STAFF REPORT

Agenda Item No.:	2
Work Plan:	State Forests Work Plan
Topic:	State Forests Management
Presentation Title:	Western Oregon State Forests Draft Forest Management Plan Scenarios
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CONTEXT

Forest Management Plans (FMP) provide the overarching direction for state forestlands managed by the Oregon Department of Forestry (ODF). These plans are developed pursuant to Oregon Administrative Rule (OAR 629-035-0030) and are approved by the Board of Forestry to codify the Board's finding that the FMP meets Greatest Permanent Value (OAR 629-035-0020).

The State Forests Division (Division) has initiated the rulemaking process for the draft Western Oregon State Forests FMP. Since the FMP is a high-level policy document intended to allow for a broad range of implementation pathways, the Board has considered multiple scenarios with different management approaches consistent with the draft FMP. Trade-offs among resource goals under these scenarios were discussed with the Forest Trust Lands Advisory Committee (FTLAC) and Division staff in previous Board meetings. In the June 2025 Board meeting, the discussion with FTLAC focused on coming to shared understanding and laying groundwork for the Board decision requested in this meeting.

Division staff have prepared a staff recommendation for an implementation pathway, with a select set of Performance Measures and their respective targets, based on an updated model scenario. If the Board adopts these Performance Measures, it will guide the Division's upcoming Implementation Plan development. Implementation Plans set medium-range management objectives designed to meet long-term FMP goals that provide resilient forests that provide a broad suite of benefits to Oregonians.

This staff report:

1. Summarizes feedback on the FMP scenarios previously presented.
2. Describes the new scenario and its justification.
3. Assesses known model issues with an impact on implementation.
4. Compares modeled outcomes from all scenarios with figures in an appendix.
5. Recommends Performance Measures and targets that would be achievable under the management approach in the new scenario.

BACKGROUND ON FMP SCENARIOS

The Division's forest activity model emulates how the forest could be managed over time with forest stands grown forward from the current inventory. It projects harvest volumes, revenues, carbon sequestration, habitat quality, and other forest stand metrics across the landscape by simulating decisions which meet a set of management objectives according to model inputs, such as silvicultural practices and landscape constraints.

The scenarios, summarized in the table below, approach timber management differently than the Division's current approach. All scenarios were modeled to meet the requirements of the proposed Habitat Conservation Plan (HCP) and had equivalent management within Habitat Conservation Areas (HCAs), where harvests have the objective of improving habitat for covered species. The first four scenarios were discussed at the June 2025 Board meeting. Scenario 5 has two new model runs that will be presented at this meeting.

Table 1: Modeled FMP scenarios included in this report. Each scenario had different runs with a parameter changed to explore variation in outcomes.

	Run a	**Run b**	**Run c**
Scenario 1 – 30-year Volume Targets, with reset to non-declining flow after 30 years	185 MMBF on BOF land	195 MMBF on BOF land	205 MMBF on BOF land
Scenario 2 – Long Rotations, with more even distribution of age classes	Up to 120 years in managed acres	Up to 150 years in managed acres	
Scenario 3 – Maximize volume, over the whole modeling timeframe	Unlimited variation in volume between 5-year periods	Limit of +/- 10% variation in volume between 5-year periods	
Scenario 4 – Maximize Net Present Value, using a 4% discount rate	Unlimited variation in volume between 5-year periods	Limit of +/- 10% variation in volume between 5-year periods	Limit of +/- 30% variation in volume between 5-year periods
NEW for this meeting **Scenario 5 – Departure Steps,** with 10 years at max, followed by 10-year steps down to 185 MMBF floor in years 31-70.	Yr 1-10: 215 MMBF 11-20: 205 MMBF 21-30: 195 MMBF 31-70: >185 MMBF 71-150: Maximize volume	Yr 1-10: 230 MMBF 11-20: 215 MMBF 21-30: 200 MMBF 31-70: >185 MMBF 71-150: Maximize volume	

Feedback from the Board's discussion with FTLAC and Division staff was used to develop the recommendation brought forward at this meeting. Some primary takeaway messages Division staff gained from previous discussions are that:

- The flow of harvest volume should be allowed to depart from even-flow (e.g., volume is able to vary from year-to-year and period-to-period). This approach would be a change in how the Division has typically set volume targets. The variation in harvest volume was viewed as an acceptable tradeoff to achieve higher

overall harvests over time. Departures from even-flow would enable the Division to even the age distribution of stands outside of HCAs to provide better long-term predictability in management.

- County planning from shared revenue, business investment by mills or operators, and shifts in the Division's workforce would require persistence of harvest levels beyond one 5-year model period.
- It is important that the Division meet its targets, as there are questions over whether the modeled volumes were attainable given the Division's current capacity and uncertainty in the data input into the models.
- Harvesting at either older or younger ages than current management carries different opportunities and risks. In the current approach, the Division pursues non-declining, even-flow of timber volume with the final harvest of stands around the culmination of mean annual increment. Diverging from this approach could change the forest structure, habitat elements for wildlife, recreational preference, wildfire risk, carbon sequestration and storage, and decision space for future management options.

NEW FMP SCENARIO: DEPARTURE STEPS

The Division designed Scenario 5 to include departures from even-flow harvest volumes to provide increased near-term revenue to counties and flatten the existing uneven stand age distribution over time. The levels of the departures are held constant in 10-year steps similar in duration to Implementation Plans. Two model runs were tested with different starting harvest levels (215 MMBF and 230 MMBF annually on Board of Forestry land and Common School Forest land). After 30 years, or three 10-year steps with set departures, the model harvests would vary over time with the goal of maximizing total harvest volume while still maintaining a designated floor of 185 MMBF annually through the HCP permit term.

The intent of this scenario is to provide near-term harvest volume departures and revenue that the Division can deliver feasibly given the uncertainty in adapting a Board-level model to the next Implementation Plan (see next section). Setting 10-year steps aids in planning investments, even though this reduces overall volume harvested compared to a model with unconstrained variation over time. The harvest floor after 30 years is intended to provide certainty about mid-term harvest and other co-benefits while preserving flexibility and options for the next generation.

TRANSLATING MODELS INTO IMPLEMENTATION

Scenario outcomes will not be exactly the same as those the Division commits to in the next Implementation Plan. Actual implementation of FMPs is carried out through more specific plans under the authority of the State Forester (OAR 629-035-0030(5)(b)). The intention of modeling FMP scenarios is to inform Board-level policy with examples of trade-offs between resources and outcomes under different implementation approaches. In creating its recommendation, the Division has considered the following ways in which the Implementation Plans will differ from the FMP modeled scenarios in this report.

Models for the Implementation Plans will use updated data on inventory and updated constraints (e.g., landslide hazards or cultural resource protection) that will change what is available to harvest. This presentation is the third round of FMP scenario modeling, which have all used the same input data to be more comparable. The drawback of using the same input data is that the inventory used as the starting point for the models has become more out of date as growth, disturbances, and management have changed the amount and distribution of volume available for future harvests on the landscape. Through FY26, there have been 36,322 acres of regeneration harvest and 9,600 acres of partial cut harvests (6% and 2% of the total FMP area) not included in the modeling based on the 2021 inventory.

Feedback on the modeling approach will lead to adjustments in the pace and scale of harvest to better reflect management on the ground for Implementation Plan models. FMP scenarios currently thin aggressively in the first 5 years of the model, due to stands exceeding a threshold for treatment. Calibrating the pace of thinning in the model will change the distribution of harvest volume between regeneration and partial cuts. The pace of treatment within HCAs will also be spread more evenly through the first 30 years.

The State Forester will provide additional direction on implementation, such as accounting for district capacity, that is not included in the presented FMP scenarios. The FMP scenarios are modeled at a georegion scale (i.e., 2 groups of districts: North Coast and Willamette Valley), while implementation may have district-level considerations that impact overall harvest levels. Overall staffing levels and distribution of FTE across ODF district offices are a factor in planned harvest volumes. The Division has averaged 1.1 million board feet per FTE over the last 10 years, a time period that includes reductions in budgeted FTE as part of a 2019 reorganization. As planned timber harvest objectives have dropped over the last three fiscal years, some budgeted positions have been held vacant across the Division as part of cost savings measures. The degree to which these positions will be filled will depend on the amount, timing and geographic distribution of projected harvest under an actual implementation plan.

The recommended performance measure targets presented below are intended to provide a range that ODF believes is achievable in actual implementation plans and that will provide a balance of social, economic, and environmental benefits.

MODELED OUTCOMES

Scenario 5 outcomes generally fall in between those of Scenario 1 and Scenario 3. The Appendix contains figures comparing scenarios using the following outcomes:

1. Harvest volume
    a. Table A1: Average annual harvest volume (MMBF) for years 1-30
    b. Table A2: Average annual harvest volume (MMBF) for years 31-70
    c. Figure A1: Modeled average annual harvest volume over 150 years for the scenarios presented at the June 2025 Board of Forestry meeting
    d. Figure A2: Modeled average annual harvest volume over 150 years with new scenario 5, “Departure Steps”, added to scenarios from Figure A1
    e. Figure A3: Modeled average annual harvest volume over 150 years for scenarios 1, 3, and 5

    f. Figure A4: Modeled average annual harvest volume over 70 years for scenarios 1, 3, and 5
    g. Figure A5: Modeled cumulative harvest volume over 150 years
2. Revenue from harvests
    a. Table A3: Average annual revenue (million $) for years 1-30
    b. Table A4: Average annual revenue (million $) for years 31-70
3. Carbon storage and sequestration
    a. Figure A6: Modeled carbon storage in aboveground live trees over 150 years
    b. Figure A7: Different assumptions affect modeled total carbon sequestration in forests and harvested wood products (flux)
4. Distribution of management by stand age class
    a. Figure A8: Average age of regeneration harvest outside of Habitat Conservation Areas over 70 years for scenarios 1c, 3b, and 5a
    b. Figure A9: Average annual acres of management by age for regeneration and thinning prescriptions outside of Habitat Conservation Areas over 30 years for scenarios 1c, 3b, and 5a
5. Habitat for covered species
    a. Figure A10: Average Northern spotted owl habitat suitability index inside and outside of HCAs over 150 years

PERFORMANCE MEASURES

Performance Measures are a select set of metrics that the Board will use to evaluate management commitments and outcomes with respect to the objectives and intent expressed through the FMP guiding principles, management approach, and goals. The Performance Measures have component metrics that will be monitored and reported for the Board and others to track management commitments and outcomes readily across a broad range of ecosystem services provided by State Forests.

