

A forest manager wearing a red hard hat and a grey jacket is standing in a lush green forest, looking at a clipboard. The forest is filled with tall trees and dense undergrowth, including many ferns. The scene is captured in a natural, slightly overcast light.

# McDonald & Dunn Forest Management Planning Process

Spring 2022 – Early 2024

OSU College of Forestry  
McDonald-Dunn Research Forest Faculty Planning Committee Meeting #17  
315 Peavy Forest Science Center or Zoom ([Join Zoom Meeting](#))  
14 November 2023, noon-2pm

**Agenda**

*Meeting Purpose:*

- Share information on recent and upcoming modeling and writing efforts
- Make decisions on process to be used to interpret modeling results
- Brainstorm about monitoring efforts needed to evaluate if goals are being met

Start Time	Activity
noon	Review where we've been, where we're going, and timeline
12:05pm	Updates on metrics to be used to assess tradeoffs among land allocation scenarios
12:15pm	Recap ideas regarding processes to be used to assess tradeoffs among land allocation scenarios
12:30pm	Break into 2 groups to discuss (1) whether to set absolute thresholds, (2) whether to present results quantitatively or qualitatively, and (3) what background context to provide to aid interpretation <ul style="list-style-type: none"><li>• Group A: carbon, forest products, resilience-density, wildfire risk</li><li>• Group B: biodiversity, resilience-composition, recreation, culturally important species</li></ul>
1:15pm	Discuss indicators of performance and sustainability
1:55pm	Next steps
2:00pm	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:

- November 14, 12:00 - 2:00 - FPC meeting ([agenda](#))  
Zoom link: <https://oregonstate.zoom.us/j/96772313273?pwd=TzJGT3FpYlZORm1ac2FzMjMrMGNrdz09>
- November 28, 12:00 - 2:00 - FPC meeting  
Zoom link: <https://oregonstate.zoom.us/j/96772313273?pwd=TzJGT3FpYlZORm1ac2FzMjMrMGNrdz09>
- December 12, 12:00 - 2:00 - FPC meeting  
Zoom link: <https://oregonstate.zoom.us/j/96772313273?pwd=TzJGT3FpYlZORm1ac2FzMjMrMGNrdz09>

## 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](#), [meeting summary](#))
- Feb. 25, 2023, SAC and FPC Joint Field Tour
- Mar. 1, 2023, Stakeholder Advisory Committee Meeting ([agenda](#), [presentation](#), [video recording](#), [meeting summary](#))
- Mar. 6, 2023, Faculty Planning Committee Meeting ([agenda](#), [presentation](#), [video recording](#), [meeting summary](#))
- Mar. 20, 2023, Faculty Planning Committee Meeting ([agenda](#), [presentation](#), [video recording](#), [meeting summary](#))
- Mar. 21 & 22, 2023, Academic User Listening Sessions (open forums)
- Mar. 27, 2023, SAC and FPC Joint Field Tour
- Apr. 13, 2023, Stakeholder Advisory Committee Meeting ([agenda](#), [presentation 1](#), [presentation 2](#), [video recording](#), [meeting summary](#))
- Apr.17, 2023, Faculty Planning Committee Meeting ([agenda](#), [presentation](#), [video recording](#), [meeting summary](#))
- May 1, 2023, Faculty Planning Committee Meeting ([agenda](#), [presentation](#), [video recording](#), [meeting summary](#))
- June 12, 2023, Faculty Planning Committee Meeting ([agenda](#), [presentation](#), [video recording](#), [meeting summary](#))
- Oct. 17, 2023, Faculty Planning Committee meeting ([agenda](#), [presentation](#), [video recording](#), [meeting summary](#))
- October 31, Faculty Planning Committee meeting ([agenda](#), [presentation](#), [video recording](#), [meeting summary](#))

SUBMIT YOUR COMMENTS

SUBMIT YOUR QUESTIONS

STAY CONNECTED

READ PUBLIC COMMENTS

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

# McDonald-Dunn Research Forest 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-Winter 2024)

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 (Early 2024)

Presentation of draft plan to the Dean &  
Forestry Executive Committee for review

