STAFF REPORT

Agenda Item No.:	15
Work Plan:	State Forests Work Plan
Topic:	State Forests Management
Presentation Title:	Western Oregon State Forests Draft Forest Management Plan Scenarios
Date of Presentation:	June 4, 2025
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CONTEXT

Forest Management Plans (FMP) provide the overarching direction for state forestlands managed by 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 management direction in the FMP meets Greatest Permanent Value (OAR 629-035-0020).

When an FMP is adopted as rule, new Implementation Plans are created to set medium-range management objectives designed to meet long-term FMP goals. Since the draft FMP is a high-level document intended to allow for a broad range of implementation pathways, the Board will consider a broad range of potential scenarios to guide staff towards the Board's desired outcomes for the draft FMP goals. In the fall of 2024, the Board, the Forest Trust Lands Advisory Committee (FTLAC), and Division staff discussed potential scenarios for Division staff to model to demonstrate trade-offs among resource goals. In this meeting, Division staff will share the results of the modeled scenarios (see attachment) for discussion between the Board, FTLAC, and Division staff.

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, and forest stand metrics across the landscape by optimizing management decisions according to model inputs, such as silvicultural practices, goals, and constraints. The resulting forest stand metrics can in turn project a range of Performance Measures, such as carbon storage or habitat suitability for species covered under the proposed Habitat Conservation Plan (HCP).

Scenarios are not specific implementation alternatives that would be adopted as-is. 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 show examples of trade-offs between resources and outcomes under different implementation approaches.

The scenarios, summarized in the table below, approach timber management outside of Habitat Conservation Areas differently than the current approach. All 10 scenario runs were modeled to meet the requirements of the proposed Habitat Conservation Plan. Economic, environmental, and social outcomes of the modeled scenarios are reported in detail in the attached report.

	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

RECOMMENDATION
Information only.

NEXT STEPS
Over the next several months, the Division will:

1. Discuss the scenario tradeoffs with the State Forests Advisory Committee and share their feedback with the Board.
2. Quantify potential Performance Measures based on modeled Scenarios and Board direction.
3. At the September 2025 Board meeting, obtain guidance from the Board for Performance Measure targets or thresholds to inform the development of initial Implementation Plans (currently expected to begin with fiscal year 2028) for the draft FMP.

ATTACHMENTS

(1) Scenario Modeled Outcomes Report

Oregon Department of Forestry Forest Management Plan

Scenario Modeled Outcomes

May 14, 2025

June 23, 2025

Note: This report contains a correction.

Please see the Scope of the Modeling section. The original version of this report incorrectly stated the modeled assumptions changed after model period 14 (year 70), coinciding with the end of the HCP term. This statement has been corrected.

Introduction and Background

Context

In November 2024, the Board of Forestry (Board) directed State Forests Division (Division) staff to develop scenarios selected by the Board and informed by the Forest Trust Lands Advisory Committee (FTLAC). The scenarios selected by the Board encompass a range of different management approaches that would meet long-term goals in the draft Western Oregon State Forest Management Plan (FMP) and fulfill the requirements of the proposed Habitat Conservation Plan (HCP). The modeled results of these scenarios are intended to inform discussions between the Board, FTLAC, and Division staff around trade-offs between forest resource goals.

Scenarios are not specific implementation alternatives that would be adopted as-is. Actual implementation of the FMP is carried out through more specific plans under the authority of the State Forester (OAR 629-035-0030(5)(b)). The intention of modeling these scenarios is to show examples of trade-offs between resources and outcomes under approaches that are different than the Division's current forest management. In particular, the scenarios explore differences in timber management outside of designated Habitat Conservation Areas (HCA) under the proposed HCP. Management of these "General Stewardship" areas were modeled through time based on four scenarios, each with model runs with different parameters. All model runs meet the requirements of the proposed HCP as well as other legal requirements for forest management.

Economic, environmental, and social outcomes of the modeled scenarios are detailed in this report. A report on the socioeconomic impact of the scenarios is forthcoming and will have a more detailed analysis of the local impact of scenarios on employment, recreation, and other factors.

Scope of the Modeling – Draft Western Oregon State Forest Management Plan with Proposed Habitat Conservation Plan

Timeframe. The analysis considers a 150-year planning timeframe (2025-2174) under all scenarios. This is equal to the 70-year permit term for the proposed HCP plus an additional 80 years, which ensures sustainable harvest through the harvest rotation following the permit term. The analysis includes alternative forest management objectives (e.g., spatial and temporal flow of harvest, habitat outcomes) as well as constraints that are held constant throughout the timeframe for each of the scenarios.

The model enacts management and forest growth in 5-year model periods. Important changes in management approaches occur after model period 6 (year 30) when HCA management is no longer performed. Following model period 14 (year 70), the management approaches used in periods 7-14 continued to be modeled (i.e., HCP implementation continues); however, the HCP permit term would have lapsed.

Geography. The analysis covers all Board of Forestry Lands (BOFL) and Common School Forest Lands (CSFL) managed by ODF in six State Forests districts in western Oregon: Astoria, Tillamook, Forest Grove, North Cascade, West Oregon and Western Lane. The included land is referred to as the "plan area." [1]

Constraints. Operational constraints (e.g., Riparian Conservation Areas (RCA), topographically inoperable areas, inner gorges, and roads) are the same across all scenarios. Silvicultural treatments for habitat improvement are permitted within HCAs across all scenarios only for the first 30 years in alignment with the proposed HCP. "Periodic variation" used as a modeling rule, is set to different levels in accordance with the Board selected scenarios to limit changes from one 5-year model period to the next.

Scale. Geographic scale determines the area used to control management objectives. Setting a geographic scale for management objectives provides an opportunity to address concerns about equity, revenue distribution, and regional environmental impacts. All scenarios used the same approach to geographic scale, with harvest scheduling simulated at the georegion scale.

1) Georegion scale. State Forests in the plan area are grouped into two geographic regions, North Coast – Astoria, Forest Grove, and Tillamook Districts and Willamette Valley – North Cascade, West Oregon District and Western Lane Districts (includes Veneta, Coos and Southwest Oregon units).
2) District scale. State Forests are organized by the field office or district out of which they are managed.

Harvest Flow. Harvest flow is the timing and amount of harvest over time within a geographic area. Flow considers the predictability and sustainability of harvest. The Board selected scenarios that approach harvest flow in different ways, but generally, harvest can be described as:

1) Even-flow. Level of harvest that can be consistently sustained during the modeled timeframe with minimal variation. Overall harvest is limited by available inventory and growth over time, but is stable, allowing for a more predictable implementation.
2) Departure: Departures from even-flow seek to achieve management objectives (e.g., maximize total volume harvested) regardless of variation in harvest levels over time.

Methods, Assumptions, and Uncertainties

MODEL SUMMARY

This modeling analysis relies on the outputs of a spatially explicit forest activity model that simulates silvicultural treatments on state forests over time. It projects timber harvest volumes, revenues, and forest stand metrics across the landscape based on the 2021 version of the Division's Stand Level Inventory and a series of model rules and parameters related to harvest objectives, planning unit scale, and acres available for harvest. These inputs are used by the model as it seeks to find harvest solutions that balance the achievement

[1] The plan area is the BOFL and the CSFL in Western Oregon. It does not include lands in the Klamath-Lake district or in eastern Oregon, nor does it include the CSFL in Douglas and Coos counties that are part of the Elliott State Forest.

of a set of goals related to the management scenarios being evaluated. Forest stand metric outputs are used to further estimate resource trade-offs, such as habitat suitability for terrestrial species covered under the proposed HCP, distribution of forest age classes, distribution of harvests within drinking water catchments, and carbon storage.

SCENARIOS

This analysis defines primary goals to model differences in outcomes across four scenarios. The primary purpose of this analysis is to show a range of outcomes possible under the draft FMP with the proposed HCP. Within the plan area, the scenarios differ in their management of forests on General Stewardship areas outside of the designated HCAs.

The four scenarios selected by the Board and modeled across the plan area are:

1) **Scenario 1 – 30-year volume targets**: BOFL specific annual harvest volume targets by georegion with limited district-level annual harvest variability allowed for the first 30 years then reset to a non-declining harvest flow for the remaining years with no district-level harvest variability limits. Volume targets on BOFL[2] for the first 30 years are:
    a. Run a: 185 million board feet (MMBF)
    b. Run b: 195 MMBF
    c. Run c: 205 MMBF
2) **Scenario 2 – Long rotations**: balanced distribution of age classes across managed acres by year 70; with a rotation age outside of HCAs up to:
    a. Run a: 120 years
    b. Run b: 150 years
3) **Scenario 3 – maximize volume**: maximize total cumulative harvest volume over time; with periodic volume variation limited to:
    a. Run a: no limit
    b. Run b: +/- 10%
4) Sc**enario 4 – maximize net present value (NPV)**: maximize NPV using a discount rate of 4%; with periodic harvest volume variation limited to:
    a. Run a: no limit
    b. Run b: +/- 10%
    c. Run c: +/- 30%

[2] For all variations of this scenario, no volume target was established for CSFL; however, forest management activities on CSFL were included in the overall model solution.

Key Assumptions and Uncertainties

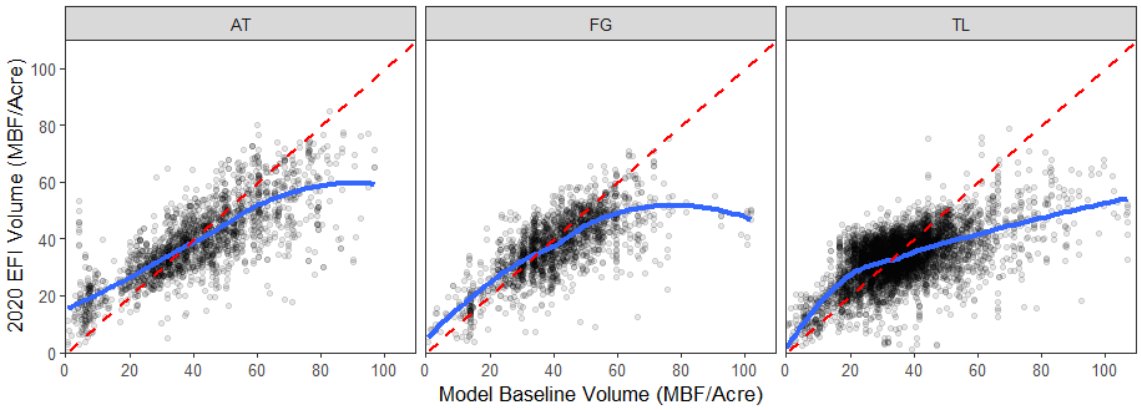
STARTING INVENTORY

The baseline inventory data where the scenarios start modeling forest management is the same as that used in the Modeled Outputs Report presented to the Board and FTLAC in December 2023. The starting inventory was updated for depletions (i.e., completed harvest activities) through the end of 2020. The current modeling effort builds upon the past modeling presented to the Board, and holding inventory steady changes fewer variables that could affect the outcomes. The accuracy of the starting inventory, which is addressed below, can affect the compounding tree growth and available volume through time.

The Division is transitioning from using a legacy Stand Level Inventory (SLI), based on variable-radius plots and imputation of unmeasured stands, to an Enhanced Forest Inventory (EFI), based on fixed-radius plots paired with lidar to model wall-to-wall forest metrics. The model uses tree lists from the 2021 SLI, with growth projected to 2025, as its starting inventory in model period 0. The 2021 SLI version was derived from tree measurements collected between 2003 and 2018, with approximately half collected after 2006. The EFI was not used because coverage was not available for the entire plan area and it does not currently provide tree lists required for the growth and yield components of these scenarios; however, EFI fixed-radius plot measurements were used in portions of the growth model calibration work that was presented to the Board in December of 2023.

We analyzed how closely stand volume estimates align in the SLI and EFI in the three North Coast districts (Astoria, Forest Grove, and Tillamook) surveyed with lidar in 2020. In general, the EFI estimates higher volume than SLI for stands with less volume (**Figure 1**, where blue line is higher than red dotted line), in part because the EFI accounts for green tree retention and small stream buffers in young stands. SLI estimates higher volume than EFI as stand volume increases (**Figure 1**, where blue line is lower than red dotted 1:1 line). In this comparison the starting inventory for the scenarios by district is 4.8%, 6.6%, and 7.5% higher than the EFI volume per acre for Astoria, Forest Grove, and Tillamook, respectively (**Table** 1).

Figure 1: Volume estimates for the 2021 SLI (Model Baseline Volume) versus the 2020 EFI. The blue line is a locally weighted regression to show whether the starting inventory in the scenarios is underestimated (if blue line is above the dashed red line) or overestimated (if blue line is below the dashed red line) relative to the 2020 EFI volume estimates. Each dot is a stand, with data filtered to remove stands <10 acres in size or stand age < 10 years old. Each plot is from one district: AT = Astoria, FG = Forest Grove, TL = Tillamook.



The above figure is summarized as the total percent error across all stands between the EFI and SLI with the mean absolute error (MAE) giving the expected difference (+/-) for any single stand in this comparison (**Table 1**). Even though inventory volume estimates for a single stand vary substantially (shown by the spread of dots in **Figure 1**), over the whole North Coast the variation is less biased (blue line in figure).

Table 1: Average difference between EFI and SLI in the North Coast districts. AT = Astoria, FG = Forest Grove, TL = Tillamook.

District	EFI mean MBF/acre	SLI mean MBF/acre	Percent difference	Stand MAE	Acres
AT	39.4	41.3	4.8%	8.7	75,644
FG	37.0	39.5	6.6%	7.5	67,870
TL	33.0	35.4	7.5%	8.7	119,820

On Astoria and Tillamook Districts, General Stewardship areas show a much smaller difference in merchantable timber volume per acre between SLI and EFI, compared to forests within HCAs. In Forest Grove General Stewardship areas there is less difference in merchantable timber volume between SLI and EFI (**Table 2**).

Table 2: Average difference between EFI and SLI in General Stewardship areas and HCAs in the North Coast districts. AT = Astoria, FG = Forest Grove, TL = Tillamook.

District	Management Area	EFI mean MBF/acre	SLI mean MBF/acre	Percent difference	Stand MAE	Acres
AT	General Stewardship	35.3	35.5	0.5%	7.7	33,616
AT	HCA	42.6	45.9	7.6%	9.5	42,028
FG	General Stewardship	36.3	39.0	7.4%	7.7	36,027
FG	HCA	37.9	40.1	5.8%	7.3	31,843
TL	General Stewardship	31.7	32.5	2.4%	7.2	57,570
TL	HCA	34.1	38.1	11.8%	10.1	62,250

The impact that the described inventory volume differences have on modeled harvest volume is not quantified here. The difference between inventory volume estimates used for timber sale planning and the actual volume harvested from those timber sales is tracked and factored into subsequent planning efforts.

THINNING

The models differed from typical planning by aggressively thinning stands as soon as they were eligible based on stand density targets. In implementation, thinning would be more evenly distributed across time by increasing options to delay thinning. This model behavior is most apparent in HCA management, where the majority of the thinning permitted in the first 30 years is enacted in the first 5-year model period. (see HCA Management section below) All scenario outcomes were affected similarly by thinning in HCAs being front-loaded.

The silvicultural pathways for thinning were limited in the model to a single commercial entry and age-capped at 55 years old. Scenario 2, with longer rotations, would be better modeled with multiple entries and later-aged thinning prescriptions. Growth and yield pathways based on ODF data were not sufficient to model these approaches. This has the effect of limiting modeled harvest volume outcomes from Scenario 2, where additional volume could be realized from additional thinning in mature stands.

HCA MANAGEMENT

The overarching management objective inside HCAs is to increase the quality and quantity of habitat for terrestrial species covered by the HCP. Habitat restoration and improvement activities inside the HCAs were set to be the same across all four scenarios in the model since harvest volume is not an objective, but rather a byproduct, of these habitat restoration or improvement activities.

Under the HCP, up to 45,000 acres of healthy conifer can be thinned and up to 30,000 acres combined of hardwood and Swiss needle cast affected stands can be treated inside the HCAs within the first 30 years of the

HCP permit term. The model thinned approximately 33,000 acres and treated around 26,000 acres of Swiss needle cast and hardwood stands during the first 30 years. The model accomplished a high proportion of thinning acres within the first period of allowed management inside the HCAs because of the way thinning was targeted in the model. In implementation, healthy conifer thinning along with restoration of Swiss needle cast and hardwood stands would follow the pace and scale guidelines within the proposed HCP and would be spread throughout the 30 years.

Silvicultural treatments within HCAs will be complex, using spatial arrangements of variable density thinning, no harvest areas, and small openings within healthy conifer stands to increase the quality and quantity of habitat for terrestrial covered species over time. Prescriptions will vary based on age, species mix, and current stand and site conditions. It was not feasible to model detailed treatments accurately within the scope of this analysis, so modeled silvicultural prescriptions inside the HCAs are more generic and simplistic than they will be when implemented. The model applies a moderate thinning prescription to all healthy conifer thinning retaining a residual stand density index (SDI) of 35%.

Similarly, the model uses a generic clearcut prescription with two leave trees per acre to treat Swiss needle cast and hardwood stands. Depending on the starting condition, species mix, site conditions and location, ODF will use a more complex suite of clearcuts, retention cuts, and very heavy thinning to treat these stands. For instance, if a hardwood stand contains no conifer trees, it may get a traditional clearcut. If a hardwood stand includes a mix of conifer trees, the conifer trees will be retained within the stand while the hardwoods are removed. Swiss needle cast stand prescriptions can vary similarly.

FEASIBILITY

Division staff and the project team reviewed resource outcomes across the scenarios. This report presents a high-level view of the outcomes, with the goal of presenting the relative difference between scenarios assuming they are carried out according to the model's solution. These comparisons are appropriate to inform "policy-level" decisions by the Board, but the actual implementation would vary compared to the model's solution.

A field review of the scenarios by foresters and resource specialists evaluated the feasibility and trade-offs of carrying out the management approaches in the scenarios based on the modeled outcomes. District-scale and more detailed spatial information of management in the scenarios was provided for internal review but is not presented in this report of scenario differences. District staff assessed internal workforce changes, infrastructure updates, reforestation capacity, and local resources that would be required to achieve the outcomes in the scenarios.

In general, ODF capacity needs for workforce, infrastructure, or reforestation tracks the harvest volume over time in the scenarios. Large fluctuations in harvest volume in a short period of time or in its apportionment among districts are difficult to plan for and carry out. Scenario 1, with consistent volume targets, was considered more feasible to implement logistically, although with abrupt staffing changes needed at the 30-year reset to non-declining flow. Scenario 1 was the only scenario with a district-level even-flow constraint. Adding flow constraints for smaller geographic scales in the model results in lower overall harvest volume if the model is tasked with maximizing volume, but may be desirable for planning continuity by ODF, counties, or local communities.

Staff noted that this high-level modeling does not account for additional constraints that arise during the planning process, such as new geotechnical concern areas, updated stream locations, or cultural resource concerns. Such features may result in localized impacts to harvest volumes or other objectives but should not affect the overall achievement of goals.

The model doesn't consider effects from climate change, pests, pathogens, drought, disturbance, or economic or regulatory changes.

Specific concerns for resource outcomes are noted in the sections below on Harvest Volume, Harvest Rotation Age, HCA Management, Habitat Quality and Quantity, and Recreation.

Economic Outcomes

Harvest Volume

The four scenarios vary in timber management and harvest approaches outside of the HCAs. Harvest volumes come from both inside and outside of HCAs for the first 30 years (**Table 3**) and outside of the HCAs for the remainder of the permit term (**Table 4**) All scenarios harvest more annual volume on average in the first 30 years compared to years 31-70. Relative differences in harvest flow among runs within each scenario were smaller than relative differences among scenarios.

Detailed figures with tables of each model period's BOFL and CSFL harvest level for the first 70 years, including by individual county for BOFL, are included in Appendix A.

Table 3: Average annual harvest volume (in million board feet) for the first 30 years of the modeled scenarios.

Scenario	Run	Total	BOFL	CSFL
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 volume	a. Unconstrained	235	228	7.9
3: Maximize 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

Table 4: Average annual harvest volume (in million board feet) for years 31-70 of the modeled scenarios.

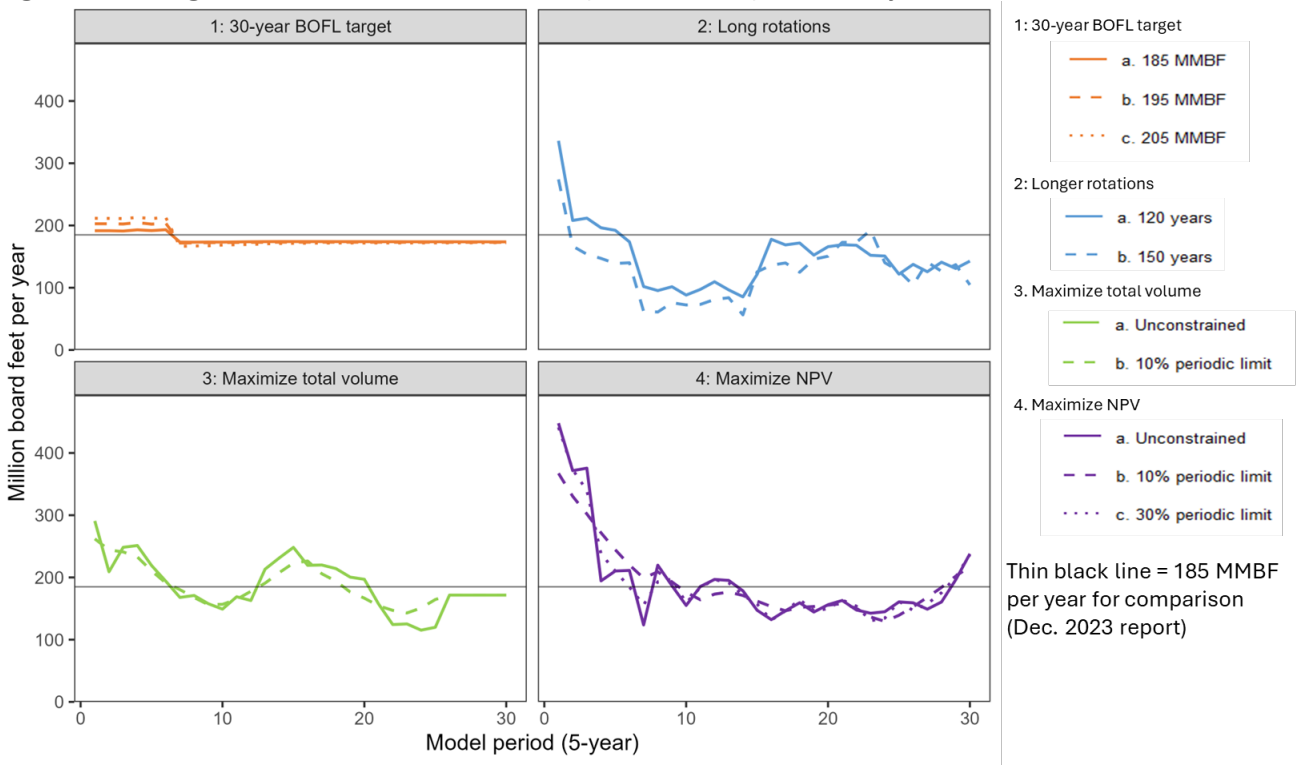
Scenario	Run	Total	BOFL	CSFL
1: 30-year BOFL target	a. 185 MMBF	174	168	5.7
1: 30-year BOFL target	b. 195 MMBF	173	166	6.2
1: 30-year BOFL target	c. 205 MMBF	169	162	6.3

2: Long rotations	a. 120 years	97	94	2.9
2: Long rotations	b. 150 years	71	68	2.5
3: Maximize volume	a. Unconstrained	178	172	5.5
3: Maximize 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

The variability in the flow of volume through time is apparent across the whole 150-year scope of the modeling (**Figure 2**). The horizontal black line on the graphs is set at 185 MMBF which represents the district scale even flow harvest level scenario from the December 2023 report for comparison. Scenario 1, by design, has the smallest amount of departure from even-flow compared to the other three scenarios. The major ebbs and flows through time in Scenarios 2 and 3 reflect the age distribution of stands available for harvest, coupled with the end of harvests within HCAs after 30 years (6 model periods). Scenario 4 front-loads harvests to achieve its financial objective compared to the other scenarios. Part of the spike in harvest during the first period of Scenarios 2, 3, and 4 is also due to the model's thinning harvests not being delayed if stands met the density requirements for treatment.

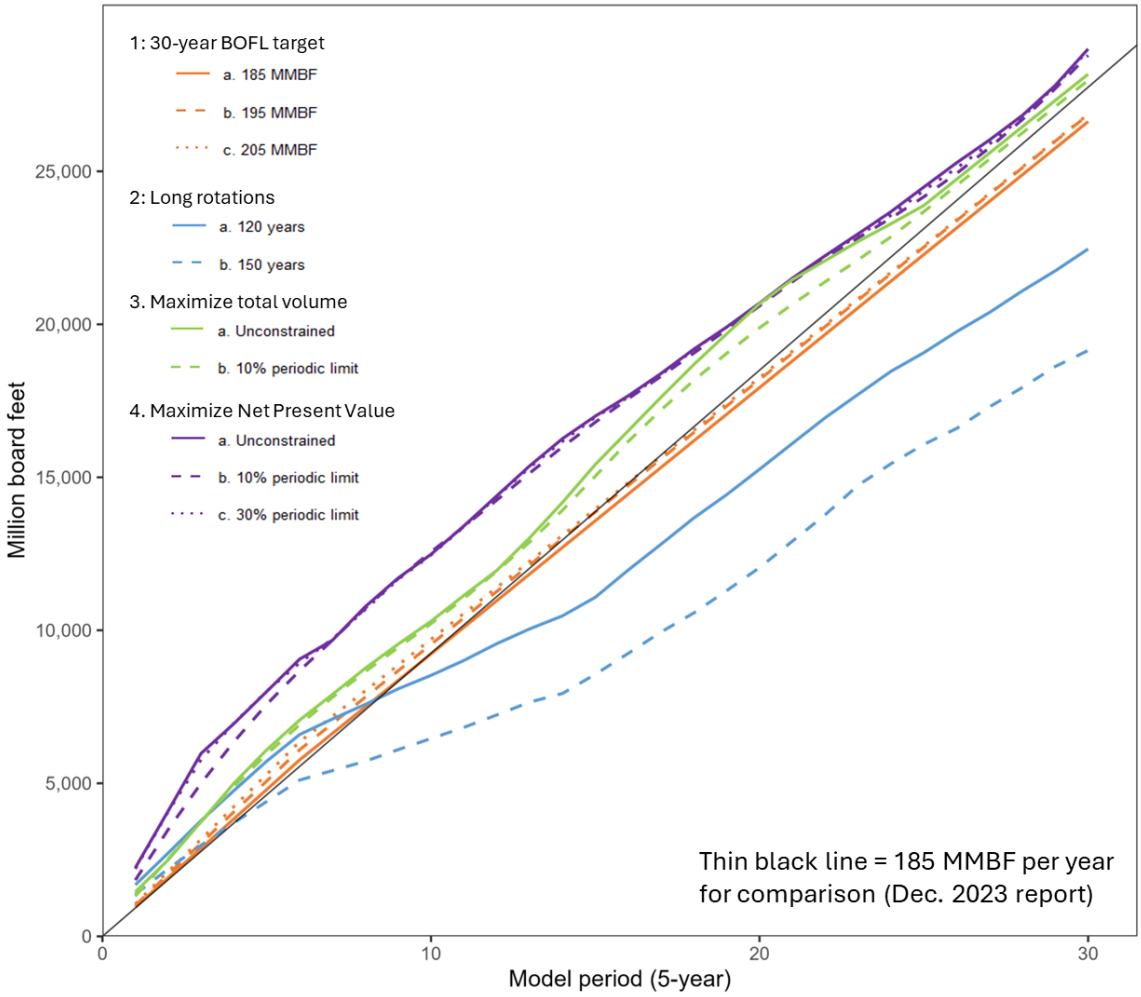
Within each scenario, the different model runs had different constraints or rules (see legend, **Figure 2**). In Scenarios 3 and 4 the limits on periodic variation in harvests over time smoothed some of the peaks and valleys in harvest flow compared to the unconstrained model runs.

Figure 2: Average annual total harvest volume (BOFL + CSFL) over 150 years.



Over the entire 150-year model timeframe (**Figure 3**), maximizing for NPV (Scenario 4) led to the highest harvest levels, with maximizing for total harvest (Scenario 3) a close second. 30-year volume targets (Scenario 1) had the third highest harvest levels, close to the even flow 185 MMBF harvest level. Long rotations (Scenario 2) had the lowest harvest levels. It should be noted that there are fewer harvest entries represented in stands as they become older under Scenario 2, so some potential volume may not be reflected; however, it is unlikely that additional potential volume would fill the gap between this and the other scenarios.

Figure 3: Cumulative total harvest volume (BOFL + CSFL) over 150 years.



Harvest flow among districts is more variable, as scenarios were modeled with most objectives set at the georegion scale (**Figure 4**). Only Scenario 1 had an even-flow constraint (for the first 30 years at the district-level).

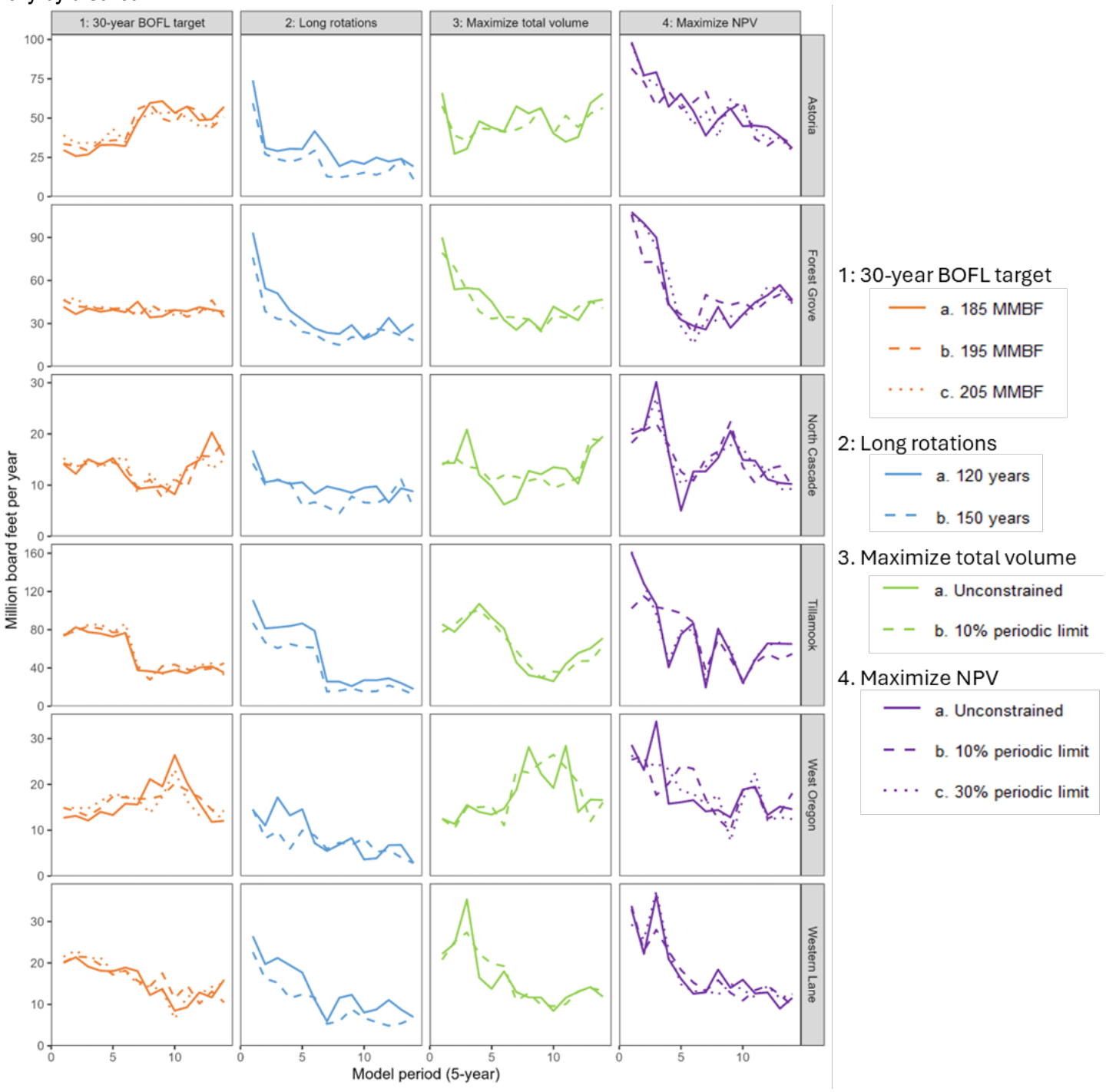
Feasibility. Staff expressed concerns that the peak harvest levels at the beginning of Scenarios 2 and 4 would likely be limited by the Division's capacity and the pool of local contractors.

There was some concern that these harvest levels would be limited by green-up constraints, in which adjacent clearcuts cannot occur until young trees reach a free-to-grow height. The model does not account for the

flexibility in harvest timing resulting from ODF's 3-year timber sale contract duration, so green-up is modeled with optimistic timing assumptions about when harvests occur and planting commences (i.e., within a one year time frame).

District staff also expressed concerns regarding the feasibility of the acreage assigned by the types of harvest (thinning or clearcut). Part of this may stem from the model's aggressive timing of thinning described in the Key Assumptions and Uncertainties section. The model's allocation of harvest prescriptions differs from ODF's planning process which takes into consideration detailed on-the-ground observations and current stand conditions.

Figure 4: District-level average annual total harvest volume (BOFL + CSFL) over 70 years. Note that y-axis scales vary by district.



Net Revenue

The variation in harvest volume between scenarios is the main driver of revenue differences. However, the distribution of revenue from harvests varies by the land under management and harvest costs. Total net revenue in the model includes both BOFL and CSFL and is calculated by removing logging costs, road maintenance, and transportation costs from the estimated pond value. This resulted in an average range of stumpages from $409 - $429 per mbf across the scenarios. The total net revenue does not remove reforestation costs as those costs are borne by the ODF and Common School Fund (CSF) shares of the net revenue. Each year, 63.75 percent of the total net annual harvest revenue from BOFL is distributed to the counties. The remaining 36.25 percent of the total net annual harvest revenue from BOFL is retained by ODF for management of those lands. Net revenue to ODF and CSF is the same as the total net revenue calculation described above with the additional removal of reforestation costs. Revenue dollars, log prices, and other costs in the modeling are inflation-adjusted to June 2022.

Similar to the presentation of harvest volume above, average annual net revenue is divided to show the difference between the first 30 years (**Table 5**) and years 31-70 (**Table 6**) for the scenarios. A broader view of the full 150 year model timeframe is shown for the average annual net revenue (**Figure 5)** and cumulative net revenue (**Figure 6**). The feasibility of meeting these modeled revenues is addressed in the discussion of staff input regarding implementation in the Harvest Volume section above.

Detailed figures with tables of each model period's BOFL and CSFL net revenue for the first 70 years, including by individual county for BOFL, are included in Appendix A.

Table 5: Average annual net revenue (in inflation-adjusted million dollars) distributed to counties, CSF, and ODF for the first 30 years. Distributions to counties, CSF, and ODF may not add up to the total net revenue due to rounding.

Scenario	Run	Total net revenue	Counties	CSF	ODF
1: 30-year BOFL target	a. 185 MMBF	80.8	49.9	2.4	28.4
1: 30-year BOFL target	b. 195 MMBF	85.8	53.1	2.5	30.2
1: 30-year BOFL target	c. 205 MMBF	89.6	55.6	2.4	31.6
2: Long rotations	a. 120 years	92.6	57.4	2.5	32.6
2: Long rotations	b. 150 years	71.0	44.1	1.9	25.1
3: Maximize volume	a. Unconstrained	100.4	62.2	2.8	35.4
3: Maximize volume	b. 10% periodic limit	98.0	60.6	2.9	34.5
4: Maximize NPV	a. Unconstrained	131.9	81.9	3.5	46.6
4: Maximize NPV	b. 10% periodic limit	125.9	78.0	3.6	44.3
4: Maximize NPV	c. 30% periodic limit	130.2	80.8	3.5	45.9

Table 6: Average annual net revenue (in inflation-adjusted million dollars) distributed to counties, CSF, and ODF for the years 31-70. Distributions to counties, CSF, and ODF may not add up to the total net revenue due to rounding.

Scenario	Run	Total net revenue	Counties	CSF	ODF
1: 30-year BOFL target	a. 185 MMBF	78.2	48.5	2.2	27.5
1: 30-year BOFL target	b. 195 MMBF	76.0	46.9	2.4	26.7
1: 30-year BOFL target	c. 205 MMBF	74.1	45.6	2.5	26.0
2: Long rotations	a. 120 years	38.4	23.9	0.9	13.6
2: Long rotations	b. 150 years	27.2	16.8	0.8	9.6
3: Maximize volume	a. Unconstrained	79.0	49.0	2.2	27.9
3: Maximize volume	b. 10% periodic limit	78.0	48.3	2.3	27.4
4: Maximize NPV	a. Unconstrained	75.7	46.8	2.3	26.6
4: Maximize NPV	b. 10% periodic limit	77.2	47.9	2.0	27.2
4: Maximize NPV	c. 30% periodic limit	75.1	46.5	2.2	26.4

Net present value is a common metric used for evaluating the relative financial performance of planning scenarios and uses discounting to estimate the current dollar value of future revenue streams. An estimate of NPV is reported (Table 7) for two timeframes, the 70-year permit term of the proposed HCP, as well as the full 150-year modeling time horizon. For this analysis a real discount rate of 4% was used. Net revenue included in the NPV calculation consisted of the estimated county distributions from BOFL harvest as well as estimated transfers to CSL minus reforestation costs. Scenario 4 was the only scenario that included NPV as a model goal. Consequently, these runs estimate a much higher NPV. This is due to the high level of harvest in the early periods associated with these runs. Additionally, the application of a discount rate in the goal formulas for Scenario 4 results in the model preferring higher value harvest opportunities earlier in the time horizon and future harvest of younger age stands as the financial maturity precedes biological maturity with regard to stand growth.