Targets designated by the Board for Performance Measures' components are intended to be informative as a set, as increasing or decreasing one resource target will have tradeoffs with others. Component metrics will be measured and reported at different time scales depending on the resource. The best time to consider them as a set for adaptive management would be during Implementation Plan revisions.

The following components of Performance Measures are available from the FMP scenario modeling and ready for the Board to consider targets. These targets would align with Scenario 5, run A outcomes within a range of uncertainty.

- Harvest and Inventory
    - Figure A11: Planned harvest volume over 10 years
    - Figure A12: Operable inventory over 10 years
- Carbon Sequestration and Storage
    - Figure A13: Additional carbon stored in aboveground live trees pool
- Adaptive Capacity of Forests
    - Figure A14: 10-year growth rates of trees remeasured by FIA plots

RECOMMENDATION

1. Staff recommends that the Board adopt performance measure targets described in one of the *Alternatives* described below to guide the State Forester's implementation of the Western Oregon State Forests Management Plan.

   Over the first decade of FMP implementation, the performance measure targets are:

   Alternative 1 (Preferred): Establishes a range of planned harvest volumes, centered on an initial decadal target of 2.15 BBF. In the first decade, harvest could range between 2.04 and 2.26 BBF. This alternative is implementable by the Department.

   - Harvest volume: Over 10 years, planned harvest volume will total 2.15 BBF +/- 5% on Board of Forestry Lands and Common School Forest Lands.
   - Operable Inventory: In 10 years, merchantable volume outside of HCAs will range from 6.26 to 6.50 BBF compared to the current 6.30 BBF.
   - Carbon sequestration and storage: Over 10 years, an additional 0.7 – 1.2 million metric tons of carbon will be sequestered in the aboveground live tree pool compared to its current carbon stock.
   - Adaptive capacity: The average annual growth rates of trees will be stable or increasing compared to the current estimate available.

   Alternative 2: Sets a floor of planned harvest based on the Departure Steps approach targeting 95% of the volume when using 2.15 BBF as an initial decadal target. There is no ceiling in this approach, so harvest will be implicitly constrained by other objectives. This alternative is implementable by the Department, but may result in significant staffing variations (i.e., need for increased staff initially to achieve higher volumes, and layoffs after the first IP).

   - Harvest volume: Over 10 years, planned harvest volume will total at least 2.05 BBF on Board of Forestry Lands. ODF will strive to achieve a harvest level that attains and maintains a balance of 6-12 months of operating expenses.
   - Operable Inventory: In 10 years, merchantable volume outside of HCAs will range from 6.24 to 6.43 BBF compared to the current 6.30 BBF.
   - Carbon sequestration and storage: Over 10 years, an additional 0.6 – 1.1 million metric tons of carbon will be sequestered in the aboveground live tree pool compared to its current carbon stock.
   - Adaptive capacity: The average annual growth rates of trees will be stable or increasing compared to the current estimate available.

   Alternative 3: Sets an initial decadal planned target of 2.30 BBF. This alternative may be implementable by the Department, but could result in exacerbated issues with the Division's budget (e.g., if the increased volume must come from low net revenue sales). This alternative is likely to result in significant staffing variations (i.e., need for increased staff initially to achieve higher volumes, and layoffs after the first IP).

- Harvest volume: Over 10 years, ODF will strive to achieve planned harvest of 2.30 BBF on Board of Forestry Lands and Common School Forest Lands and attain and maintain a balance of 6-12 months of operating expenses.
- Operable Inventory: In 10 years, merchantable volume outside of HCAs will decline to 6.24 BBF compared to the current 6.3 BBF.
- Carbon sequestration and storage: Over 10 years, an additional 0.6 million metric tons of carbon will be sequestered in the aboveground live tree pool compared to its current carbon stock.
- Adaptive capacity: The average annual growth rates of trees will be stable or increasing compared to the current estimate available.

2. Staff recommends the Board find the targets reflect appropriate initial implementation of the Western Oregon State Forests Management Plan. These targets are based on forest management objectives that allow for predictable outputs in planned timber volume and other co-benefits for the first three decades, followed by more variable harvest levels intended to capture the culmination of stand growth over time. These targets also allow for decision space for each 10-year period and for the future beyond 30 years.

NEXT STEPS

After this meeting, the Division will:

1. Develop additional PM targets to reflect outcomes that are not easily discernable from harvest scheduling modeling.
2. Staff will return to the Board in June 2026 to present the final draft FMP, including summarized public comments and recommendations to plan revisions to reflect comments received. The Board will make a decision on plan adoption.
3. Start modeling for Implementation Plans (to begin in FY2028) to accompany the draft FMP.

ATTACHMENTS

1. Appendix of Scenario Modeled Outcomes

Staff Report Appendix
November 18, 2025 Board of Forestry meeting

Modeled harvest volume (average annual MMBF) in different time periods and from Board of Forestry Lands (BOFL) and Common School Forest Lands (CSFL)

Table A1: Average annual harvest volume (MMBF) for years 1-30

Scenario	Run	Total	BOFL	CSL
1: 30-year BOFL target	a. 185 MMBF	192	185	6.9
1: 30-year BOFL target	b. 195 MMBF	203	196	7.1
1: 30-year BOFL target	c. 205 MMBF	212	205	6.9
2: Long rotations	a. 120 years	220	213	6.9
2: Long rotations	b. 150 years	170	165	5.6
3: Maximize total volume	a. Unconstrained	235	228	7.9
3: Maximize total volume	b. 10% periodic limit	230	222	8.0
4: Maximize NPV	a. Unconstrained	302	294	8.4
4: Maximize NPV	b. 10% periodic limit	289	281	8.8
4: Maximize NPV	c. 30% periodic limit	298	289	8.6
5: Departure steps	a. 215 MMBF start	206	198	7.5
5: Departure steps	b. 230 MMBF start	215	207	7.9

Table A2: Average annual harvest volume (MMBF) for years 31-70

Scenario	Run	Total	BOFL	CSL
1: 30-year BOFL target	a. 185 MMBF	174	168	5.7
1: 30-year BOFL target	b. 195 MMBF	173	166	6.2
1: 30-year BOFL target	c. 205 MMBF	169	162	6.3
2: Long rotations	a. 120 years	97	94	2.9
2: Long rotations	b. 150 years	71	68	2.5
3: Maximize total volume	a. Unconstrained	178	172	5.5
3: Maximize total volume	b. 10% periodic limit	175	170	5.6
4: Maximize NPV	a. Unconstrained	180	174	6.3
4: Maximize NPV	b. 10% periodic limit	183	177	5.6
4: Maximize NPV	c. 30% periodic limit	181	175	5.9
5: Departure steps	a. 215 MMBF start	195	189	6.0
5: Departure steps	b. 230 MMBF start	192	186	6.0

Modeled revenue from harvests (average annual revenue net of costs) by time period and by distribution to counties, the Common School Fund (CSF), and ODF.

Table A3: Average annual revenue (million $) for years 1-30

Scenario	Run	Total net revenue	Counties	CSF	ODF
1: 30-year BOFL target	a. 185 MMBF	83.4	51.5	2.4	29.3
1: 30-year BOFL target	b. 195 MMBF	88.4	54.7	2.5	31.1
1: 30-year BOFL target	c. 205 MMBF	92.4	57.3	2.4	32.6
2: Long rotations	a. 120 years	95.5	59.3	2.5	33.7
2: Long rotations	b. 150 years	73.5	45.5	2.0	25.9
3: Maximize total volume	a. Unconstrained	103.2	64.0	2.8	36.4
3: Maximize total volume	b. 10% periodic limit	100.7	62.4	2.8	35.5
4: Maximize NPV	a. Unconstrained	135.2	84.0	3.4	47.7
4: Maximize NPV	b. 10% periodic limit	129.0	79.9	3.6	45.5
4: Maximize NPV	c. 30% periodic limit	133.4	82.8	3.5	47.1
5: Departure steps	a. 215 MMBF start	90.0	55.6	2.7	31.6
5: Departure steps	b. 230 MMBF start	94.1	58.2	2.8	33.1

Table A4: Average annual revenue (million $) for years 31-70

Scenario	Run	Total net revenue	Counties	CSF	ODF
1: 30-year BOFL target	a. 185 MMBF	80.3	49.7	2.2	28.3
1: 30-year BOFL target	b. 195 MMBF	79.1	48.8	2.5	27.8
1: 30-year BOFL target	c. 205 MMBF	77.2	47.6	2.5	27.0
2: Long rotations	a. 120 years	41.3	25.7	1.0	14.6
2: Long rotations	b. 150 years	30.7	19.0	0.9	10.8
3: Maximize total volume	a. Unconstrained	79.5	49.3	2.2	28.0
3: Maximize total volume	b. 10% periodic limit	78.2	48.4	2.3	27.5
4: Maximize NPV	a. Unconstrained	76.7	47.4	2.3	26.9
4: Maximize NPV	b. 10% periodic limit	78.9	48.9	2.0	27.8
4: Maximize NPV	c. 30% periodic limit	77.2	47.7	2.2	27.2
5: Departure steps	a. 215 MMBF start	87.3	54.1	2.4	30.8
5: Departure steps	b. 230 MMBF start	86.0	53.3	2.4	30.3

Figure A1: Modeled average annual harvest volume over 150 years for the scenarios presented at the June 2025 Board of Forestry meeting.

