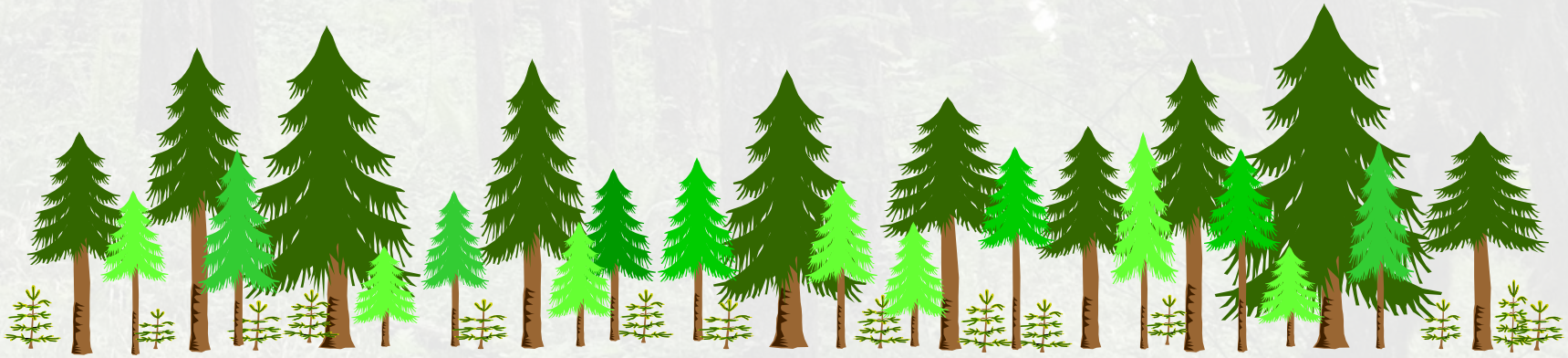
A. Even-aged, short rotation

B. Even-aged, long rotation

C. Multi-aged, multi-species

D. Managed reserves

E. Ecosystems of concern



McDonald-Dunn Research Forests draft guidelines for each new 'Management Strategy'

[version after FPC meeting on 20 February 2023]

	Even-aged short rotation	Even-aged long rotation	Multi-aged multi-species	Managed reserves	Ecosystems of concern
Overview	Even-aged plantations of Douglas-fir (or other climatic-appropriate species and genetic stock) will be established and managed to be financially competitive by maximizing yields of wood products valuable for domestic mills. Clearcut harvests will not exceed 80 acres (with limited exceptions due to large-scale disturbances).	Even-aged forests of Douglas-fir (or other climatic-appropriate species and genetic stock) will be established and managed to provide older forest conditions and produce high-quality wood for domestic mills. Clearcut harvests will not exceed 40 acres (with limited exceptions due to large-scale disturbances).	Multi-aged, mixed-species forests of primarily Douglas-fir will be established and managed using *shelterwood-with-residuals, group-selection,* and *variable retention* regeneration harvests to create heterogeneity in openings, regenerate new age classes of trees, and maintain structural diversity and visual aesthetics. Multiple native tree species will be encouraged. These harvests will not exceed 40 acres.	These areas will be held and conserved outside the management base using only a light touch when needed to promote and maintain historical older-forest structural and compositional diversity, visual aesthetics, and provide for public safety. Forest succession and developmental processes following natural disturbances will proceed with little human intervention. Areas added to the existing reserve base may need more active operations to promote the development of historical conditions.	Restoration and maintenance activities will be undertaken in native oak savanna/woodlands, meadows, and riparian/aquatic systems. Two strategies will be employed: • retain and conserve the most at-risk and highest value components of ecological and cultural diversity, and • use intensive efforts where needed to improve and restore broader ecological and/or cultural functions at specific sites.
Guiding principles	*Manage in a way that creates learning and research opportunities about short-rotation forestry and early seral conditions, under the principle of financial sustainability.*	*Manage in a way that creates learning and research opportunities about long-rotation forestry and retention of legacy elements throughout the life of each stand.*	*Manage in a way that creates learning and research opportunities about managing multi-aged and/or multi-species stands to support diverse forest values recognized by a variety of cultures.*	*Manage in a way that ensures learning and research opportunities about the creation and maintenance of historical late-seral forest conditions informed by both Indigenous knowledge and Western science.*	*Manage in a way that creates learning and research opportunities about a range of restoration opportunities and intensities to improve and maintain the health and resiliency of selected ecosystems, informed by both Indigenous knowledge and Western science.*