Table 7: Net present value (millions of dollars) of harvest using an annual discount rate of 4%

Scenario	Run	Years 1-70	Years 1-150
1: 30-year BOFL target	a. 185 MMBF	1,202	1,275
1: 30-year BOFL target	b. 195 MMBF	1,250	1,323
1: 30-year BOFL target	c. 205 MMBF	1,285	1,356
2: Long rotations	a. 120 years	1,258	1,328
2: Long rotations	b. 150 years	960	1,021
3: Maximize volume	a. Unconstrained	1,451	1,535
3: Maximize volume	b. 10% periodic limit	1,426	1,507
4: Maximize NPV	a. Unconstrained	1,913	1,971
4: Maximize NPV	b. 10% periodic limit	1,804	1,864
4: Maximize NPV	c. 30% periodic limit	1,897	1,955

Figure 5: Average annual total net revenue (BOFL + CSFL) over 150 years.

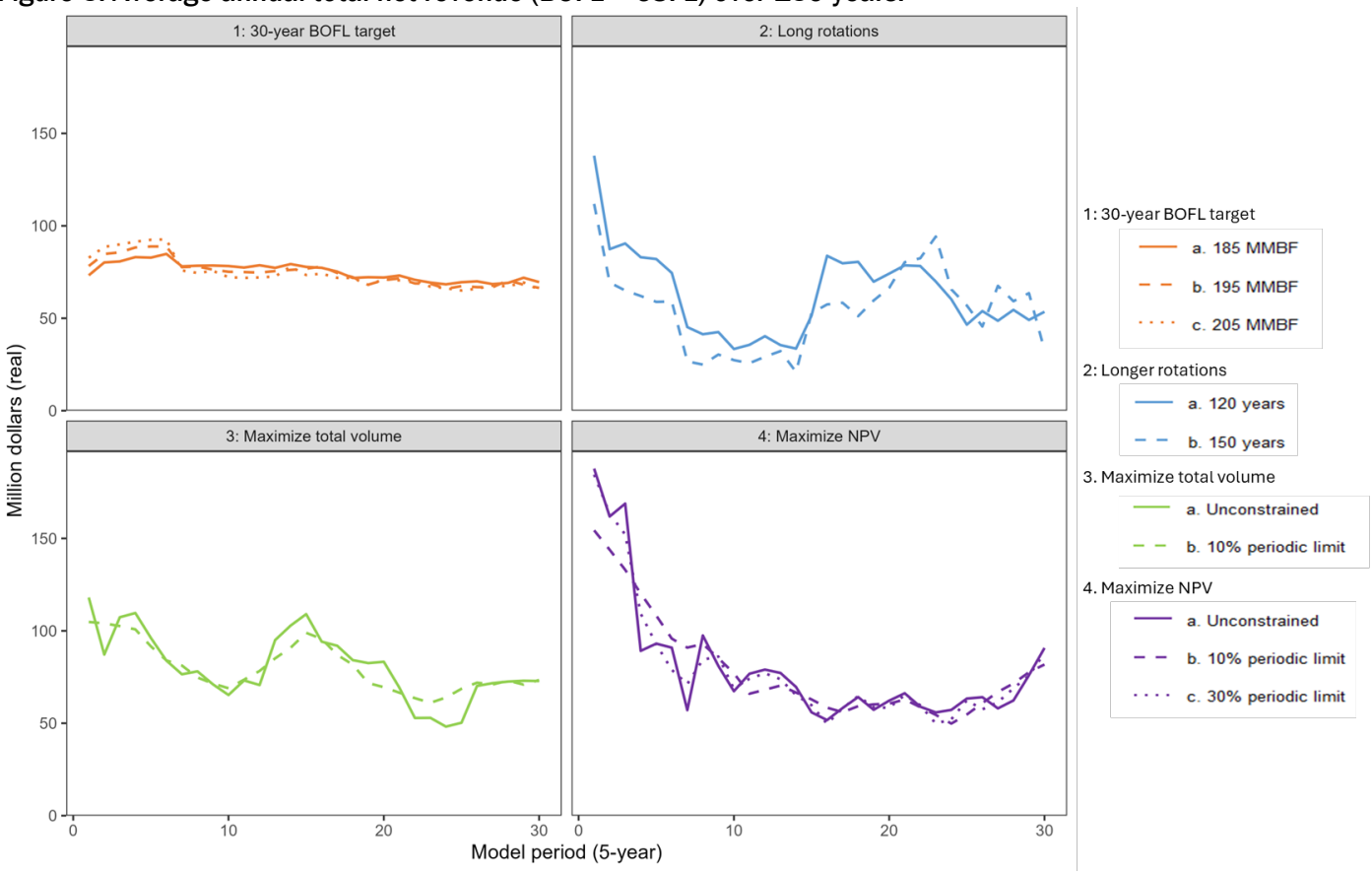
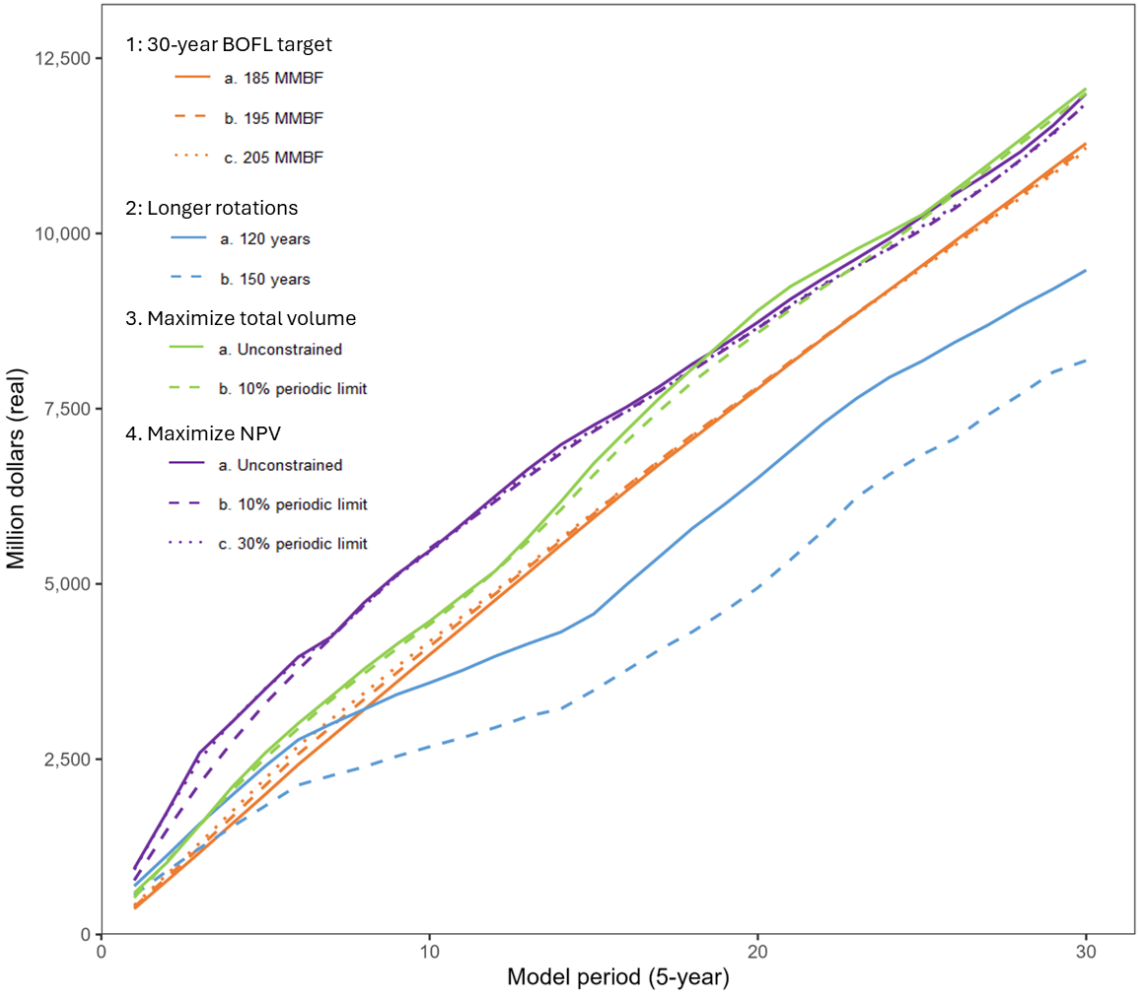


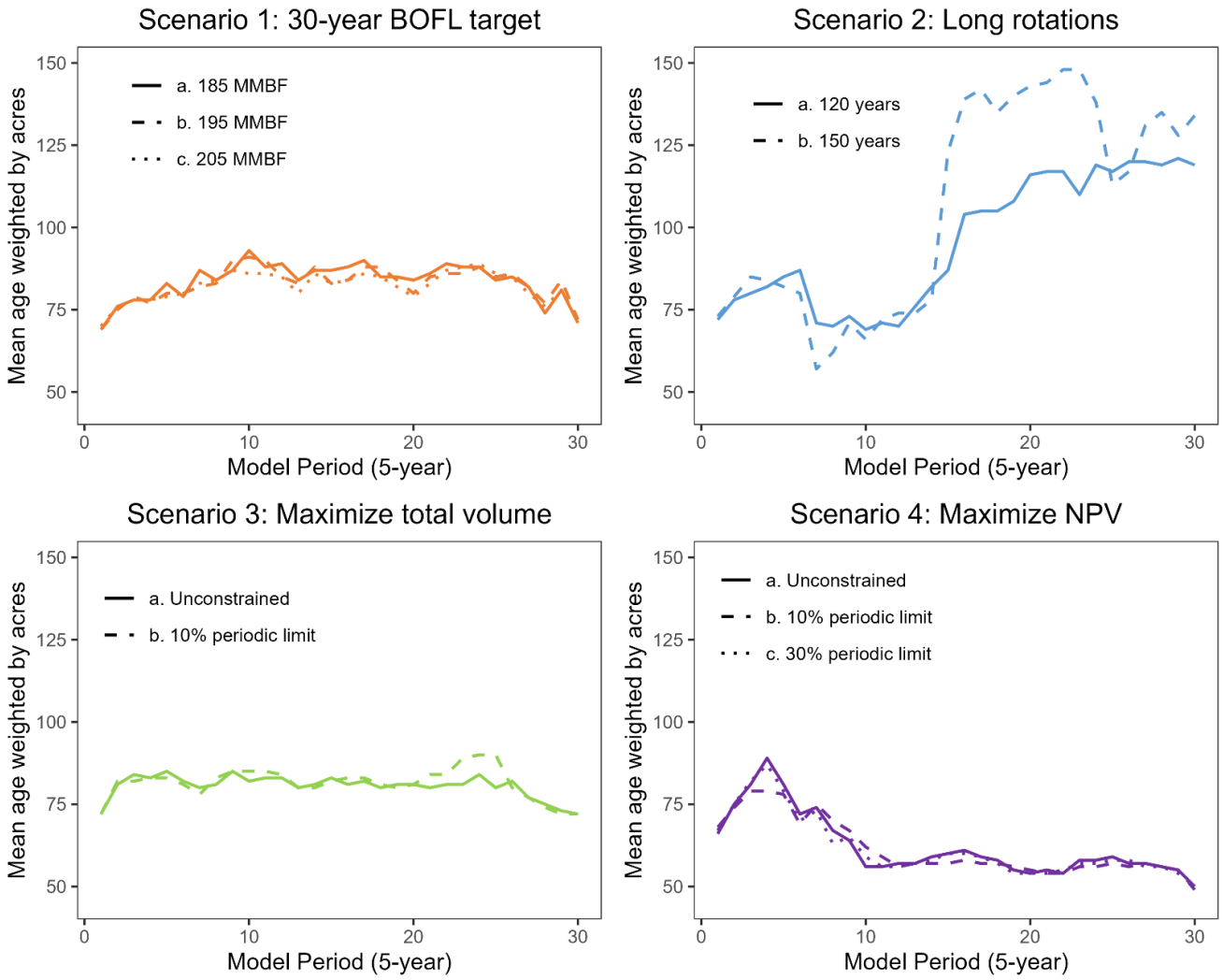
Figure 6: Cumulative total net revenue (BOFL + CSFL) over 150 years.



HARVEST AGE

One tradeoff between the management approaches in the scenarios is the harvest age for stands receiving regeneration (clearcut) harvests (**Figure 7**). Scenario 3 selects stands with an average harvest age of 81-82 years for clearcuts, most similar to the Division's current approach. Scenario 1 model runs have an average harvest age of 77 years for the first 30 years, followed by average harvests at 85-87 years in years 31-70. In comparison, Scenario 2 has a younger harvest age for the first 70 years before the average grows closer to the targeted harvest age of 120 or 150 years. Scenario 4 has an average harvest age of around 75 years for the first 30 years before decreasing to 55-56 years.

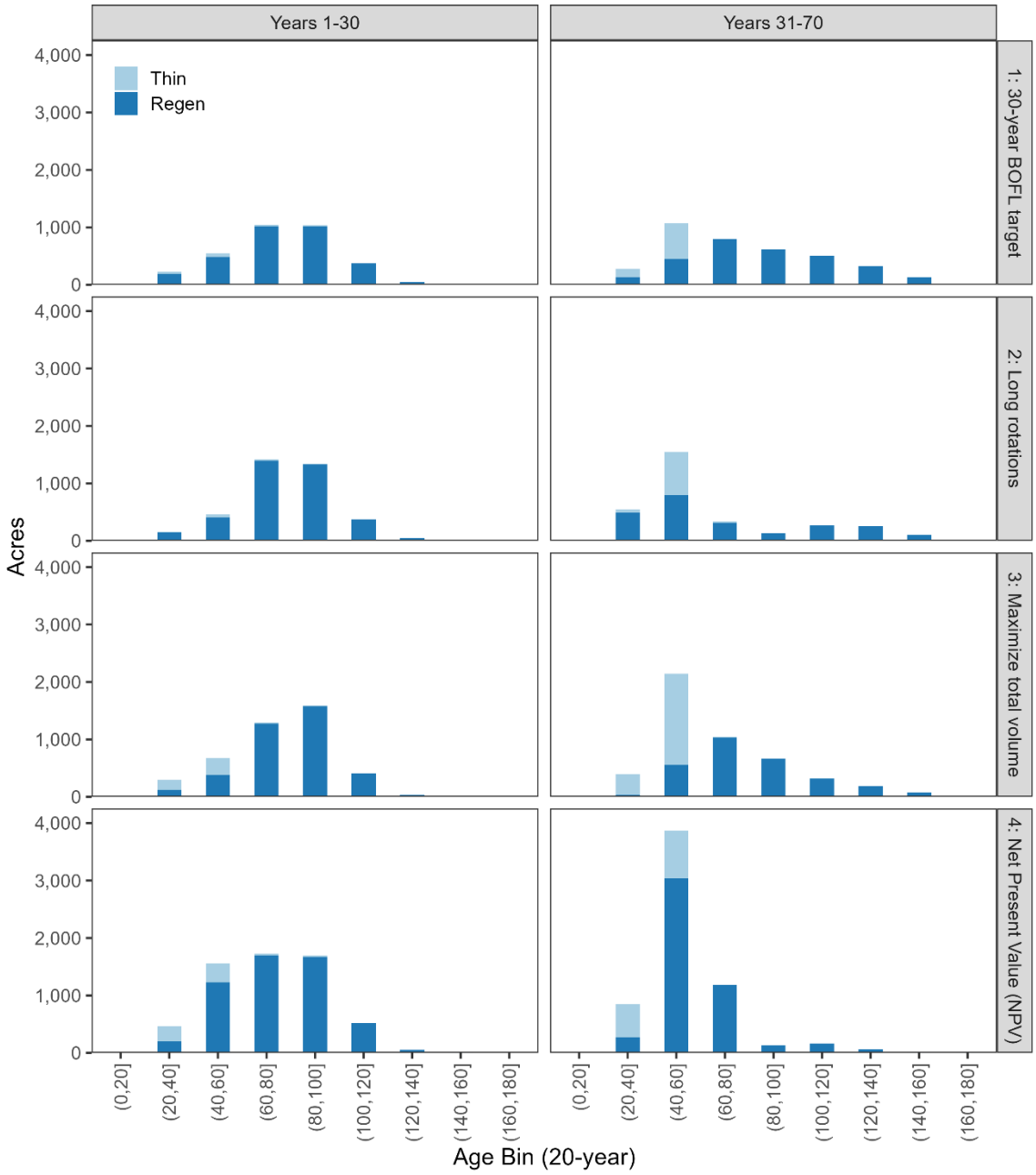
Figure 7: Average stand age in regeneration harvests (clearcuts) over 150 years.



Average harvest age through time does not show the range of forest stands receiving different harvest treatments under these management approaches. The distribution of stand ages with regeneration and thinning treatments is similar in the first 30 years across scenarios, as the limiting factor is the availability of harvestable stands in the current inventory (left column, **Figure 8**). In years 31-70, all scenarios harvest a broad age range of stands, but Scenario 4 harvests a greater proportion of younger stands and fewer older age stands (right column, **Figure 8**).

Feasibility. ODF staff have noted that targeting older stands for harvest is challenging because tree ages would have to be measured to verify that trees aged 175 years or older are not harvested to align with ODF policy. While Scenarios 1, 2, and 3 all have older stands (>140 years old) harvested in years 31-70 (**Figure 8**), this risk would be highest for Scenario 2 when longer rotations ramp up after 70 years (**Figure 7**).

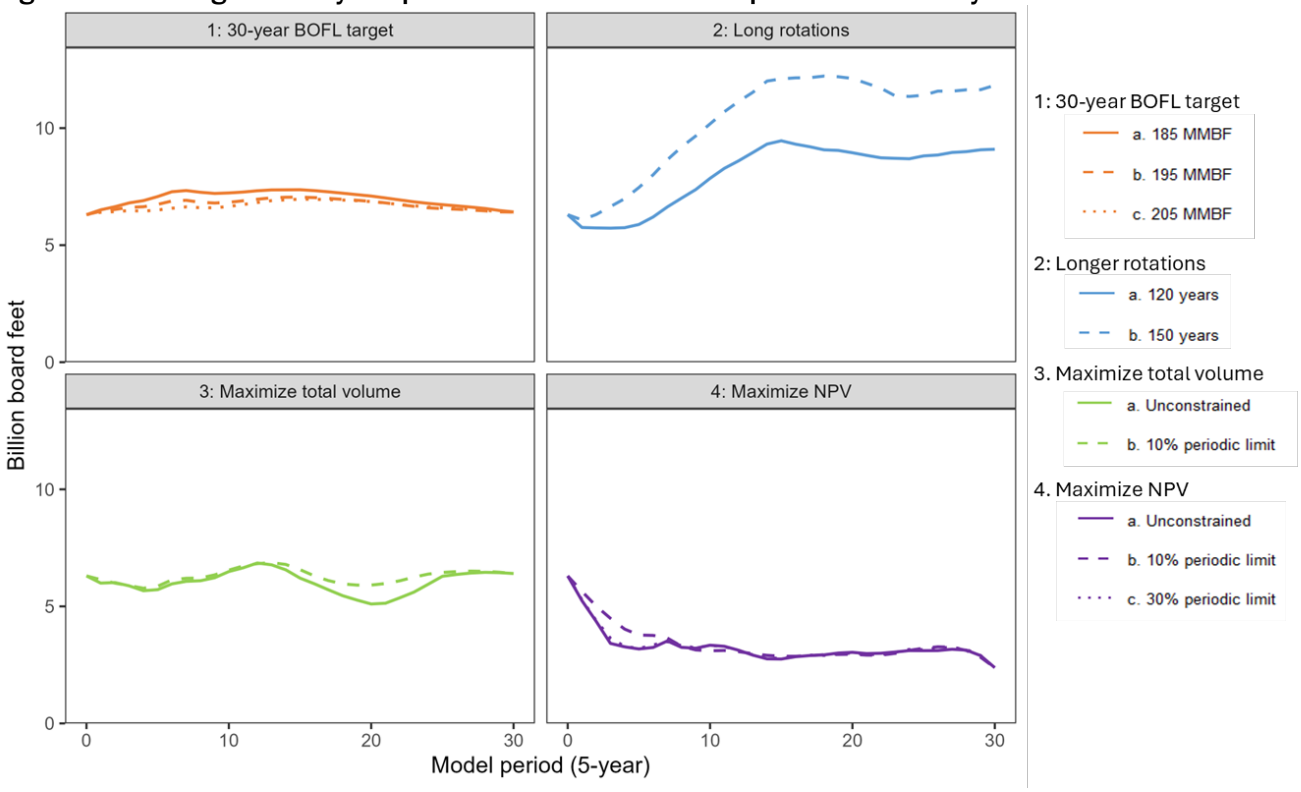
Figure 8: Age distribution of harvest treatments by scenario (run a. only). The mean annual acres receiving thinning or regeneration harvests (light and dark blue, respectively) by the forest stand age (grouped in 20-year age bins) in the General Stewardship areas only. Columns of panels are split by the first 30 years on the left and years 31-70 on the right. Rows of panels represent the labeled scenarios.



Timber Inventory

The scenarios are notably different in the amount of standing inventory in the General Stewardship areas. This is primarily due to the harvest volume over time and the ages of stands harvested, but part of the divergence is due to model rules concerning the amount of available inventory at the end of each scenario ("ending inventory"). Scenarios 1 and 3 were modeled with an ending inventory parameter that ensured that the model selected harvests in accordance with long-term sustainability. This constraint leads these two scenarios to result in an ending inventory similar to the starting inventory. Scenario 2 holds more inventory in the forest for eventual longer rotations, so it did not require an ending inventory parameter. Scenario 4 did not have an ending inventory parameter to allow for an "uncollared" model run, and it holds about 45% of the baseline starting inventory.

Figure 9: Standing inventory in operable General Stewardship areas over 150 years



Environmental Outcomes

HCA and RCA Treatments

Outcomes in the HCAs and RCAs do not vary by scenario. HCP rules governing harvest in HCAs and RCAs were applied the same way for all modeled scenarios and runs. As such, model outcomes from inside the HCAs are the same in each scenario and are not broken out.

The relationship between harvest and environmental benefits is complicated by the fact that the HCP conservation fund would be funded by timber harvest revenue. Consequently, scenarios with lower harvest volumes outside of HCAs would distribute less money for aquatic and terrestrial habitat improvement projects inside RCAs and HCAs. This tradeoff is not represented in the modeled outcomes.

Habitat Quality and Quantity for Covered Species

TERRESTRIAL SPECIES

Northern spotted owls, marbled murrelets, and red tree vole, three covered species in the HCP, are all strongly associated with late-seral conifer forests. The modeled Habitat Suitability Index (HSI) for each of these species includes parameters that characterize attributes of late-seral forests, particularly those that provide key habitat features, such as large trees used by marbled murrelets, northern spotted owls, and red tree voles for nesting. By linking the HSIs to the forest management model, habitat suitability changes were assessed throughout the modeled timeframe. In accordance with the proposed HCP, suitable habitat gains and depletions due to conservation and harvest are accounted for. This process ensures that the minimum habitat commitments reflected in the proposed HCP biological goals and objectives are achieved in all scenarios.

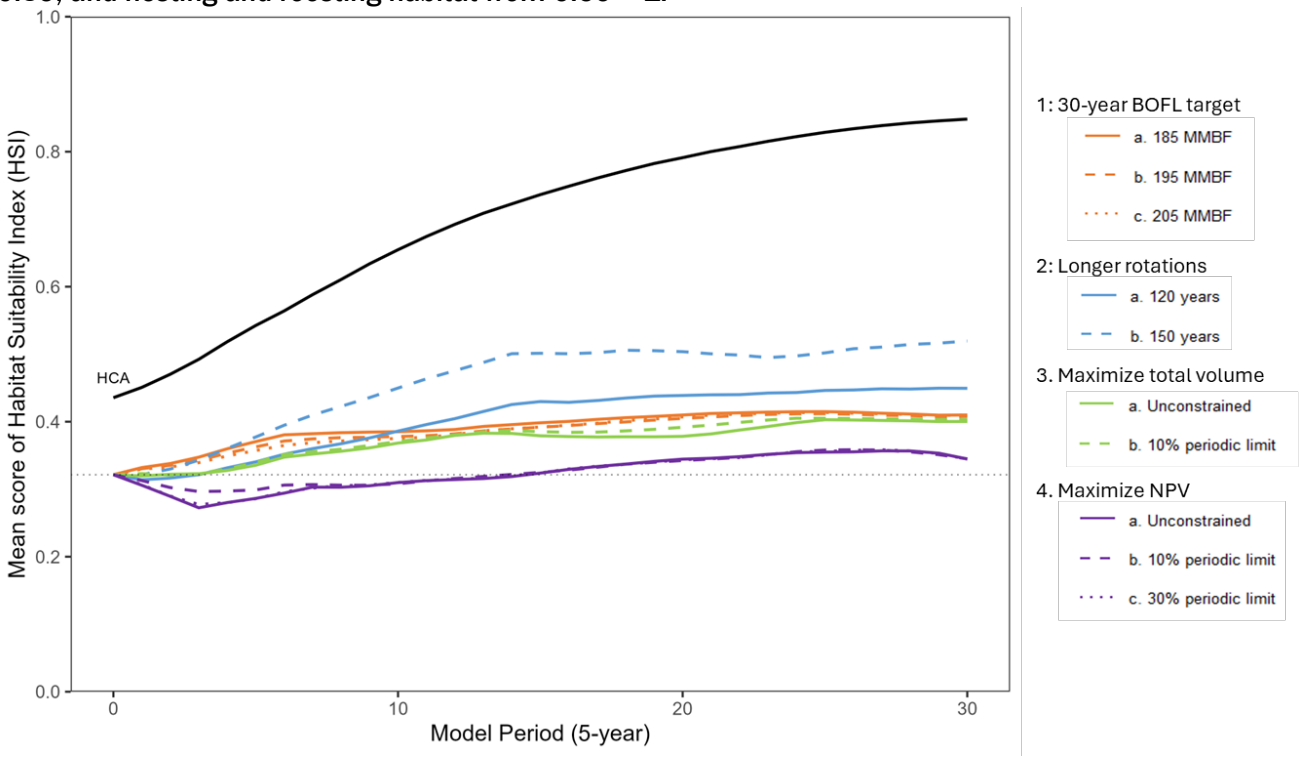
The habitat outcomes below for the three covered species show the differences across scenarios in General Stewardship areas. While all scenarios comply with the proposed HCP, they differ in the quality and quantity of habitat in General Stewardship areas and, for northern spotted owls, in the level of dispersal habitat in General Stewardship areas.

Northern spotted owls

Northern spotted owls occur in all districts across the plan area. The proposed HCP biological goals and objectives for northern spotted owls, within HCAs, are: 1) conserve and maintain at least 15,000 acres of existing nesting and roosting habitat; 2) conserve, maintain, and enhance at least 73,000 acres of foraging habitat; 3) increase the quantity of nesting and roosting habitat by 69,000 acres (for a total of 84,000 acres) by the end of the permit term, while maintaining 50,000 acres of foraging habitat within the HCAs. Total nesting, roosting, and foraging habitat at the end of the permit term shall be 134,000 acres. The modeling shows that these requirements inside the HCAs are met for all scenarios.

In General Stewardship areas, the average quality of northern spotted owl habitat is less than in HCAs (**Figure 10**). Scenario 2 provides higher quality northern spotted owl habitat in the General Stewardship areas, followed by Scenario 1, Scenario 3, and Scenario 4, respectively.

Figure 10: Mean Habitat Quality Over Time for Northern Spotted Owl in General Stewardship areas and Habitat Conservation Areas. The Habitat Suitability Index (HSI) in the HCP was averaged over time, weighted by stand area. All scenarios have the same increase in habitat quality in the HCAs (black line) but differ in the General Stewardship areas (see legend). The thin dotted horizontal line shows the starting baseline in General Stewardship Areas. HSI values are modeled between 0 and 1, with dispersal habitat = 0.30 – 0.39, foraging habitat 0.40 – 0.59, and nesting and roosting habitat from 0.60 – 1.



The HCP dispersal habitat goal is to maintain at least 40% of the permit area in General Stewardship areas as dispersal habitat to aid in their movement across the landscape. The proposed HCP defines dispersal habitat as stands of trees averaging 11 inches in diameter at breast height or greater, having at least 40% canopy closure. This 40% objective is measured at the two georegions used in this modeling.

Scenario 4 is the only scenario that approaches this minimum requirement, as it reaches the threshold in both the North Coast (**Figure 11**) and Willamette Valley (**Figure 12**) georegions. Starting in model period 5, Scenario 4 in the Willamette Valley georegion stays at the minimum dispersal habitat amount (**Figure 12**). If this scenario were to be implemented, disturbances such as fire, storm damage, windthrow, or insect-caused mortality may risk noncompliance with the proposed HCP requiring the Division to delay planned harvests to come back into compliance.

Figure 11: Quantity of Northern spotted owl dispersal habitat over 150 years outside of HCAs in the North Coast georegion. Horizontal black line shows the minimum dispersal habitat required by the proposed HCP.

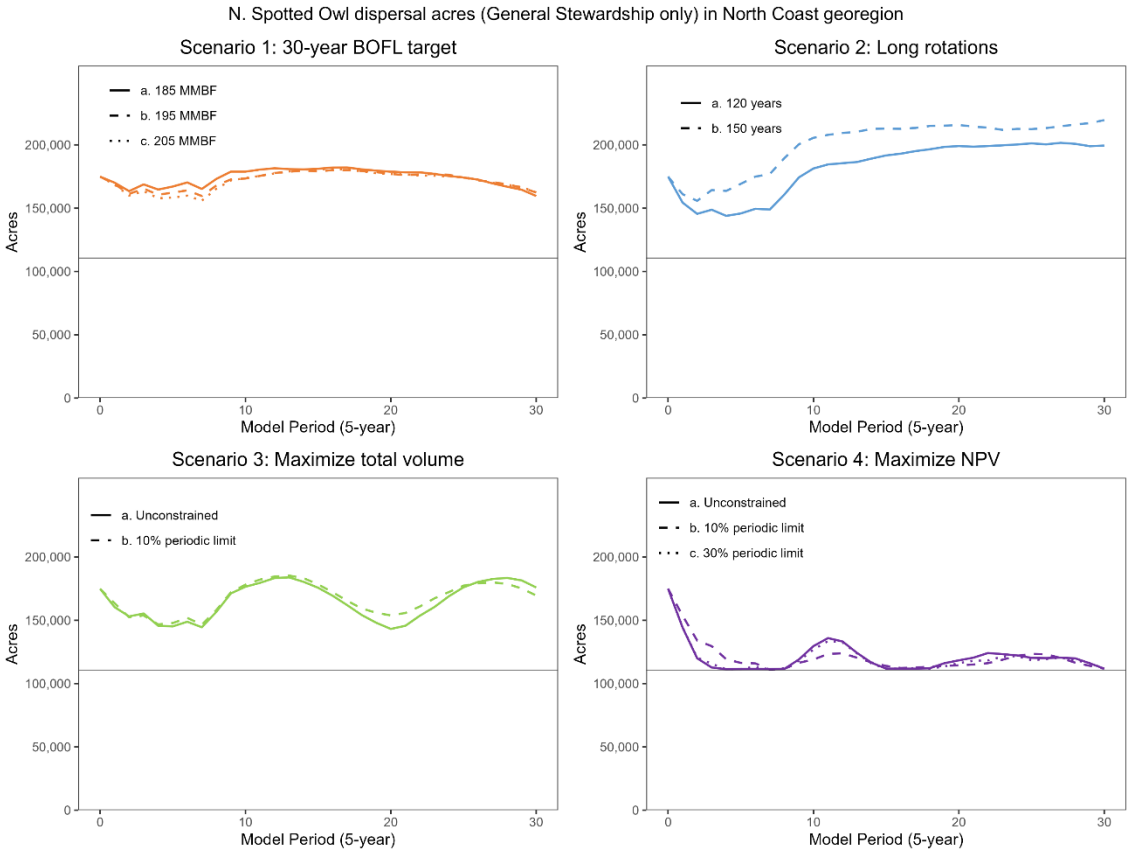
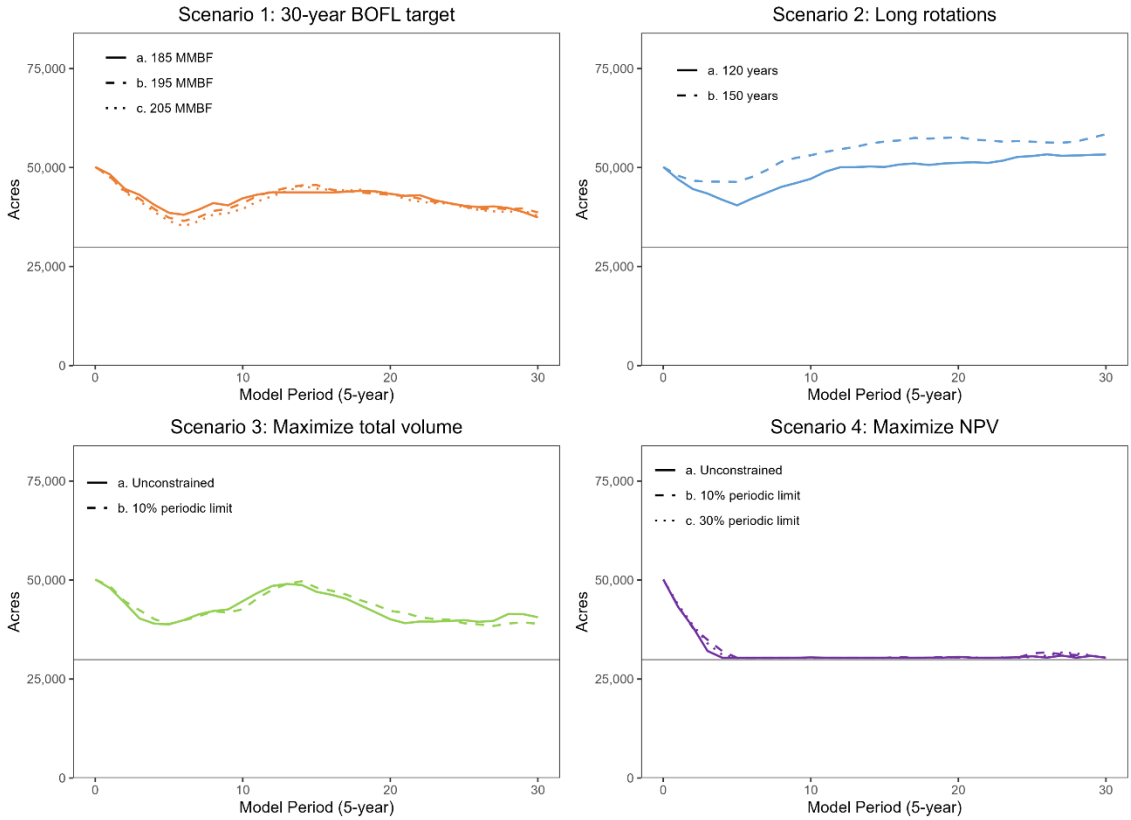


Figure 12: Quantity of Northern spotted owl dispersal habitat over 150 years outside of HCAs in the Willamette Valley georegion. Horizontal black line shows the minimum dispersal habitat required by the proposed HCP.

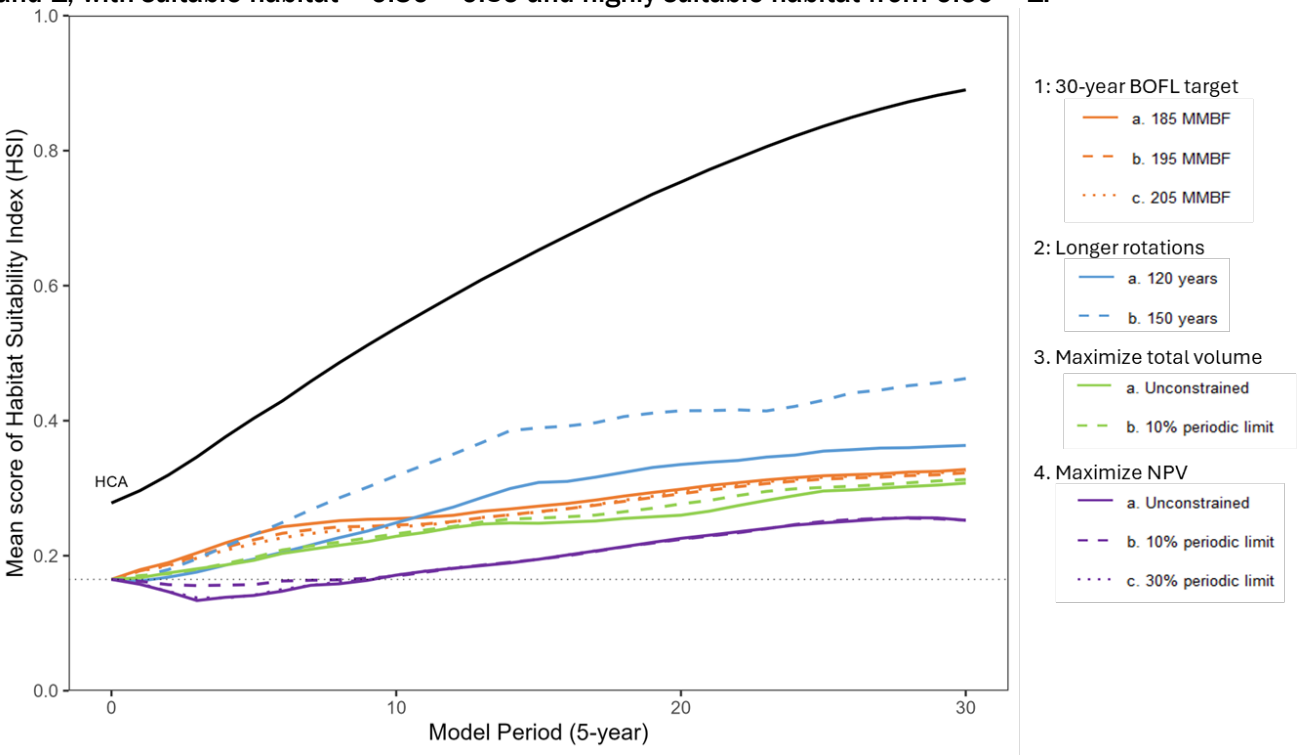


Marbled murrelets

Marbled murrelets are found across the plan area with the exception of the North Cascade District and the majority of the Southwest Unit -Western Lane District. The proposed HCP biological goals and objectives for marbled murrelets within HCAs, are: 1) conserve, maintain, and enhance at least 62,000 acres of existing suitable habitat and 1,000 acres of existing highly suitable habitat including locations where occupancy has been previously documented, and 2) increase the amount of habitat by at least 45,000 acres of suitable habitat and 34,000 acres of highly suitable habitat in locations that minimize patch edge/interior habitat ratios. This amounts to a total of 107,000 acres of suitable habitat and 35,000 acres of highly suitable habitat conserved by the end of the permit term. The modeling shows that these requirements inside the HCAs are met for all scenarios.