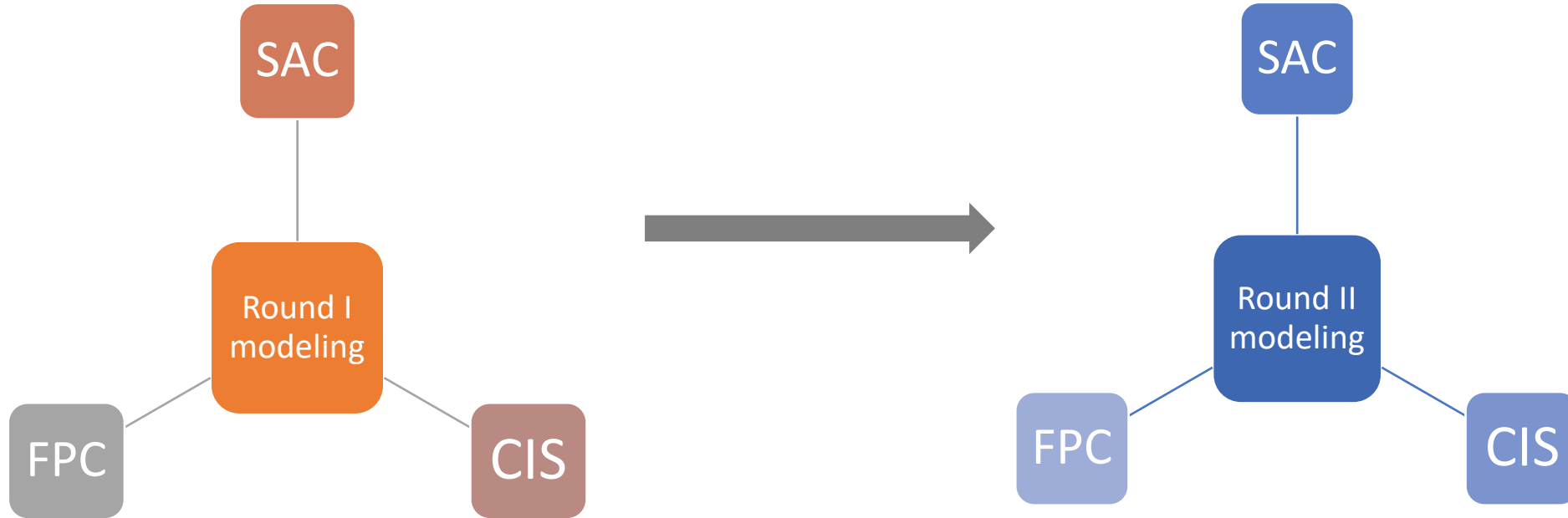
Forest management plan refinement

Forest management plan approval by Dean

# Tentative Timeline (subject to change)

- FPC meetings
  - Fall term: biweekly (Nov 14, Nov 28, Dec 12)
  - Winter term: monthly (once in early Jan, early Feb, early March)
- SAC meetings
  - Mid-January
  - Mid-February
- Community Input Sessions
  - Late January
  - Late February