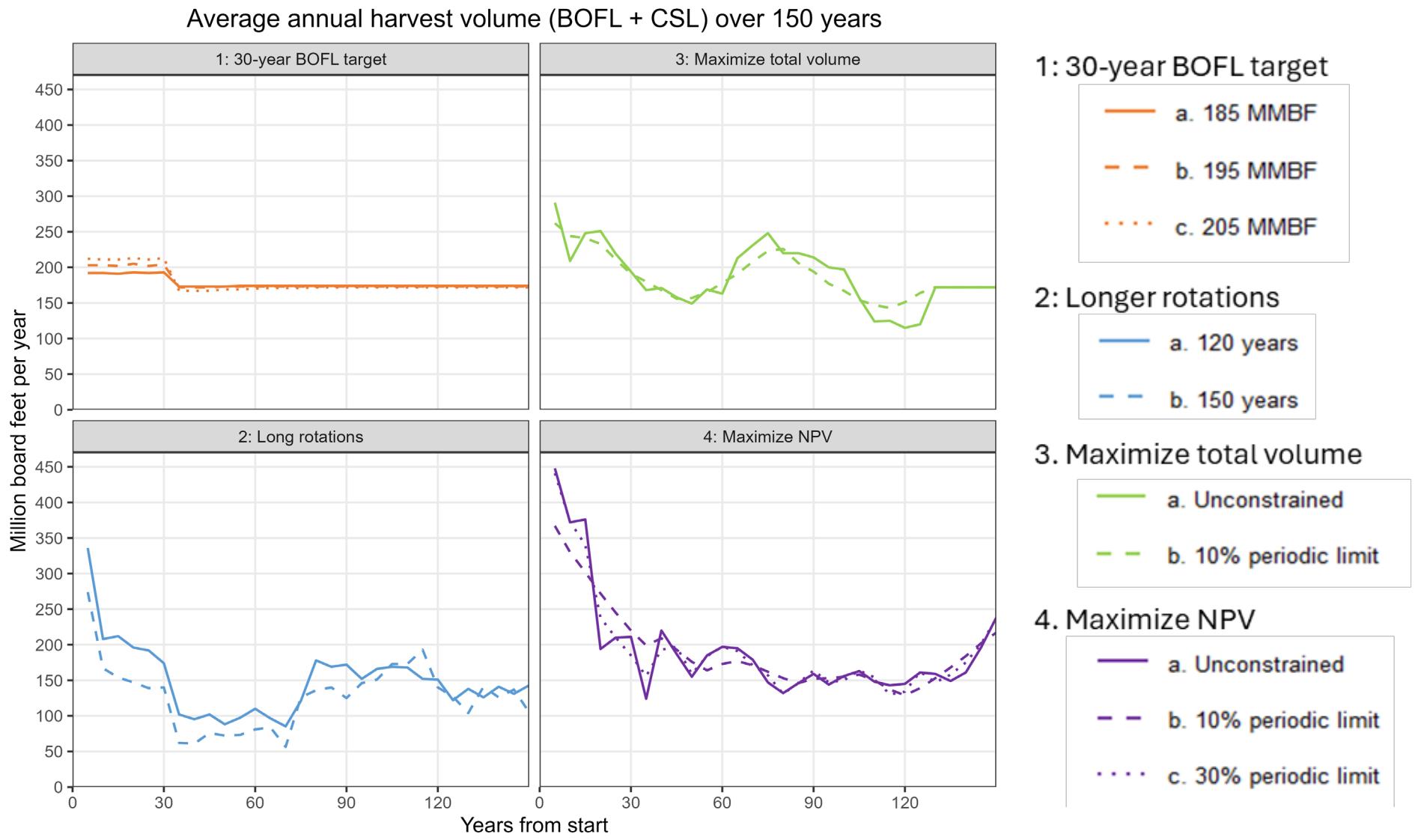


Figure A2: Modeled average annual harvest volume over 150 years. Includes a new scenario 5, “Departure Steps”, added to scenarios from Figure A1.

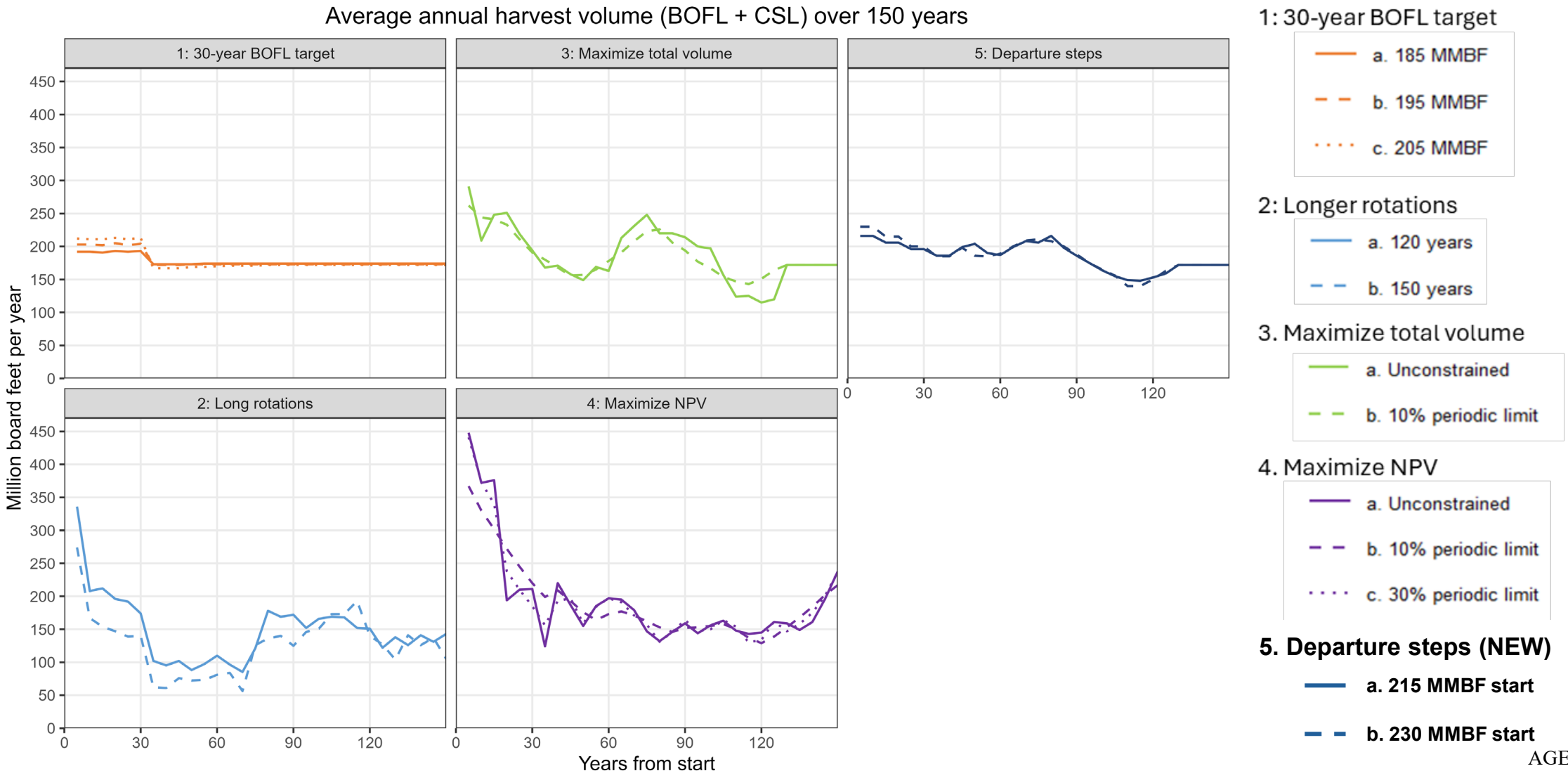


Figure A3: Modeled average annual harvest volume over 150 years for scenarios 1, 3, and 5. Note that y-axis is compressed to highlight differences between scenarios over time.