The mean habitat quality over time for marbled murrelets shows that all scenarios will have less late-seral forest in the General Stewardship areas compared to the HCAs (**Figure 13**). Scenario 2 provides the most marbled murrelet habitat in the General Stewardship areas, followed by Scenario 1, Scenario 3, and Scenario 4, respectively.

Figure 13: Mean Habitat Quality Over Time for the marbled murrelet in General Stewardship areas and Habitat Conservation Areas. The Habitat Suitability Index in the HCP was averaged over time, weighted by stand area. All scenarios have the same increase in habitat quality in the HCAs (black line) but differ in the General Stewardship areas (see legend). The thin dotted horizontal line shows the starting baseline. HSI values are modeled between 0 and 1, with suitable habitat = 0.30 – 0.59 and highly suitable habitat from 0.60 – 1.

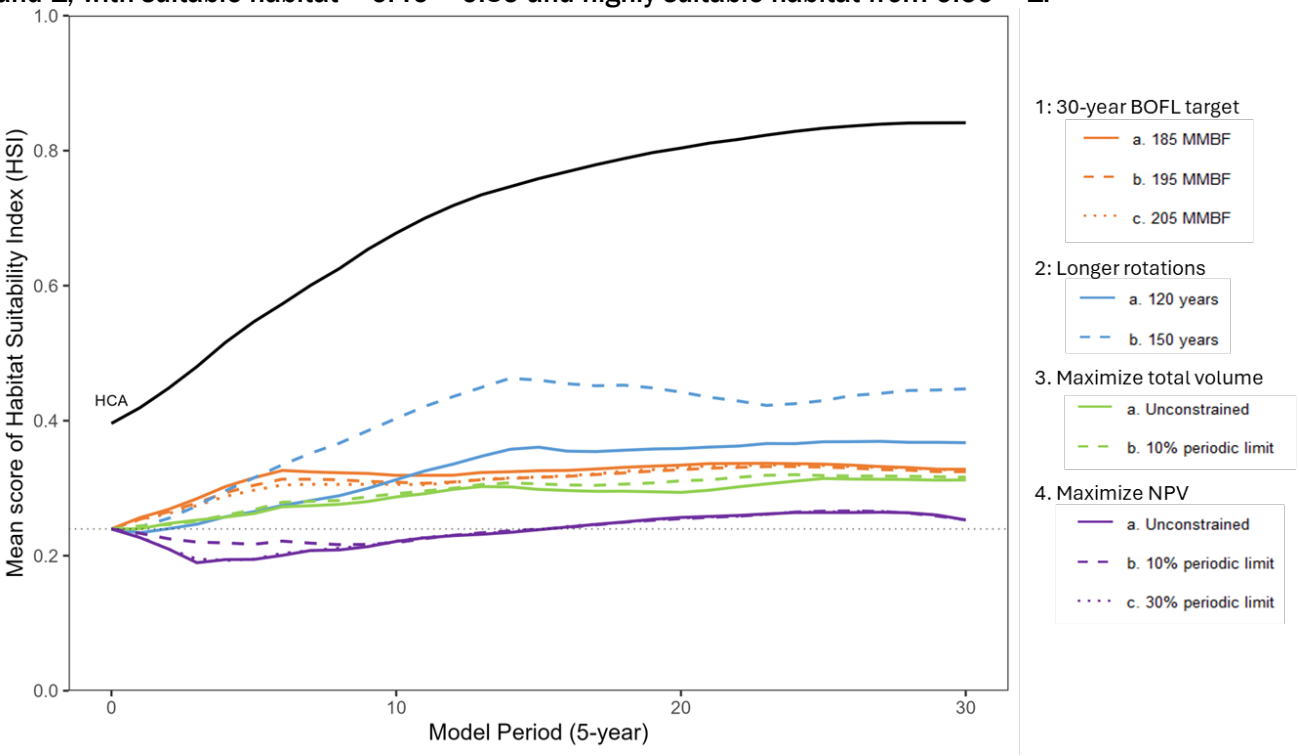


Red tree voles

Red tree voles occur across the plan area but only the north Oregon coast Distinct Population Segment (DPS) is covered under the proposed HCP. The DPS covers the Astoria, Tillamook, Forest Grove, and West Oregon Districts, and also the portion of the Veneta Unit - Western Lane District north of the Siuslaw River. The proposed HCP biological goals and objectives for red tree voles within HCAs are: 1) conserve, maintain, and enhance at least 48,000 acres of suitable habitat and 5,000 acres of highly suitable habitat, including areas where occupancy has been previously documented, and 2) increase the amount of suitable habitat by 30,000 acres and highly suitable habitat by 34,000 acres. This amounts to a total of 78,000 acres of suitable habitat and 39,000 acres of highly suitable habitat by the end of the permit term. The modeling shows that these requirements inside the HCAs are met for all scenarios.

The mean habitat quality over time for red tree voles shows that all scenarios will have less late-seral forest in the General Stewardship areas compared to the HCAs (**Figure 14**). Scenario 2 provides the most red tree vole habitat in the General Stewardship areas, followed by Scenario 1, Scenario 3, and Scenario 4, respectively.

Figure 14: Mean Habitat Quality Over Time for the red tree vole in General Stewardship areas and Habitat Conservation Areas. The Habitat Suitability Index in the HCP was averaged over time, weighted by stand area. All scenarios have the same increase in habitat quality in the HCAs (black line) but differ in the General Stewardship areas (see legend). The thin dotted horizontal line shows the starting baseline. HSI values are modeled between 0 and 1, with suitable habitat = 0.40 – 0.59 and highly suitable habitat from 0.60 – 1.



AQUATIC SPECIES

Riparian conservation areas are designed to support and protect the ecological processes that address the limiting factors and the biological goals and objectives for covered aquatic species. They were designated using the best available data, including current and historic occurrence data, SLI, lidar, and habitat models. Constraints on harvest within RCAs are the same under all scenarios with no commercial harvest allowed.

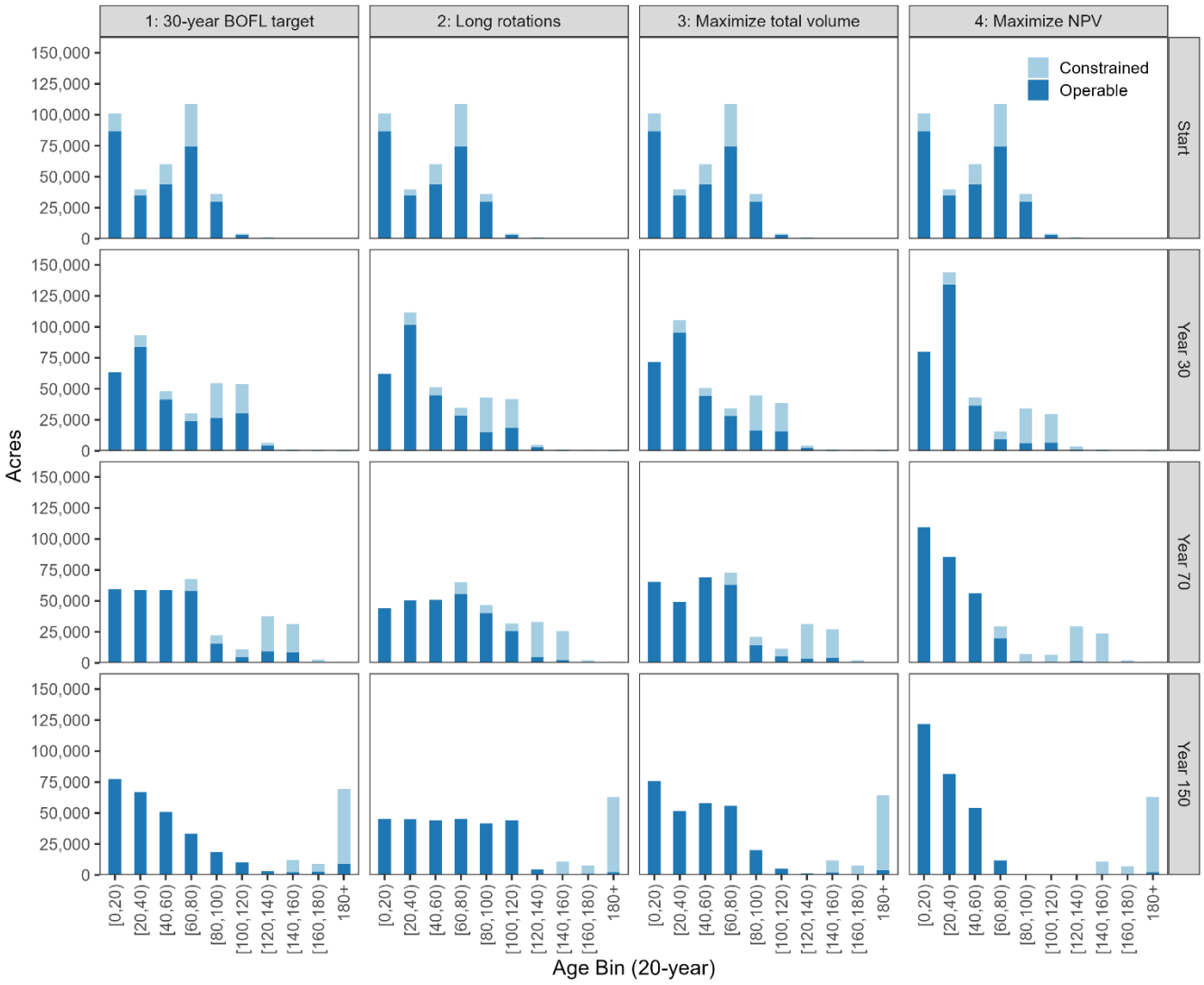
Feasibility. Staff noted that the road systems would need to be upgraded substantially in the Tillamook, West Oregon, and Western Lane districts to accommodate larger harvest volumes in all scenarios. The proposed HCP has management standards for roads in General Stewardship areas, HCAs, and RCAs that would be followed. However, road costs in the model may not fully account for local conditions that would require additional considerations to protect aquatic species from infrastructure changes.

OTHER WILDLIFE

For this analysis, the age distribution of forest stands is used as a proxy for the forest seral stages that provide a diverse range of resources within the permit area for native wildlife not covered by the proposed HCP. For example, terrestrial species that favor an open canopy for grazing and forage (e.g., ungulates) would favor younger forest conditions. Treatments within HCAs, especially those for SNC and hardwoods, will create complex early seral habitat over the first 30 years. However, the HCAs over time are intended to grow into complex late seral forest with early seral habitat provided by natural disturbances not included in these models.

Early and mid seral stages, and the wildlife associated with them, will be primarily distributed in the General Stewardship areas and would have more intensive young stand management than harvests occurring in the HCAs. The scenarios differ in how the stand age distribution progresses over time (**Figure 15** for General Stewardship only, Appendix B for HCAs included). Scenario 2 provides the most even distribution of early to middle age stands, which was an objective for its model runs. Scenario 4 has the youngest stand age distribution in the General Stewardship areas, with Scenarios 1 and 3 in the middle.

Figure 15: Distribution of stand age by acres in General Stewardship areas by scenario (run a. only). Note that each scenario and run stand age distribution including HCAs is in Appendix B.

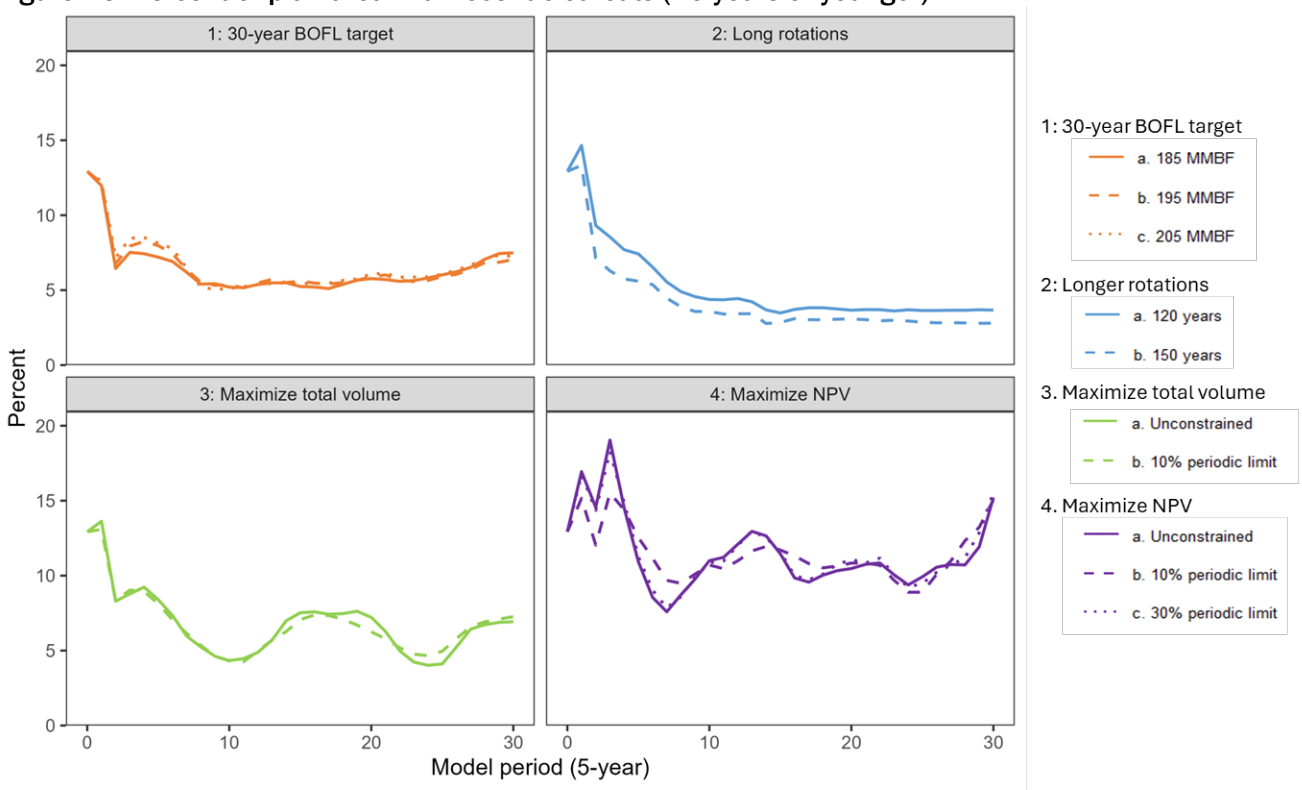


Drinking Water

In the proposed HCP, the impacts of the pace and scale of forest management were analyzed at a watershed scale to assess impacts on covered aquatic species. Specifically, the percentage of watershed areas containing stands with recent clearcuts (defined as less than 10 years old) were quantified across the permit term to assess the impact that harvests could have on peak flow in streams. This approach was repeated for this analysis across the whole plan area and with a focus on catchments with public water systems using surface water.

Across the entire plan area, the scenarios differ in the percentage of recent clearcuts across the modeling timeframe (**Figure 16**). The majority of harvest volume in all scenarios comes from regeneration harvests, so the area with recent clearcuts increases in the scenarios and model periods with higher harvest volume.

Figure 16: Percent of plan area with recent clearcuts (10 years or younger)



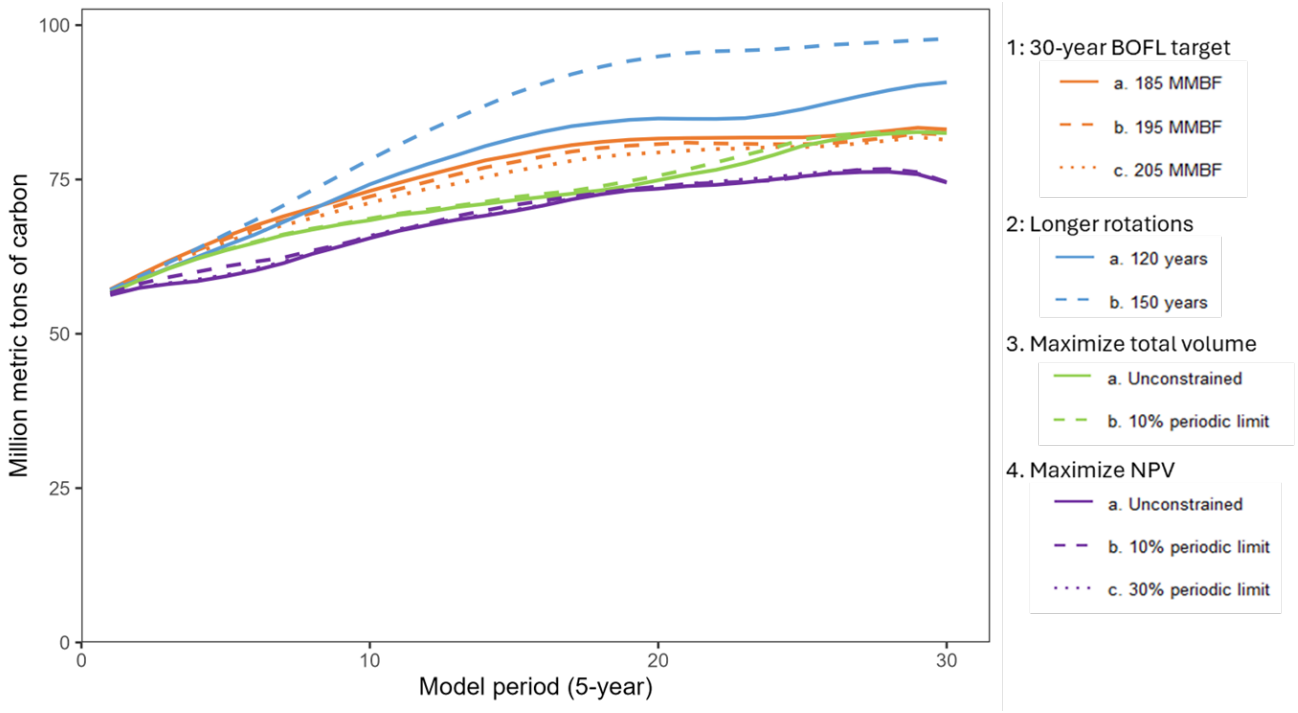
The localized impact of State Forests harvests on stream flow would depend on the concentration of ODF-managed land within a watershed and the management of surrounding landowners. Thirteen public water systems with ODF-managed land making up 10% or greater of their surface water catchment were assessed for each scenario's proposed management through time (Appendix C). The average percentage of ODF-managed lands with recent regeneration harvests was highest for Scenario 4, followed by Scenario 3, Scenario 1, and Scenario 2, respectively. The maximum potential impact of management was 19% of ODF-managed land with recent clearcuts averaged over time in one drinking water catchment in which State Forests made up 51% of the area (see Appendix C).

Carbon Sequestration and Storage

Net forest carbon was tracked by the model through time accounting for both sequestration and decomposition above and belowground. Harvest volume output by the model was then used to estimate harvested wood product net carbon storage and decomposition over time.[3] All scenarios are expected to be net sinks for carbon, with increasing storage through time (**Figure 17**). Differences in forest carbon storage between scenarios are related to harvest intensity and the standing inventory level in the General Stewardship areas (**Figure 18**). Scenario 2 stores the most carbon, followed by Scenario 1, Scenario 3, and Scenario 4, respectively.

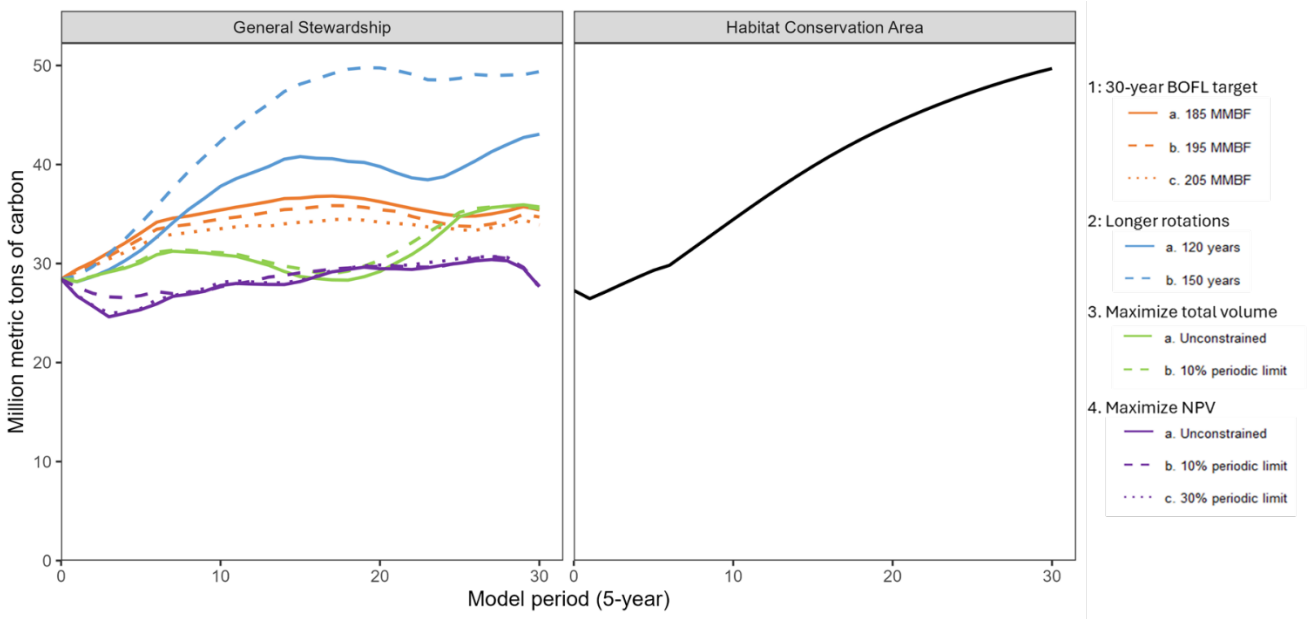
Parameters not accounted for in this analysis include the greenhouse gas emissions offset by harvested wood products due to their substitution for materials like concrete or the forest carbon storage offset from changing harvest activity on other forestland ownerships. The effects of continued climate change on tree growth and disturbances such as heat waves and drought were also not modeled.

Figure 17: Net carbon storage in the forest and in harvested wood products over 150 years.



[3] Morgan, T. A., Donahue, T., Dillon, T., Yost, A. C., & Groom, J. (2020). *Oregon Harvested Wood Products Carbon Inventory 1906-2018*. USDA Forest Service, Forest Inventory and Analysis Program. <https://research.fs.usda.gov/sites/default/files/2023-04/pnw-oregon-harvested-wood-products-carbon-inventory-report-1906-2018.pdf>

Figure 18: Forest carbon (aboveground + belowground) over 150 years by landscape designation.



Social Outcomes

Recreation

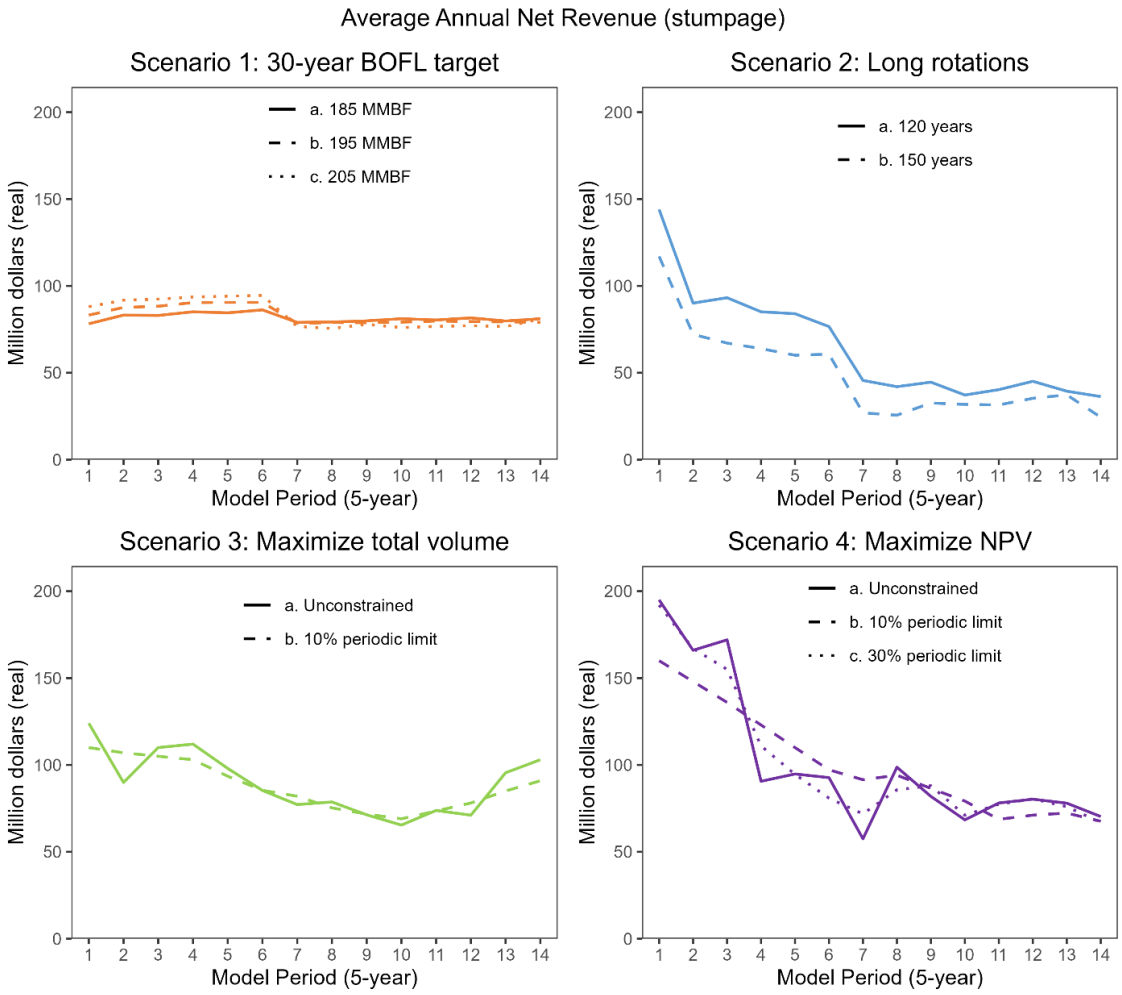
ODF staff do not foresee significant differences between the scenarios for closures of recreation facilities or staffing levels required. However, the impacts from Scenario 4 would have the most extreme swings between model periods, which would likely have bigger impacts on planning for closures and reroutes. More impacts on trails from higher harvest levels will be felt by motorized user groups (OHVs), due to a larger number of motorized trails being in General Stewardship areas. In time periods with higher rates of thinning, more impacts will be felt near facilities like campgrounds and day-use areas (which are generally in HCAs).

Appendix A

Detailed harvest revenue and volume

The following figures show average annual net revenue and harvest volume in more detail over 70 years (fourteen 5-year model periods). Revenue is inflation-adjusted in real dollars indexed to 2022. First, all revenue and volume from both BOFL and CSFL are shown on pp. 30-31. Net revenue distributed to counties and BOFL harvest volume is shown on pp. 32-33. Net revenue to the CSF and CSFL harvest volume and is shown on pp. 34-35. Net revenue distributions and BOFL harvest volumes in individual counties appear in alphabetical order on pp. 36-63. Note that counties without BOFL are not shown.

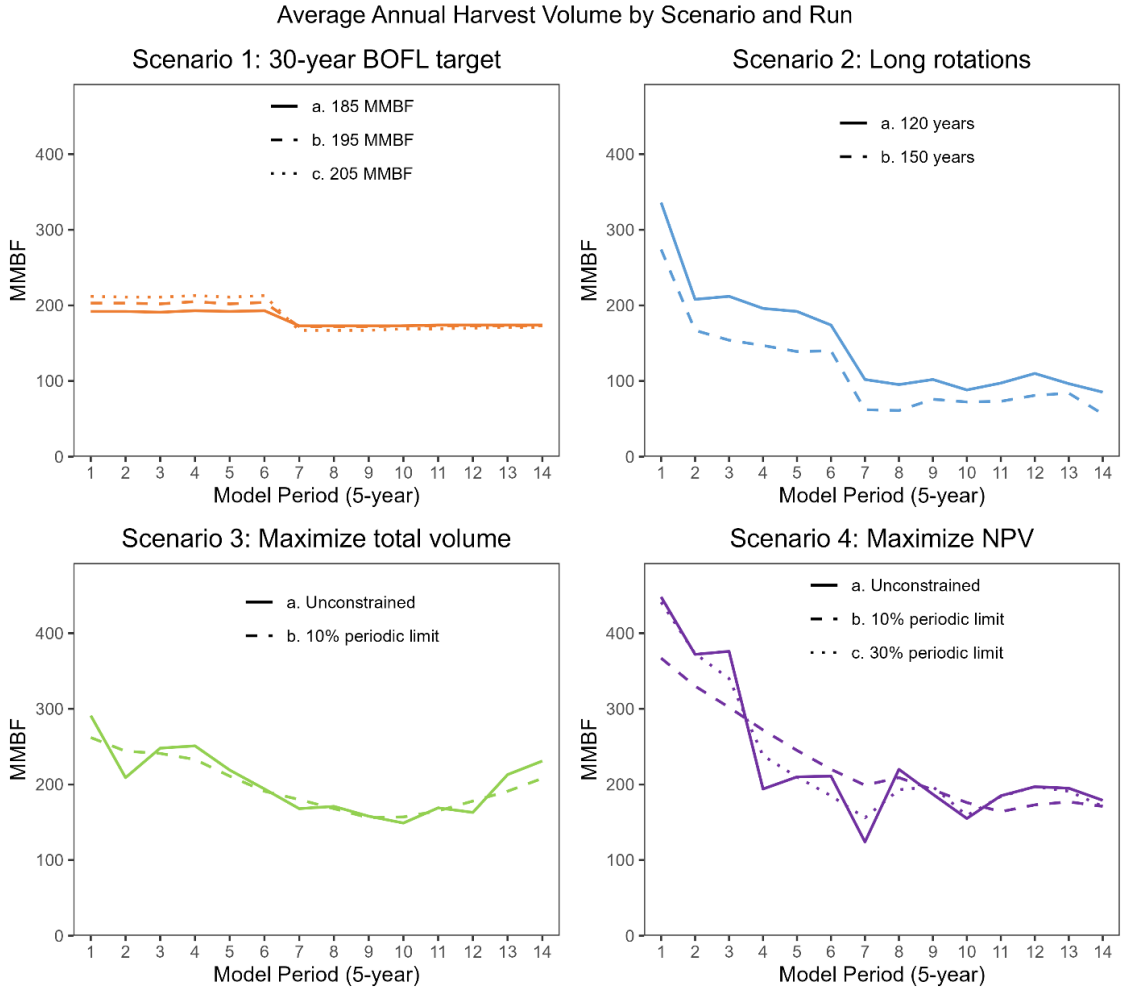
REVENUE FROM BOFL AND CSFL



Average annual net revenue (real million $) by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	78.2	83.2	83	85.1	84.5	86.2	79	79.2	79.9	81.1	80.4	81.6	79.8	81.1
1b	83.2	87.6	88.3	90.4	90.5	90.5	78.5	78.9	78.8	79.1	79.8	79.5	79.3	79
1c	88	91.8	92.4	93.6	94.1	94.5	76.7	75.5	77.9	76	76.7	77.1	76.6	80.9
2a	144	90.1	93.2	85.1	84	76.6	45.6	42	44.6	37.2	40.3	45.1	39.4	36.3
2b	117	72.1	67.1	63.9	60.1	60.7	26.9	25.6	32.6	31.8	31.5	35.3	37.3	24.4
3a	124	89.9	110	112	98	85.3	77.2	78.7	71.3	65.4	73.8	71.1	95.5	103
3b	110	107	105	103	93.5	85.4	82	75.3	71.7	69	73.5	78.1	85	90.9
4a	195	166	172	90.6	94.8	92.7	57.5	98.7	81.9	68.4	78.1	80.3	78	70.3
4b	160	148	136	123	110	97.2	91.5	94.1	86.5	79.2	68.7	71.1	72.3	67.6
4c	192	167	155	111	94.6	80.9	71.8	85.7	88	71.1	77.4	80.5	76	66.8

VOLUME FROM BOFL AND CSFL

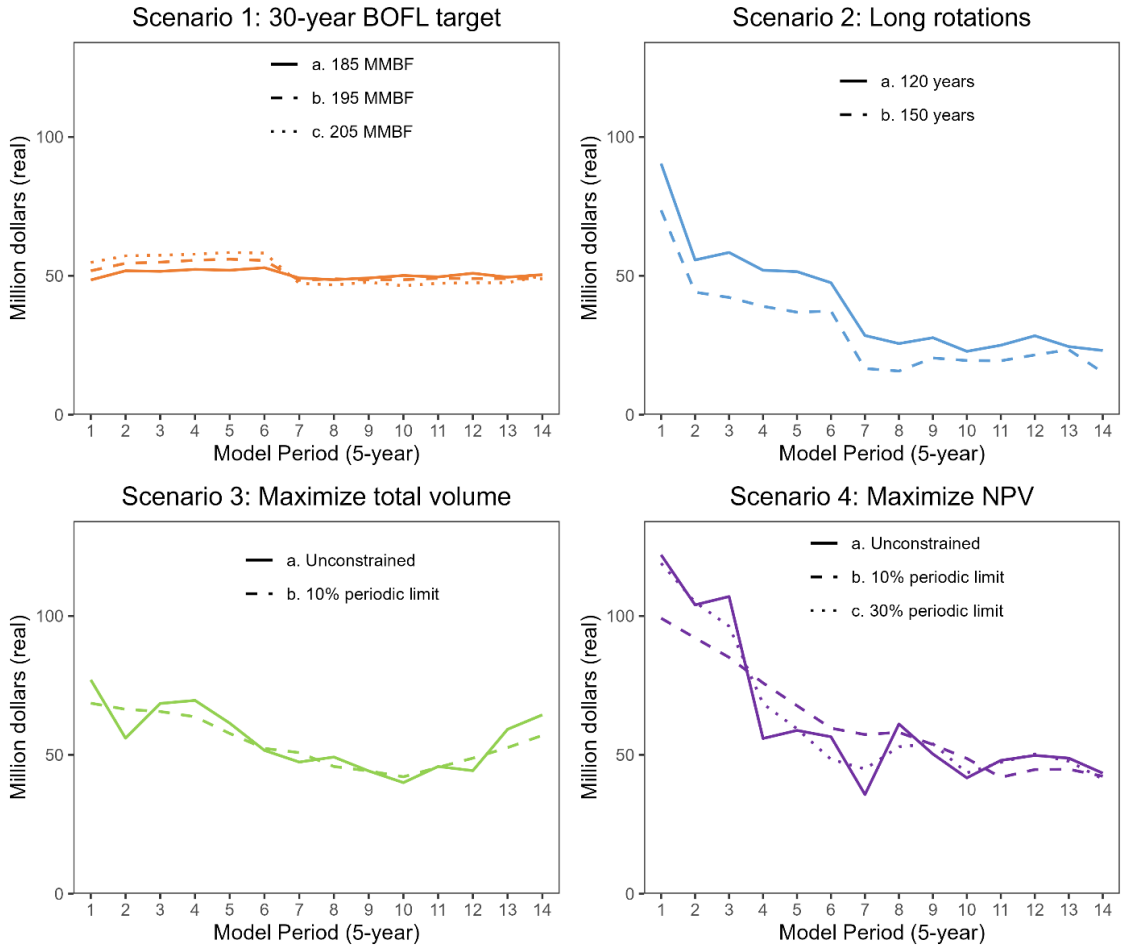


Average annual million board feet (BOFL + CSL) by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	192	192	191	193	192	193	173	173	173	173	174	174	174	174
1b	203	203	202	205	202	204	172	172	172	173	173	173	173	173
1c	212	211	211	213	211	213	167	167	167	169	169	170	171	171
2a	336	208	212	196	192	174	102	95.3	102	88.2	97.3	110	96.5	85.3
2b	274	167	154	147	139	140	62.1	61	75.9	72.3	73.2	81	83.9	56.4
3a	291	209	248	251	219	194	168	171	158	149	169	163	213	231
3b	262	244	241	233	211	191	180	168	156	157	165	178	191	208
4a	448	372	376	194	210	211	124	220	187	155	185	197	195	179
4b	367	330	302	272	245	220	199	209	193	176	164	173	177	171
4c	441	373	340	238	210	185	156	193	197	159	184	197	191	171