	Even-aged short rotation	Even-aged long rotation	Multi-aged multi-species	Managed reserves	Ecosystems of concern
Stand establishment	Employs intensive site preparation following industry standards (prescribed fire and vegetation control) for ease of planting and early stand establishment. Planted seedlings will be from the best genetically selected material available for timber production but will also consider genetic seed sources adapted to a changing climate. Planting densities will be sufficient to meet the Oregon Forest Practices Act but avoid the need for precommercial thinning. Spacing will be intentionally uniform. Competing vegetation will be managed to minimize growth loss of tree seedlings for the first 1-5 years until trees are free-to-grow, and then competing vegetation will be allowed to grow. 5% of hardwood resprouts will be left free to grow in the understory.	Employs adequate site preparation to plant and establish a stocked young stand. Planted seedlings will be from the best genetically selected material available for timber production but will also consider genetic seed sources adapted to a changing climate with an eye to longer rotations. Initial stocking rates will be appropriate for the site conditions with enough established trees to accommodate multiple commercial thinning harvests within the rotation. Spacing can be variable and appropriate to the site. Competing vegetation will be managed with less herbicide than short rotations, with the intention of limiting tree seedling mortality during the first 1-3 years, and then competing vegetation will be free to grow. 10% of hardwood resprouts will be left free to grow in the understory.	A combination of pile burning, broadcast burning, and limited surface herbicide treatments will be used for site preparation in understory and/or small openings. Seedlings will be interplanted to augment natural regeneration of conifers from seed and hardwoods from both sprouts and seed, with an eye to species richness and genetic variability. *Shelterwood with residuals* will maintain an appropriate overstory density to allow understory trees to grow. Overstory trees may be spaced uniformly or variably, dictated by site, stand, and windthrow risk conditions. *Group-selection harvests* will contain small (1.5-4.0 acre) openings. *Variable retention regeneration harvests* will retain individual trees, clumps of thinned and unthinned trees, and/or no-touch areas that are dictated by site, stand, and windthrow risk conditions.	Typically, stands will regenerate continuously on their own from natural seeding. Active conifer and hardwood regeneration efforts may occur in areas subjected to large-scale disturbances (e.g., windstorms, ice storms, or wildfires), or when adding acres to the reserve base. Invasive vegetation will be managed to ensure establishment and growth of tree seedlings and culturally significant species.	*Oak savanna/woodlands* – in areas designated to receive intensive restoration treatment, oaks may be purposefully established through seed or seedlings at appropriate densities along with other native and culturally significant vegetation that historically occurred in these ecosystems. Site preparation with prescribed fire and/or judicious surface herbicide use may be required. *Meadows* – may require site preparation with prescribed fire and/or judicious surface herbicide use and seeding of other appropriate native herbaceous vegetation. *Riparian systems* - in areas designated to receive small-scale restoration treatment, limited harvests will occur with site preparation and planting at appropriate densities along with other native vegetation that historically occurred in these ecosystems.

	Even-aged short rotation	Even-aged long rotation	Multi-aged multi-species	Managed reserves	Ecosystems of concern
Intermediate treatments	Thinning and other intermediate stand treatments will only be done if justifiable economically or if needed to respond to an unplanned disturbance event to maintain the health of each the stand.	The first commercial thinning will occur as dictated by stand conditions, likely around 28-34 years of age. Additional commercial thinning entries will be done until final harvest using a variety of thinning approaches. The last thinning will occur no later than 10-15 years before final harvest.	*Shelterwood-with-residuals* - understory trees may be commercially thinned when needed (likely 30-40 years of age) depending on the overstory density. If overstory trees die, replacement trees may be assigned from the understory cohort to maintain the two-storied canopy structure over time. *Group-selection* – Periodic thinning will be used to increase vertical and horizontal structure, maintain health, and provide interim income. *Variable retention regeneration harvests* – Periodic thinning will be used to increase vertical and horizontal structure, maintain health, and provide interim income.	All areas may receive intermediate treatment under limited circumstances: • Treatment of invasive species • Removal of individual trees due to safety concerns • Prescribed burning to emulate historical processes and for research purposes Areas newly added to the reserve base may need intermediate treatment under limited circumstances: • Irregular thinning or creation of gaps to promote characteristics of historical late-seral forest conditions typical of the region and in light of climate change	*Oak savanna/woodlands* - treatments could include prescribed burning, control of invasive plants, and/or precommercial thinning to remove young invading conifers *Meadows* – treatments could include repeat prescribed burning and control of invasive plants and invading conifers *Riparian systems* – treatments could include additional structural thinning, repeat prescribed burning, and control of invasive plants *Aquatic systems* – In-stream and pond treatments could include removal of invasive species, including invasive aquatic plants.