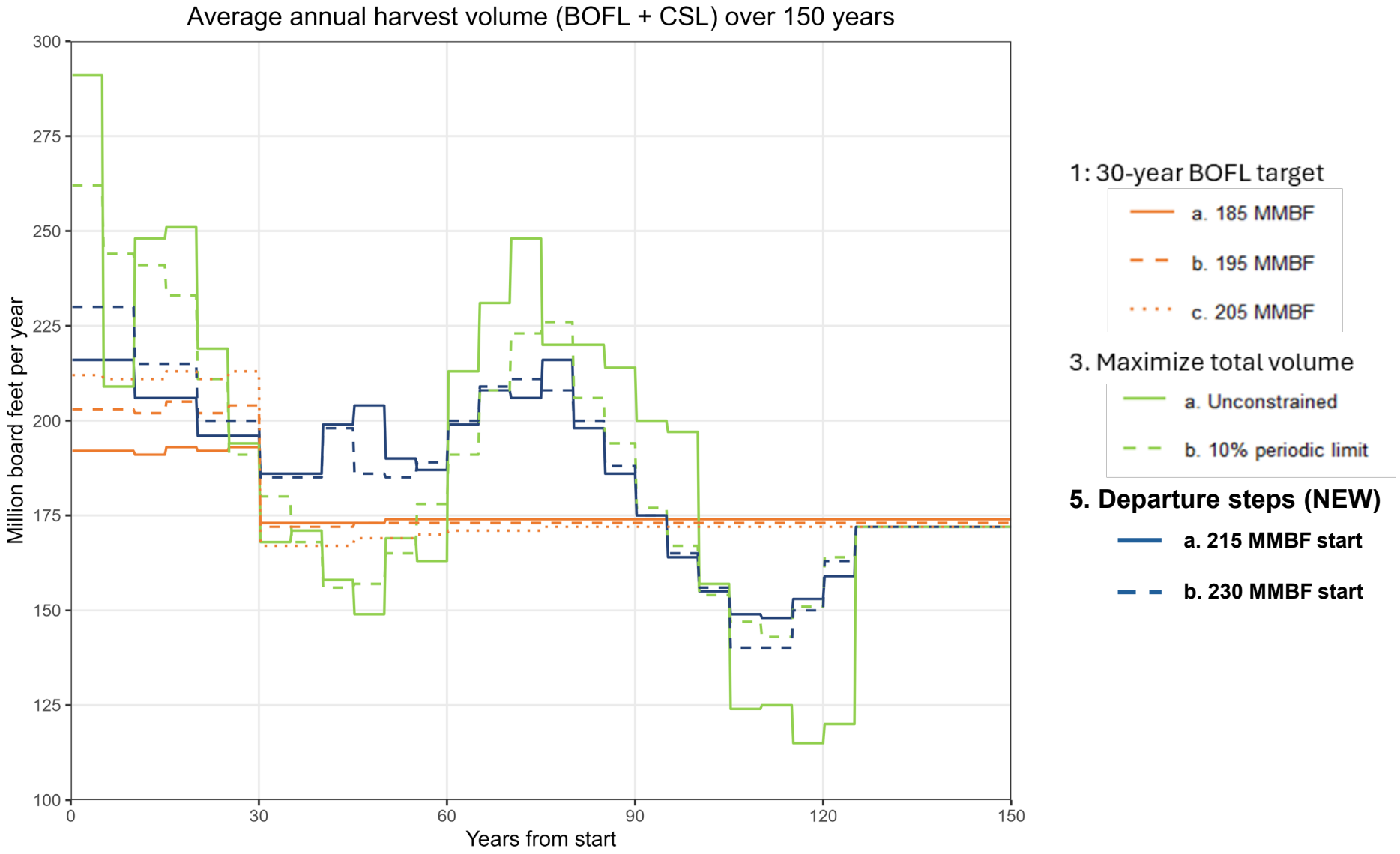


Figure A4: Modeled average annual harvest volume over 70 years for scenarios 1, 3, and 5. Note that y-axis is compressed to highlight differences between scenarios over time.

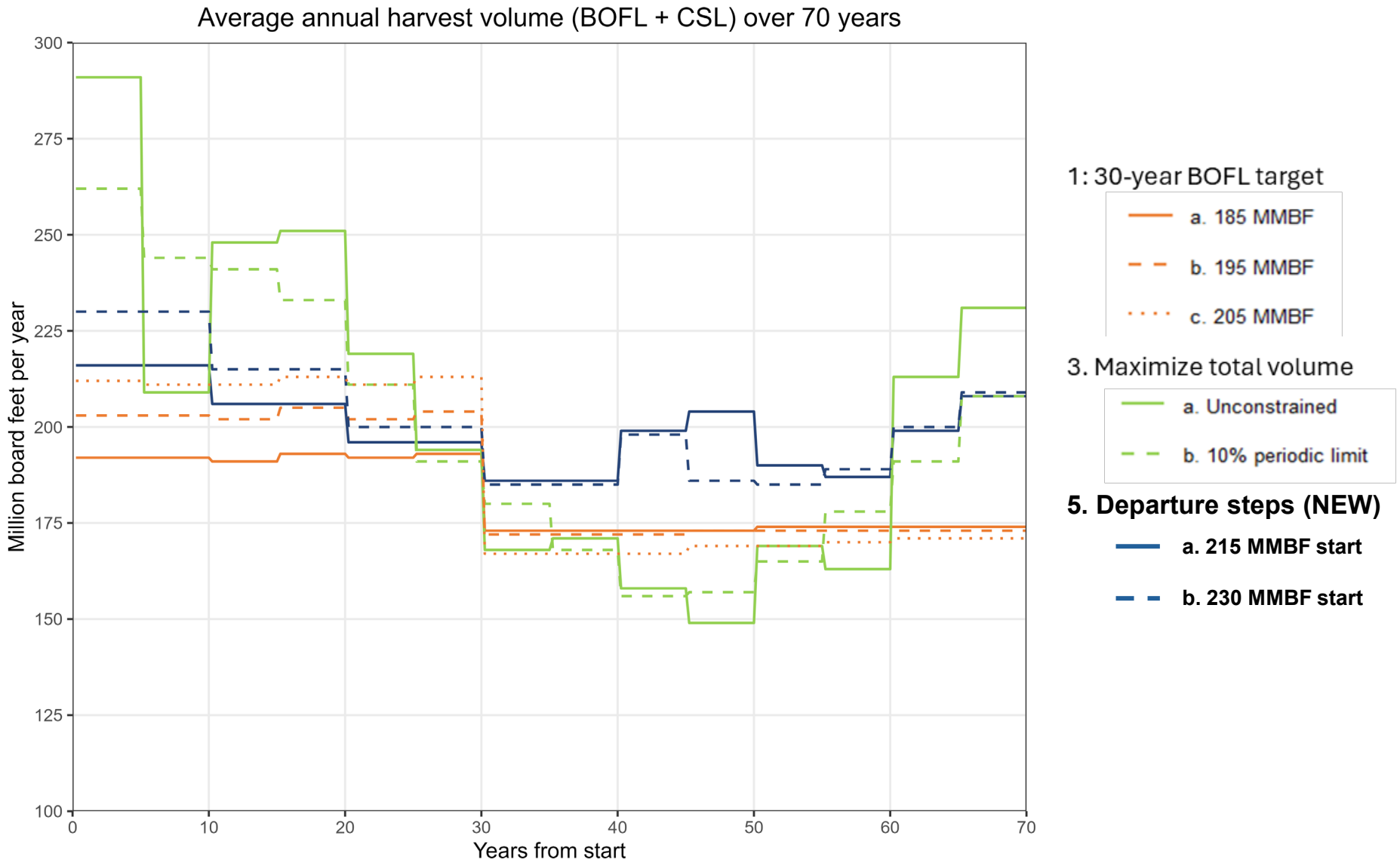


Figure A5: Modeled cumulative harvest volume over 150 years. Includes a new scenario with the scenarios presented at the June 2025 Board of Forestry meeting.