# McDonald-Dunn Research Forest Management Planning Process



# Recap: 5 new 'Forest Management Strategies'

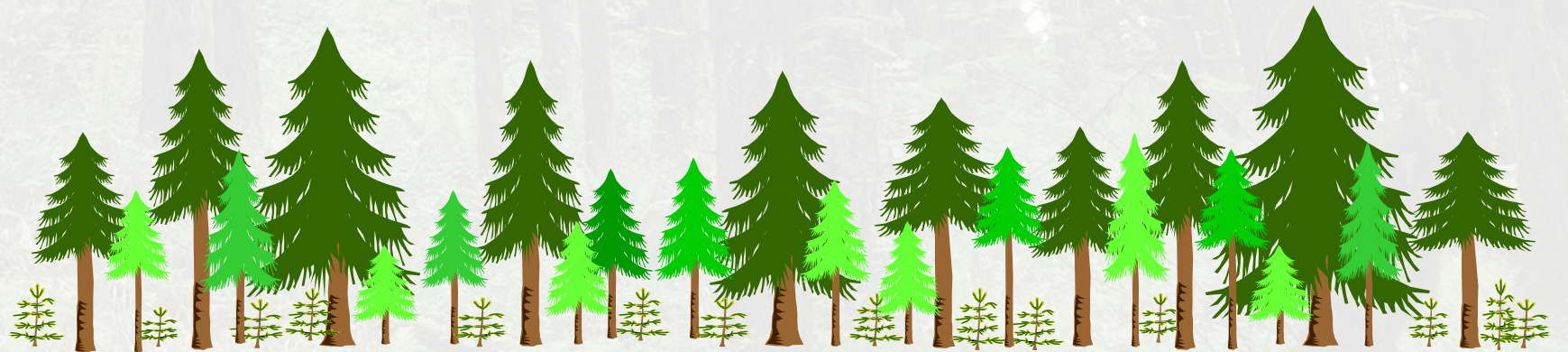
**A. Even-aged, short rotation**

**B. Even-aged, long rotation**

**C. Multi-aged, multi-species**

**D. Managed reserves**

**E. Ecosystems of concern (oak woodlands, meadows, riparian)**



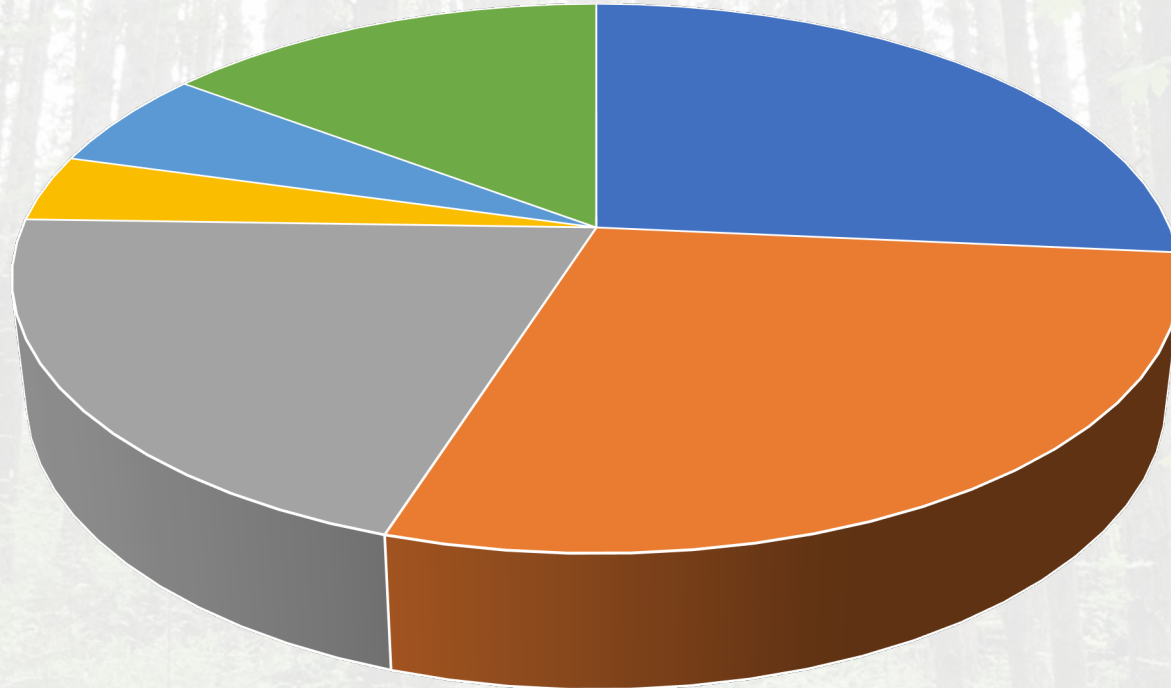


## Overview of each new 'Management Strategy'

	Even-aged short rotation	Even-aged long rotation	Multi-aged multi-species	Managed reserves	Ecosystems of concern
<b>Overview</b>	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 <u>shelterwood-with-residuals</u> , <u>group-selection</u> , and <u>variable retention</u> regeneration harvests to create heterogeneity in openings, regenerate new age classes of trees, and maintain structural diversity for a variety of values. 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 for a variety of values, 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: <ul style="list-style-type: none"> <li>• retain and conserve the most at-risk and highest value components of ecological and cultural diversity, and</li> <li>• use intensive efforts where needed to improve and restore broader ecological and/or cultural functions at specific sites.</li> </ul>