	Even-aged short rotation	Even-aged long rotation	Multi-aged multi-species	Managed reserves	Ecosystems of concern
Stand age	Rotation lengths will be regulated primarily by age that maximizes net revenue production. Rotations will be 30-60, likely 35-45 years.	Rotations typically will be 60-90 years, with a small percentage (<10%) managed to 120 years.	*Shelterwood-with-residuals* - Final harvest of understory trees will be 60-70 years. The age of the oldest trees harvested from these stands will be 60-120 years, regulated primarily by the complexity of habitat desired for each stand. *Group-selection* - Re-entry harvest will occur every 15-30 years to create 3-4 age classes. Minimum proximity of group selection openings to previous harvest entries will be >200 feet. *Variable retention harvest* – Re-entry harvest will occur every 15-30 years to create 3-4 age classes.	NA. The age of the oldest trees in these stands will continue to increase over time adding to the age-class diversity across the forest.	NA. The age of the oldest trees in oak and riparian ecosystems will tend to increase over time.
Legacy elements	Procedures will follow OFPA regulations (i.e., retain wildlife trees and CWD in harvest units >25 acres).	Procedures will exceed OFPA regulations (i.e., retain additional legacy trees, green trees, snags, and CWD).	This management system maintains abundant living and dead structure constantly within each stand in an effort to create and sustain diverse forest conditions.	NA – it is the legacy	*Oak savanna/woodlands* – old conifers with an open grown character dating to pre-settlement will be retained. *Meadows* – NA *Aquatic/riparian systems* - large old trees and big logs will be retained or enhanced both in-stream and in riparian zones.