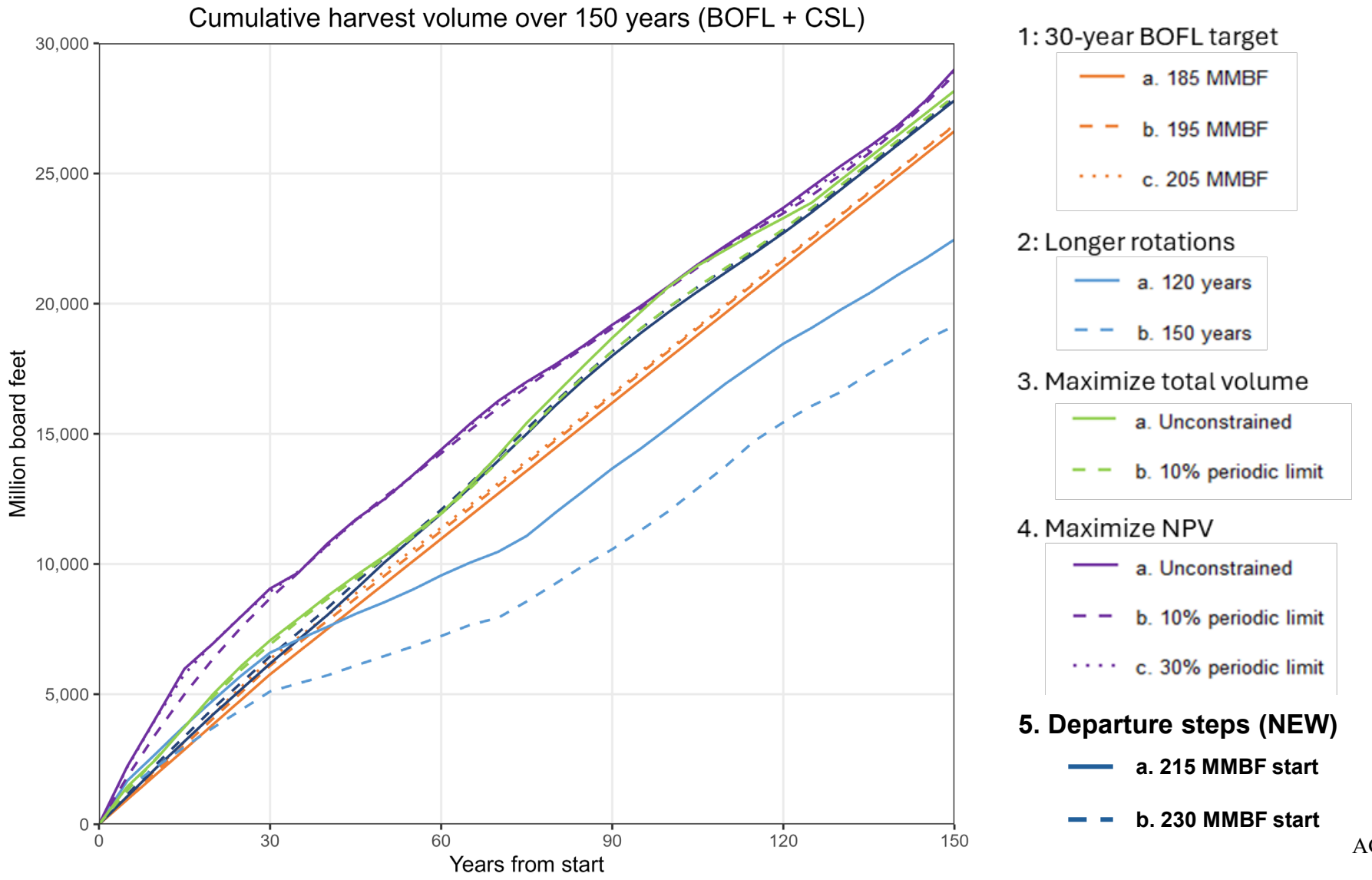


Figure A6: Modeled carbon storage in aboveground live trees over 150 years.

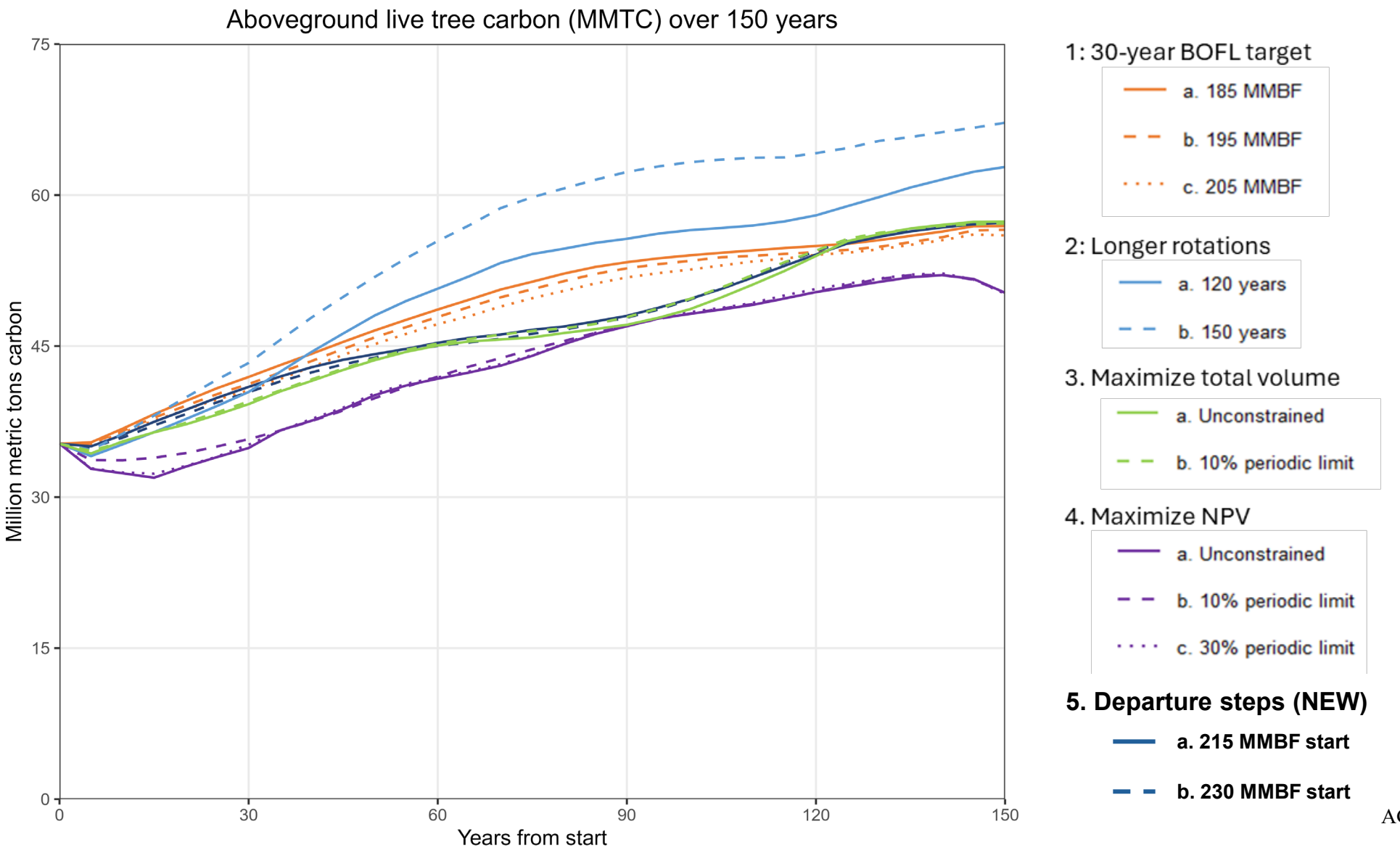
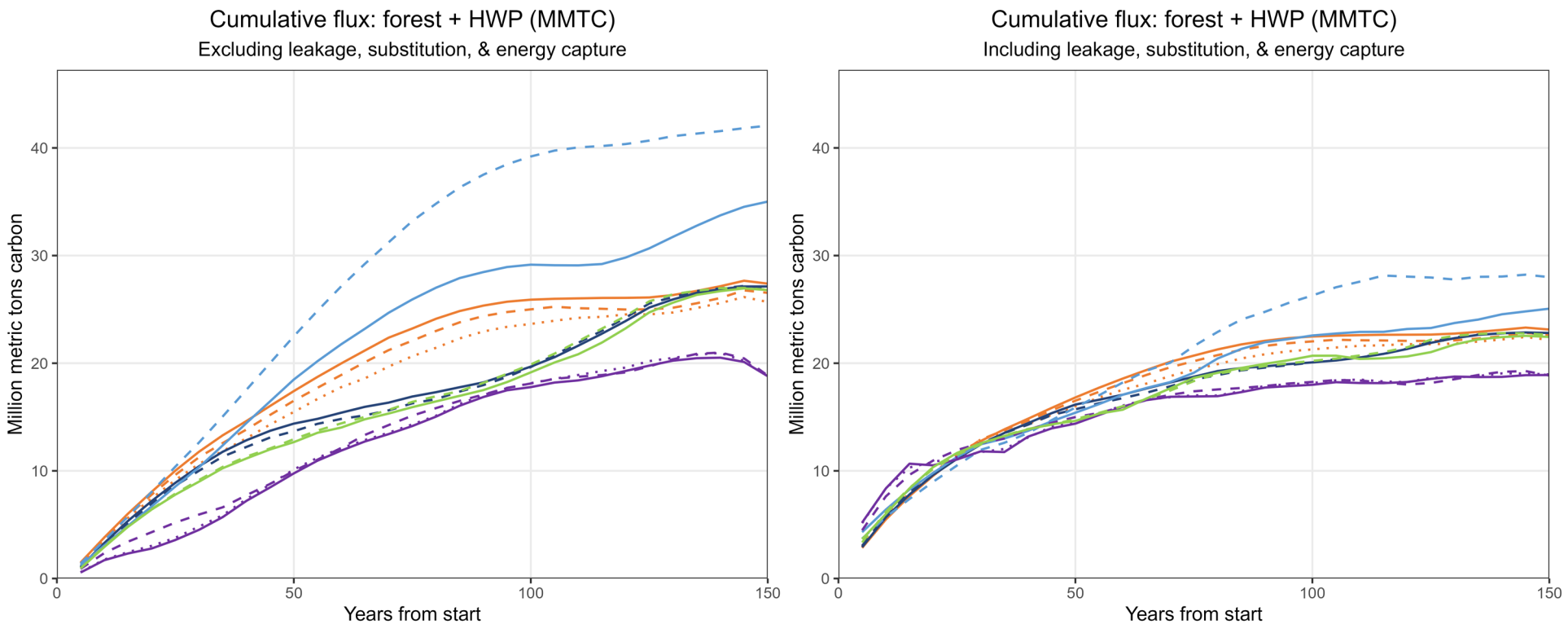


Figure A7: Different assumptions affect modeled carbon sequestration (flux).
Carbon pools include forest (live trees aboveground & belowground) and harvested wood products (HWP) (in use, landfill, & decomposition) over 150 years. Left graph shows results without additional assumptions. Right graph shows same results with half credit for forest carbon due to leakage, double credit to HWP in use due to substitution, and half the emissions from HWP excluded with energy capture.



1: 30-year BOFL target
- a. 185 MMBF
- b. 195 MMBF
- c. 205 MMBF

2: Longer rotations
- a. 120 years
- b. 150 years

3. Maximize total volume
- a. Unconstrained
- b. 10% periodic limit

4. Maximize NPV
- a. Unconstrained
- b. 10% periodic limit
- c. 30% periodic limit

5. Departure steps (NEW)
- **a. 215 MMBF start**
- **b. 230 MMBF start**

Figure A8: Average age of regeneration harvest outside of Habitat Conservation Areas over 70 years for scenarios 1c, 3b, and 5a. Note that y-axis is compressed to highlight differences over time.