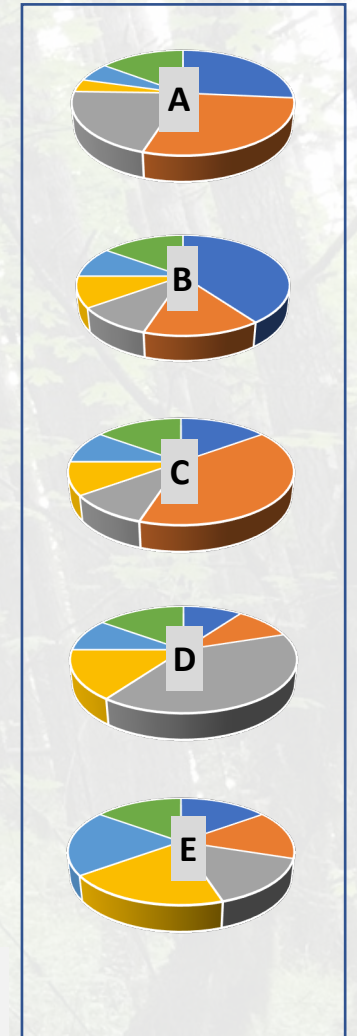
# Recap: We'll be evaluating the merits of several 'scenarios'

Baseline Scenario



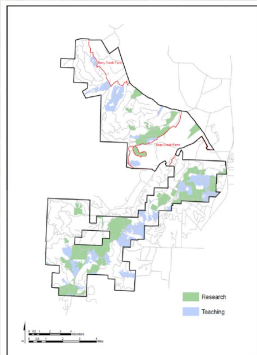
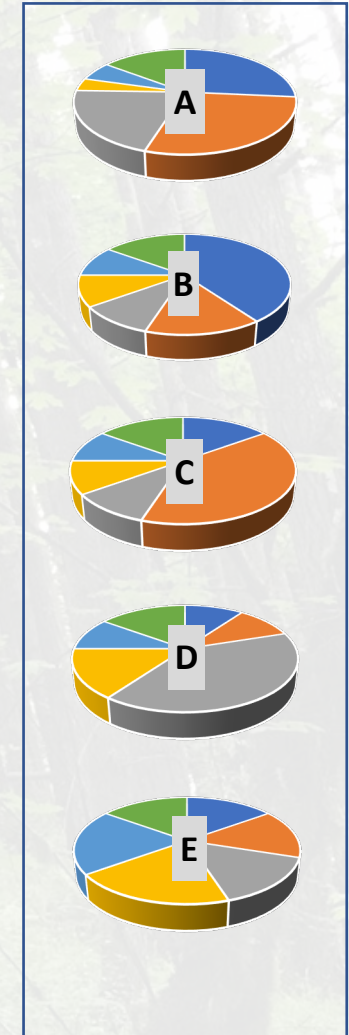
- Even-aged, short rotation
- Even-aged, long rotation
- Multi-aged/multi-species
- Managed reserve
- Ecosystems of concern
- Long term learning \*

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



# Recap: Modeling of Scenarios to Evaluate Tradeoffs

Proportion	Scenario A (baseline)	Scenario B (lots of EASR)	Scenario C (lots of EALR)	Scenario D (lots of MAMS)	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%
Managed reserve	4%	10%	10%	15%	20%
Ecosystems of concern	6%	10%	10%	10%	20%
Long term learning *	15%	15%	15%	15%	15%
<b>TOTAL</b>	100%	100%	100%	100%	100%



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



# Evaluating the merits of several 'scenarios'

What values will we evaluate as we assess tradeoffs among *management strategies*?

## Value

Biodiversity

Carbon storage

Culturally important species

Forest products

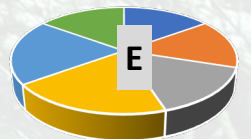
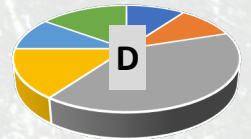
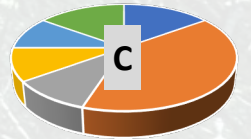
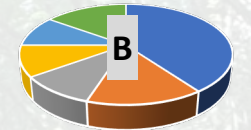
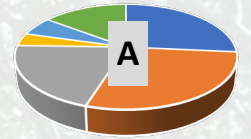
Recreation suitability /  
Scenic beauty