REVENUE TO COUNTIES ONLY

Average Annual Net Revenue to Counties over 70 years

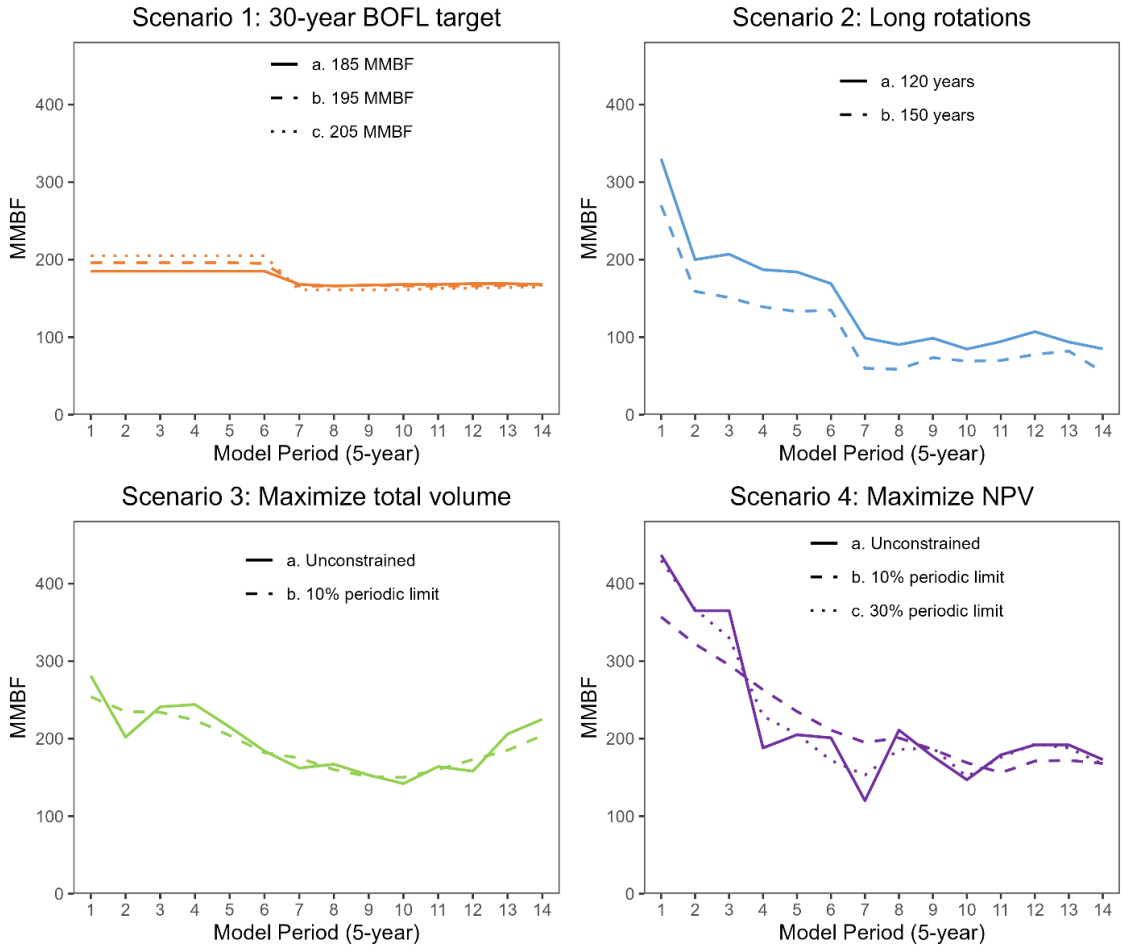


Average annual net revenue to counties (real million $)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	48.5	51.8	51.6	52.3	52	52.9	49.2	48.6	49.2	50.1	49.6	50.9	49.5	50.4
1b	51.8	54.5	54.9	55.6	56	55.5	48.4	48.9	48.6	48.6	49.1	49	49	48.9
1c	54.8	57.2	57.4	57.8	58.4	58.2	47.3	46.7	47.7	46.4	47.3	47.5	47.5	50
2a	90.4	55.7	58.4	52	51.5	47.5	28.5	25.6	27.7	22.8	25	28.4	24.5	23.1
2b	73.6	44.1	42.2	39	36.9	37.3	16.6	15.7	20.4	19.5	19.4	21.5	23.4	15.2
3a	77	56	68.5	69.6	61.4	51.6	47.4	49.2	44.2	40	45.8	44.3	59.2	64.4
3b	68.6	66.4	65.6	63.7	57.7	52.3	50.8	45.8	44.2	42.1	45.5	48.8	52.6	57
4a	122	104	107	55.9	58.8	56.5	35.7	61.1	50.3	41.7	48	49.8	48.8	43.4
4b	99.2	92.1	85.1	75.9	67.7	59.6	57.3	58.1	53.7	48.7	41.9	44.7	44.8	42.3
4c	119	105	96.3	68.4	59.4	48.4	44.9	52.9	54	43.5	47.3	50.3	47.7	41.3

VOLUME FROM BOFL ONLY

Average Annual BOFL Harvest Volume over 70 years

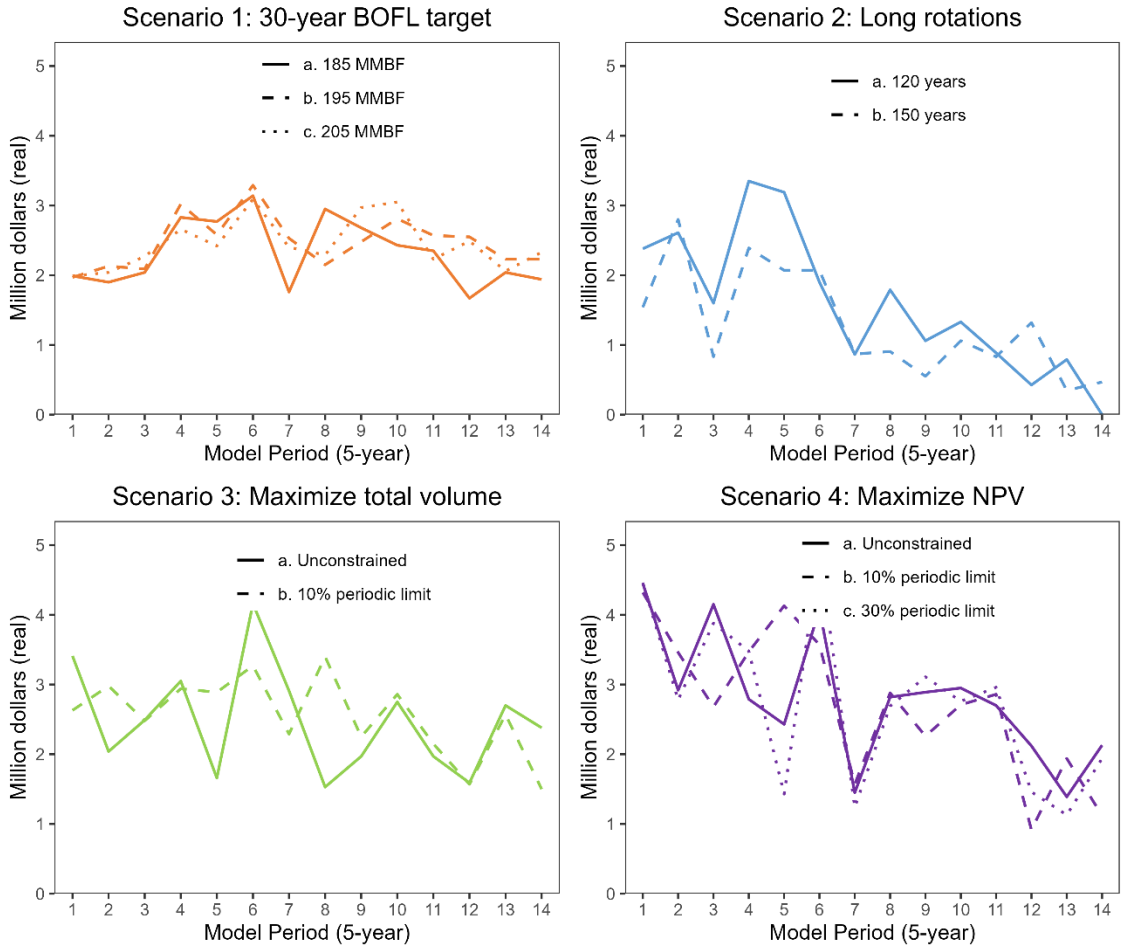


Average annual harvest volume (BOFL only)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	185	185	185	185	185	185	168	166	167	168	168	169	169	168
1b	196	196	196	196	196	195	166	166	167	166	166	166	167	167
1c	205	205	205	205	205	205	161	161	161	161	163	163	164	165
2a	330	200	207	187	184	169	98.9	90.3	98.6	84.6	94.3	107	93.7	84.9
2b	270	159	151	139	133	135	59.8	58.5	73.5	69	69.9	77.7	82	54.9
3a	281	202	241	244	215	184	162	167	153	142	164	158	206	225
3b	254	235	234	224	204	182	175	160	151	150	160	173	185	204
4a	437	365	365	188	205	201	120	211	177	147	179	192	192	173
4b	357	322	295	263	235	211	195	201	186	169	156	171	172	168
4c	430	367	330	229	206	172	153	186	188	151	176	193	188	167

REVENUE TO THE CSF ONLY

Average Annual Net Revenue to CSF over 70 years

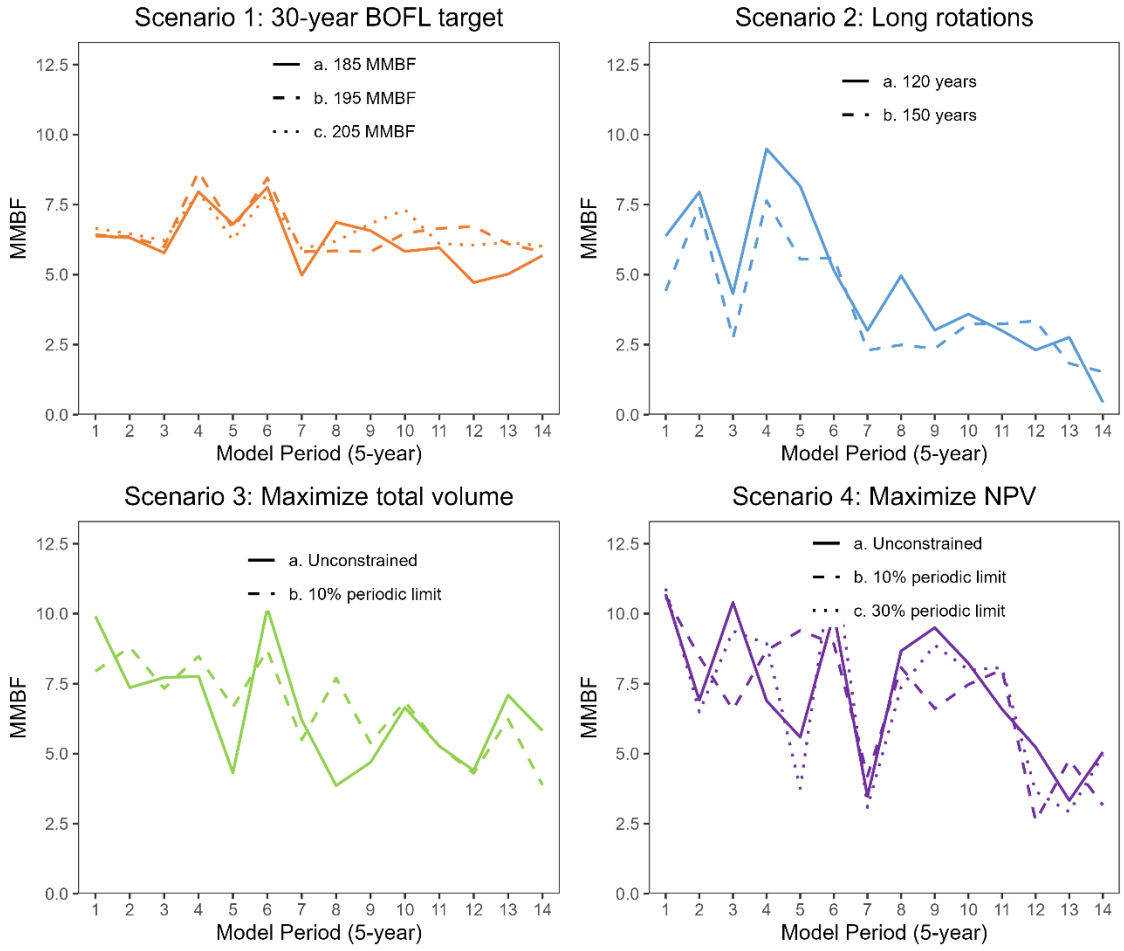


Average annual net revenue to CSF (real million $)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	1.99	1.9	2.04	2.83	2.77	3.14	1.76	2.95	2.68	2.43	2.35	1.67	2.04	1.94
1b	1.97	2.13	2.09	3.02	2.58	3.29	2.53	2.15	2.48	2.81	2.57	2.55	2.23	2.23
1c	1.99	2.04	2.27	2.66	2.42	3.09	2.4	2.29	2.97	3.05	2.23	2.49	2.06	2.33
2a	2.38	2.61	1.6	3.35	3.19	1.9	0.863	1.79	1.06	1.33	0.886	0.426	0.791	0
2b	1.54	2.8	0.832	2.39	2.07	2.07	0.869	0.906	0.551	1.06	0.831	1.32	0.347	0.468
3a	3.41	2.04	2.49	3.05	1.66	4.16	2.91	1.53	1.97	2.75	1.97	1.59	2.7	2.38
3b	2.63	2.98	2.48	2.94	2.89	3.27	2.29	3.4	2.25	2.86	2.15	1.57	2.57	1.5
4a	4.45	2.92	4.15	2.79	2.43	4.08	1.45	2.82	2.89	2.95	2.7	2.12	1.39	2.13
4b	4.32	3.46	2.68	3.47	4.13	3.57	1.57	2.88	2.26	2.71	2.86	0.915	1.94	1.12
4c	4.46	2.78	3.88	3.48	1.43	4.86	1.24	2.69	3.11	2.76	2.96	1.46	1.13	1.94

VOLUME FROM CSFL ONLY

Average Annual CSFL Harvest Volume over 70 years

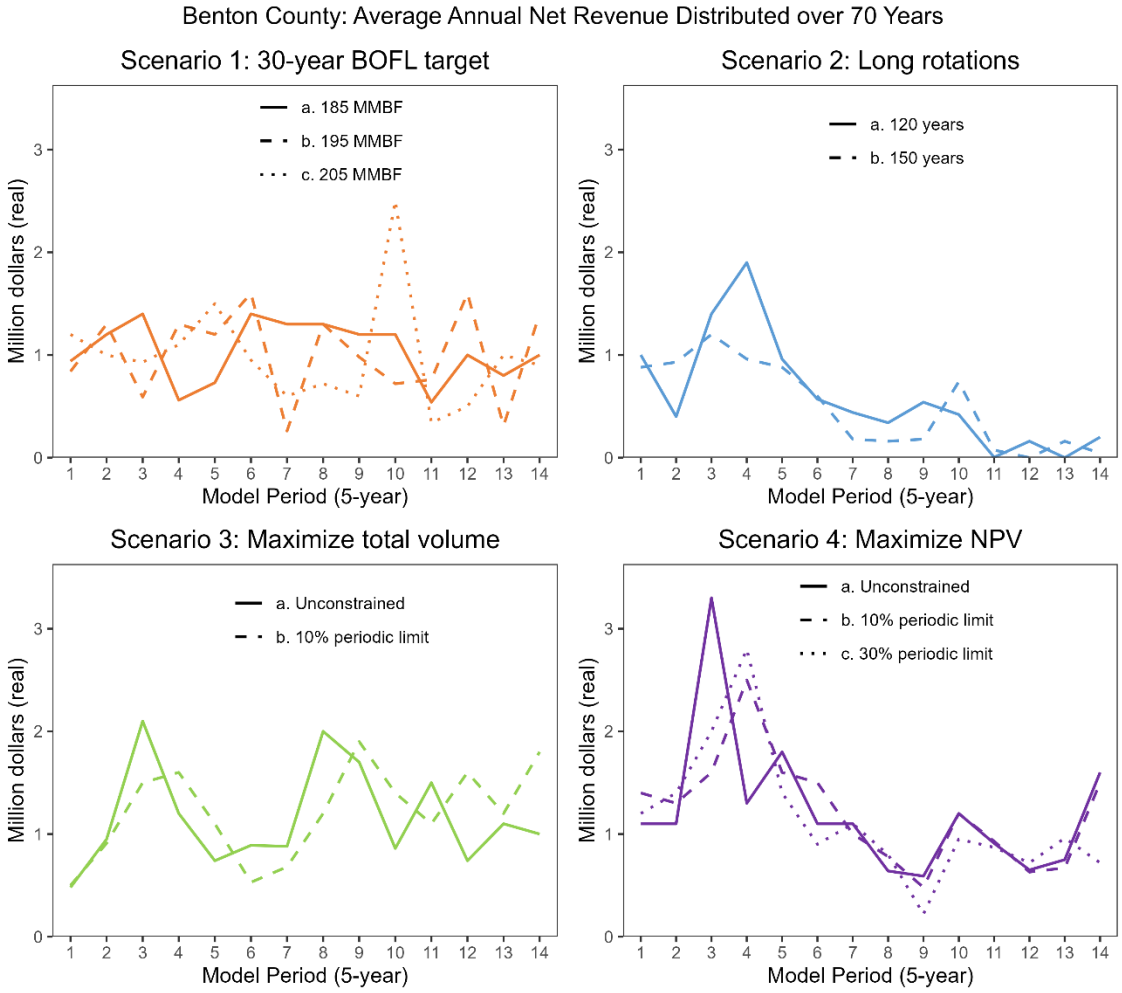


Average annual harvest volume (CSFL only)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	6.38	6.32	5.78	7.96	6.8	8.12	4.98	6.87	6.57	5.83	5.96	4.72	5.02	5.68
1b	6.42	6.36	6	8.68	6.64	8.45	5.82	5.85	5.82	6.48	6.65	6.72	6.1	5.81
1c	6.66	6.46	6.22	7.94	6.24	7.88	5.93	6.19	6.82	7.32	6.11	6.05	6.16	6.02
2a	6.38	7.95	4.32	9.49	8.16	5.15	3.01	4.96	3.02	3.59	3	2.31	2.76	0.439
2b	4.42	7.43	2.73	7.64	5.55	5.6	2.3	2.49	2.36	3.24	3.24	3.35	1.83	1.53
3a	9.91	7.36	7.72	7.76	4.32	10.2	6.2	3.86	4.69	6.65	5.27	4.4	7.09	5.82
3b	7.94	8.81	7.33	8.48	6.67	8.7	5.49	7.7	5.38	6.87	5.27	4.3	6.23	3.88
4a	10.7	6.91	10.4	6.89	5.59	10	3.47	8.67	9.5	8.23	6.59	5.23	3.33	5.06
4b	10.6	8.47	6.57	8.69	9.4	8.92	4.2	8.08	6.61	7.47	8	2.6	4.78	3.16
4c	10.9	6.49	9.38	8.93	3.76	12.1	3.08	7.37	8.88	7.99	8.07	3.65	2.92	4.95

INDIVIDUAL COUNTY REVENUE AND VOLUME FROM BOFL ONLY

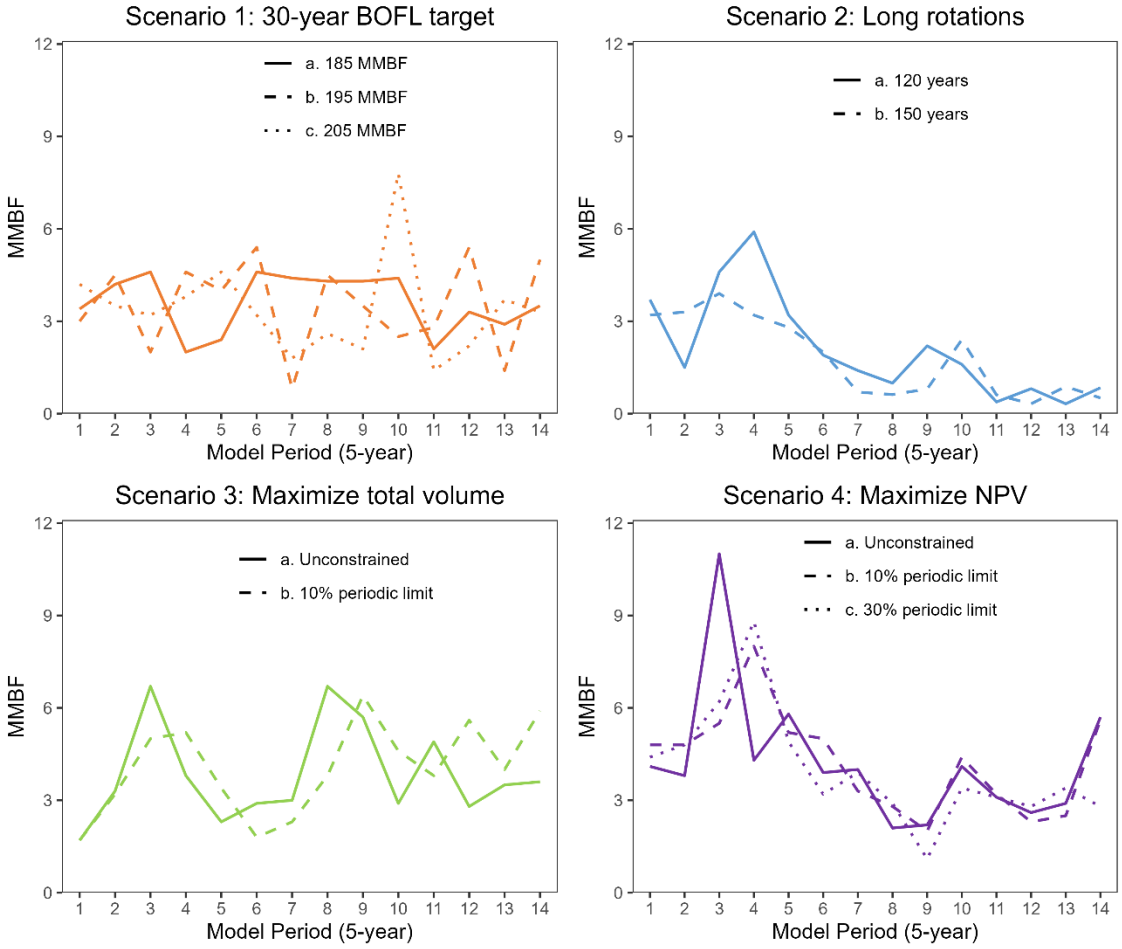
Benton County



Average annual net revenue to county (real million $) by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	0.94	1.2	1.4	0.56	0.73	1.4	1.3	1.3	1.2	1.2	0.54	1	0.8	1
1b	0.84	1.3	0.59	1.3	1.2	1.6	0.26	1.3	0.98	0.72	0.76	1.6	0.31	1.4
1c	1.2	1	0.93	1.1	1.5	0.95	0.6	0.72	0.6	2.5	0.34	0.5	1	0.9
2a	1	0.4	1.4	1.9	0.96	0.57	0.44	0.34	0.54	0.42	0.0038	0.16	0	0.2
2b	0.88	0.93	1.2	0.96	0.88	0.6	0.18	0.16	0.18	0.74	0.074	0	0.16	0.043
3a	0.48	0.95	2.1	1.2	0.74	0.89	0.88	2	1.7	0.86	1.5	0.74	1.1	1
3b	0.5	0.91	1.5	1.6	1.1	0.53	0.68	1.2	1.9	1.4	1.1	1.6	1.2	1.8
4a	1.1	1.1	3.3	1.3	1.8	1.1	1.1	0.64	0.59	1.2	0.91	0.65	0.75	1.6
4b	1.4	1.3	1.6	2.5	1.6	1.5	1	0.78	0.48	1.2	0.93	0.63	0.67	1.5
4c	1.2	1.4	2	2.8	1.4	0.9	1.1	0.8	0.22	0.95	0.87	0.72	0.96	0.72

Benton County: BOFL Average Annual Volume over 70 Years

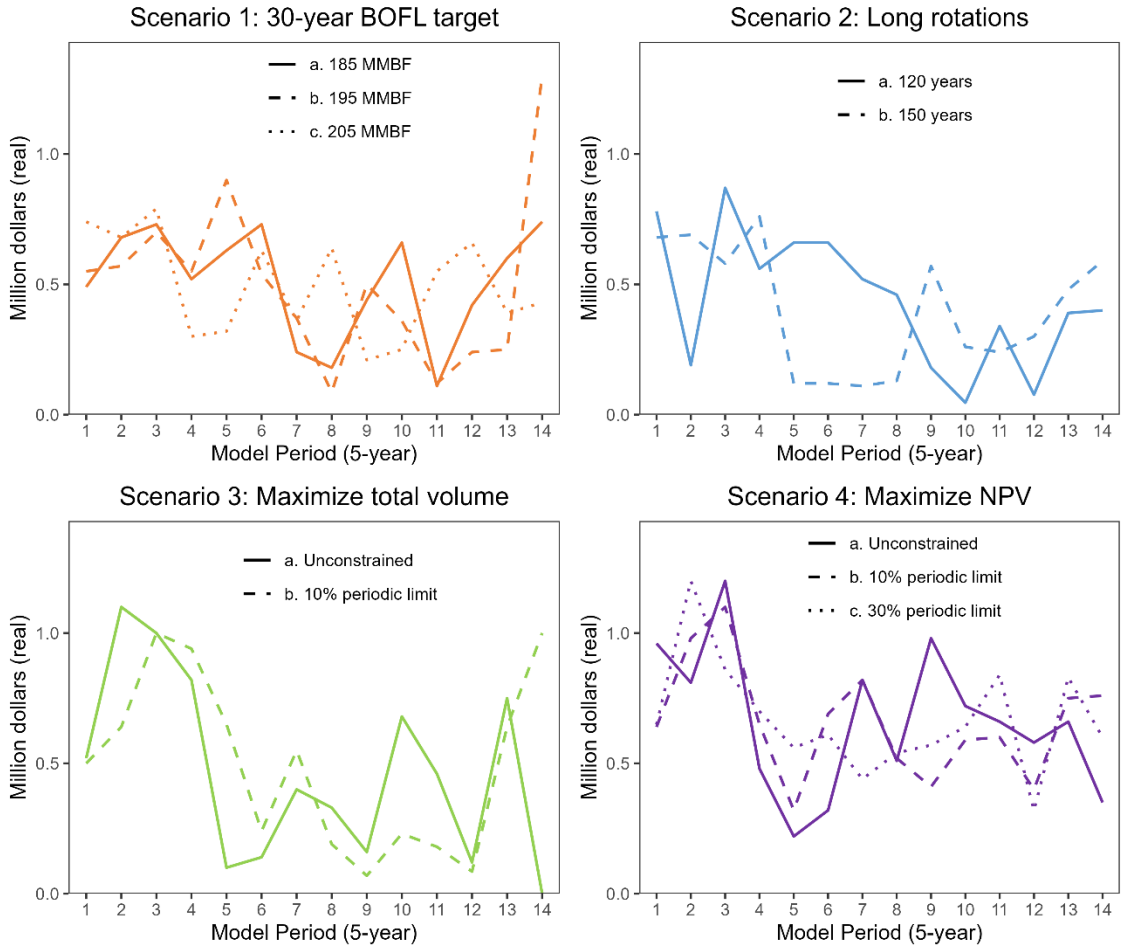


Average annual volume (MMBF) on BOFL by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	3.4	4.2	4.6	2	2.4	4.6	4.4	4.3	4.3	4.4	2.1	3.3	2.9	3.5
1b	3	4.5	2	4.6	4	5.4	0.82	4.5	3.5	2.5	2.8	5.4	1.4	5
1c	4.2	3.5	3.2	3.8	4.6	3.2	1.8	2.6	2.1	7.8	1.4	2.2	3.7	3.3
2a	3.7	1.5	4.6	5.9	3.2	1.9	1.4	0.99	2.2	1.6	0.38	0.81	0.32	0.84
2b	3.2	3.3	3.9	3.2	2.8	2	0.7	0.62	0.8	2.4	0.61	0.32	0.88	0.51
3a	1.7	3.3	6.7	3.8	2.3	2.9	3	6.7	5.7	2.9	4.9	2.8	3.5	3.6
3b	1.7	3.2	5	5.2	3.4	1.8	2.3	3.8	6.4	4.6	3.8	5.6	4	5.9
4a	4.1	3.8	11	4.3	5.8	3.9	4	2.1	2.2	4.1	3.1	2.6	2.9	5.7
4b	4.8	4.8	5.5	8	5.2	5	3.3	2.8	2	4.4	3.2	2.3	2.5	5.6
4c	4.4	4.8	6.2	8.8	4.9	3.2	3.9	2.9	1.1	3.4	3.1	2.8	3.4	2.8

Clackamas County

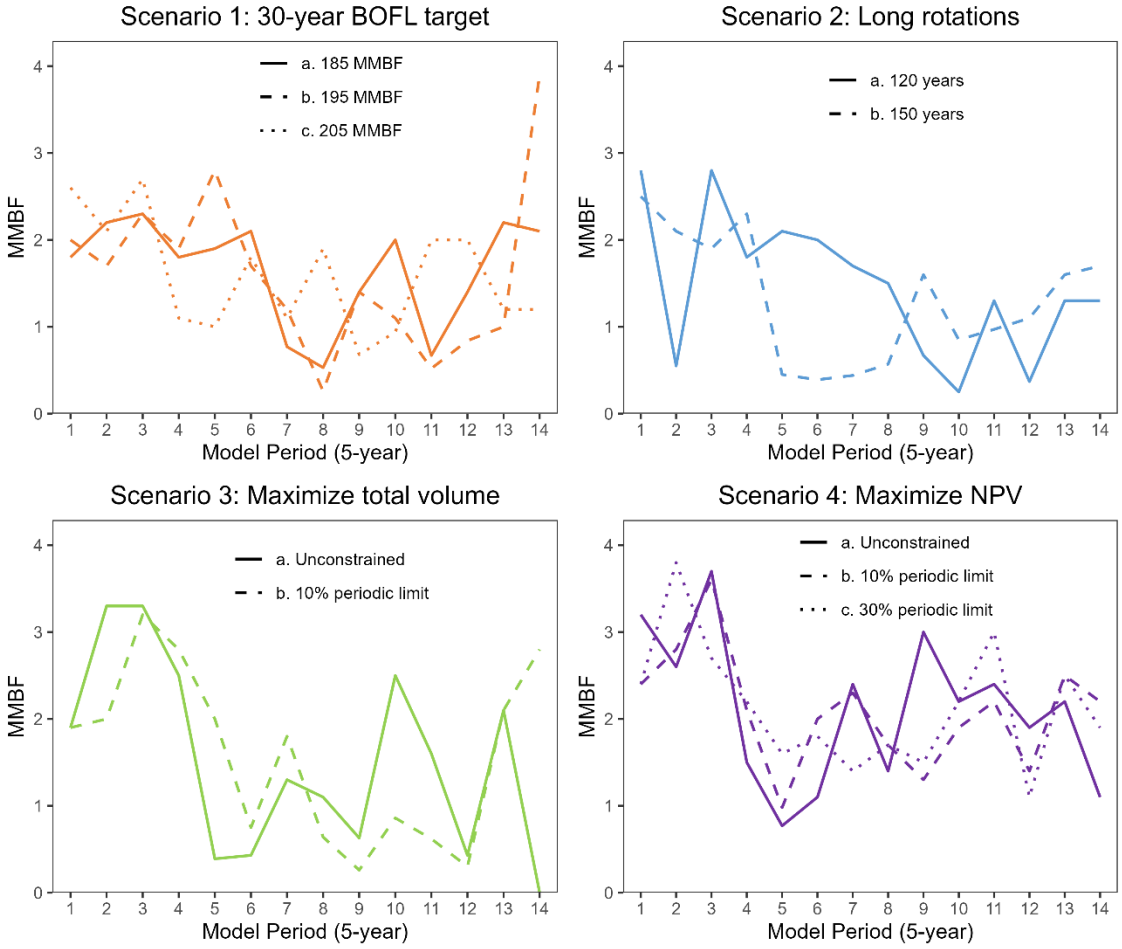
Clackamas County: Average Annual Net Revenue Distributed over 70 Years



Average annual net revenue to county (real million $) by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	0.49	0.68	0.73	0.52	0.63	0.73	0.24	0.18	0.44	0.66	0.11	0.42	0.6	0.74
1b	0.55	0.57	0.7	0.55	0.9	0.54	0.37	0.086	0.5	0.36	0.12	0.24	0.25	1.3
1c	0.74	0.68	0.79	0.3	0.32	0.63	0.36	0.64	0.21	0.25	0.55	0.66	0.39	0.43
2a	0.78	0.19	0.87	0.56	0.66	0.66	0.52	0.46	0.18	0.046	0.34	0.077	0.39	0.4
2b	0.68	0.69	0.58	0.76	0.12	0.12	0.11	0.13	0.57	0.26	0.24	0.3	0.48	0.59
3a	0.52	1.1	1	0.82	0.1	0.14	0.4	0.33	0.16	0.68	0.46	0.12	0.75	0
3b	0.5	0.64	1	0.94	0.65	0.24	0.55	0.19	0.069	0.23	0.18	0.085	0.64	1
4a	0.96	0.81	1.2	0.48	0.22	0.32	0.82	0.51	0.98	0.72	0.66	0.58	0.66	0.35
4b	0.64	0.98	1.1	0.65	0.32	0.69	0.82	0.52	0.41	0.59	0.6	0.4	0.75	0.76
4c	0.65	1.2	0.86	0.7	0.56	0.61	0.44	0.54	0.57	0.64	0.84	0.32	0.83	0.6

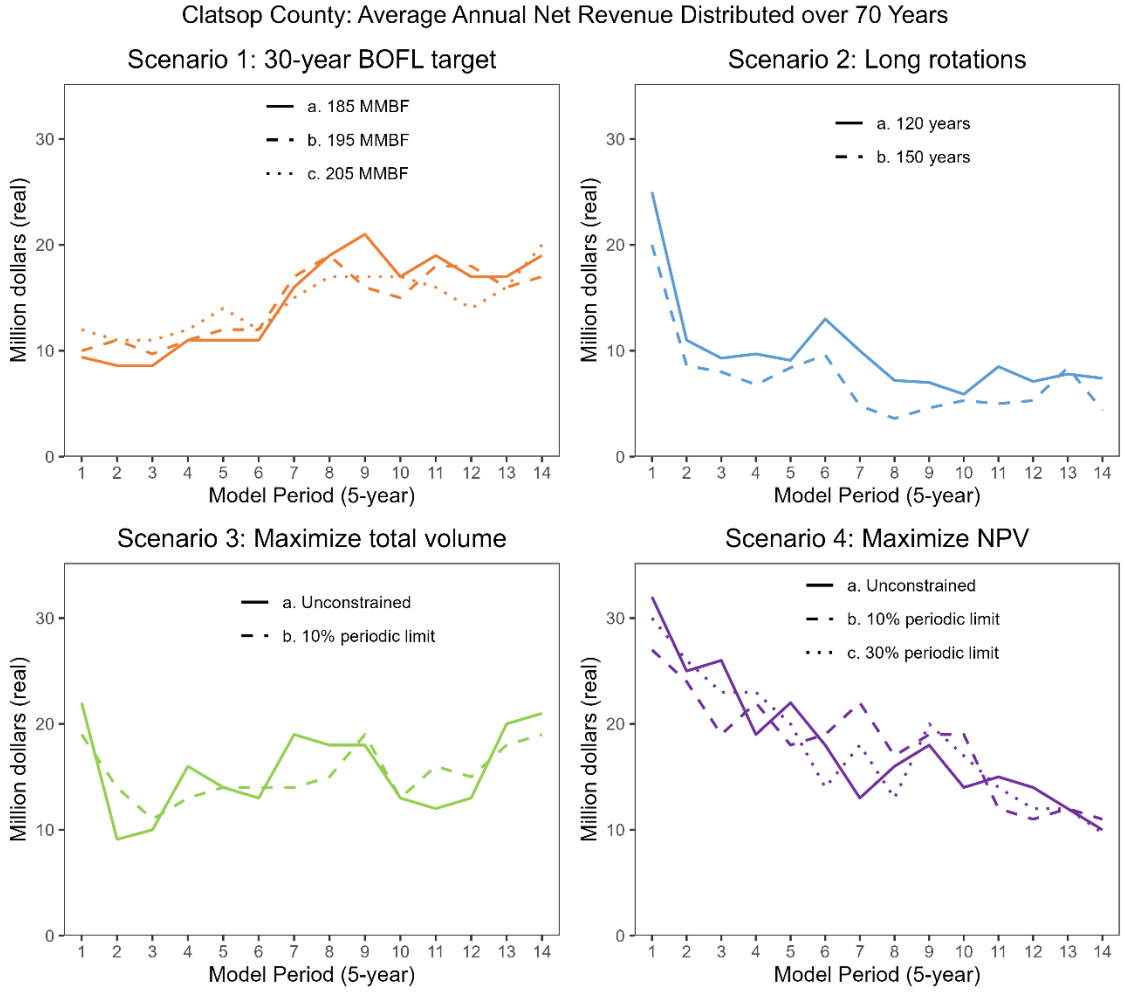
Clackamas County: BOFL Average Annual Volume over 70 Years



Average annual volume (MMBF) on BOFL by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	1.8	2.2	2.3	1.8	1.9	2.1	0.77	0.53	1.4	2	0.67	1.4	2.2	2.1
1b	2	1.7	2.3	1.9	2.8	1.7	1.2	0.26	1.4	1.1	0.52	0.84	1	3.9
1c	2.6	2.1	2.7	1.1	1	1.8	1.1	1.9	0.68	0.94	2	2	1.2	1.2
2a	2.8	0.55	2.8	1.8	2.1	2	1.7	1.5	0.67	0.25	1.3	0.37	1.3	1.3
2b	2.5	2.1	1.9	2.3	0.45	0.39	0.44	0.57	1.6	0.85	0.97	1.1	1.6	1.7
3a	1.9	3.3	3.3	2.5	0.39	0.43	1.3	1.1	0.63	2.5	1.6	0.43	2.1	0
3b	1.9	2	3.2	2.8	2	0.75	1.8	0.64	0.26	0.86	0.62	0.3	2.1	2.8
4a	3.2	2.6	3.7	1.5	0.77	1.1	2.4	1.4	3	2.2	2.4	1.9	2.2	1.1
4b	2.4	2.8	3.6	2.1	0.98	2	2.3	1.7	1.3	1.9	2.2	1.4	2.5	2.2
4c	2.4	3.8	2.7	2.2	1.6	1.8	1.4	1.7	1.5	2.2	3	1.1	2.5	1.9