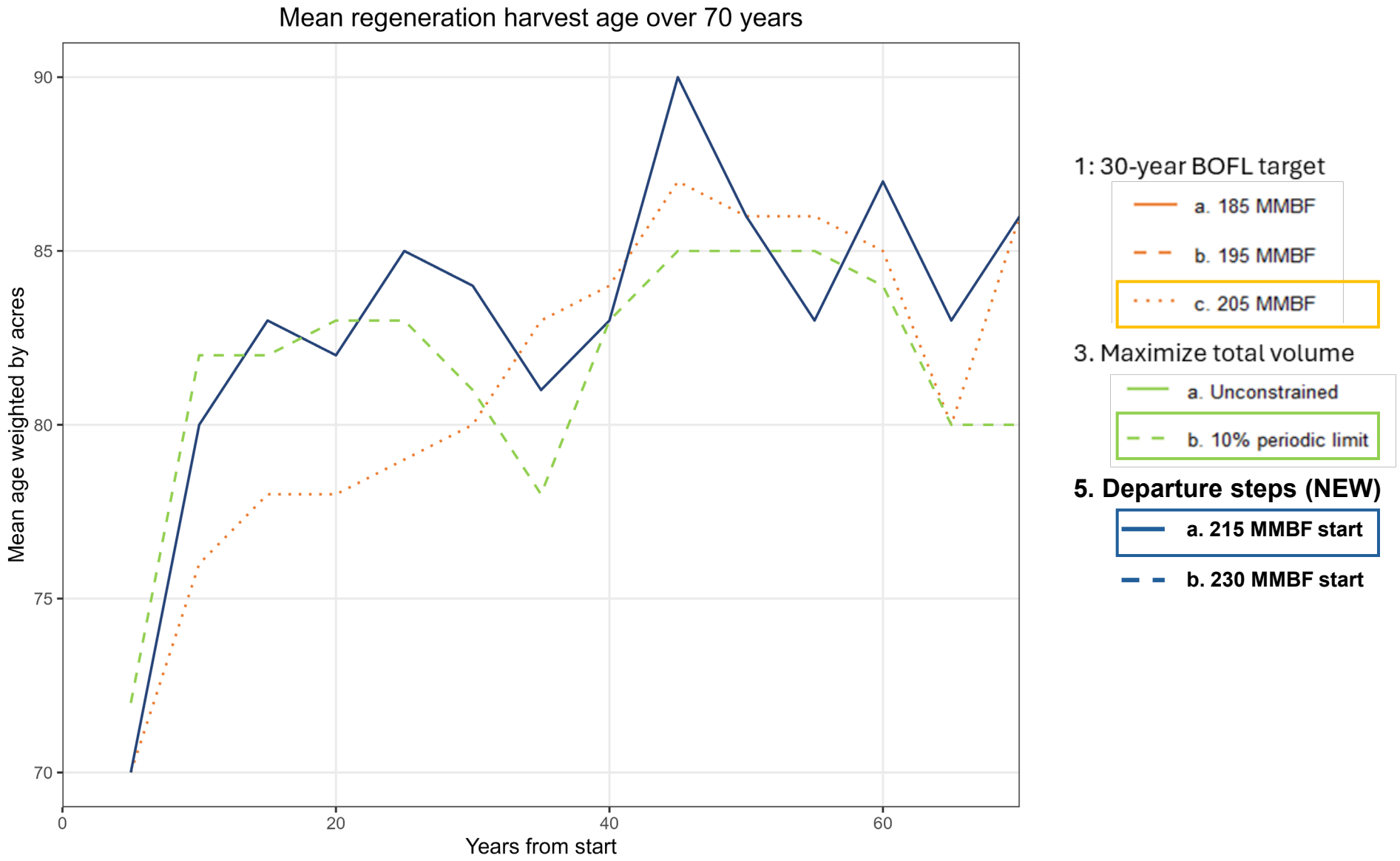
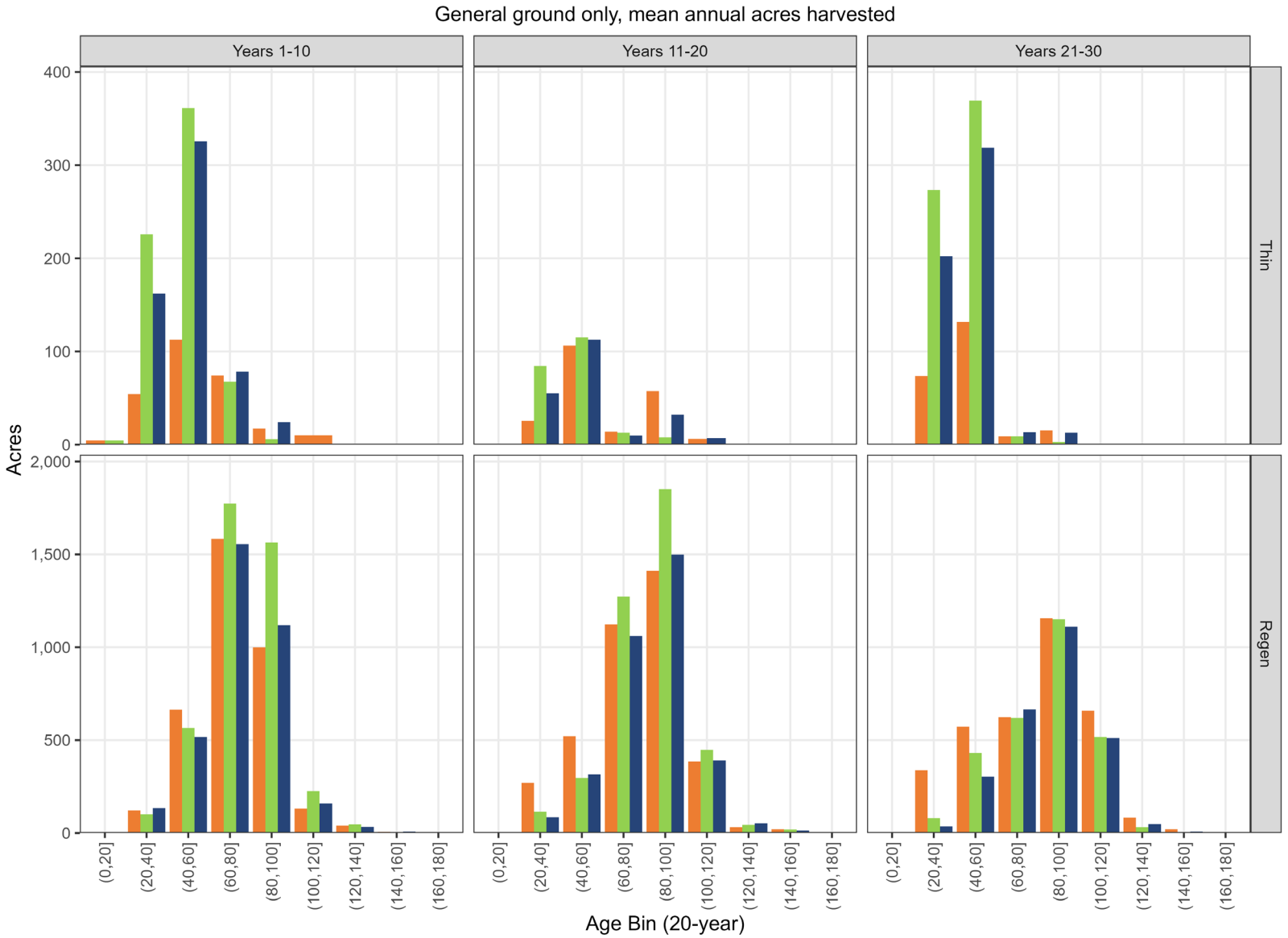


Figure A9: Average annual acres of management by age for regeneration and thinning prescriptions outside of Habitat Conservation Areas over 30 years. Select scenarios 1c, 3b, and 5a only, grouped by 20-year age bins.



1: 30-year BOFL target

- a. 185 MMBF
- b. 195 MMBF
- c. 205 MMBF

3. Maximize total volume

- a. Unconstrained
- b. 10% periodic limit

5. Departure steps (NEW)

- **a. 215 MMBF start**
- **b. 230 MMBF start**

Figure A10: Average Northern spotted owl habitat suitability index inside and outside of HCAs over 150 years. HCAs receive the same management in all scenarios. Select scenarios 1c, 3b, and 5a&b only.