Resilience - density

Resilience - composition

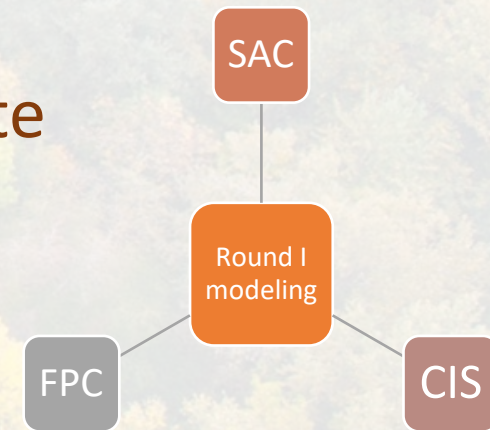
Revenue

Wildfire risk



# Options for assessing metrics used to evaluate scenarios

- We will have 9 “forest values” to compare across 5 scenarios
- Ultimately, FPC, SAC, and the community will weigh in on their degree of preference for each
- We need to decide on process to be used to evaluate



- Options
  - Assess with true values, each on a different scale
  - Convert quantitative values for each metric to qualitative (high, medium, low)
  - Convert quantitative values for each metric to ranking (1, 2, 3, 4, 5)

# Options for assessing metrics used to evaluate scenarios

## - Raw numbers (mock-up numbers are inserted below as placeholders to show the variety of scales across forest values)

Forest Value	Scenario A (baseline)	Scenario B (lots of EASR)	Scenario C (lots of EALR)	Scenario D (lots of MAMS)	Scenario E (lots of MR & EOC)
Biodiversity	3.8	2.5	3.9	2.1	3.4
Carbon storage	820 MT C/ha	1640 MT C/ha	1010 MT C/ha	940 MT C/ha	1730 MT C/ha
Culturally important species	2.4	3.1	3.6	3.7	2.9
Forest products	5.1 MMBF	5.8 MMBF	4.7 MMBF	4.2 MMBF	3.7 MMBF
Recreation suitability/scenic beauty	3.3	3.1	3.9	3.5	3.7
Resilience - density	144 trees/ha	159 trees/ha	150 trees/ha	162 trees/ha	138 trees/ha
Resilience - composition	4.0	3.8	4.5	4.6	4.3
Revenue	\$1.0 M	\$1.2 M	\$0.8 M	\$0.6 M	\$0.4 M
Wildfire risk	42	49	40	46	44

# Options for assessing metrics used to evaluate scenarios

- **Qualitative (high, medium, low)** (mock-up ratings are inserted below as placeholders to demo this approach)

<b>Forest Value</b>	<b>Scenario A (baseline)</b>	<b>Scenario B (lots of EASR)</b>	<b>Scenario C (lots of EALR)</b>	<b>Scenario D (lots of MAMS)</b>	<b>Scenario E (lots of MR &amp; EOC)</b>
Biodiversity	High	Low	High	Low	Medium
Carbon storage	Low	High	Medium	Low	High
Culturally important species	Low	Medium	High	High	Low
Forest products	High	High	Medium	Low	Low
Rec suitability/scenic beauty	Low	Low	High	Medium	High
Resilience - density	Low	High	Medium	High	Low
Resilience - composition	Low	Low	High	High	Medium
Revenue	High	High	Medium	Low	Low
Wildfire risk	Low	High	Low	High	Medium

High
Medium
Low

# Options for assessing metrics used to evaluate scenarios

## - Ranking (1 through 5) (mock-up rankings are inserted below as placeholders to demo this approach)

Forest Value	Scenario A (baseline)	Scenario B (lots of EASR)	Scenario C (lots of EALR)	Scenario D (lots of MAMS)	Scenario E (lots of MR & EOC)
Biodiversity	4	2	5	1	3
Carbon storage	1	4	3	2	5
Culturally important species	1	3	4	5	2
Forest products	4	5	3	2	1
Rec suitability/scenic beauty	2	1	5	3	4
Resilience - density	2	4	3	5	1
Resilience - composition	2	1	4	5	3
Revenue	4	5	3	2	1
Wildfire risk	2	5	1	4	3

Highest (5)
Moderately high (4)
Moderate (3)
Moderately Low (2)
Lowest (1)