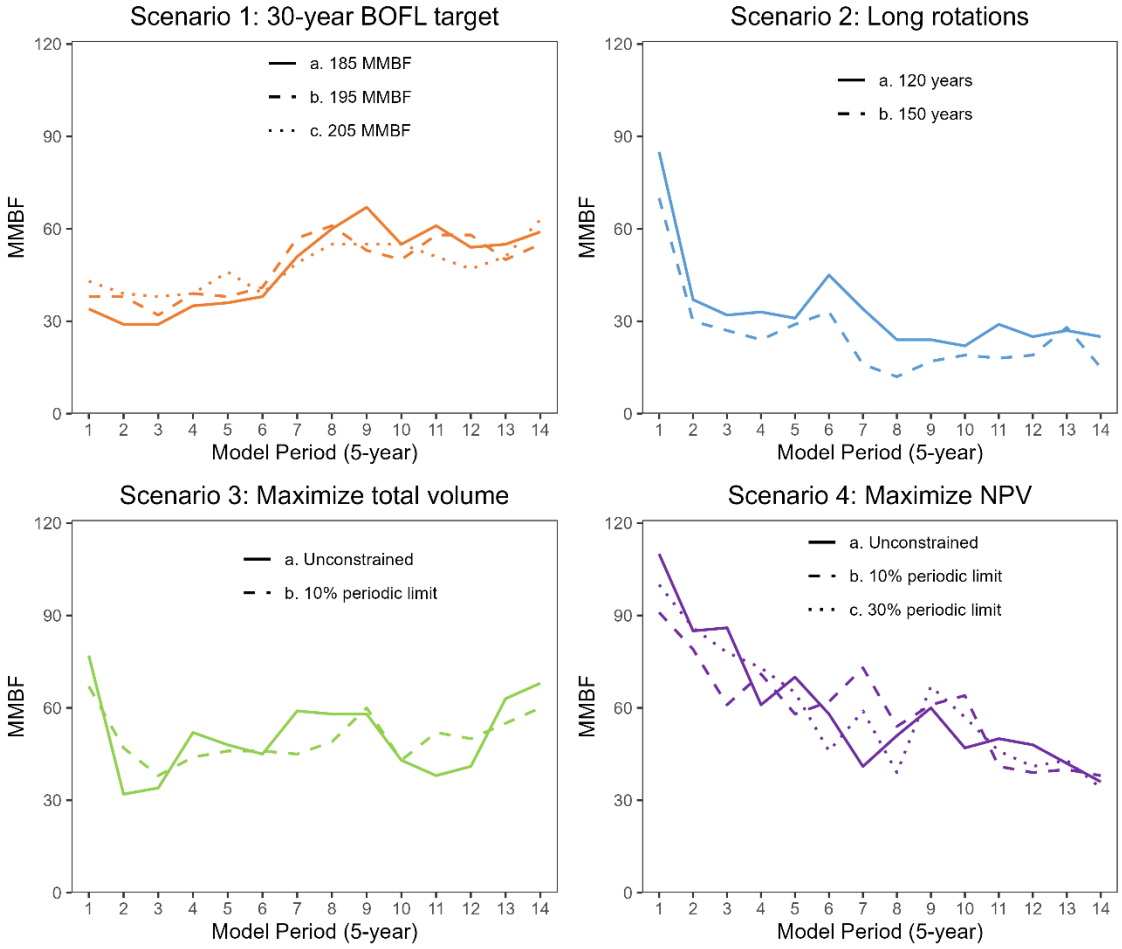
Clatsop County



Average annual net revenue to county (real million $) by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	9.4	8.6	8.6	11	11	11	16	19	21	17	19	17	17	19
1b	10	11	9.7	11	12	12	17	19	16	15	18	18	16	17
1c	12	11	11	12	14	12	15	17	17	17	16	14	16	20
2a	25	11	9.3	9.7	9.1	13	10	7.2	7	5.9	8.5	7.1	7.8	7.4
2b	20	8.6	8	6.8	8.4	9.6	4.8	3.6	4.6	5.3	5	5.3	8.4	4.4
3a	22	9.1	10	16	14	13	19	18	18	13	12	13	20	21
3b	19	14	11	13	14	14	14	15	19	13	16	15	18	19
4a	32	25	26	19	22	18	13	16	18	14	15	14	12	10
4b	27	24	19	22	18	19	22	17	19	19	12	11	12	11
4c	30	26	23	23	20	14	18	13	20	17	14	12	12	9.7

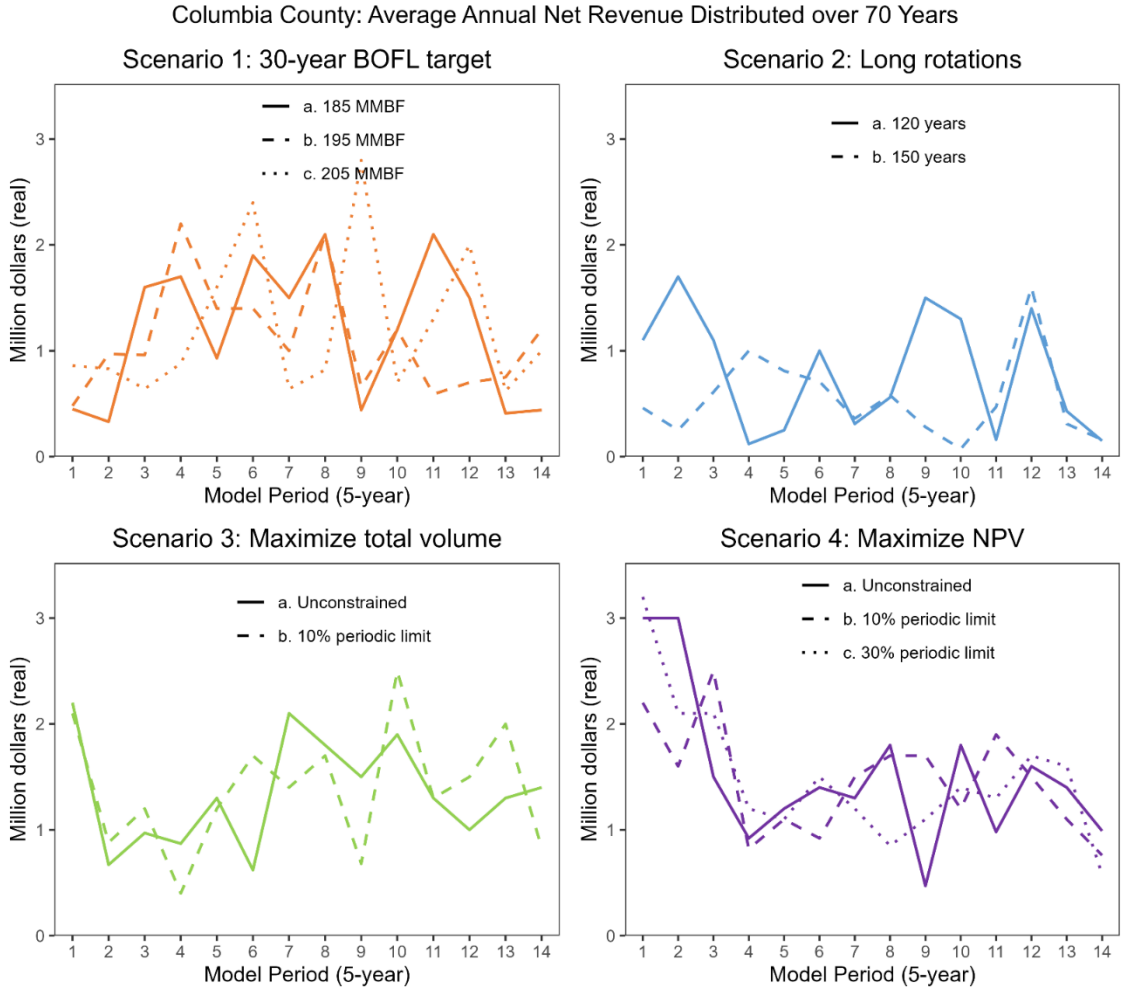
Clatsop County: BOFL Average Annual Volume over 70 Years



Average annual volume (MMBF) on BOFL by model period (5-year)

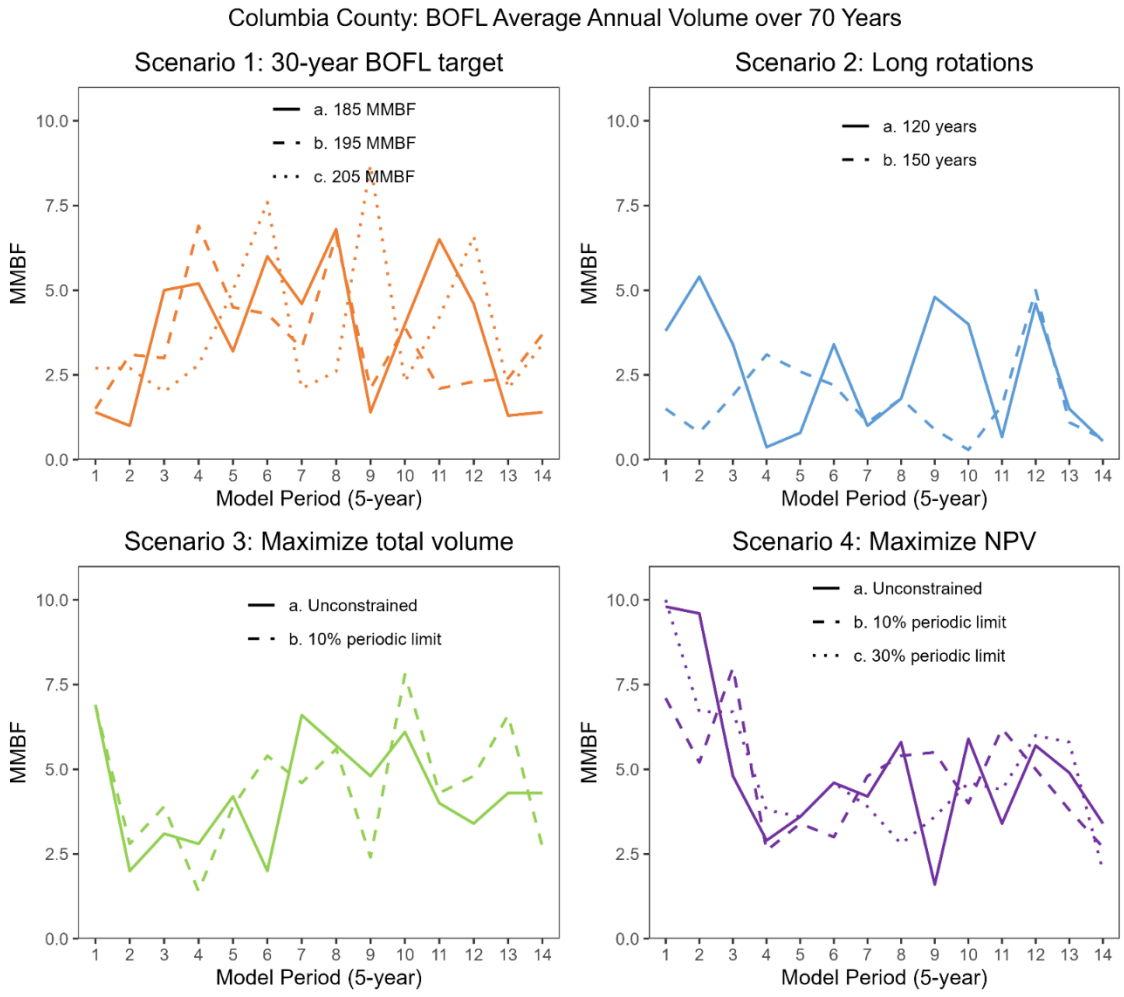
Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	34	29	29	35	36	38	51	60	67	55	61	54	55	59
1b	38	38	32	39	38	41	57	61	53	50	58	58	50	55
1c	43	39	38	39	46	39	49	55	55	55	51	47	51	63
2a	85	37	32	33	31	45	34	24	24	22	29	25	27	25
2b	70	30	27	24	29	33	16	12	17	19	18	19	28	15
3a	77	32	34	52	48	45	59	58	58	43	38	41	63	68
3b	67	47	38	44	46	46	45	49	60	43	52	50	55	60
4a	110	85	86	61	70	58	41	51	60	47	50	48	42	36
4b	91	79	61	71	58	62	73	54	61	64	41	39	40	38
4c	100	86	78	73	65	46	59	39	67	57	46	41	43	34

Columbia County



Average annual net revenue to county (real million $) by model period (5-year)

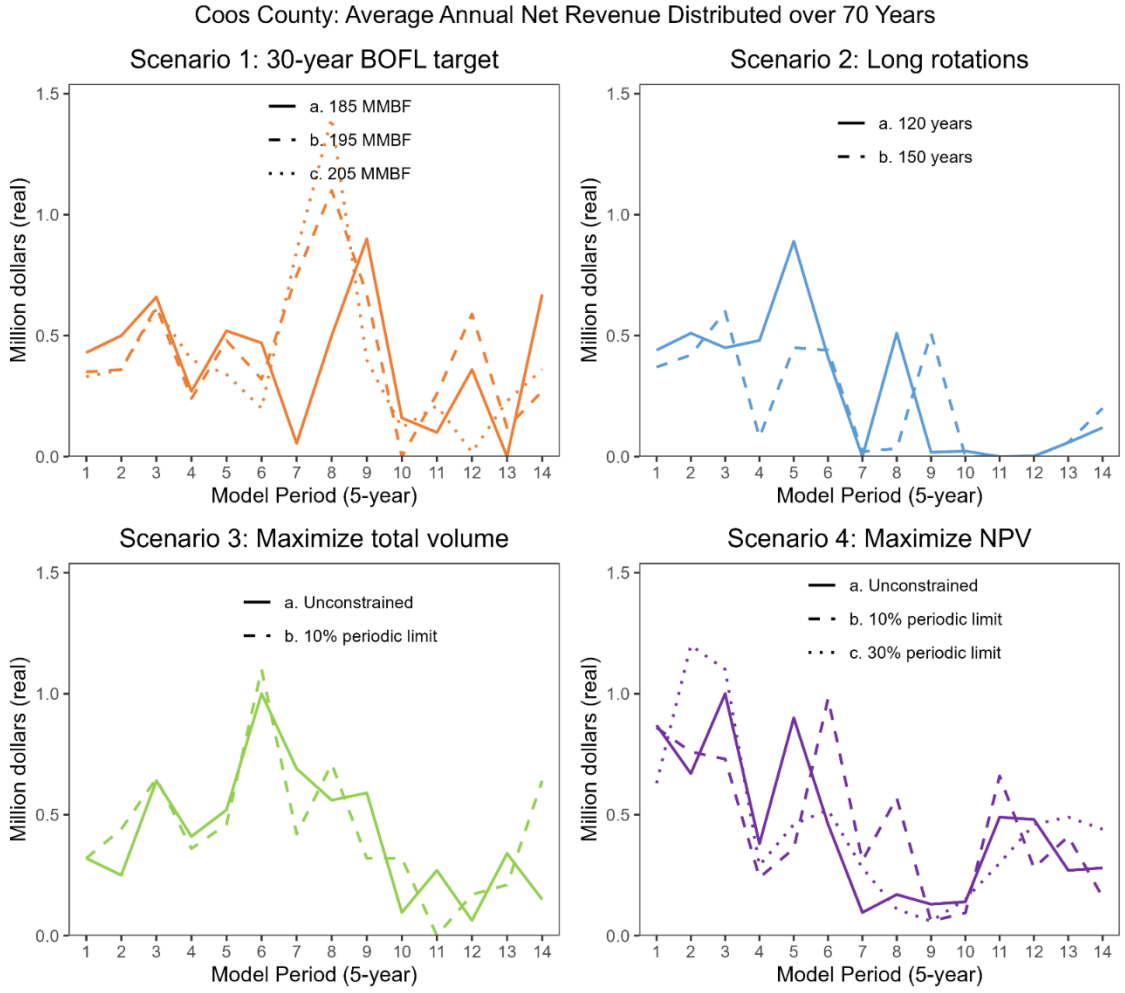
Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	0.45	0.33	1.6	1.7	0.93	1.9	1.5	2.1	0.44	1.2	2.1	1.5	0.41	0.44
1b	0.48	0.97	0.96	2.2	1.4	1.4	1	2.1	0.66	1.2	0.59	0.7	0.75	1.2
1c	0.86	0.83	0.64	0.88	1.6	2.4	0.64	0.82	2.8	0.7	1.3	2	0.62	1
2a	1.1	1.7	1.1	0.12	0.25	1	0.31	0.56	1.5	1.3	0.16	1.4	0.43	0.15
2b	0.46	0.25	0.61	1	0.81	0.71	0.36	0.58	0.28	0.073	0.47	1.6	0.31	0.16
3a	2.2	0.67	0.97	0.87	1.3	0.62	2.1	1.8	1.5	1.9	1.3	1	1.3	1.4
3b	2.1	0.88	1.2	0.4	1.2	1.7	1.4	1.7	0.68	2.5	1.3	1.5	2	0.83
4a	3	3	1.5	0.92	1.2	1.4	1.3	1.8	0.47	1.8	0.98	1.6	1.4	0.99
4b	2.2	1.6	2.5	0.82	1.1	0.92	1.5	1.7	1.7	1.2	1.9	1.5	1.1	0.76
4c	3.2	2.1	2.1	1.2	1.1	1.5	1.2	0.85	1.1	1.4	1.3	1.7	1.6	0.58



Average annual volume (MMBF) on BOFL by model period (5-year)

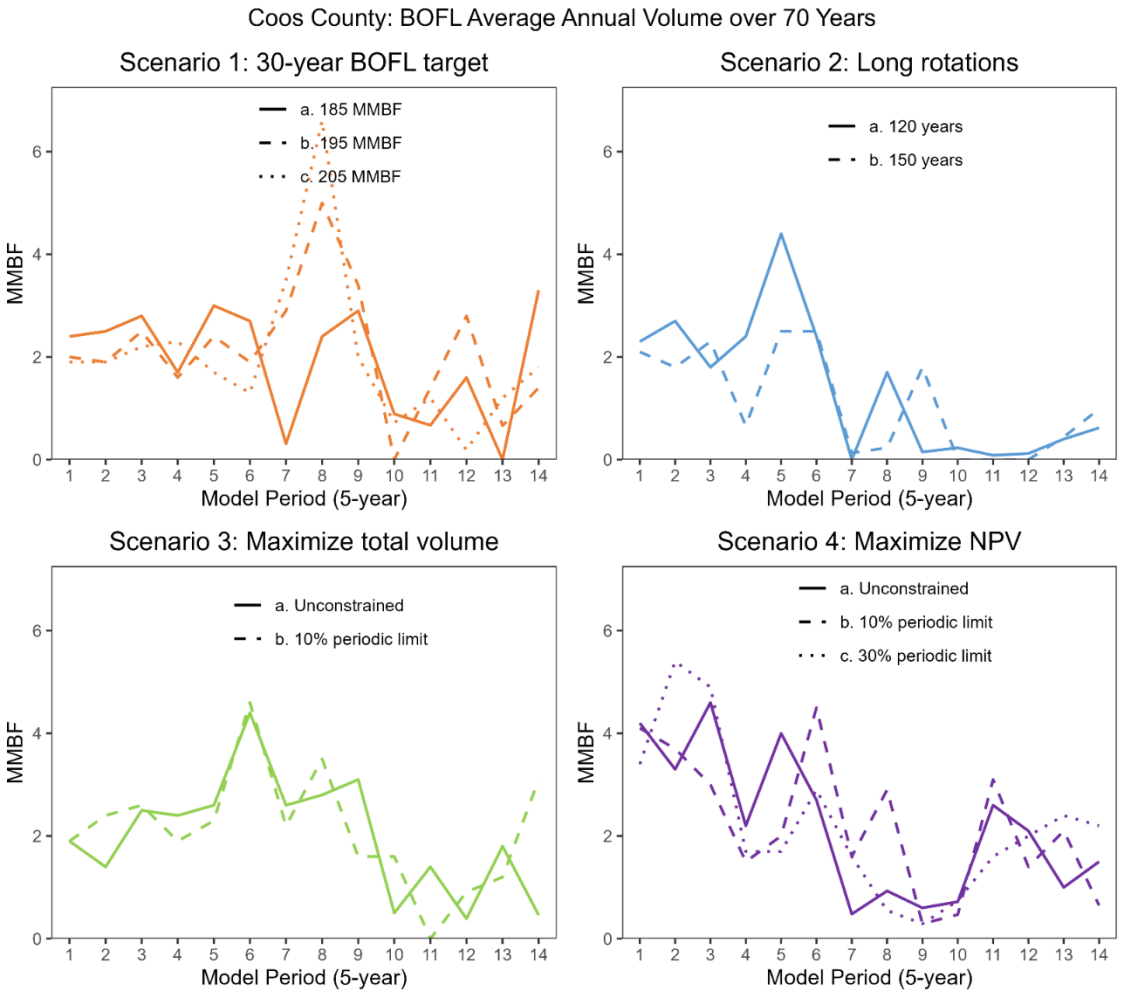
Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	1.4	1	5	5.2	3.2	6	4.6	6.8	1.4	4	6.5	4.6	1.3	1.4
1b	1.5	3.1	3	6.9	4.5	4.3	3.3	6.6	2.1	3.9	2.1	2.3	2.4	3.7
1c	2.7	2.7	2	2.8	5	7.6	2.1	2.6	8.7	2.3	4.2	6.6	2.1	3.4
2a	3.8	5.4	3.4	0.37	0.79	3.4	1	1.8	4.8	4	0.67	4.6	1.5	0.55
2b	1.5	0.8	1.9	3.1	2.6	2.2	1.1	1.8	0.89	0.29	1.6	5	1.1	0.62
3a	6.9	2	3.1	2.8	4.2	2	6.6	5.7	4.8	6.1	4	3.4	4.3	4.3
3b	6.9	2.8	3.9	1.4	3.9	5.4	4.6	5.6	2.4	7.8	4.3	4.8	6.6	2.7
4a	9.8	9.6	4.8	2.9	3.6	4.6	4.2	5.8	1.6	5.9	3.4	5.7	4.9	3.4
4b	7.1	5.2	8	2.6	3.4	3	4.8	5.4	5.5	4	6.2	5	3.8	2.7
4c	10	6.7	6.7	3.8	3.6	4.6	3.9	2.8	3.6	4.6	4.4	6	5.8	2

Coos County



Average annual net revenue to county (real million $) by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	0.43	0.5	0.66	0.27	0.52	0.47	0.055	0.5	0.9	0.16	0.1	0.36	0	0.67
1b	0.35	0.36	0.62	0.24	0.48	0.32	0.75	1.1	0.67	0	0.26	0.59	0.12	0.27
1c	0.33	0.36	0.61	0.4	0.34	0.2	0.85	1.4	0.4	0.12	0.21	0.018	0.23	0.36
2a	0.44	0.51	0.45	0.48	0.89	0.41	0	0.51	0.018	0.023	0	0.0025	0.058	0.12
2b	0.37	0.42	0.6	0.08	0.45	0.44	0.021	0.033	0.51	0	0	0	0.059	0.2
3a	0.32	0.25	0.64	0.41	0.52	1	0.69	0.56	0.59	0.096	0.27	0.063	0.34	0.15
3b	0.32	0.44	0.65	0.36	0.46	1.1	0.42	0.71	0.32	0.32	0	0.17	0.21	0.64
4a	0.87	0.67	1	0.38	0.9	0.46	0.096	0.17	0.13	0.14	0.49	0.48	0.27	0.28
4b	0.86	0.76	0.73	0.24	0.36	0.98	0.31	0.57	0.06	0.094	0.66	0.28	0.41	0.16
4c	0.63	1.2	1.1	0.29	0.46	0.52	0.28	0.11	0.06	0.15	0.3	0.46	0.49	0.44

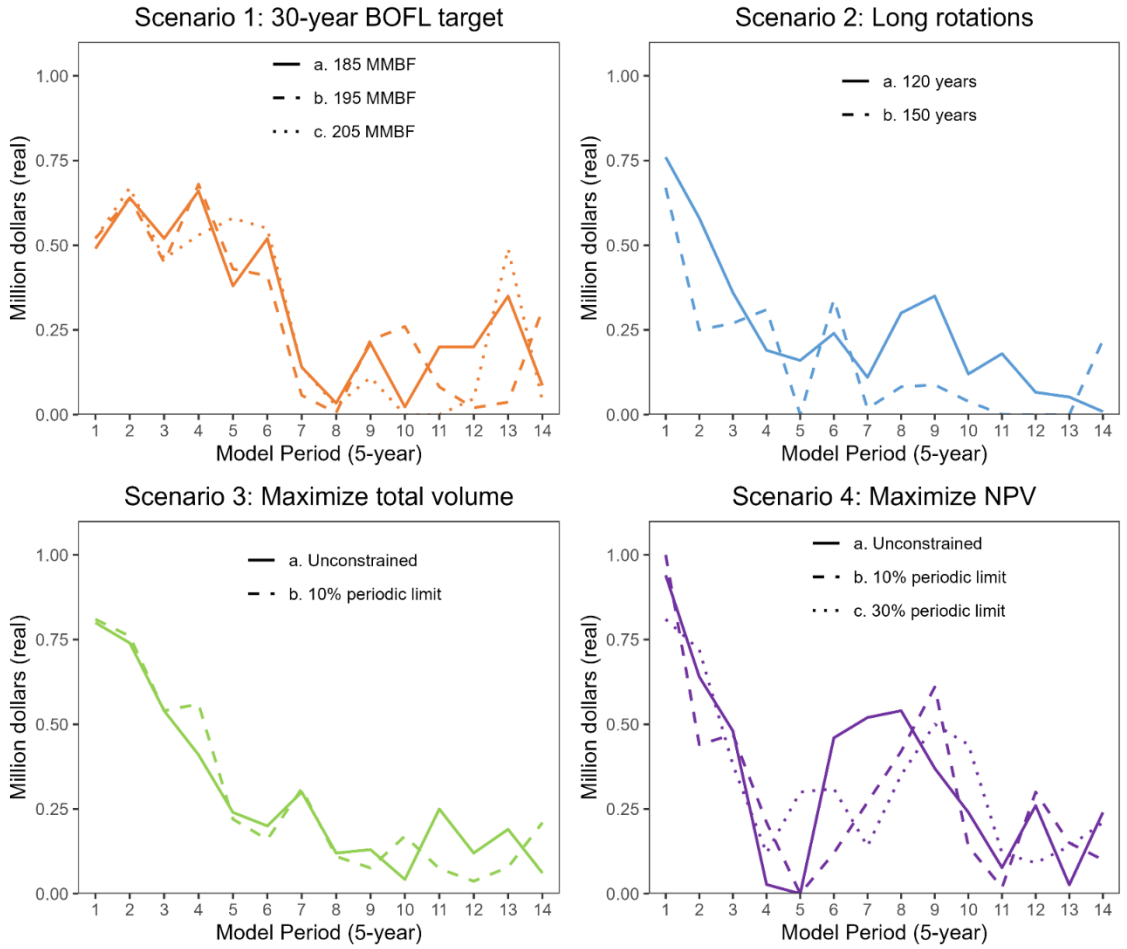


Average annual volume (MMBF) on BOFL by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	2.4	2.5	2.8	1.7	3	2.7	0.31	2.4	2.9	0.89	0.67	1.6	0	3.3
1b	2	1.9	2.5	1.6	2.4	1.9	2.9	5	3.4	0	1.4	2.8	0.66	1.4
1c	1.9	1.9	2.2	2.3	1.7	1.3	3.5	6.6	2	0.72	1.2	0.19	1.2	1.8
2a	2.3	2.7	1.8	2.4	4.4	2.4	0	1.7	0.15	0.23	0.085	0.12	0.4	0.62
2b	2.1	1.8	2.3	0.66	2.5	2.5	0.13	0.23	1.8	0	0	0	0.44	0.99
3a	1.9	1.4	2.5	2.4	2.6	4.4	2.6	2.8	3.1	0.5	1.4	0.39	1.8	0.46
3b	1.9	2.4	2.6	1.9	2.3	4.6	2.2	3.5	1.6	1.6	0	0.91	1.2	3.1
4a	4.2	3.3	4.6	2.2	4	2.7	0.48	0.93	0.6	0.72	2.6	2.1	1	1.5
4b	4.1	3.7	3	1.5	2	4.5	1.6	2.9	0.29	0.47	3.1	1.4	2.1	0.65
4c	3.4	5.4	4.9	1.7	1.7	2.9	1.6	0.55	0.29	0.74	1.6	2	2.4	2.2

Douglas County

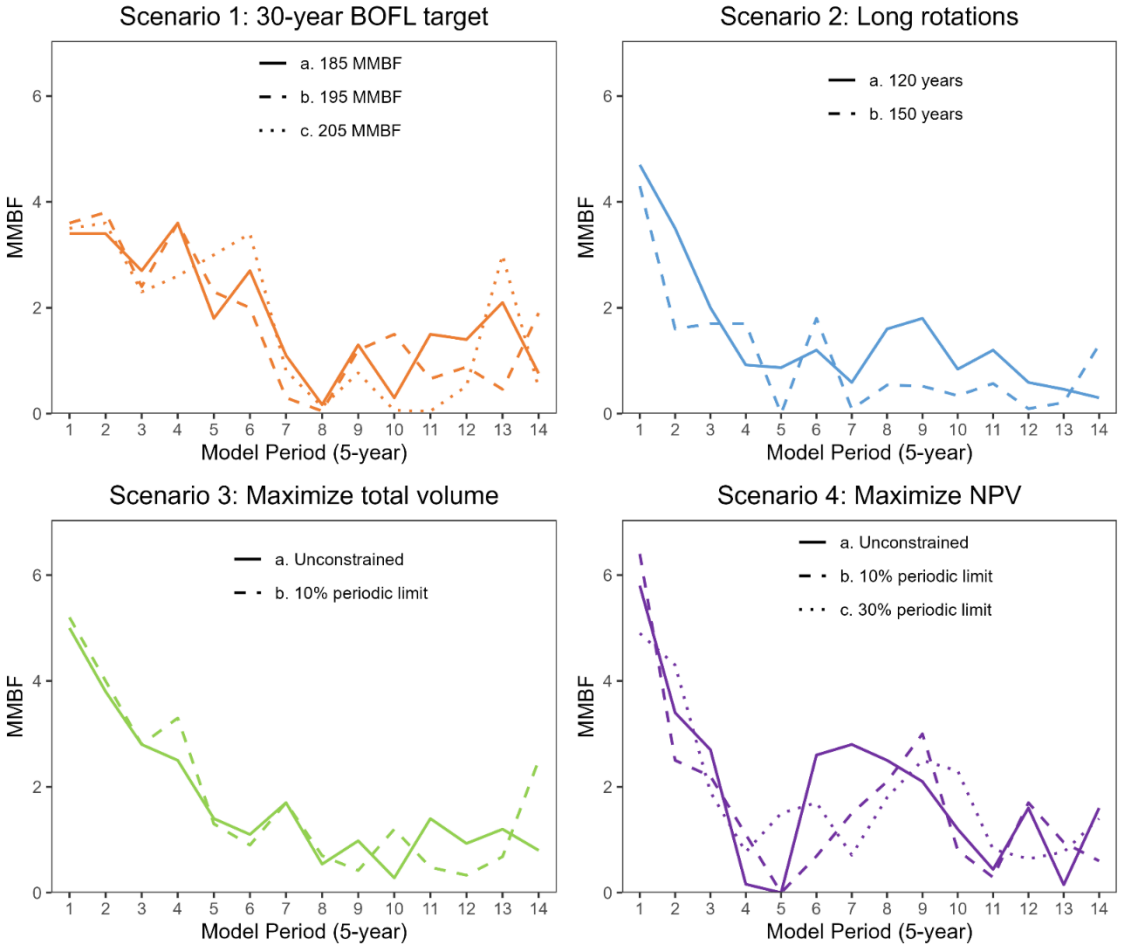
Douglas County: Average Annual Net Revenue Distributed over 70 Years



Average annual net revenue to county (real million $) by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	0.49	0.64	0.52	0.66	0.38	0.52	0.14	0.034	0.21	0.023	0.2	0.2	0.35	0.086
1b	0.52	0.64	0.45	0.68	0.43	0.41	0.057	0.0053	0.22	0.26	0.082	0.02	0.037	0.31
1c	0.52	0.67	0.46	0.53	0.58	0.55	0.14	0.026	0.11	0	0	0.047	0.49	0.04
2a	0.76	0.58	0.36	0.19	0.16	0.24	0.11	0.3	0.35	0.12	0.18	0.066	0.052	0.0091
2b	0.67	0.25	0.27	0.31	0	0.34	0.018	0.082	0.088	0.039	0.00058	0	0	0.22
3a	0.8	0.74	0.54	0.41	0.24	0.2	0.3	0.12	0.13	0.042	0.25	0.12	0.19	0.061
3b	0.81	0.76	0.54	0.56	0.22	0.16	0.31	0.11	0.076	0.17	0.074	0.037	0.078	0.21
4a	0.94	0.64	0.48	0.027	0	0.46	0.52	0.54	0.37	0.24	0.077	0.26	0.026	0.24
4b	1	0.44	0.47	0.21	0	0.12	0.27	0.42	0.61	0.14	0.018	0.3	0.15	0.1
4c	0.81	0.72	0.38	0.12	0.3	0.31	0.14	0.35	0.5	0.44	0.12	0.091	0.14	0.21

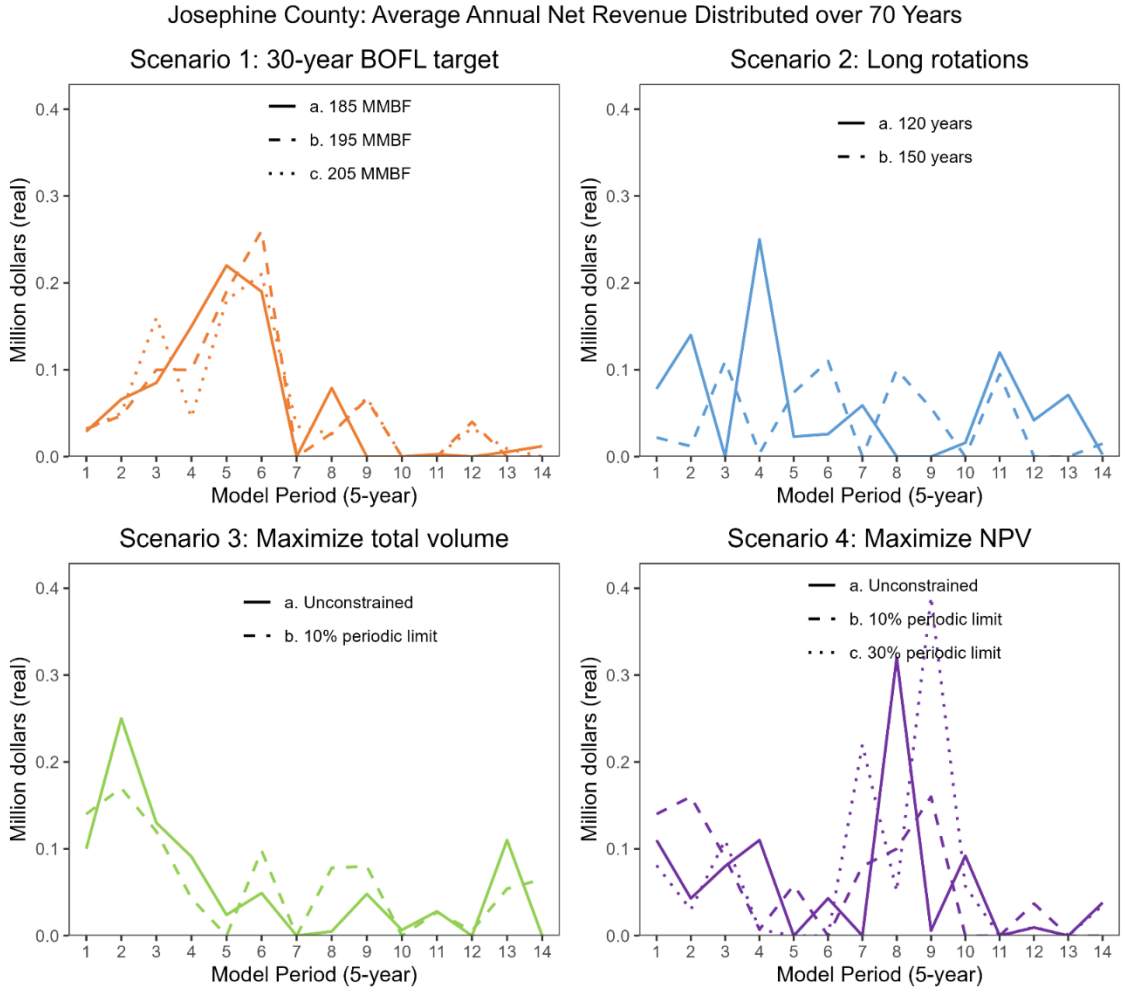
Douglas County: BOFL Average Annual Volume over 70 Years



Average annual volume (MMBF) on BOFL by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	3.4	3.4	2.7	3.6	1.8	2.7	1.1	0.17	1.3	0.3	1.5	1.4	2.1	0.76
1b	3.6	3.8	2.4	3.6	2.3	2	0.3	0.049	1.2	1.5	0.66	0.88	0.46	1.9
1c	3.5	3.6	2.3	2.6	3	3.4	0.81	0.13	0.77	0.062	0.047	0.52	3	0.48
2a	4.7	3.5	2	0.92	0.87	1.2	0.59	1.6	1.8	0.84	1.2	0.59	0.46	0.3
2b	4.3	1.6	1.7	1.7	0	1.8	0.087	0.54	0.52	0.34	0.57	0.094	0.21	1.3
3a	5	3.8	2.8	2.5	1.4	1.1	1.7	0.54	0.98	0.28	1.4	0.93	1.2	0.8
3b	5.2	4	2.8	3.3	1.3	0.9	1.7	0.7	0.42	1.2	0.48	0.33	0.68	2.5
4a	5.8	3.4	2.7	0.16	0	2.6	2.8	2.5	2.1	1.2	0.44	1.6	0.15	1.6
4b	6.4	2.5	2.2	1.1	0	0.69	1.5	2.1	3	0.8	0.29	1.7	0.95	0.6
4c	4.9	4.3	1.9	0.77	1.5	1.7	0.71	1.8	2.5	2.3	0.82	0.64	0.77	1.4