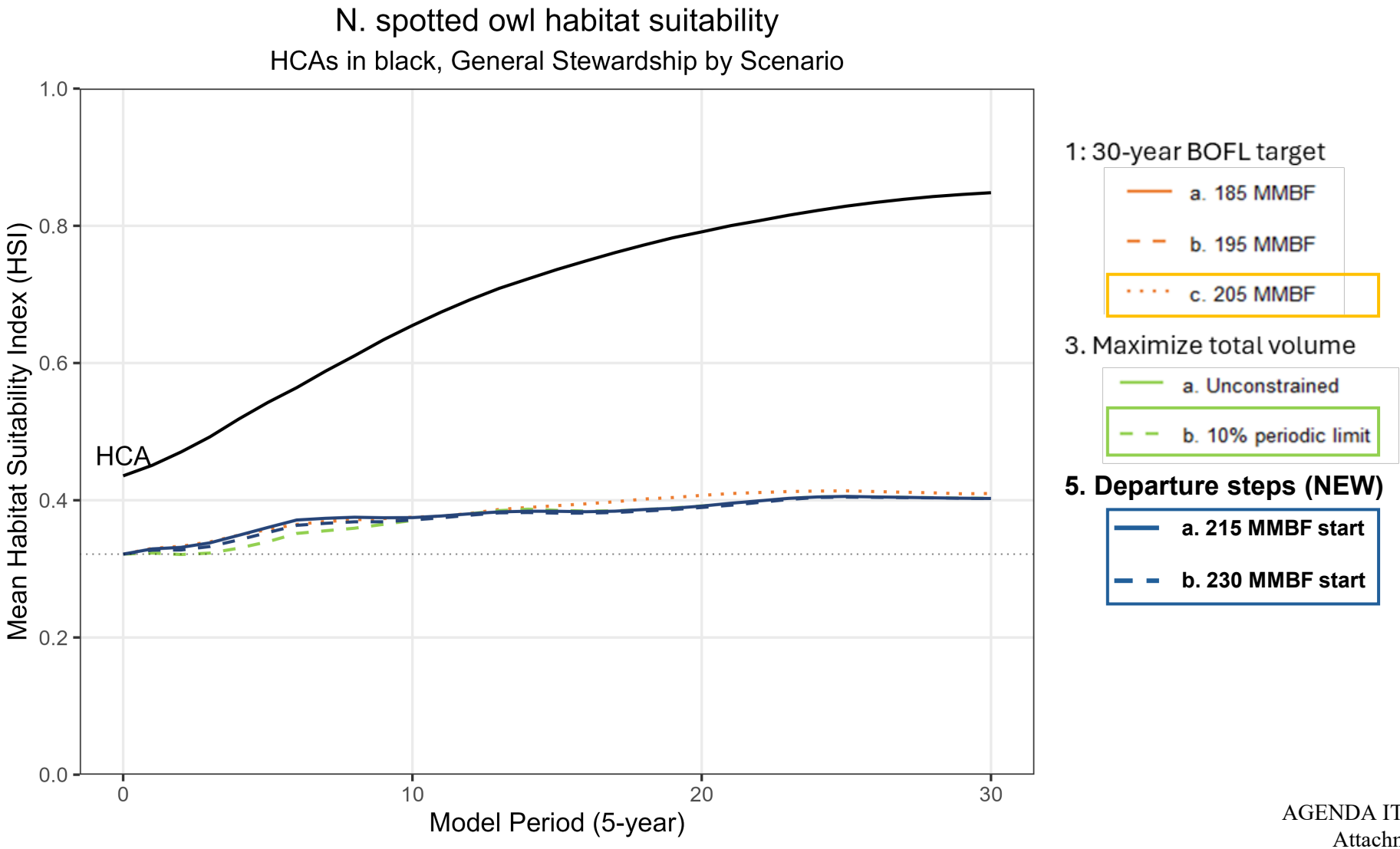


Figure A11: Harvest & Inventory performance measure
Over 10 years, 2.15 BBF +/- 5% of planned harvest volume (gray shading)

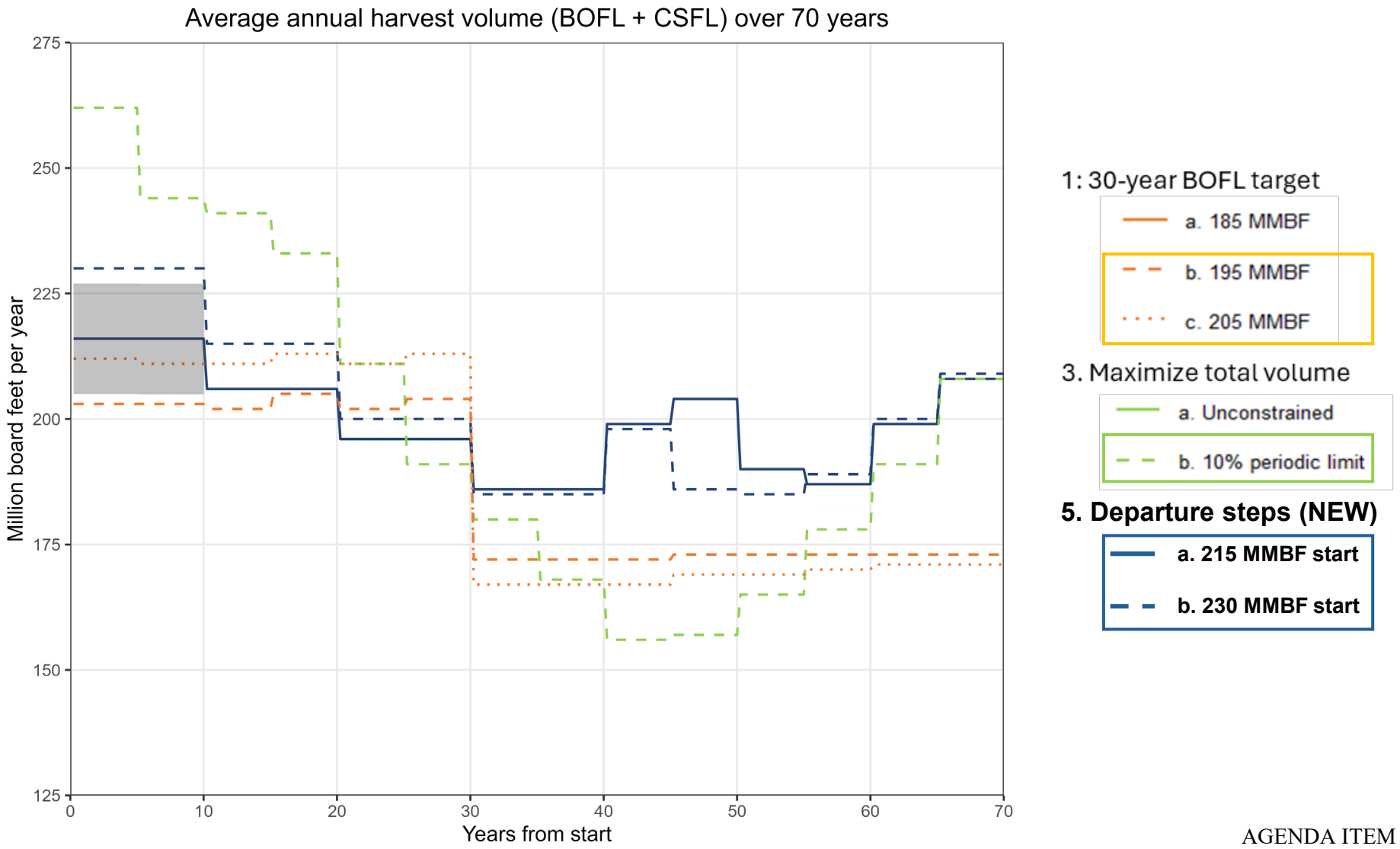
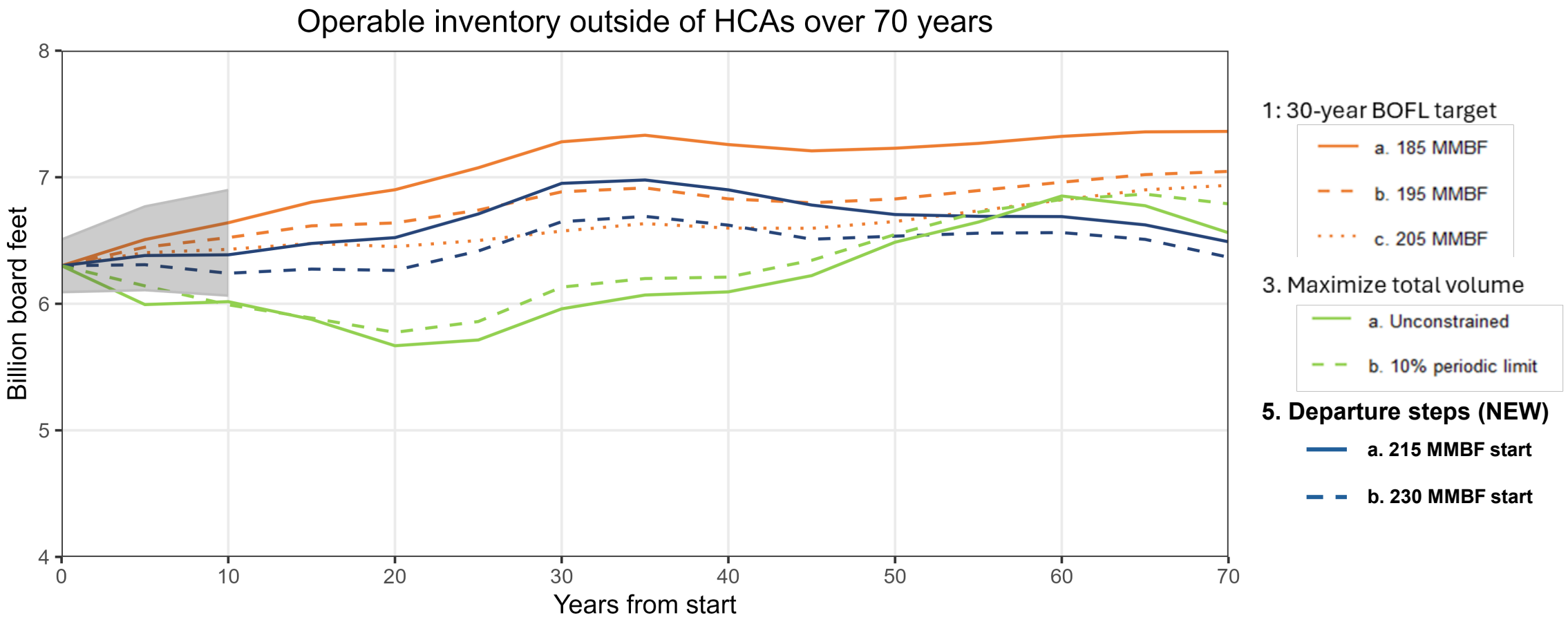
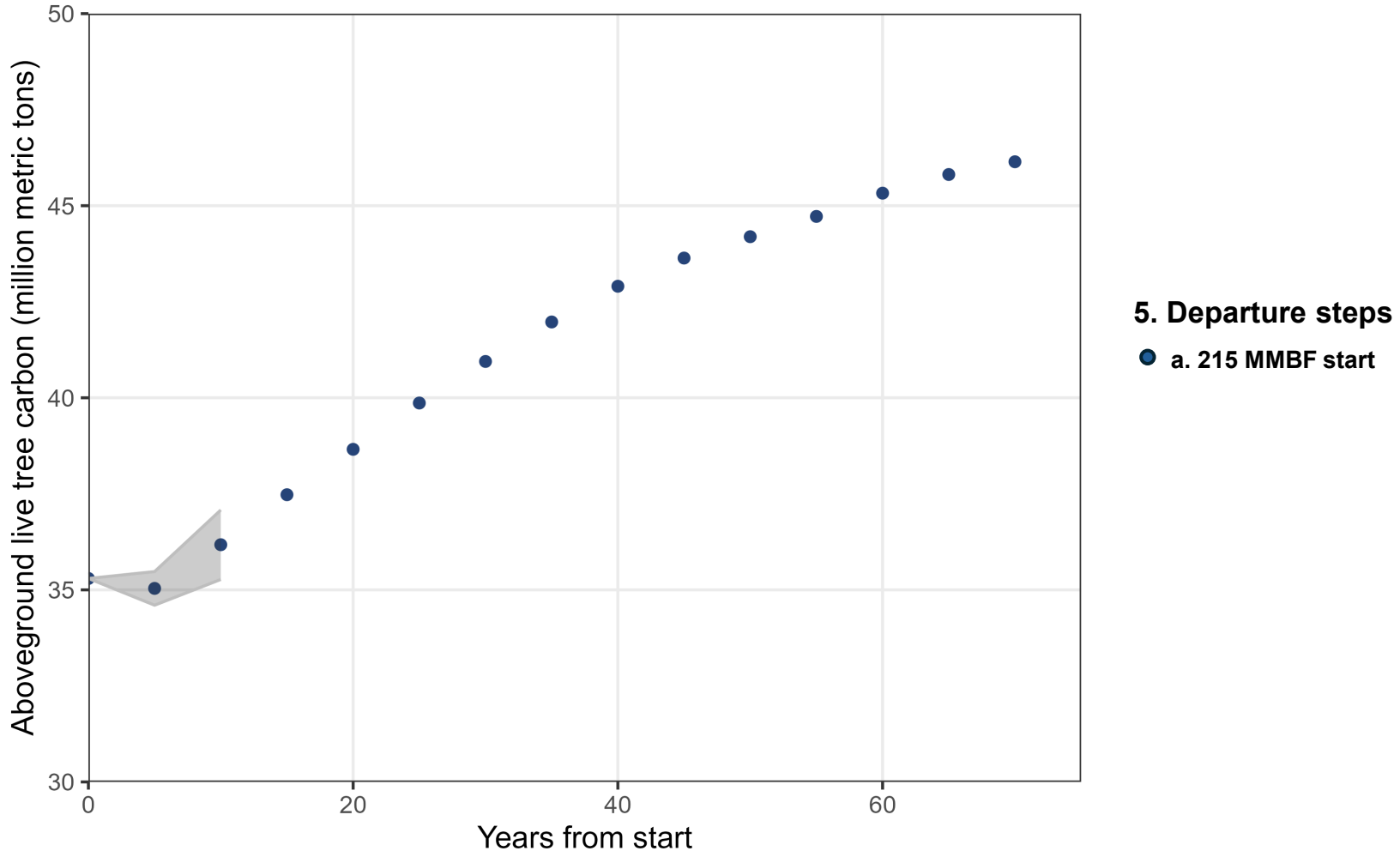