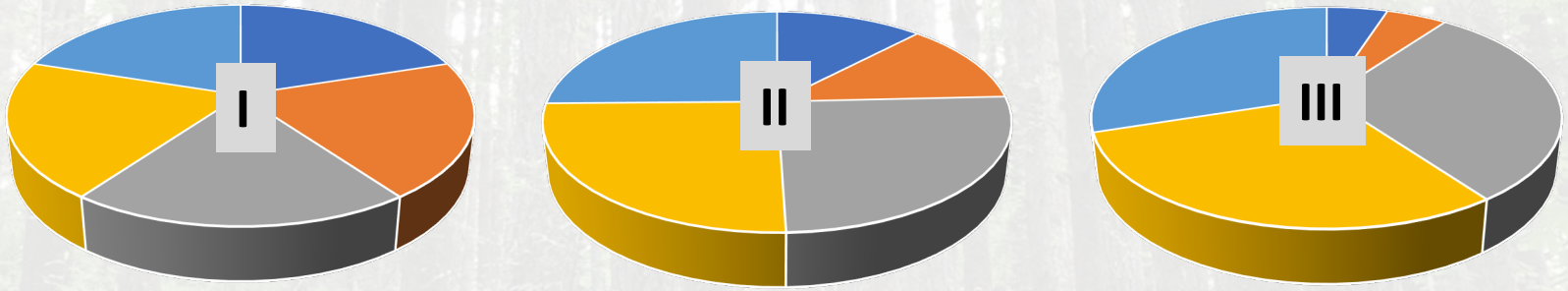
	Even-aged short rotation	Even-aged long rotation	Multi-aged multi-species	Managed reserves	Ecosystems of concern
Opportunities created	• Offers dependable financial returns • Early-seral conditions provide habitat for some plant & wildlife species • Early-seral conditions are preferred by some hunters • Short rotations ensure edge habitat important for some wildlife species • Short rotations allow testing & demonstration of climate adaptability using alternative genetics of Douglas-fir or other species • Enables demonstration of the longevity and character of early-seral conditions and use of prescribed fire • Creates learning opportunities about harvest operations, regeneration, vegetation treatments, fuels management, and comparison of net carbon sequestration between Douglas-fir and alternative species	• Offers dependable financial returns • Produces high-quality logs/wood that fills niche markets • Provides net carbon sequestration potential relative to shorter rotations • Is aesthetically appealing • Retention of more legacy elements at stand initiation (e.g., old trees, CWD, broadleaf shrubs) provides habitat for wildlife throughout the life of each stand • The variety in stand age promotes biodiversity across the landscape • Older stands fill a gap on the landscape because there are few such forests on lands under other ownership • Creates learning opportunities about managing and financing rotation lengths longer than is typical • Provides training opportunities on thinning and underburning	• Offers reduced and variable financial returns • Multi-aged stands with varying degrees of within-stand complexity will promote overall biodiversity and a broad suite of habitat conditions for wildlife • Continuous cover ensures visual aesthetics • Provides enhanced recreational opportunities • Enables net carbon sequestration in multi-aged stands and multi-species stands • Multi-age and multi-species stands fill a gap on the landscape because there are few such forests on lands under other ownership • Creates learning opportunities about managing with complex silvicultural techniques, and investigations of operational costs and harvest costs associated with non-typical silvicultural approaches • Demonstrates complex approaches for small-scale forest operations and woodland owners	• Enables exploration of non-timber benefits and preserves options for future carbon markets • Allows exploration of opportunity costs and direct costs and benefits of conserving late seral conditions • Sustains relatively undisturbed conditions that promote habitat for some plant and wildlife species • Provides preferred aesthetic conditions for recreation • Net carbon sequestration will be useful for comparisons • Creates learning opportunities about long-term risks from invasive species, climate change, and climate-induced disturbances as trees age and tree densities increase • Provides outreach opportunities about the importance of old forests and benefits associated with their active management	• Enables research, teaching, and demonstration on all aspects of ecosystem restoration and monitoring for oak, meadow, and riparian/aquatic systems • Creates chance to understand costs incurred by restoration and maintenance programs for unique ecosystems • Enhances biodiversity by improving health in three distinct ecosystem types and at the landscape scale • Demonstrates potential applications of Indigenous knowledge • Reduces wildfire risk in the WUI through strategic fuel breaks in oak woodlands • Creates healthy examples of native meadows and oak woodlands, filling a gap on the landscape because few exist on lands under other ownership • Increases social license to operate • Enhances partnerships with external entities interested in restoration • Enables learning about restoration principles, the ecology of native plants, first foods, and invasive species reduction

Opportunities Created – this is material extracted from the definition table, arranged according to 8 subject categories, in response to a suggestion from the SAC to reorganize this info