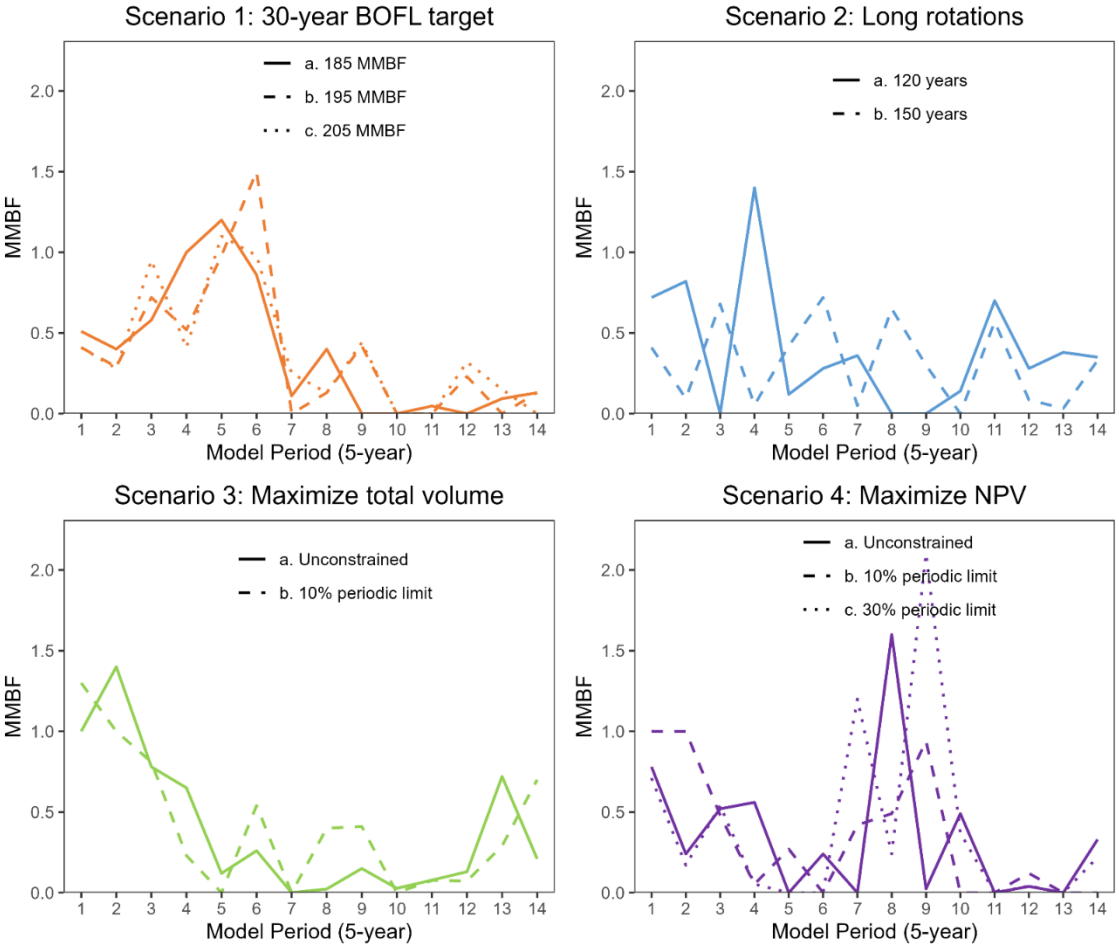
Josephine County



Average annual net revenue to county (real million $) by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	0.029	0.066	0.085	0.15	0.22	0.19	0	0.079	0	0	0.0028	0	0.0055	0.012
1b	0.032	0.047	0.1	0.1	0.19	0.26	0	0.027	0.066	0	0	0.04	0	0
1c	0.032	0.05	0.16	0.045	0.18	0.21	0.035	0.026	0.068	0	0	0.033	0.0091	0
2a	0.078	0.14	0	0.25	0.023	0.026	0.059	0	0	0.016	0.12	0.042	0.071	0.0023
2b	0.022	0.012	0.11	0.0036	0.074	0.11	0	0.1	0.056	0	0.095	0	0	0.015
3a	0.1	0.25	0.13	0.091	0.024	0.049	0	0.005	0.048	0.0066	0.028	0	0.11	0
3b	0.14	0.17	0.12	0.043	0	0.098	0	0.078	0.08	0	0.027	0.0058	0.054	0.065
4a	0.11	0.043	0.08	0.11	0	0.043	0	0.32	0.0059	0.092	0	0.0094	0	0.038
4b	0.14	0.16	0.09	0.0072	0.058	0	0.08	0.1	0.16	0	0	0.037	0	0
4c	0.081	0.03	0.11	0.0072	0	0	0.22	0.051	0.39	0.057	0	0.0099	0	0.035

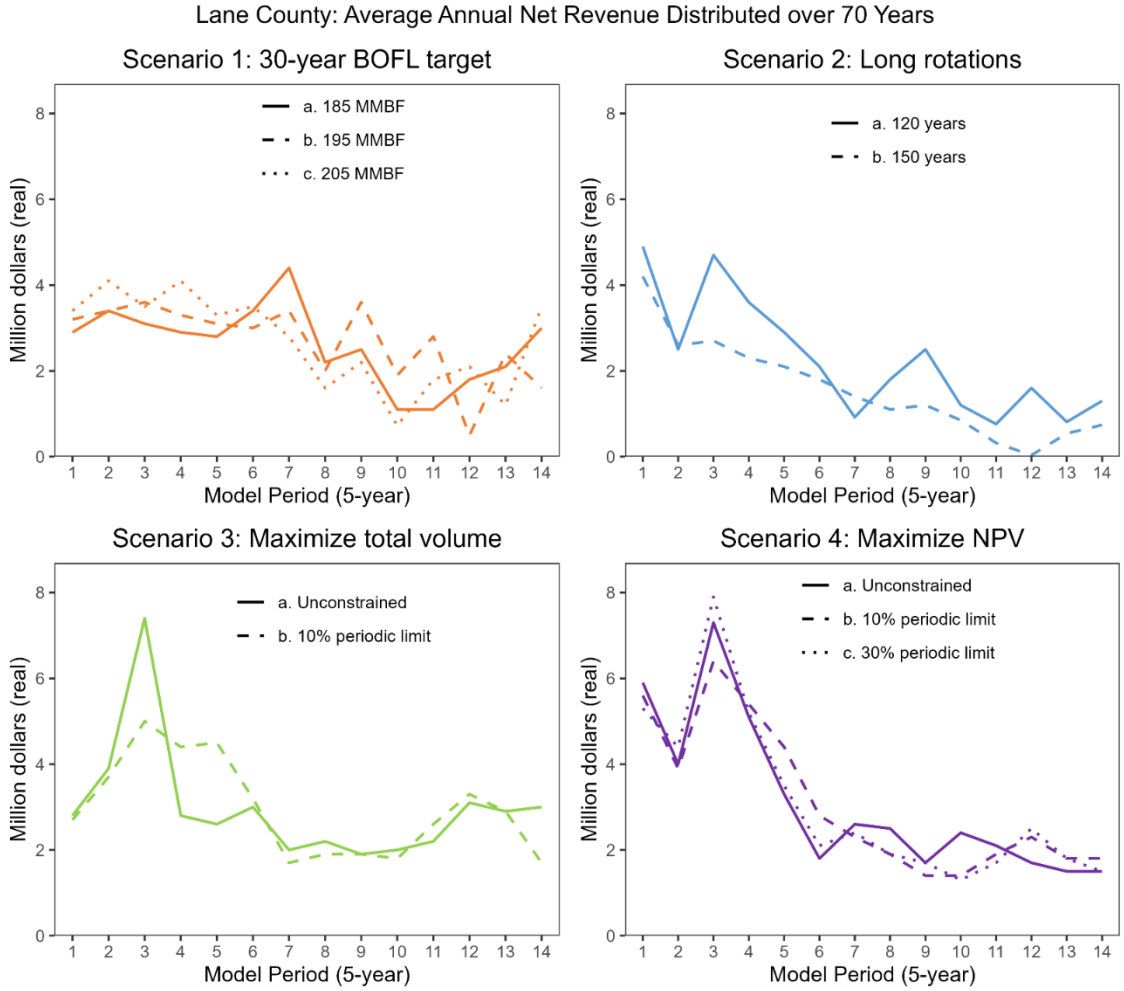
Josephine County: BOFL Average Annual Volume over 70 Years



Average annual volume (MMBF) on BOFL by model period (5-year)

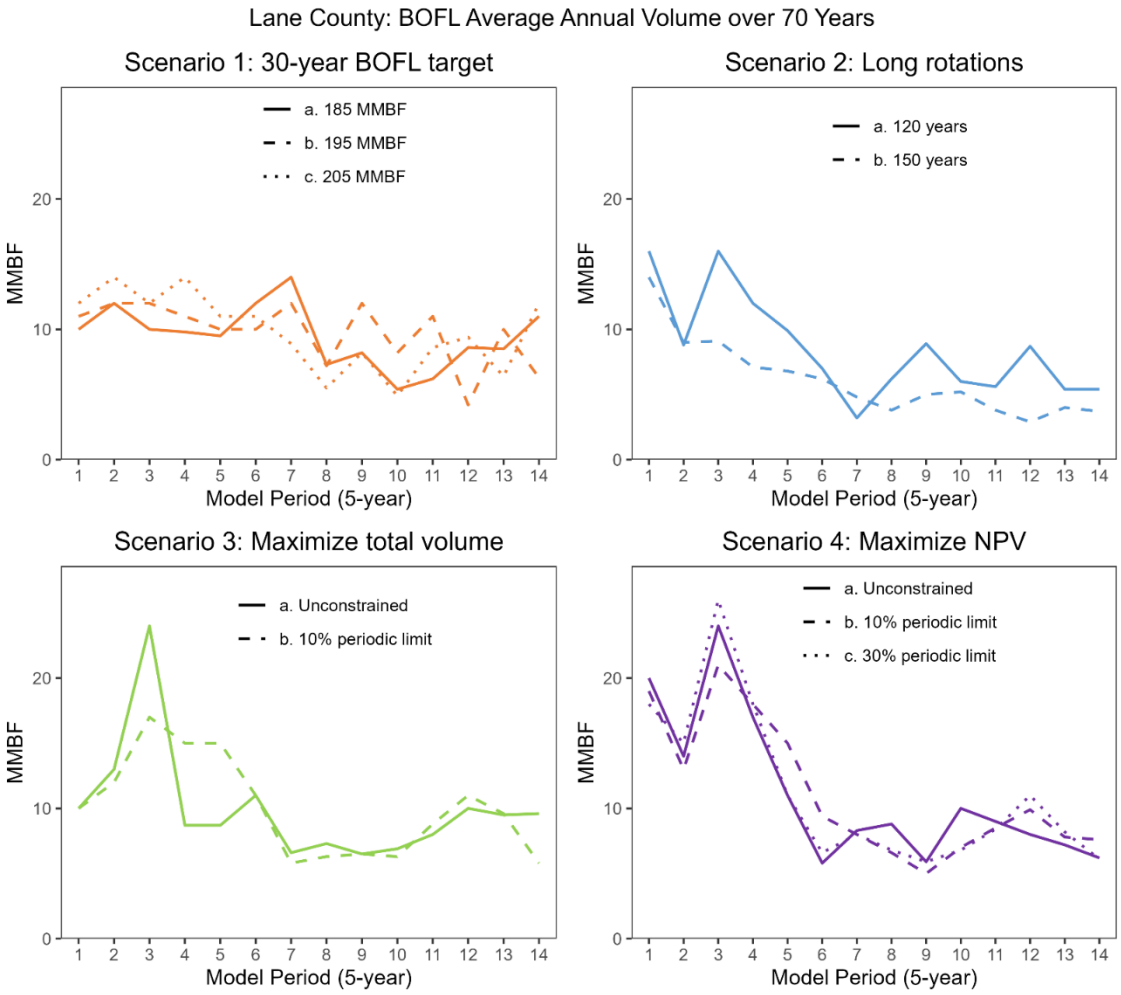
Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	0.51	0.4	0.58	1	1.2	0.86	0.11	0.4	0	0	0.047	0	0.093	0.13
1b	0.41	0.29	0.72	0.52	0.98	1.5	0	0.13	0.42	0	0	0.23	0	0.13
1c	0.41	0.28	0.95	0.41	1.1	0.98	0.25	0.13	0.44	0	0	0.32	0.15	0
2a	0.72	0.82	0	1.4	0.12	0.28	0.36	0	0	0.14	0.7	0.28	0.38	0.35
2b	0.41	0.094	0.68	0.053	0.42	0.72	0.05	0.65	0.3	0	0.57	0.085	0.033	0.33
3a	1	1.4	0.78	0.65	0.12	0.26	0	0.023	0.15	0.027	0.078	0.13	0.72	0.21
3b	1.3	1	0.81	0.23	0	0.54	0	0.4	0.41	0	0.076	0.073	0.29	0.7
4a	0.78	0.24	0.52	0.56	0	0.24	0	1.6	0.024	0.49	0	0.039	0	0.33
4b	1	1	0.48	0.053	0.27	0	0.42	0.49	0.94	0	0	0.12	0	0
4c	0.71	0.17	0.54	0.053	0	0	1.2	0.24	2.1	0.37	0	0.041	0	0.22

Lane County



Average annual net revenue to county (real million $) by model period (5-year)

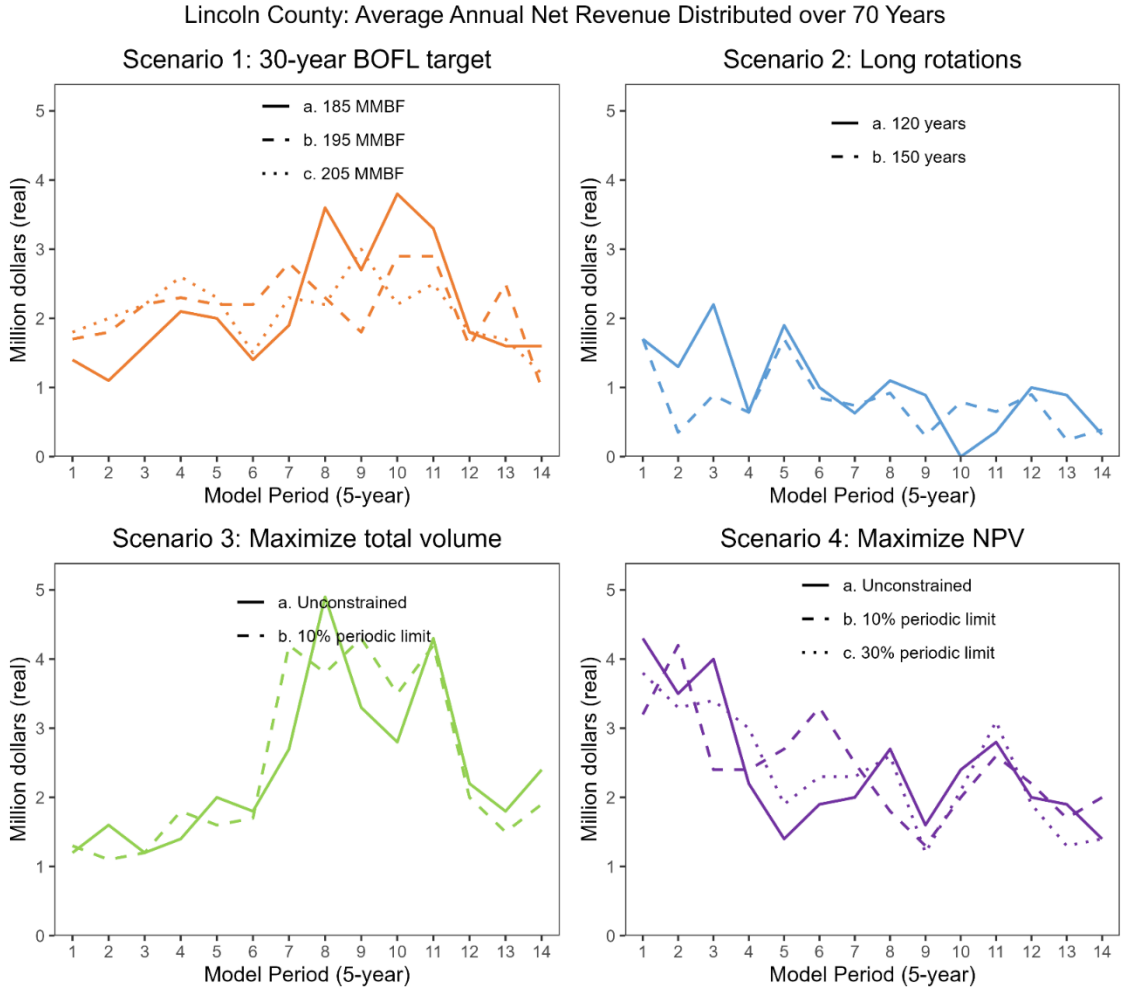
Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	2.9	3.4	3.1	2.9	2.8	3.4	4.4	2.2	2.5	1.1	1.1	1.8	2.1	3
1b	3.2	3.4	3.6	3.3	3.1	3	3.4	2	3.6	1.9	2.8	0.49	2.4	1.6
1c	3.4	4.1	3.5	4.1	3.3	3.5	2.8	1.6	2.2	0.72	1.8	2.1	1.2	3.5
2a	4.9	2.5	4.7	3.6	2.9	2.1	0.92	1.8	2.5	1.2	0.76	1.6	0.81	1.3
2b	4.2	2.6	2.7	2.3	2.1	1.8	1.4	1.1	1.2	0.85	0.32	0.034	0.54	0.74
3a	2.8	3.9	7.4	2.8	2.6	3	2	2.2	1.9	2	2.2	3.1	2.9	3
3b	2.7	3.7	5	4.4	4.5	3.2	1.7	1.9	1.9	1.8	2.6	3.3	2.9	1.7
4a	5.9	4	7.3	5.1	3.3	1.8	2.6	2.5	1.7	2.4	2.1	1.7	1.5	1.5
4b	5.6	3.9	6.4	5.4	4.4	2.8	2.3	1.9	1.4	1.4	1.9	2.3	1.8	1.8
4c	5.3	4.4	7.9	5.2	3.5	2.1	2.4	1.9	1.7	1.3	1.7	2.5	1.8	1.5



Average annual volume (MMBF) on BOFL by model period (5-year)

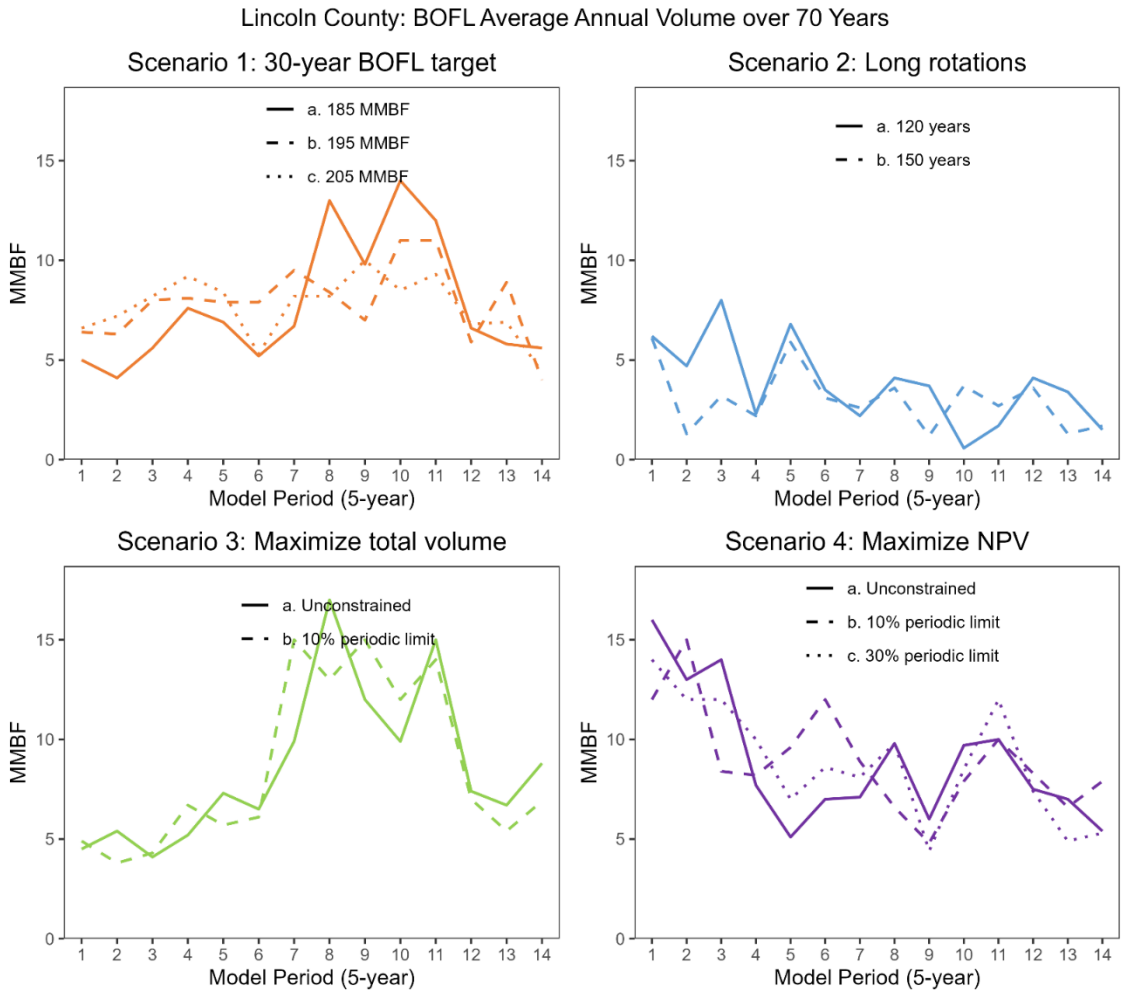
Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	10	12	10	9.8	9.5	12	14	7.3	8.2	5.4	6.2	8.6	8.5	11
1b	11	12	12	11	10	10	12	7.2	12	8.2	11	4.2	10	6.3
1c	12	14	12	14	11	11	8.9	5.5	8.2	4.9	8.6	9.4	6.4	12
2a	16	8.8	16	12	9.9	7	3.2	6.2	8.9	6	5.6	8.7	5.4	5.4
2b	14	9	9.1	7.1	6.8	6.2	4.8	3.8	5	5.2	3.8	2.9	4	3.7
3a	10	13	24	8.7	8.7	11	6.6	7.3	6.5	6.9	8	10	9.5	9.6
3b	10	12	17	15	15	11	5.8	6.3	6.5	6.3	8.8	11	9.6	5.8
4a	20	14	24	17	11	5.8	8.3	8.8	5.9	10	9	8	7.2	6.2
4b	19	13	21	18	15	9.4	8	6.6	5	7	8.5	9.9	7.8	7.6
4c	18	15	26	18	11	6.6	8	6.8	5.9	6.8	8.4	11	8.2	6.1

Lincoln County



Average annual net revenue to county (real million $) by model period (5-year)

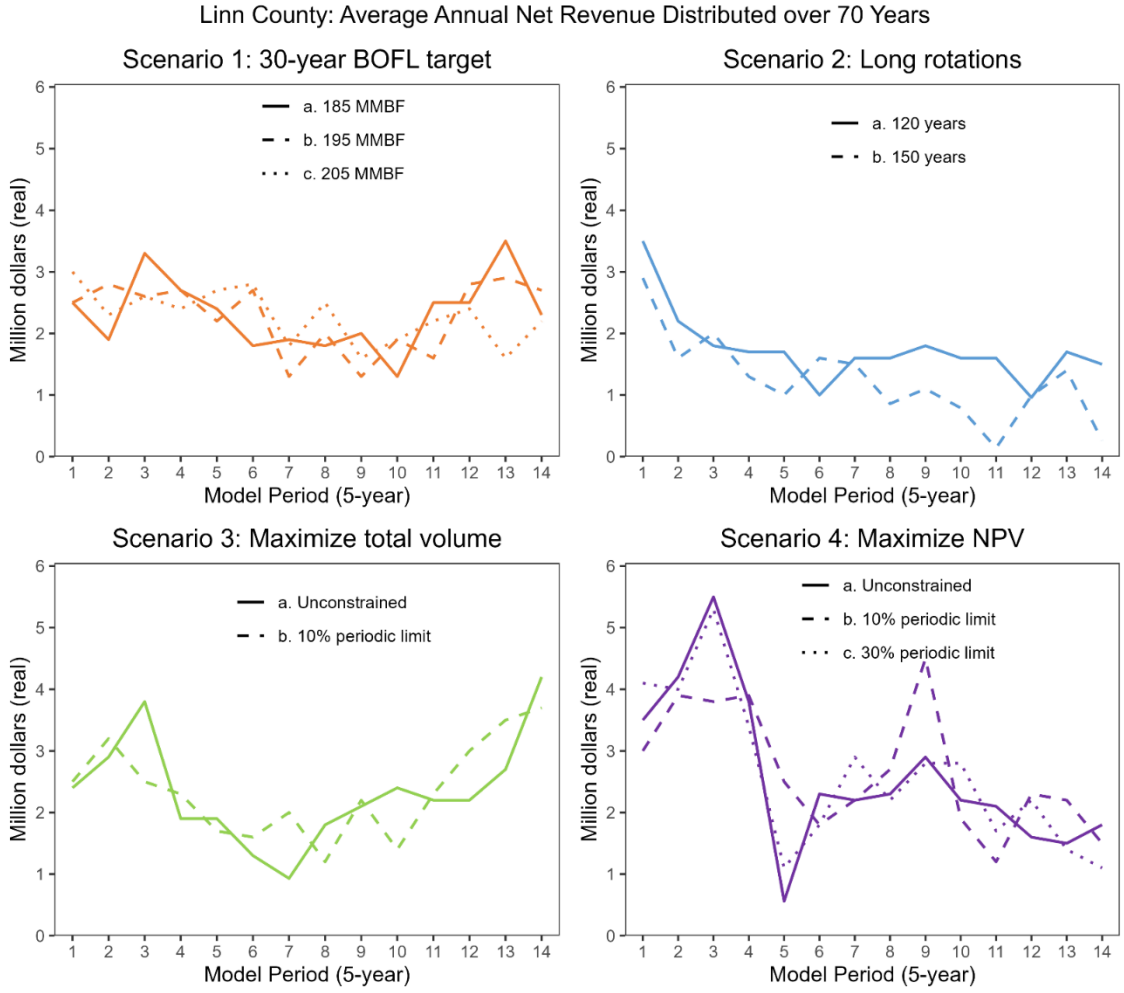
Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	1.4	1.1	1.6	2.1	2	1.4	1.9	3.6	2.7	3.8	3.3	1.8	1.6	1.6
1b	1.7	1.8	2.2	2.3	2.2	2.2	2.8	2.3	1.8	2.9	2.9	1.6	2.5	0.99
1c	1.8	2	2.2	2.6	2.3	1.5	2.3	2.2	3	2.2	2.5	1.8	1.7	1.2
2a	1.7	1.3	2.2	0.65	1.9	1	0.63	1.1	0.89	0	0.36	1	0.89	0.32
2b	1.7	0.35	0.89	0.64	1.7	0.85	0.74	0.92	0.3	0.79	0.65	0.9	0.24	0.39
3a	1.2	1.6	1.2	1.4	2	1.8	2.7	4.9	3.3	2.8	4.3	2.2	1.8	2.4
3b	1.3	1.1	1.2	1.8	1.6	1.7	4.2	3.8	4.3	3.5	4.2	2	1.5	1.9
4a	4.3	3.5	4	2.2	1.4	1.9	2	2.7	1.6	2.4	2.8	2	1.9	1.4
4b	3.2	4.2	2.4	2.4	2.7	3.3	2.5	1.8	1.3	2	2.6	2.2	1.7	2
4c	3.8	3.3	3.4	3	1.9	2.3	2.3	2.6	1.2	2.1	3.1	1.9	1.3	1.4



Average annual volume (MMBF) on BOFL by model period (5-year)

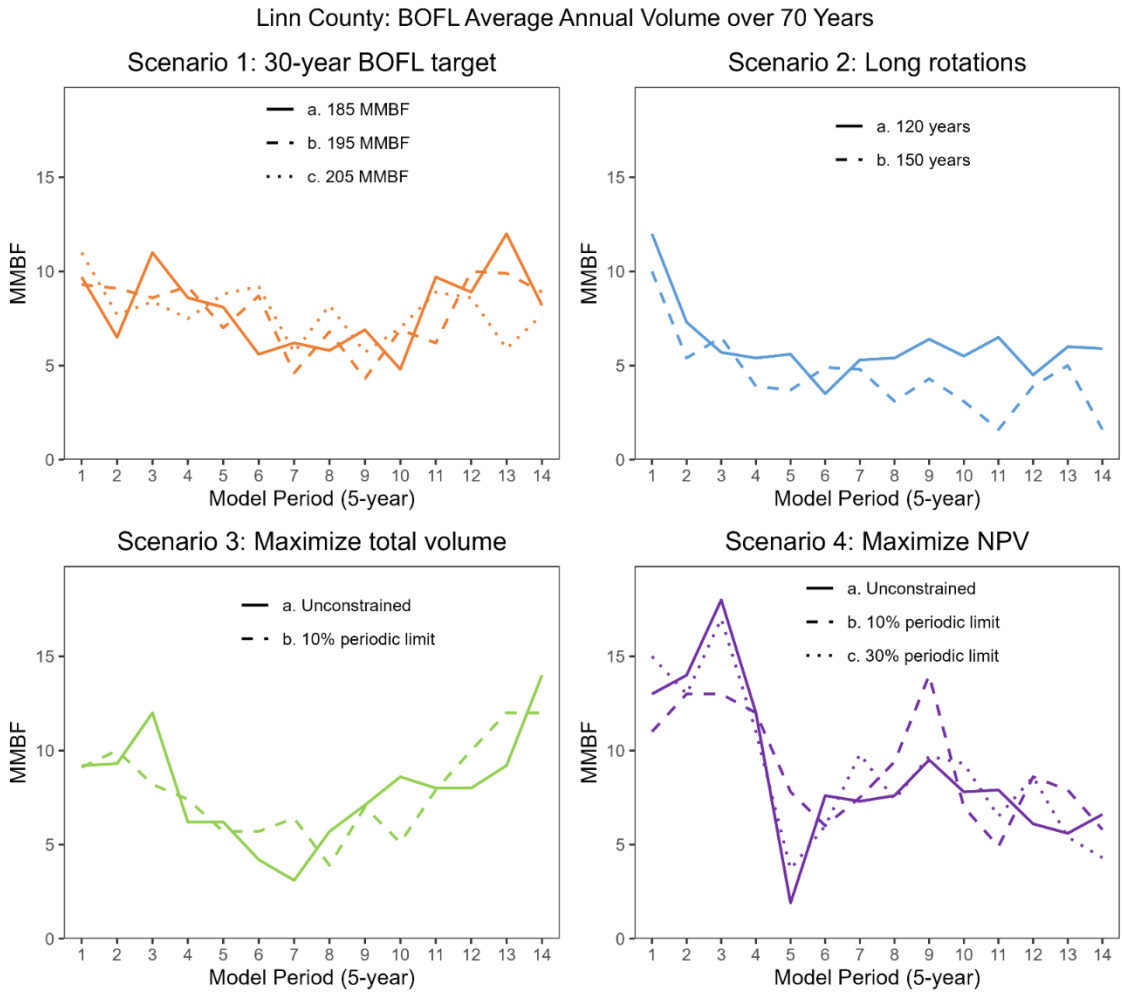
Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	5	4.1	5.6	7.6	6.9	5.2	6.7	13	9.8	14	12	6.6	5.8	5.6
1b	6.4	6.3	8	8.1	7.9	7.9	9.5	8.4	7	11	11	5.9	8.9	4
1c	6.6	7.2	8.2	9.2	8.4	5.3	8.2	8.2	10	8.5	9.3	6.8	6.9	4.4
2a	6.2	4.7	8	2.3	6.8	3.5	2.2	4.1	3.7	0.58	1.7	4.1	3.4	1.5
2b	6.1	1.3	3.2	2.2	5.9	3.1	2.6	3.6	1.2	3.7	2.7	3.6	1.3	1.7
3a	4.5	5.4	4.1	5.2	7.3	6.5	9.9	17	12	9.9	15	7.4	6.7	8.8
3b	4.9	3.8	4.3	6.7	5.7	6.1	15	13	15	12	14	7	5.4	6.9
4a	16	13	14	7.7	5.1	7	7.1	9.8	6	9.7	10	7.5	7	5.4
4b	12	15	8.4	8.2	9.6	12	8.9	6.6	4.8	7.9	10	8.3	6.6	7.9
4c	14	12	12	10	7	8.6	8.1	9.8	4.4	8.5	12	7.4	4.9	5.3

Linn County



Average annual net revenue to county (real million $) by model period (5-year)

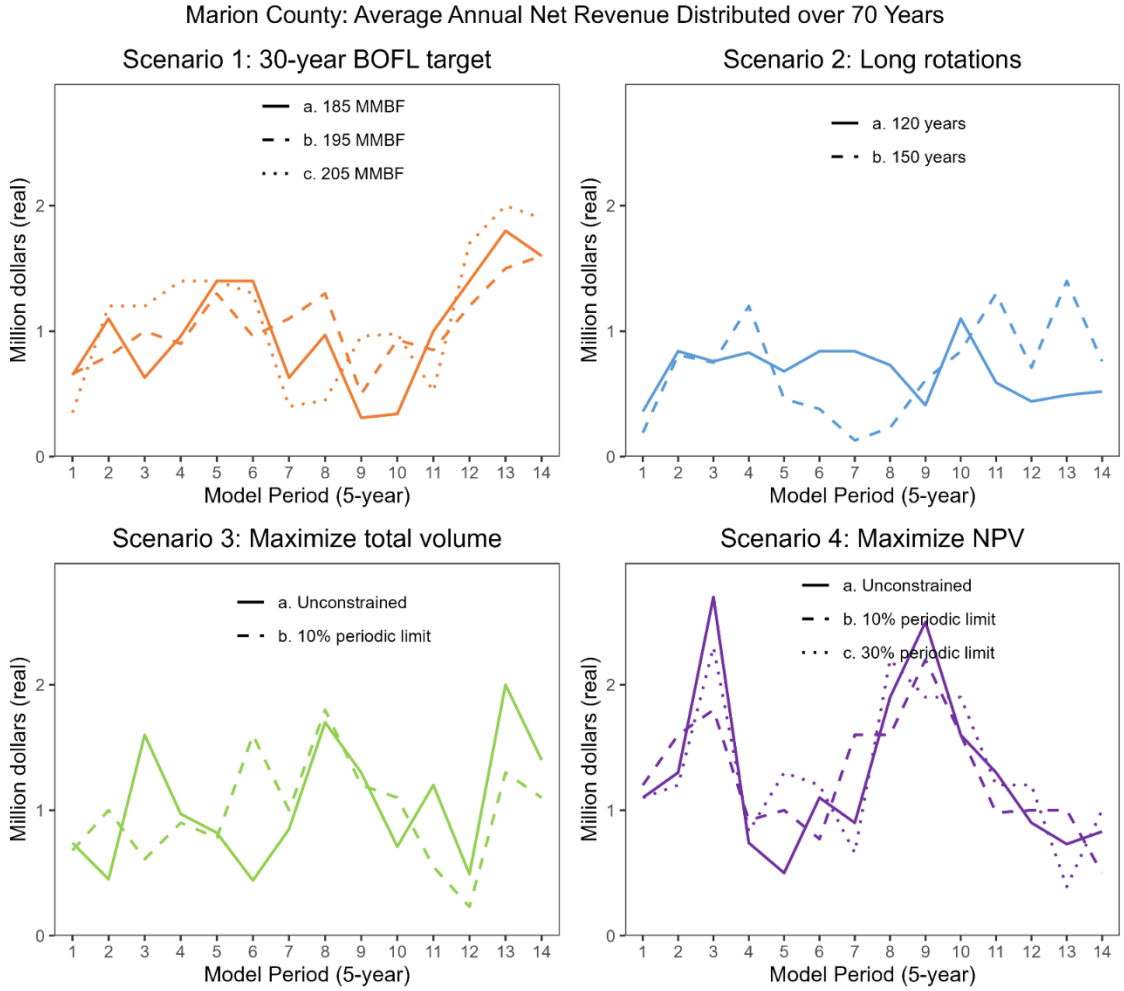
Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	2.5	1.9	3.3	2.7	2.4	1.8	1.9	1.8	2	1.3	2.5	2.5	3.5	2.3
1b	2.5	2.8	2.6	2.7	2.2	2.7	1.3	2	1.3	1.9	1.6	2.8	2.9	2.7
1c	3	2.3	2.6	2.4	2.7	2.8	1.8	2.5	1.6	1.9	2.2	2.4	1.6	2.2
2a	3.5	2.2	1.8	1.7	1.7	1	1.6	1.6	1.8	1.6	1.6	0.96	1.7	1.5
2b	2.9	1.6	2	1.3	1	1.6	1.5	0.86	1.1	0.79	0.14	0.99	1.4	0.26
3a	2.4	2.9	3.8	1.9	1.9	1.3	0.93	1.8	2.1	2.4	2.2	2.2	2.7	4.2
3b	2.5	3.2	2.5	2.3	1.7	1.6	2	1.2	2.2	1.4	2.3	3	3.5	3.7
4a	3.5	4.2	5.5	3.8	0.56	2.3	2.2	2.3	2.9	2.2	2.1	1.6	1.5	1.8
4b	3	3.9	3.8	3.9	2.5	1.8	2.2	2.7	4.5	1.9	1.2	2.3	2.2	1.5
4c	4.1	4	5.3	3.4	1.1	1.8	2.9	2.2	2.8	2.8	1.7	2.2	1.4	1.1



Average annual volume (MMBF) on BOFL by model period (5-year)