Figure A12: Harvest & Inventory performance measure
In 10 years, merchantable volume outside of HCAs will be stable at 6.39 BBF (range of 6.06 to 6.90 BBF, gray shading)



Range for operable inventory was selected by adding inventory uncertainty (3.3% error) and cumulative harvest volume uncertainty (derived from the +/- 5% range for the decadal target)

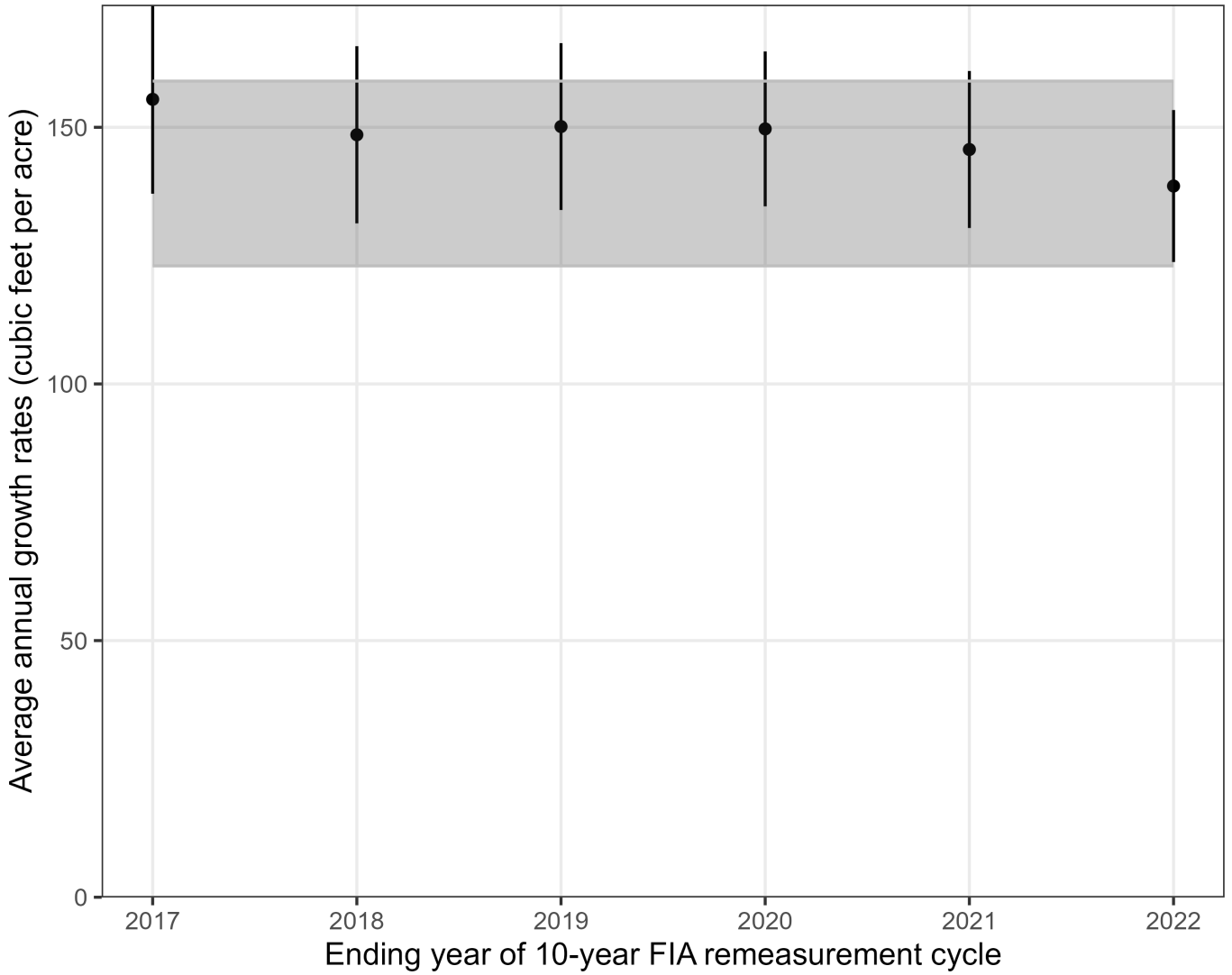
Figure A13: Carbon Sequestration and Storage performance measure
In 10 years, an additional 2.5% (range 0 – 5%, gray shading) million metric tons of carbon will be sequestered in the aboveground live tree pool compared to its current carbon stock. This would equal 0.9 million metric tons of sequestration.



Range for carbon uncertainty was selected based on the cumulative harvest volume uncertainty (derived from the +/- 5% range for the decadal target)

Figure A14: Adaptive Capacity of Forests performance measure Maintain or increase the average annual growth rate of trees remeasured on FIA plots compared to the current estimate

Annual growth could be reported in merchantable volume (this graph), biomass, carbon, or basal area per acre. The growth rate is one component of net change, which also includes recruitment, harvest rates, and mortality.



Current estimate of 141 cubic feet of volume from these 6 years (95% confidence interval of 123-159g)