	Even-aged short rotation	Even-aged long rotation	Multi-aged, multi-species	Managed reserves	Ecosystems of concern
Learning, training, & demonstration opportunities	Creates learning opportunities about harvest operations, regeneration, vegetation treatments, fuels management, and comparison of net carbon sequestration between Douglas-fir and alternative species; Enables demonstration of the longevity and character of early-seral conditions and use of prescribed fire; Short rotations allow testing & demonstration of climate adaptability using alternative genetics of Douglas-fir or other species	Creates learning opportunities about managing and financing rotation lengths longer than is typical; Provides training opportunities on thinning and underburning	Creates learning opportunities about managing with complex silvicultural techniques, and investigations of operational costs and harvest costs associated with non-typical silvicultural approaches; Demonstrates complex approaches for small-scale forest operations and woodland owners	Creates learning opportunities about long-term risks from invasive species, climate change, and climate-induced disturbances as trees age and tree densities increase; Provides outreach opportunities about the importance of old forests and benefits associated with their active management	Enables research, teaching, and demonstration on all aspects of ecosystem restoration and monitoring for oak, meadow, and riparian/aquatic systems; Enables learning about restoration principles, the ecology of native plants, first foods, and invasive species reduction; Demonstrates potential applications of Indigenous knowledge; Creates chance to understand costs incurred by restoration and maintenance programs for unique ecosystems
Finances	Offers dependable financial returns	Offers dependable financial returns	Offers reduced and variable financial returns	Enables exploration of non-timber benefits and preserves options for future carbon markets; Allows exploration of opportunity costs and direct costs and benefits of conserving late seral	Offers opportunity to learn about costs incurred by restoration of various ecosystem types
Habitat conditions	Early-seral conditions provide habitat for some plant & wildlife species; Short rotations ensure edge habitat important for some wildlife species	Retention of more legacy elements at stand initiation (e.g., old trees, CWD, broadleaf shrubs) provides habitat for wildlife throughout the life of each stand; The variety in stand age across stands in this strategy promotes biodiversity across the McD forest	Multi-aged stands with varying degrees of within-stand complexity will promote overall biodiversity and a broad suite of habitat conditions for wildlife	Sustains relatively undisturbed conditions that promote habitat for some plant and wildlife species	Enhances biodiversity by improving health in three distinct ecosystem types and at the landscape scale
Carbon		Provides net carbon sequestration potential relative to shorter rotations	Enables net carbon sequestration in multi-aged stands and multi-species stands	Net carbon sequestration will be useful for comparisons	
Forest products	Produces logs/wood for typical markets	Produces high-quality logs/wood that fills niche markets			
Recreation & aesthetics	Early-seral conditions are preferred by some hunters; harvest units provide temporary vistas	Is aesthetically appealing	Provides enhanced recreational opportunities; Continuous cover ensures visual aesthetics	Provides preferred aesthetic conditions for recreation	
Wildfire risk					Reduces wildfire risk in the WUI through strategic fuel breaks in oak woodlands
Unique features provided relative to the surrounding region		Older stands fill a gap on the landscape because there are few such forests on lands under other ownership	Multi-age and multi-species stands fill a gap on the landscape because there are few such forests on lands under other ownership	Older stands fill a gap on the landscape because there are few such forests on lands under other ownership	Creates healthy examples of native meadows and oak woodlands that fill a gap on the landscape because few exist on lands under other ownership
Other					Enhances partnerships with external entities interested in restoration; Increases social license to operate

Modeling of ‘scenarios’

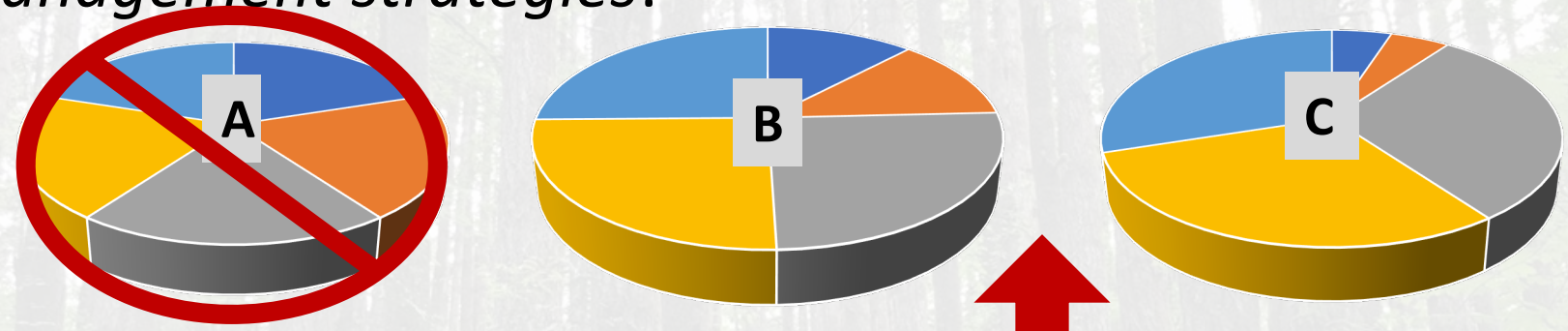
- Each scenario reflects varying land allocations to each *management strategy* (i.e., different proportions of the forest allocated to each strategy)



- Each *management strategy* provides slightly different benefits (ecosystem services)
- A comparison of *scenarios* will enable evaluation of tradeoffs associated with having more or less of each *management strategy*

Evaluating the merits of each ‘scenario’

- Example suite of 3 scenarios reflect varying proportions of *management strategies*:

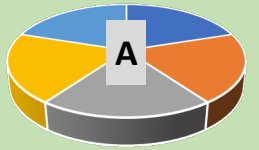


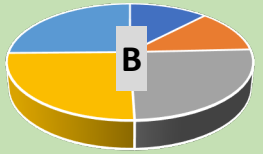
Value	Scenario A	Scenario B	Scenario C
Biodiversity	Low	High	Moderate
Carbon storage	Moderate	High	Moderate
Revenue	High	Low	Moderate

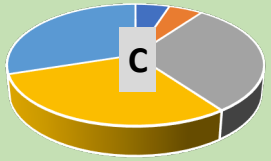
In this example, if results from the first round of modeling were to suggest that Scenario A would lead to unacceptable results (e.g., too much or too little of a particular forest value), the scenarios explored during the second round would move away from this (e.g., we would no long consider scenario A but instead look at new scenarios with land allocations reflecting proportions between scenarios B and C).