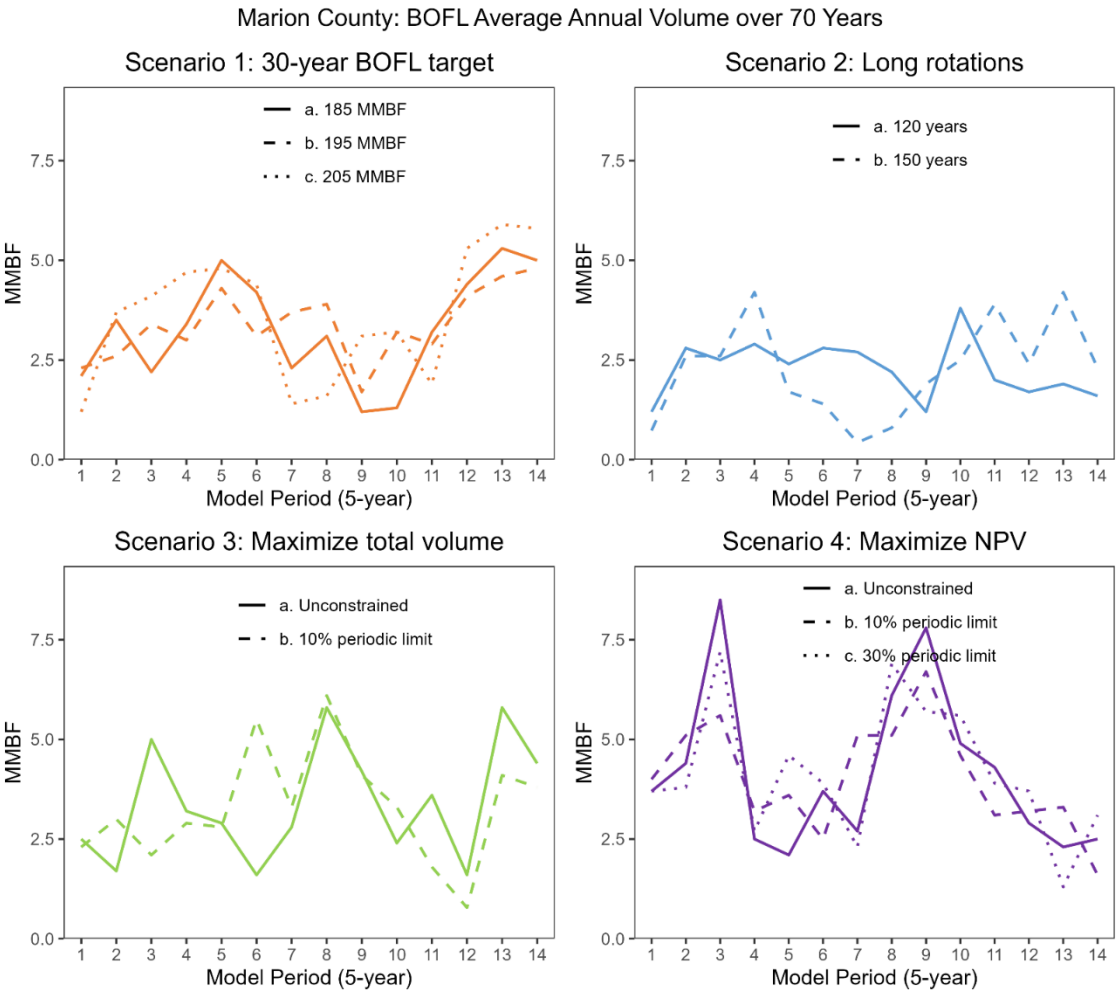
Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	9.7	6.5	11	8.6	8.1	5.6	6.2	5.8	6.9	4.8	9.7	8.9	12	8.2
1b	9.3	9.1	8.6	9.2	7	8.7	4.6	6.8	4.3	6.9	6.2	10	9.9	8.9
1c	11	7.7	8.4	7.5	8.8	9.2	5.7	8.2	5.7	7	8.9	8.6	5.9	7.7
2a	12	7.3	5.7	5.4	5.6	3.5	5.3	5.4	6.4	5.5	6.5	4.5	6	5.9
2b	10	5.4	6.5	3.9	3.7	4.9	4.8	3.1	4.3	3.1	1.6	3.9	5	1.6
3a	9.2	9.3	12	6.2	6.2	4.2	3.1	5.7	7.1	8.6	8	8	9.2	14
3b	9.1	10	8.2	7.4	5.7	5.7	6.4	3.9	7	5.1	7.9	10	12	12
4a	13	14	18	12	1.9	7.6	7.3	7.6	9.5	7.8	7.9	6.1	5.6	6.6
4b	11	13	13	12	7.8	6	7.5	9.4	14	7	4.9	8.6	7.9	5.8
4c	15	13	17	11	3.7	6	9.8	7.4	9.7	9.3	6.5	8.6	5.4	4.3

Marion County



Average annual net revenue to county (real million $) by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	0.65	1.1	0.63	0.96	1.4	1.4	0.63	0.97	0.31	0.34	1	1.4	1.8	1.6
1b	0.66	0.8	1	0.9	1.3	0.96	1.1	1.3	0.5	0.93	0.85	1.2	1.5	1.6
1c	0.35	1.2	1.2	1.4	1.4	1.3	0.4	0.45	0.96	0.98	0.52	1.7	2	1.9
2a	0.36	0.84	0.76	0.83	0.68	0.84	0.84	0.73	0.41	1.1	0.59	0.44	0.49	0.52
2b	0.19	0.81	0.75	1.2	0.46	0.38	0.13	0.23	0.61	0.84	1.3	0.71	1.4	0.76
3a	0.74	0.45	1.6	0.97	0.82	0.44	0.85	1.7	1.3	0.71	1.2	0.49	2	1.4
3b	0.68	1	0.61	0.9	0.78	1.6	1	1.8	1.2	1.1	0.55	0.23	1.3	1.1
4a	1.1	1.3	2.7	0.74	0.5	1.1	0.9	1.9	2.5	1.6	1.3	0.9	0.73	0.83
4b	1.2	1.6	1.8	0.92	1	0.77	1.6	1.6	2.2	1.6	0.98	1	1	0.5
4c	1.1	1.2	2.3	0.83	1.3	1.2	0.66	2.2	1.9	1.9	1.2	1.2	0.39	1

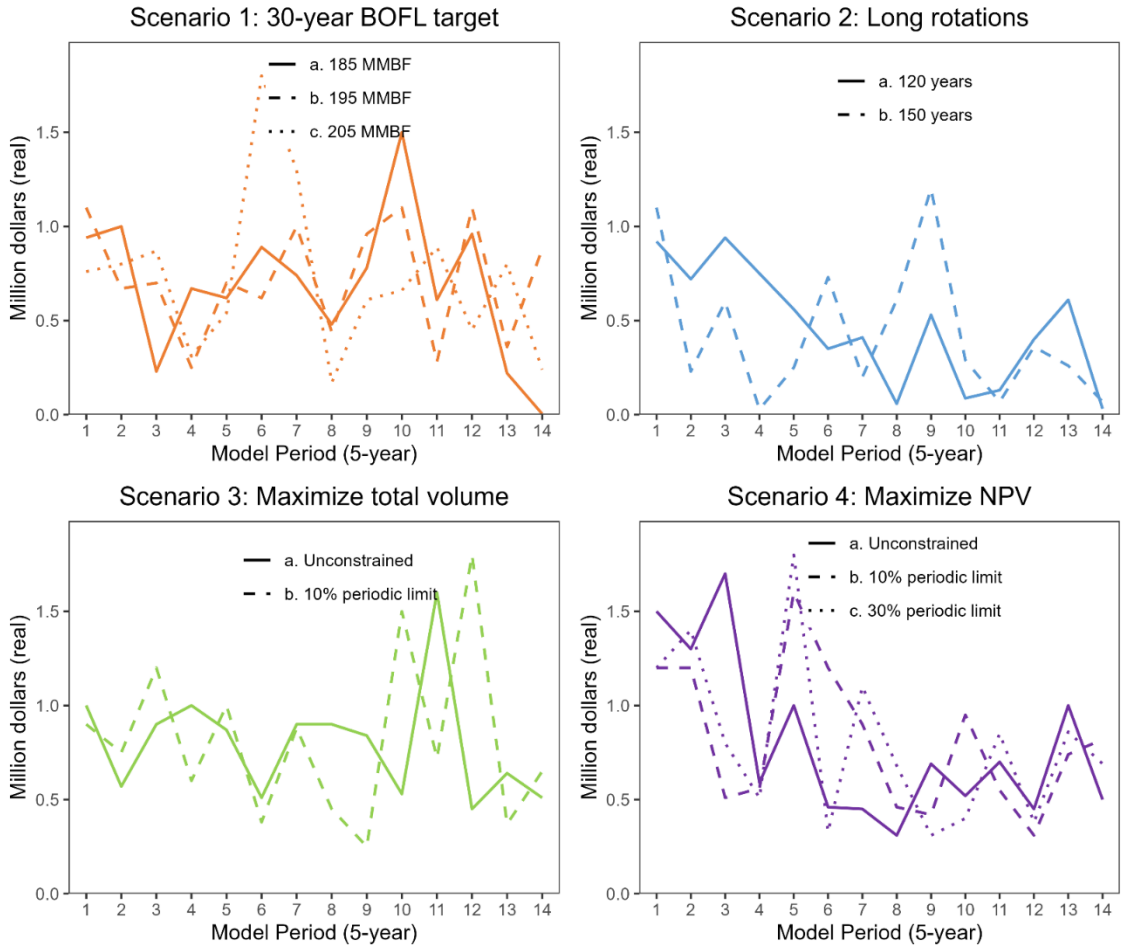


Average annual volume (MMBF) on BOFL by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	2.1	3.5	2.2	3.4	5	4.2	2.3	3.1	1.2	1.3	3.2	4.4	5.3	5
1b	2.3	2.6	3.4	3	4.3	3.1	3.7	3.9	1.7	3.2	2.9	4.1	4.6	4.8
1c	1.2	3.7	4.1	4.7	4.8	4.4	1.4	1.6	3.1	3.2	1.9	5.3	5.9	5.8
2a	1.2	2.8	2.5	2.9	2.4	2.8	2.7	2.2	1.2	3.8	2	1.7	1.9	1.6
2b	0.73	2.6	2.6	4.2	1.7	1.4	0.43	0.8	1.9	2.5	3.9	2.4	4.2	2.3
3a	2.5	1.7	5	3.2	2.9	1.6	2.8	5.8	4.2	2.4	3.6	1.6	5.8	4.4
3b	2.3	3	2.1	2.9	2.8	5.5	3.3	6.1	4.1	3.3	1.8	0.78	4.1	3.8
4a	3.7	4.4	8.5	2.5	2.1	3.7	2.7	6.1	7.8	4.9	4.3	2.9	2.3	2.5
4b	4	5.1	5.6	3.2	3.6	2.5	5.1	5.1	6.7	4.6	3.1	3.2	3.3	1.6
4c	3.7	3.8	7.2	2.7	4.6	3.9	2.3	6.9	5.7	5.6	3.9	3.7	1.3	3.1

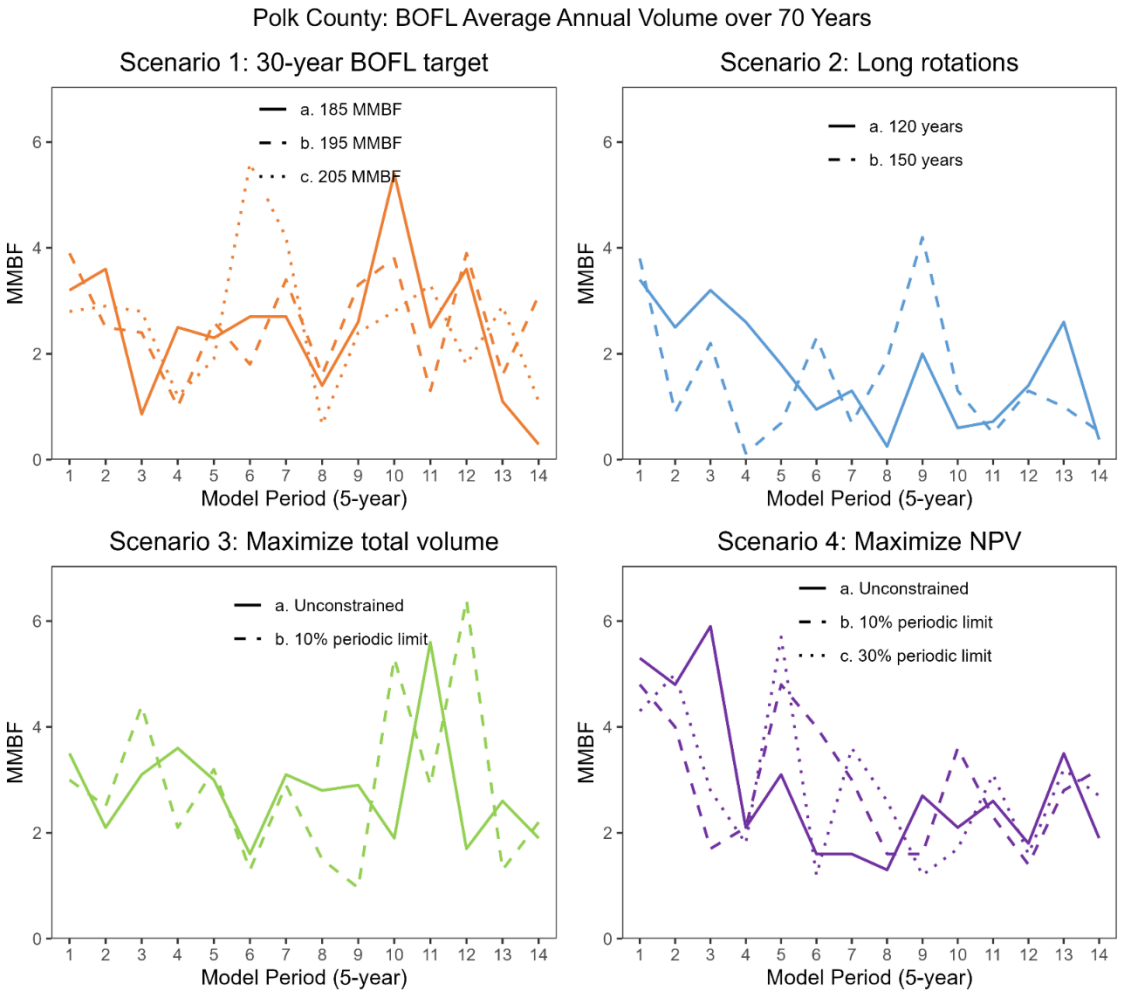
Polk County

Polk County: Average Annual Net Revenue Distributed over 70 Years



Average annual net revenue to county (real million $) by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	0.94	1	0.23	0.67	0.62	0.89	0.74	0.48	0.78	1.5	0.61	0.96	0.22	0.0043
1b	1.1	0.67	0.7	0.25	0.7	0.62	1	0.44	0.96	1.1	0.28	1.1	0.36	0.88
1c	0.76	0.8	0.87	0.31	0.54	1.8	1.3	0.17	0.61	0.66	0.89	0.45	0.8	0.24
2a	0.92	0.72	0.94	0.75	0.56	0.35	0.41	0.058	0.53	0.087	0.13	0.4	0.61	0.031
2b	1.1	0.23	0.6	0.028	0.25	0.73	0.2	0.61	1.2	0.29	0.068	0.36	0.26	0.069
3a	1	0.57	0.9	1	0.87	0.51	0.9	0.9	0.84	0.53	1.6	0.45	0.64	0.51
3b	0.9	0.75	1.2	0.6	1	0.38	0.88	0.45	0.25	1.5	0.72	1.8	0.37	0.65
4a	1.5	1.3	1.7	0.59	1	0.46	0.45	0.31	0.69	0.52	0.7	0.45	1	0.5
4b	1.2	1.2	0.51	0.56	1.6	1.2	0.9	0.46	0.42	0.95	0.55	0.31	0.74	0.82
4c	1.2	1.4	0.8	0.51	1.8	0.33	1.1	0.68	0.31	0.4	0.85	0.38	0.86	0.69

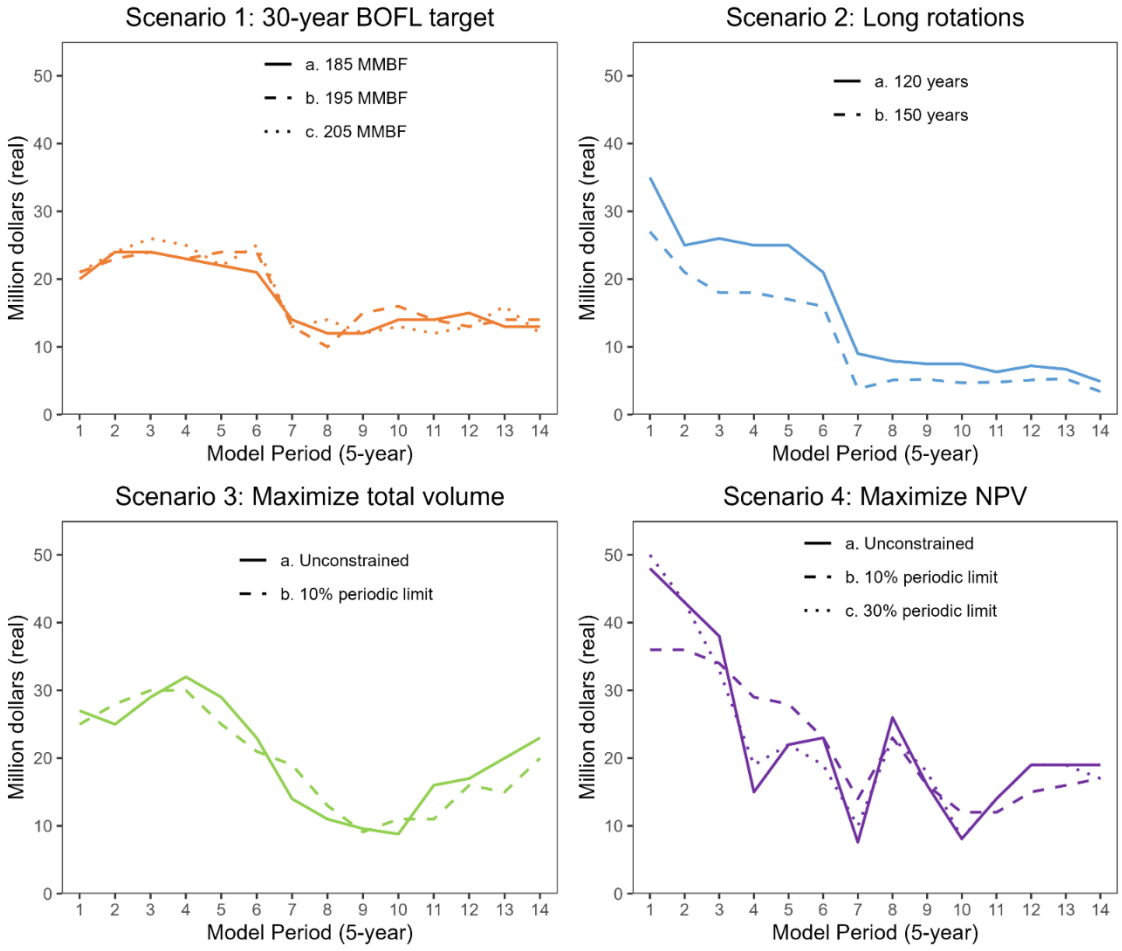


Average annual volume (MMBF) on BOFL by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	3.2	3.6	0.86	2.5	2.3	2.7	2.7	1.4	2.6	5.4	2.5	3.6	1.1	0.29
1b	3.9	2.5	2.4	1	2.6	1.8	3.4	1.6	3.3	3.8	1.3	3.9	1.6	3.1
1c	2.8	2.9	2.8	1.2	1.9	5.6	4.2	0.66	2.4	2.8	3.3	1.8	2.9	1.1
2a	3.4	2.5	3.2	2.6	1.8	0.95	1.3	0.25	2	0.6	0.72	1.4	2.6	0.38
2b	3.8	0.89	2.2	0.12	0.69	2.3	0.69	1.9	4.2	1.3	0.5	1.3	1	0.53
3a	3.5	2.1	3.1	3.6	3	1.6	3.1	2.8	2.9	1.9	5.6	1.7	2.6	1.9
3b	3	2.5	4.4	2.1	3.2	1.3	2.9	1.5	0.96	5.3	2.9	6.4	1.3	2.2
4a	5.3	4.8	5.9	2.1	3.1	1.6	1.6	1.3	2.7	2.1	2.6	1.8	3.5	1.9
4b	4.8	4	1.7	2.1	4.8	4	3	1.6	1.6	3.6	2.3	1.4	2.8	3.2
4c	4.3	5	2.8	1.8	5.7	1.2	3.6	2.6	1.2	1.7	3.1	1.6	3.2	2.7

Tillamook County

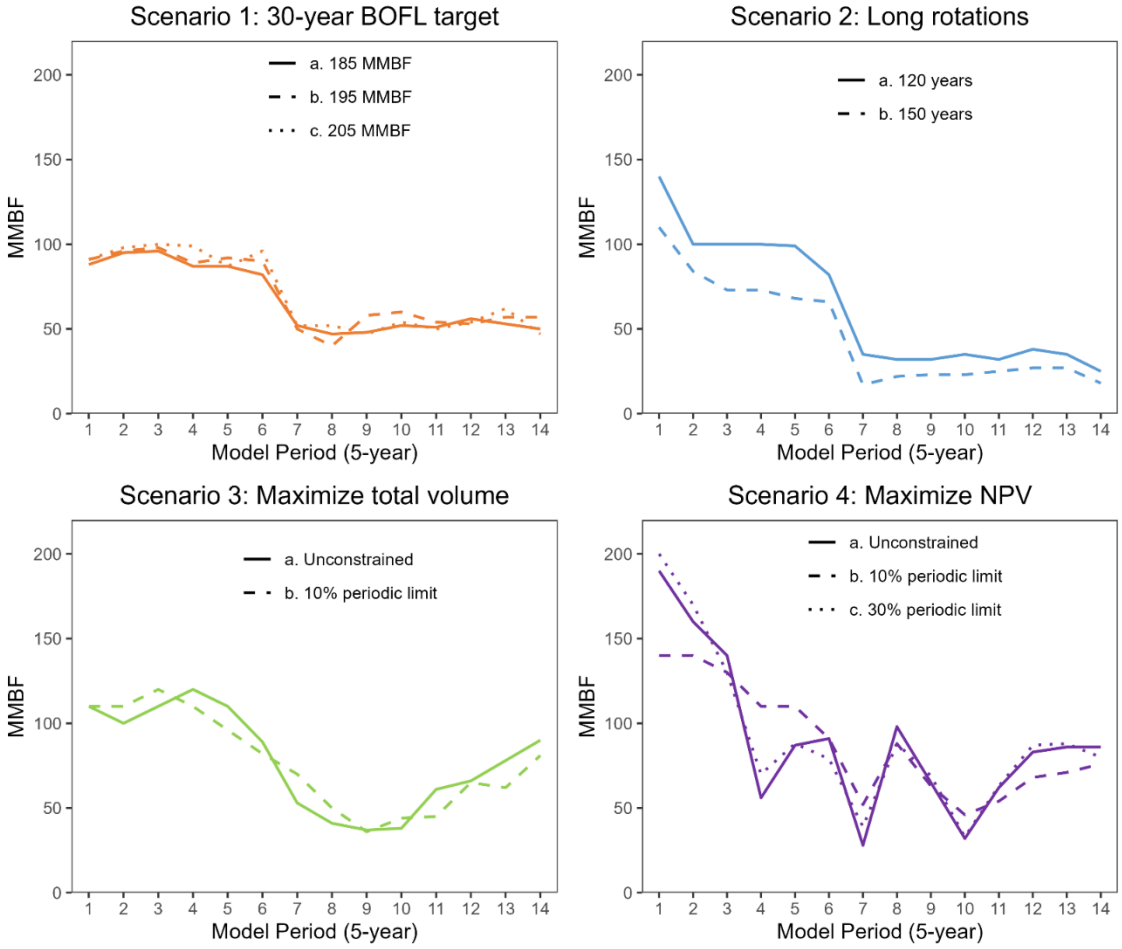
Tillamook County: Average Annual Net Revenue Distributed over 70 Years



Average annual net revenue to county (real million $) by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	20	24	24	23	22	21	14	12	12	14	14	15	13	13
1b	21	23	24	23	24	24	13	10	15	16	14	13	14	14
1c	21	24	26	25	22	25	13	14	12	13	12	13	16	12
2a	35	25	26	25	25	21	9	7.9	7.5	7.5	6.3	7.2	6.7	4.9
2b	27	21	18	18	17	16	3.8	5.1	5.2	4.7	4.8	5.1	5.3	3.4
3a	27	25	29	32	29	23	14	11	9.6	8.8	16	17	20	23
3b	25	28	30	30	25	21	19	13	9.1	11	11	16	15	20
4a	48	43	38	15	22	23	7.6	26	16	8.1	14	19	19	19
4b	36	36	34	29	28	23	14	23	16	12	12	15	16	17
4c	50	43	33	19	22	19	10	23	18	8.2	14	19	19	17

Tillamook County: BOFL Average Annual Volume over 70 Years

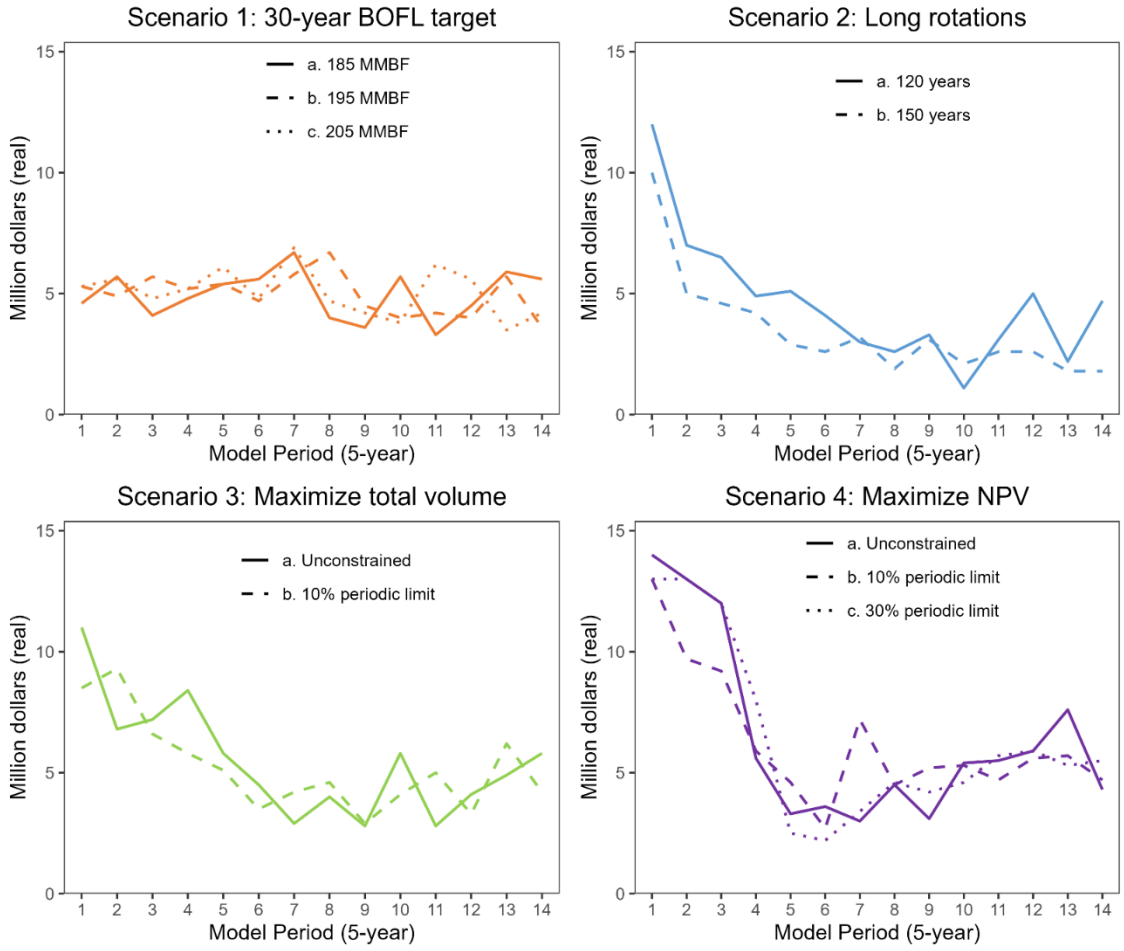


Average annual volume (MMBF) on BOFL by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	88	95	96	87	87	82	52	47	48	52	51	56	53	50
1b	91	96	98	89	92	90	50	40	58	60	54	53	57	57
1c	91	98	100	99	87	96	52	52	47	54	50	54	62	47
2a	140	100	100	100	99	82	35	32	32	35	32	38	35	25
2b	110	84	73	73	68	66	17	22	23	23	25	27	27	18
3a	110	100	110	120	110	89	53	41	37	38	61	66	78	90
3b	110	110	120	110	96	82	70	50	36	44	45	65	62	81
4a	190	160	140	56	87	91	28	98	65	32	62	83	86	86
4b	140	140	130	110	110	91	52	88	63	46	54	68	71	76
4c	200	170	130	70	88	79	39	88	69	33	63	87	88	80

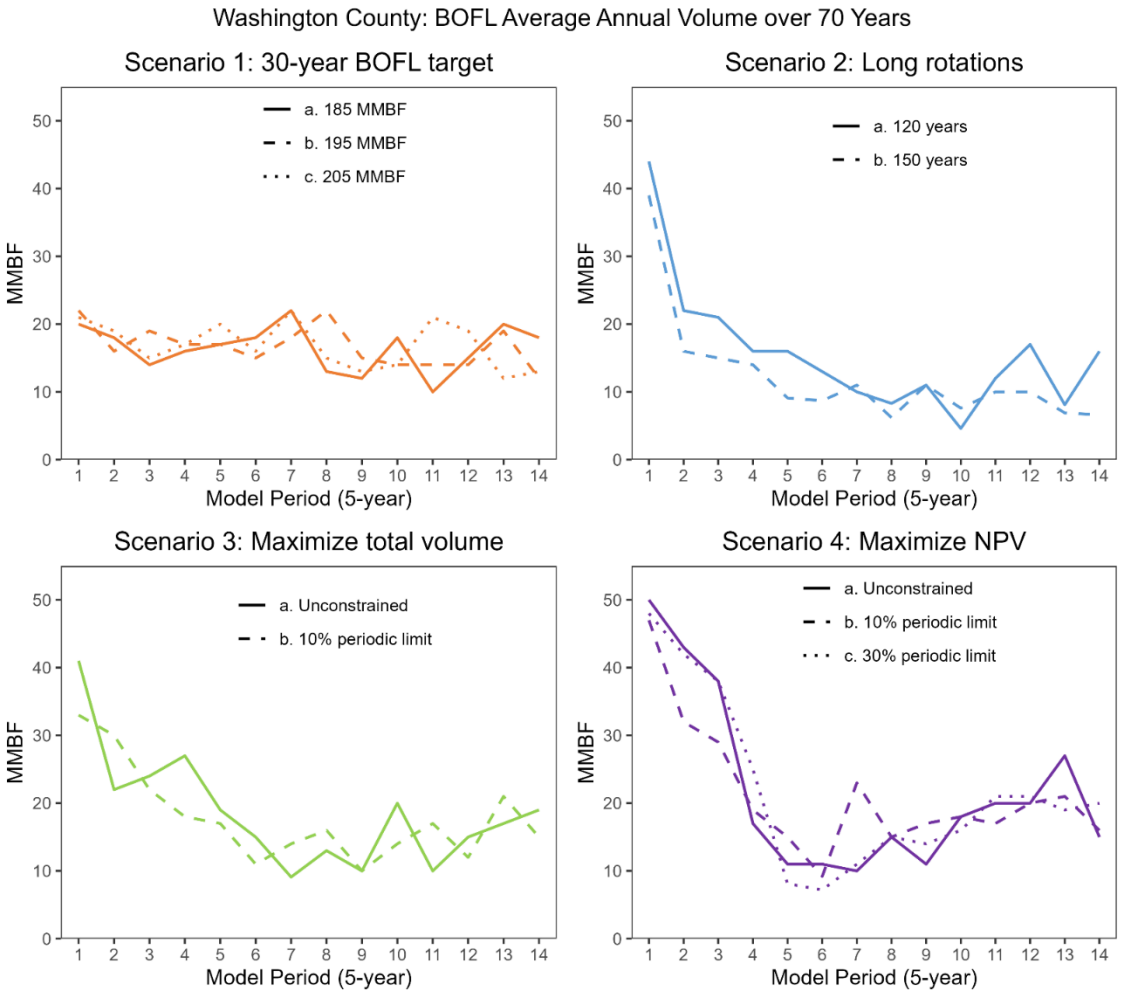
Washington County

Washington County: Average Annual Net Revenue Distributed over 70 Years



Average annual net revenue to county (real million $) by model period (5-year)

Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	4.6	5.7	4.1	4.8	5.4	5.6	6.7	4	3.6	5.7	3.3	4.5	5.9	5.6
1b	5.3	4.9	5.7	5.2	5.4	4.7	5.8	6.7	4.5	4	4.2	4	5.7	3.6
1c	5.3	5.6	4.8	5.2	6.1	4.8	6.9	4.7	4.2	3.8	6.2	5.6	3.5	4.2
2a	12	7	6.5	4.9	5.1	4.1	3	2.6	3.3	1.1	3.1	5	2.2	4.7
2b	10	5	4.6	4.2	2.9	2.6	3.2	1.9	3.1	2.1	2.6	2.6	1.8	1.8
3a	11	6.8	7.2	8.4	5.8	4.5	2.9	4	2.8	5.8	2.8	4.1	4.9	5.8
3b	8.5	9.3	6.6	5.8	5.1	3.5	4.2	4.6	2.9	4.1	5	3.3	6.2	4.2
4a	14	13	12	5.6	3.3	3.6	3	4.5	3.1	5.4	5.5	5.9	7.6	4.3
4b	13	9.7	9.2	5.9	4.6	2.7	7.2	4.5	5.2	5.3	4.7	5.6	5.7	4.7
4c	13	13	12	8	2.5	2.2	3.4	4.6	4.2	4.6	5.7	5.9	5.3	5.5



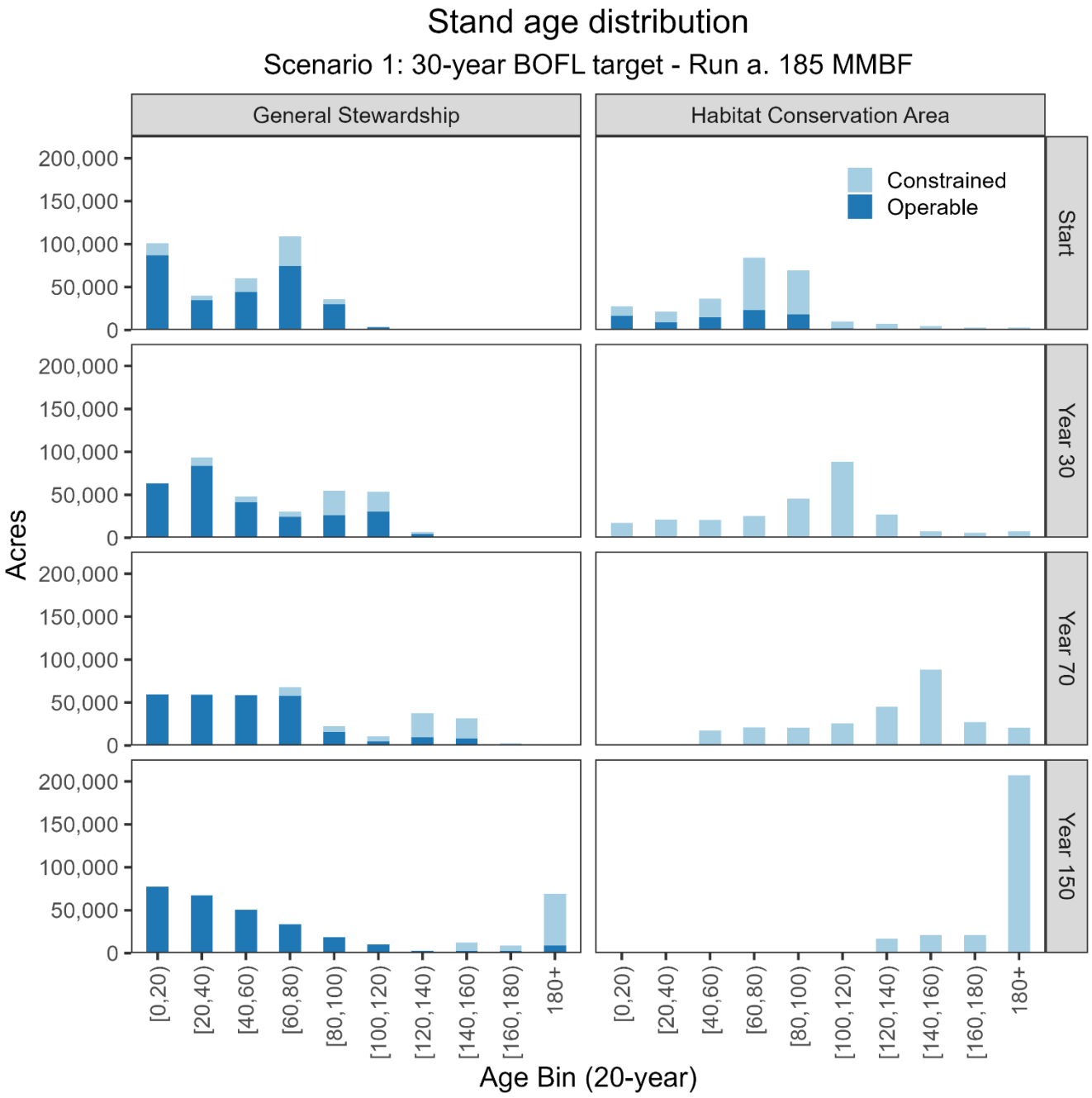
Average annual volume (MMBF) on BOFL by model period (5-year)