# Options for assessing metrics used to evaluate scenarios

## - Relative comparison with baseline: raw numbers

<b>Forest Value</b>	<b>Scenario A (baseline)</b>	<b>Scenario B (lots of EASR)</b>	<b>Scenario C (lots of EALR)</b>	<b>Scenario D (lots of MAMS)</b>	<b>Scenario E (lots of MR &amp; EOC)</b>
Biodiversity	<b>3.8</b>	2.5	3.9	2.1	3.4
Carbon storage	<b>820 MT C/ha</b>	1640 MT C/ha	1010 MT C/ha	940 MT C/ha	1730 MT C/ha
Culturally important species	<b>2.4</b>	3.1	3.6	3.7	2.9
Forest products	<b>5.1 MMBF</b>	5.8 MMBF	4.7 MMBF	4.2 MMBF	3.7 MMBF
Rec suitability/scenic beauty	<b>3.3</b>	3.1	3.9	3.5	3.7
Resilience - density	<b>144 trees/ha</b>	159 trees/ha	150 trees/ha	162 trees/ha	138 trees/ha
Resilience - composition	<b>4.0</b>	3.8	4.5	4.6	4.3
Revenue	<b>\$1.0 M</b>	\$1.2 M	\$0.8 M	\$0.6 M	\$0.4 M
Wildfire risk	<b>42</b>	49	40	46	44

# Options for assessing metrics used to evaluate scenarios

- Relative comparison with baseline: % change

Forest Value	Scenario A (baseline)	Scenario B (lots of EASR)	Scenario C (lots of EALR)	Scenario D (lots of MAMS)	Scenario E (lots of MR & EOC)
Biodiversity	3.8	-34%	+3%	-44%	-10%
Carbon storage	820 MT C/ha	+100%	+ 23%	+15%	+111%
Culturally important species	2.4	+29%	+50%	+54%	+21%
Forest products	5.1 MMBF	+14%	-8%	-18%	-27%
Rec suitability/scenic beauty	3.3	-6%	+18%	+ 6%	+12%
Resilience - density	144 trees/ha	+10%	+4%	+13%	-4%
Resilience - composition	4.0	-5%	+13%	+15%	+8%
Revenue	\$1.0 M	+20%	-20%	-40%	-60%
Wildfire risk	42	+17%	-5%	+10%	+5%

# Options for assessing metrics used to evaluate scenarios

- **Relative comparison with baseline: color-coded % change**

Forest Value	Scenario A (baseline)	Scenario B (lots of EASR)	Scenario C (lots of EALR)	Scenario D (lots of MAMS)	Scenario E (lots of MR & EOC)
Biodiversity	3.8	-34%	+3%	-44%	-10%
Carbon storage	820 MT C/ha	+100%	+ 23%	+15%	+111%
Culturally important species	2.4	+29%	+50%	+54%	+21%
Forest products	5.1 MMBF	+14%	-8%	-18%	-27%
Rec suitability/scenic beauty	3.3	-6%	+18%	+ 6%	+12%
Resilience - density	144 trees/ha	+10%	+4%	+13%	-4%
Resilience - composition	4.0	-5%	+13%	+15%	+8%
Revenue	\$1.0 M	+20%	-20%	-40%	-60%
Wildfire risk	42	+17%	-5%	+10%	+5%

Is this degree of specificity warranted for all values?

Should we set acceptability thresholds for any?

What background info should we provide to assist in interpreting?

Considerable increase (>50% increase)

Modest increase (10-50% increase)

Little change (10% increase – 10% decrease)

Modest decrease (10-50% decrease)

Considerable decrease (>50% decrease)

# Options for assessing metrics used to evaluate scenarios

## - Relative comparison with baseline

Three questions for us to deliberate:

1. What degree of specificity is warranted for interpreting each forest value?
2. Would it be appropriate to set acceptability thresholds for some forest values?
3. What background info should we provide to assist non-experts in interpreting?

Discuss as a large group or break into 2?

- **Group A:**

- carbon
- forest products
- resilience-density
- wildfire risk

- **Group B:**

- biodiversity
- resilience-composition
- recreation
- culturally important species

Forest Value	Scenario A (baseline)	Scenario B (lots of EASR)	Scenario C (lots of EALR)	Scenario D (lots of MAMS)	Scenario E (lots of MR & EOC)
Biodiversity	3.8	-34%	+3%	-44%	-10%
Carbon storage	820 MT C/ha	+100%	+ 23%	+15%	+111%
Culturally important species	2.4	+29%	+50%	+54%	+21%
Forest products	5.1 MMBF	+14%	-8%	-18%	-27%
Rec suitability/scenic beauty	3.3	-6%	+18%	+ 6%	+12%
Resilience - density	144 trees/ha	+10%	+4%	+13%	-4%
Resilience - composition	4.0	-5%	+13%	+15%	+8%
Revenue	\$1.0 M	+20%	-20%	-40%	-60%
Wildfire risk	42	+17%	-5%	+10%	+5%