Evaluating the merits of several ‘scenarios’

What values could we evaluate as we discuss tradeoffs among *management strategies?*





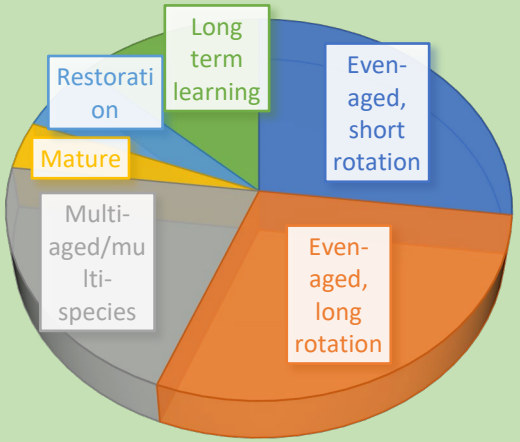


Value	Relevant metrics
Biodiversity	**Stand age class distribution** (a measure of the diversity of forest age class) **Forest cover** (a measure of habitat suitability for some species)
Carbon storage	**Aboveground biomass** (a measure of biomass of stem wood, bark, and foliage)
Recreation suitability & aesthetics	**Qualitative measure of preferences for various rec users**
Resilience	**Stand Density Index** (a measure of tree density and size)
Revenue	**Projected** (a dollar value projected to be earned through timber harvest)
Wildfire risk	**Composite index** (derived from **Canopy bulk density, Canopy base height, Canopy cover**)

Potential scenarios, AKA proportions of ‘Management Strategies’

Proportion	Scenario A (baseline)	Scenario B (lots of EA,SR)	Scenario C (lots of EA,LR)	Scenario D (lots of MA,MS)	Scenario E (lots of MR)	Scenario F (lots of EOC)
Even-aged, short rotation	27%					
Even-aged, long rotation	29%					
Multi-aged/multi-species	21%					
Reserve & managed reserve	4%					
Restoration	6%					
Long term learning *	15%					
TOTAL	100%					

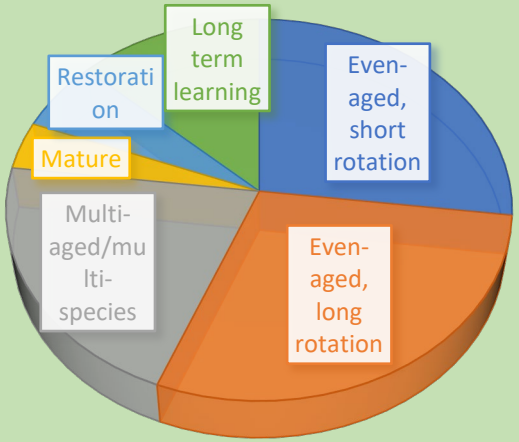
Consider desired future conditions as we propose potential scenarios to be modeled.



* long-term learning = acreage used for long-term research and recurring teaching and demonstrations

Potential scenarios, AKA proportions of ‘Management Strategies’

Proportion	Scenario A (baseline)	Scenario B (lots of EA,SR)	Scenario C (lots of EA,LR)	Scenario D (lots of MA,MS)	Scenario E (lots of MR & EOC)
Even-aged, short rotation	27%	40%	15%	10%	15%
Even-aged, long rotation	29%	15%	40%	10%	15%
Multi-aged/multi-species	21%	10%	10%	40%	15%
Reserve & managed reserve	4%	10%	10%	15%	20%
Restoration	6%	10%	10%	10%	20%
Long term learning *	15%	15%	15%	15%	15%
TOTAL	100%	100%	100%	100%	100%



Consider desired future conditions as we propose potential scenarios to be modeled.

* long-term learning = acreage used for long-term research and recurring teaching and demonstrations