# Options for assessing metrics used to evaluate scenarios

## - Relative comparison with baseline

### McDonald-Dunn Research Forest – Interpreting Results from the Modeling of Alternative Land Allocation Scenarios

#### Three questions for us to deliberate:

1. What degree of specificity is appropriate for each value, when comparing with the baseline (i.e., current conditions)?
2. Would it be appropriate to set acceptability thresholds for any of these forest values? If so, how would they be derived?
3. What background info should we provide to assist non-experts in interpreting?

Forest Value	Degree of specificity	Should thresholds be set?	Background information
<b>Carbon</b>	Precise % change -, -, +, ++ Other	No Yes If yes, how to set them?	Range: How to interpret what is acceptable/desirable?
<b>Forest products</b>	Precise % change -, -, +, ++ Other	No Yes If yes, how to set them?	Range: How to interpret what is acceptable/desirable?
<b>Resilience-density</b>	Precise % change -, -, +, ++ Other	No Yes If yes, how to set them?	Range: How to interpret what is acceptable/desirable?
<b>Wildfire risk</b>	Precise % change -, -, +, ++ Other	No Yes If yes, how to set them?	Range: How to interpret what is acceptable/desirable?

### McDonald-Dunn Research Forest – Interpreting Results from the Modeling of Alternative Land Allocation Scenarios

#### Three questions for us to deliberate:

1. What degree of specificity is appropriate for each value, when comparing with the baseline (i.e., current conditions)?
2. Would it be appropriate to set acceptability thresholds for any of these forest values? If so, how would they be derived?
3. What background info should we provide to assist in interpreting?

Forest Value	Degree of specificity	Should thresholds be set?	Background information
<b>Biodiversity</b>	Precise % change -, -, +, ++ Other	No Yes If yes, how to set them?	Range: How to interpret what is acceptable/desirable?
<b>Resilience-composition</b>	Precise % change -, -, +, ++ Other	No Yes If yes, how to set them?	Range: How to interpret what is acceptable/desirable?
<b>Recreation</b>	Precise % change -, -, +, ++ Other	No Yes If yes, how to set them?	Range: How to interpret what is acceptable/desirable?
<b>Culturally important species</b>	Precise % change -, -, +, ++ Other	No Yes If yes, how to set them?	Range: How to interpret what is acceptable/desirable?

# Indicators of Performance and Sustainability

- 2005 Plan
  - defined 7 goals
  - set 1-4 objectives for each goal
  - proposed 1-8 indicators for each objective
- New plan
  - FRAC defined 10 goals for all Research Forests, some of which align with 2005
  - we need to set objectives and indicators for each of the 10 new goals
  - the intent is to define monitoring needs ... this will enable adaptive management



# New goals in relation to those from the 2005 Plan

- Goal 1 - Learning, Discovery, Engagement ..... Goals 1 & 7 from 2005 Plan
- Goal 2 – Stewardship ..... Goals 2 & 3 from 2005 Plan
- Goal 3 – Research ..... Goal 1 from 2005 Plan
- Goal 4 - Resilient Forests ..... *No analogue in 2005 Plan*
- Goal 5 - Working Demonstration Forest ..... Goal 1 from 2005 Plan
- Goal 6 – Recreation ..... Goal 5 from 2005 Plan
- Goal 7 - Community Connections ..... Goal 6 from 2005 Plan
- Goal 8 - Financial Sustainability ..... Goal 2 from 2005 Plan
- Goal 9 – Accountability ..... *No analogue in 2005 Plan*
- Goal 10 - Continuous Improvement ..... Goal 7 from 2005 Plan

# Our Goals

- Goal 1 - Learning, Discovery, Engagement
- Goal 2 - Stewardship
- Goal 3 - Research
- Goal 4 - Resilient Forests
- Goal 5 - Working Demonstration Forest
- Goal 6 - Recreation
- Goal 7 - Community Connections
- Goal 8 - Financial Sustainability
- Goal 9 - Accountability
- Goal 10 - Continuous Improvement

Goal	Objec- tives	Indicators	Method- ology to measure	How often to measure	Who will measure
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					