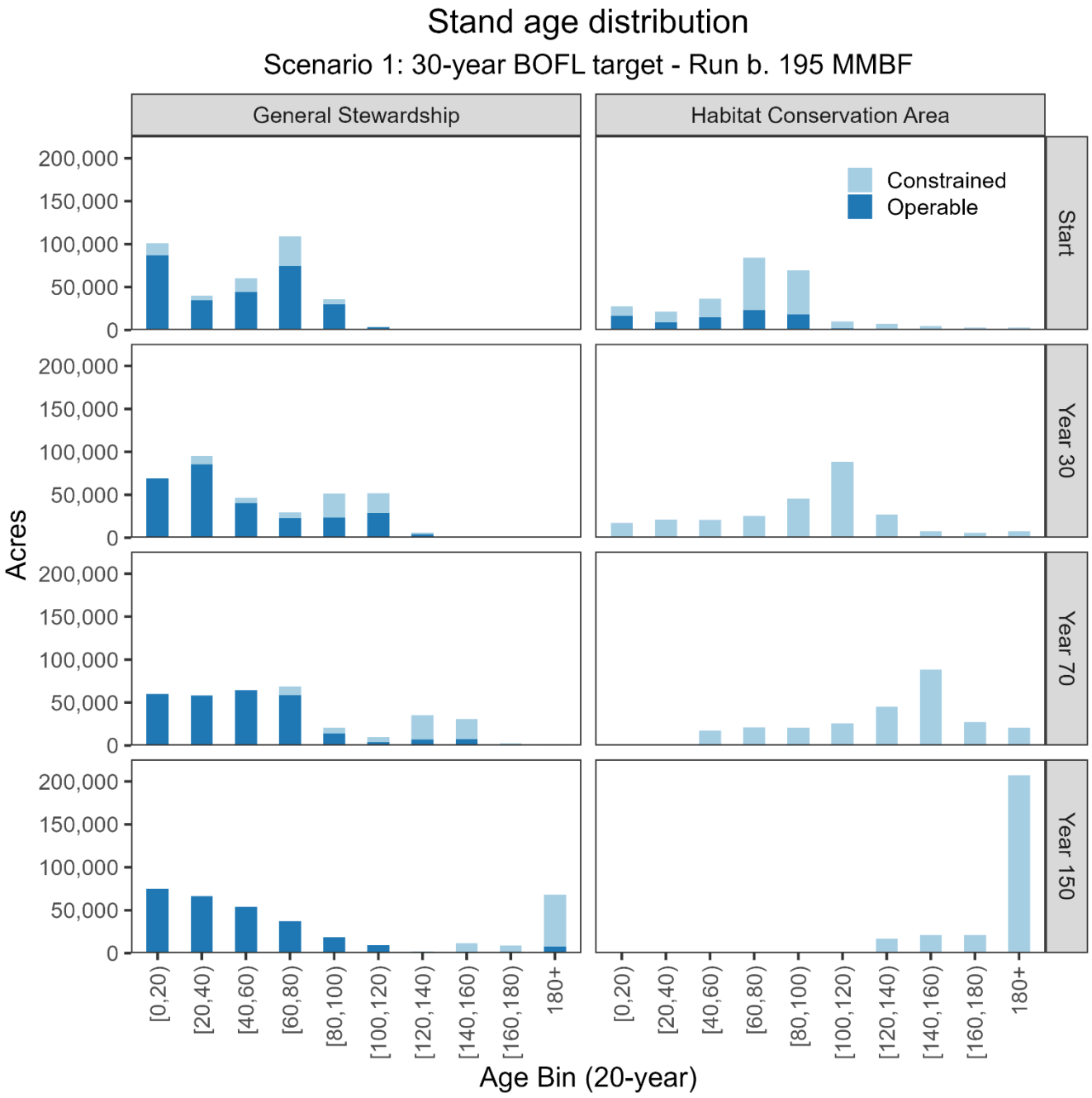
Scenario	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1a	20	18	14	16	17	18	22	13	12	18	10	15	20	18
1b	22	16	19	17	17	15	18	22	15	14	14	14	19	12
1c	21	19	15	17	20	16	22	15	13	14	21	19	12	13
2a	44	22	21	16	16	13	10	8.3	11	4.6	12	17	8.1	16
2b	39	16	15	14	9.1	8.7	11	6.2	11	7.6	10	10	6.9	6.6
3a	41	22	24	27	19	15	9.1	13	10	20	10	15	17	19
3b	33	30	22	18	17	11	14	16	10	14	17	12	21	15
4a	50	43	38	17	11	11	10	15	11	18	20	20	27	15
4b	47	32	29	19	15	9.2	23	15	17	18	17	20	21	16
4c	48	42	38	25	8.1	7.2	11	15	14	16	21	21	19	20

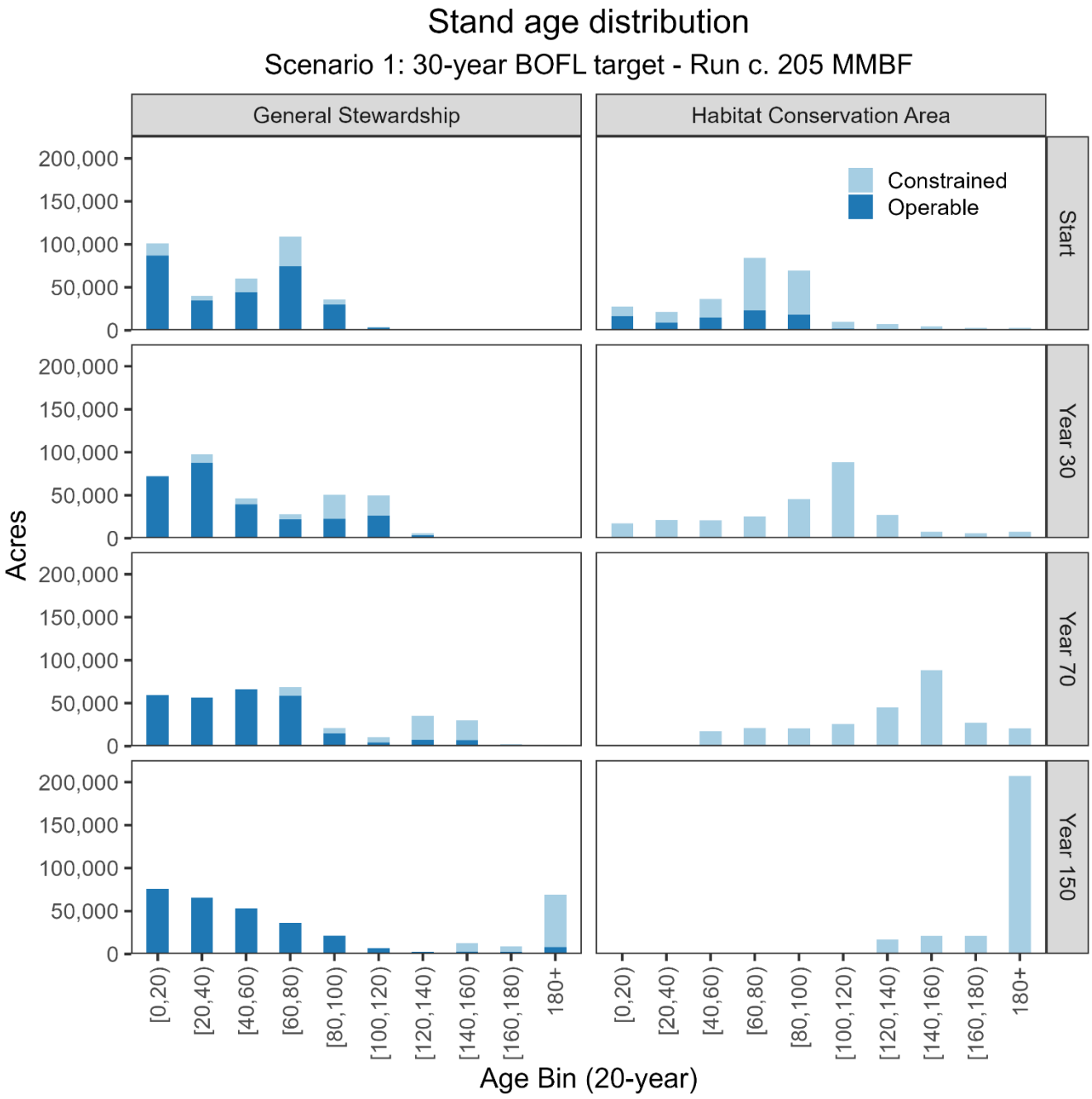
Appendix B

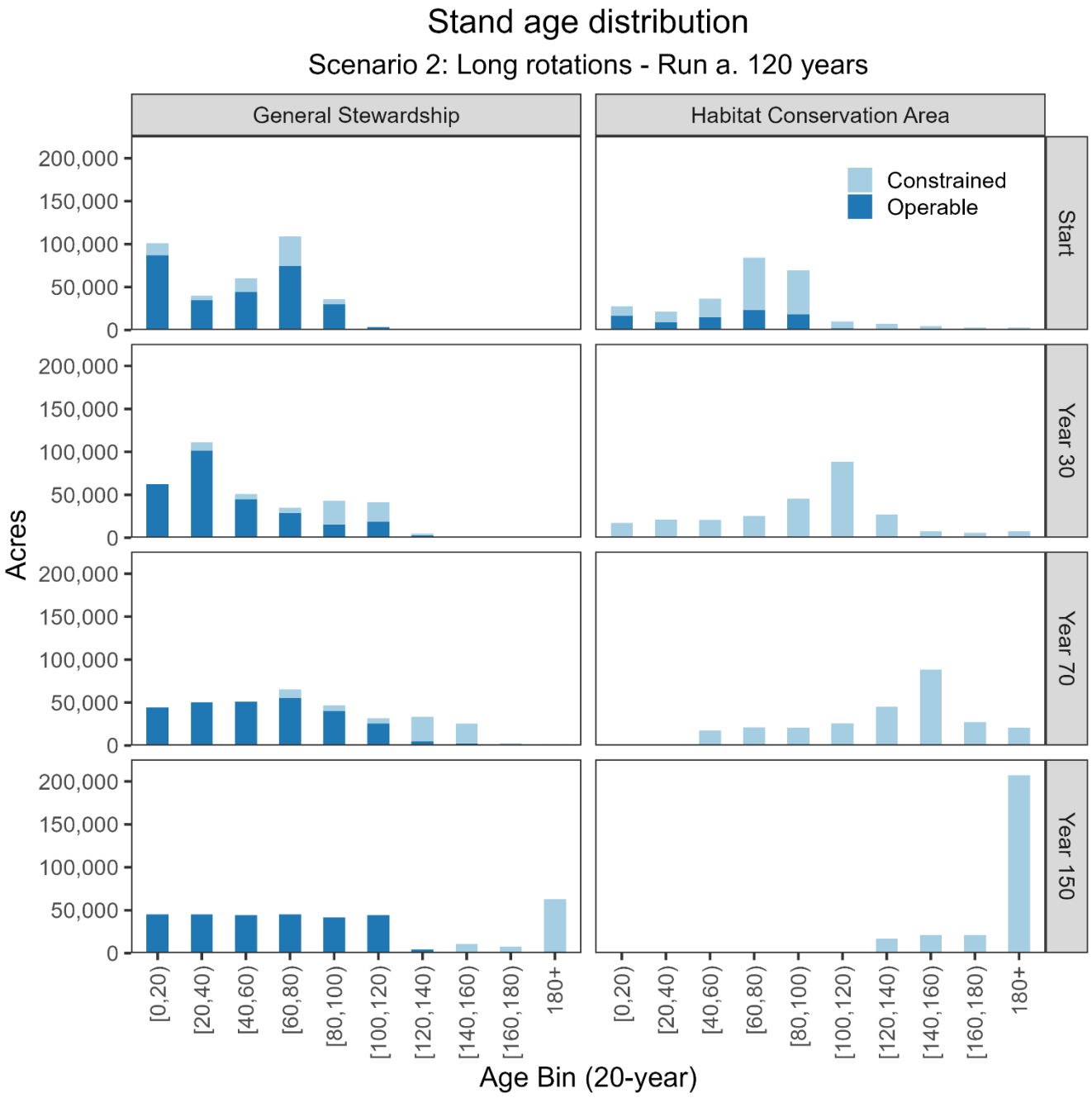
Forest stand age distribution through time for each scenario.

The figures in this section show the acreage of forest stands at different seral stages (defined by the age of the dominant trees) by their designation as General Stewardship areas or HCAs. The scenarios differ in their management approaches within the operable General Stewardship areas, while the constrained areas and HCAs receive the same treatment in all scenarios. While model runs only differ in the operable area in the General Stewardship column, these figures show the distribution of seral stages across the whole forest through the entire model timeframe.


Stand age distribution
Scenario 1: 30-year BOFL target - Run a. 185 MMBF
General Stewardship
Habitat Conservation Area
Start
Year 30
Year 70
Year 150
Constrained
Operable
Acres
200,000
150,000
100,000
50,000
0
[0,20)
[20,40)
[40,60)
[60,80)
[80,100)
[100,120)
[120,140)
[140,160)
[160,180)
180+
Age Bin (20-year)


Stand age distribution
Scenario 1: 30-year BOFL target - Run b. 195 MMBF
General Stewardship
Habitat Conservation Area
Constrained
Operable
Start
Year 30
Year 70
Year 150
Acres
200,000
150,000
100,000
50,000
0
[0,20)
[20,40)
[40,60)
[60,80)
[80,100)
[100,120)
[120,140)
[140,160)
[160,180)
180+
Age Bin (20-year)


Stand age distribution
Scenario 1: 30-year BOFL target - Run c. 205 MMBF
General Stewardship
Habitat Conservation Area
Constrained
Operable
Start
Year 30
Year 70
Year 150
Acres
200,000
150,000
100,000
50,000
0
[0,20)
[20,40)
[40,60)
[60,80)
[80,100)
[100,120)
[120,140)
[140,160)
[160,180)
180+
Age Bin (20-year)


Stand age distribution
Scenario 2: Long rotations - Run a. 120 years
General Stewardship
Habitat Conservation Area
Constrained
Operable
Start
Year 30
Year 70
Year 150
Acres
200,000
150,000
100,000
50,000
0
[0,20)
[20,40)
[40,60)
[60,80)
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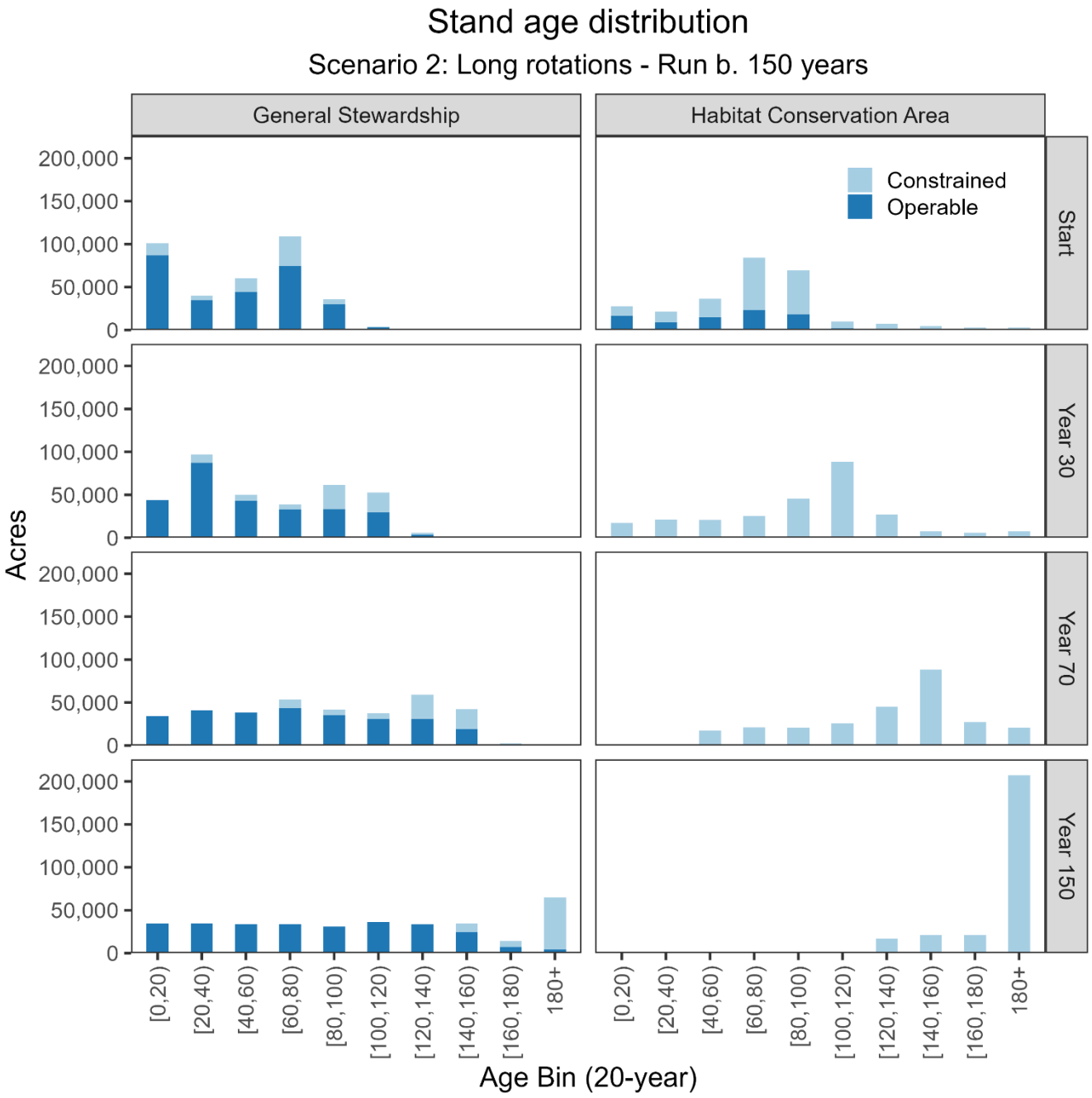
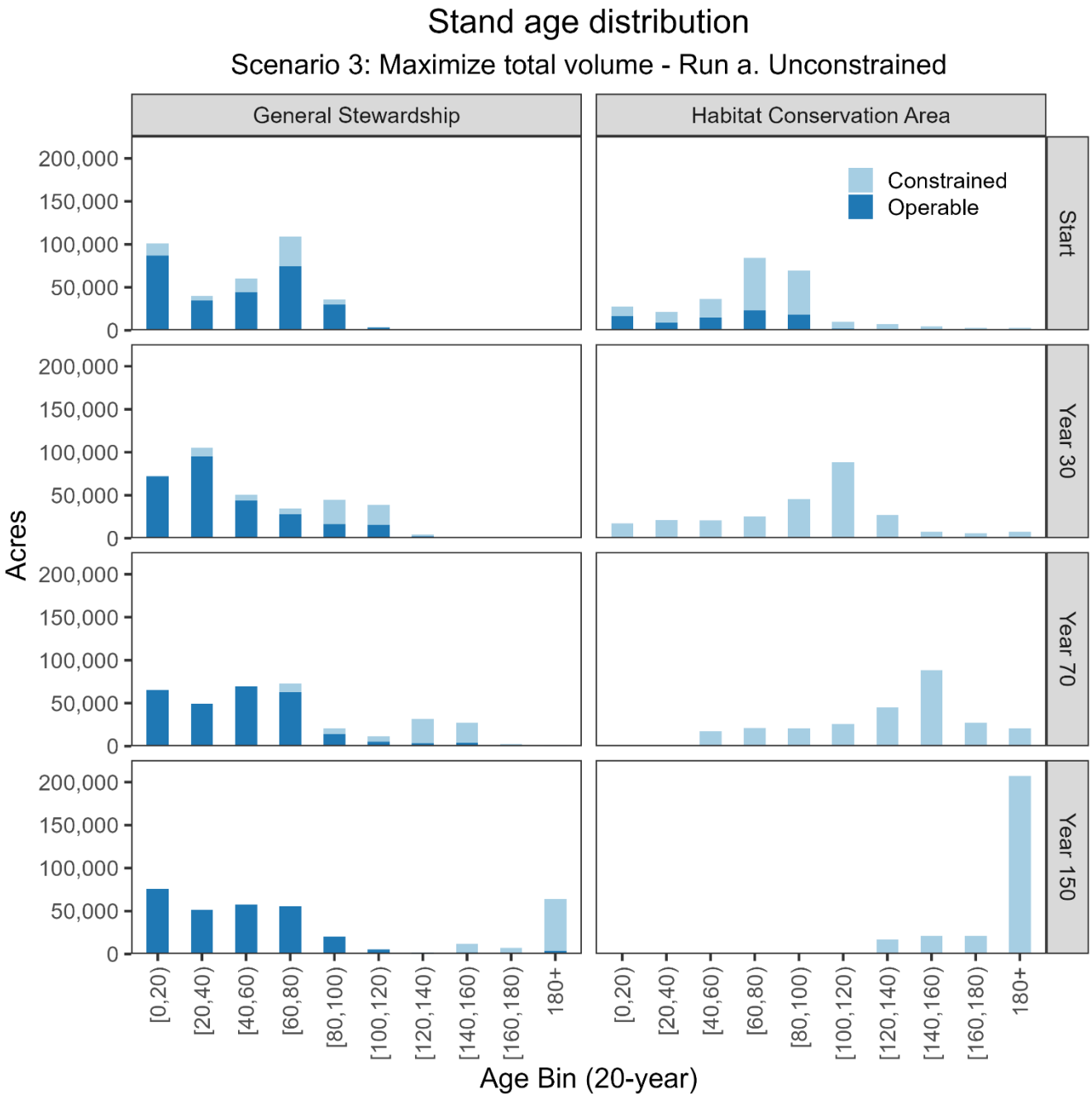
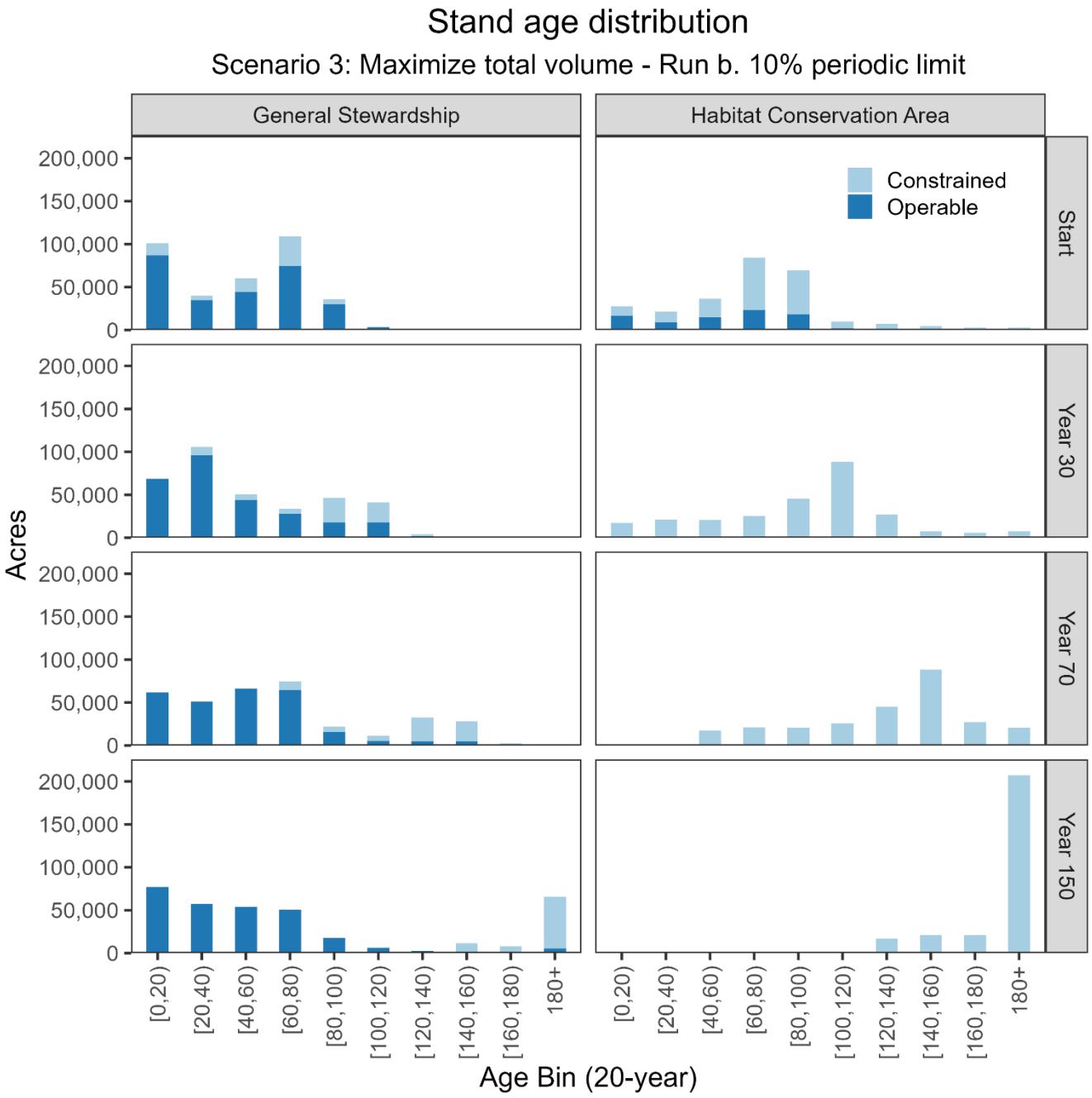
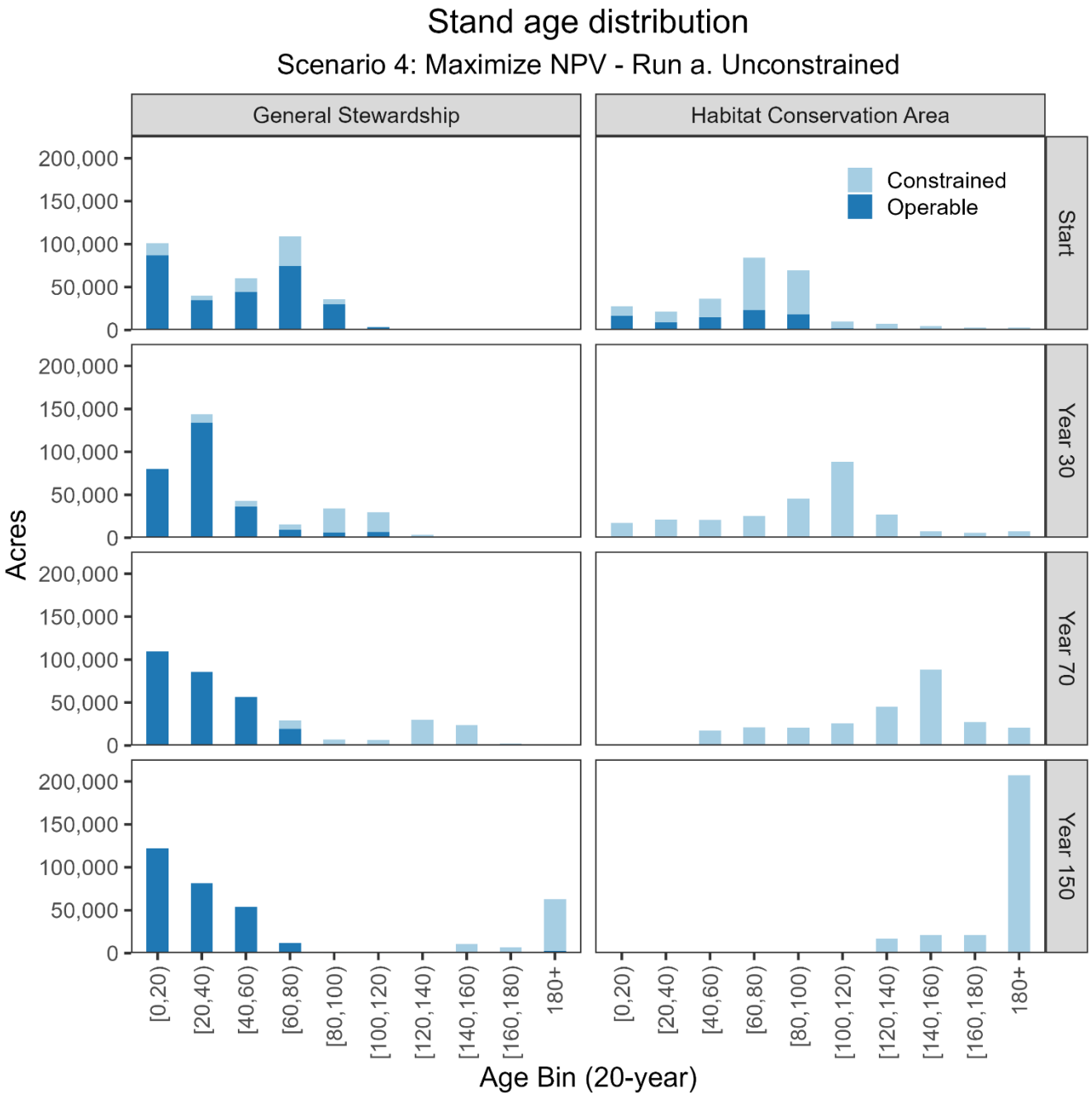
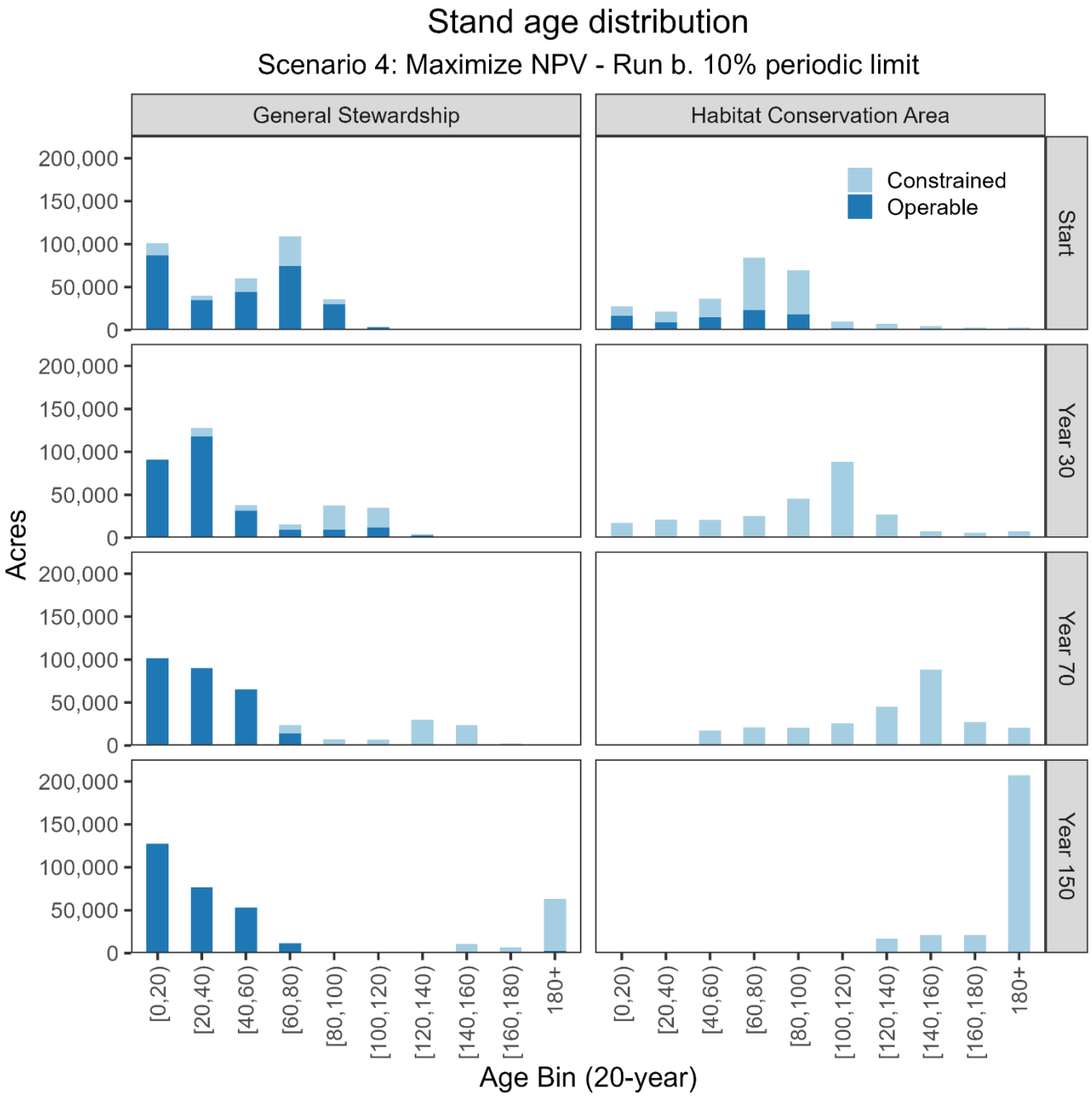
[140,160)
[160,180)
180+
Age Bin (20-year)

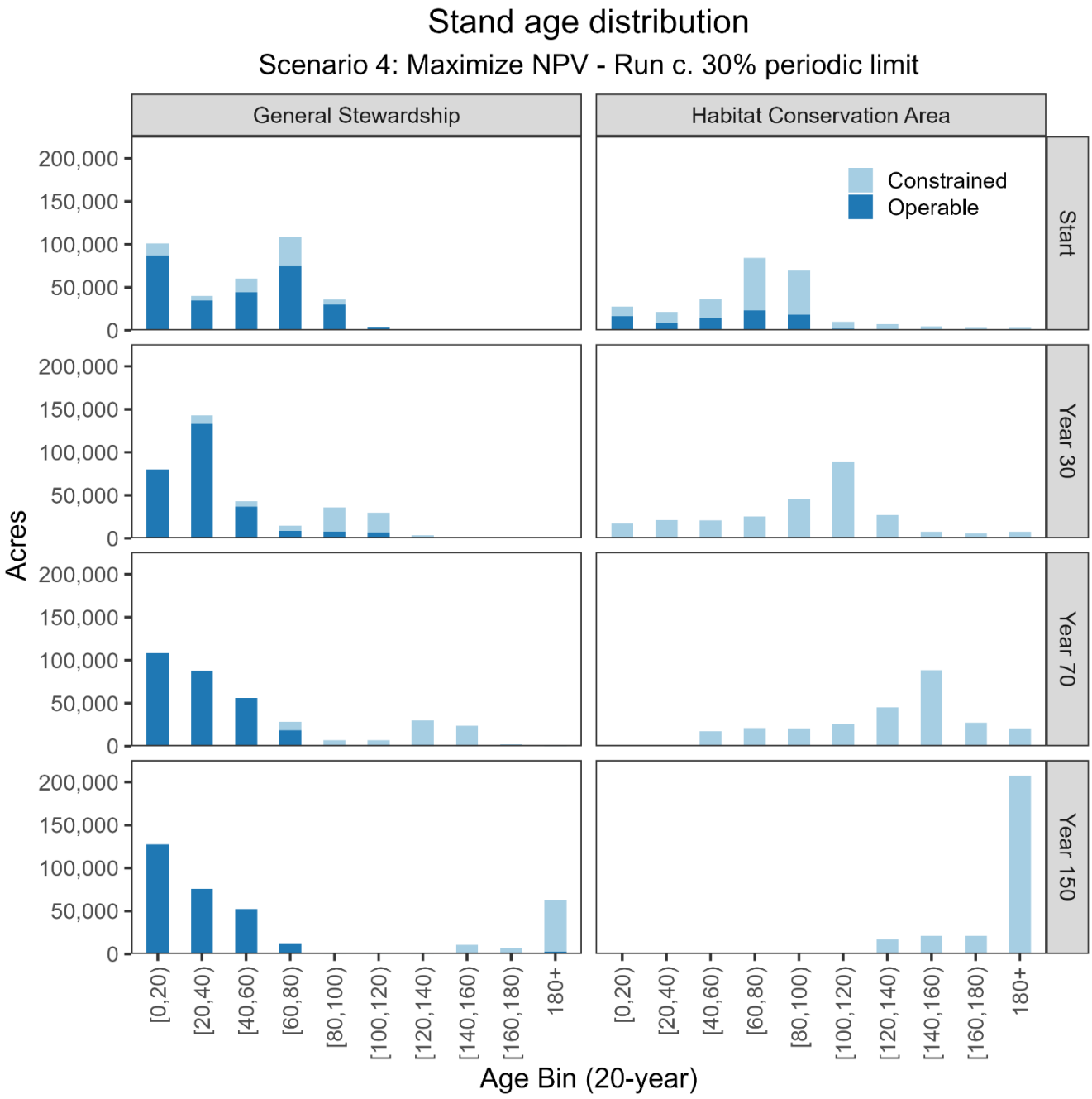

Stand age distribution
Scenario 2: Long rotations - Run b. 150 years
General Stewardship
Habitat Conservation Area
Constrained
Operable
Start
Year 30
Year 70
Year 150
Acres
200,000
150,000
100,000
50,000
0
[0,20)
[20,40)
[40,60)
[60,80)
[80,100)
[100,120)
[120,140)
[140,160)
[160,180)
180+
Age Bin (20-year)


Stand age distribution
Scenario 3: Maximize total volume - Run a. Unconstrained
General Stewardship
Habitat Conservation Area
Constrained
Operable
Start
Year 30
Year 70
Year 150
Acres
200,000
150,000
100,000
50,000
0
[0,20)
[20,40)
[40,60)
[60,80)
[80,100)
[100,120)
[120,140)
[140,160)
[160,180)
180+
Age Bin (20-year)


Stand age distribution
Scenario 3: Maximize total volume - Run b. 10% periodic limit
General Stewardship
Habitat Conservation Area
Constrained
Operable
Start
Year 30
Year 70
Year 150
Acres
200,000
150,000
100,000
50,000
0
[0,20)
[20,40)
[40,60)
[60,80)
[80,100)
[100,120)
[120,140)
[140,160)
[160,180)
180+
Age Bin (20-year)


Stand age distribution
Scenario 4: Maximize NPV - Run a. Unconstrained
General Stewardship
Habitat Conservation Area
Constrained
Operable
Start
Year 30
Year 70
Year 150
Acres
200,000
150,000
100,000
50,000
0
[0,20)
[20,40)
[40,60)
[60,80)
[80,100)
[100,120)
[120,140)
[140,160)
[160,180)
180+
Age Bin (20-year)


Stand age distribution
Scenario 4: Maximize NPV - Run b. 10% periodic limit
General Stewardship
Habitat Conservation Area
Constrained
Operable
Start
Year 30
Year 70
Year 150
Acres
200,000
150,000
100,000
50,000
0
[0,20)
[20,40)
[40,60)
[60,80)
[80,100)
[100,120)
[120,140)
[140,160)
[160,180)
180+
Age Bin (20-year)


Stand age distribution
Scenario 4: Maximize NPV - Run c. 30% periodic limit
General Stewardship
Habitat Conservation Area
Constrained
Operable
Start
Year 30
Year 70
Year 150
Acres
200,000
150,000
100,000
50,000
0
[0,20)
[20,40)
[40,60)
[60,80)
[80,100)
[100,120)
[120,140)
[140,160)
[160,180)
180+
Age Bin (20-year)

Appendix C

Drinking water assessment

Thirteen public water systems have ODF-managed land making up greater than 10 percent of their surface water drinking water source areas.[4] This table shows the size of these public water systems, the ODF percent of their size, and, for each scenario, the percent of ODF-managed land in each catchment area with recent regeneration harvests averaged across the entire 150 year modeling timeframe. Recent regeneration harvests are stands 10 or fewer years after a clearcut as in Figure 16.

				1: 30-year BOFL target			2: Long rotations		3: Maximize total volume		4: Maximize Net Present Value		
Public Water System	County	Size (acres)	ODF percent	a. 185 MMBF	b. 195 MMBF	c. 205 MMBF	a. 120-year	b. 150-year	a. No limit	b. 10% periodic limit	a. No limit	b. 10% periodic limit	c. 30% periodic limit
BEAVER WATER DISTRICT	TILLAMOOK	18647	13	5	5	5	4	4	6	6	8	8	8
BERNDT CREEK WATER CORP	COLUMBIA	35304	41	6	6	6	5	4	7	7	11	11	11
DETROIT WATER SYSTEM	MARION	184	32	0	0	0	0	0	0	0	0	0	0
FISHHAWK LAKE RECREATION CLUB	COLUMBIA	10004	30	9	9	8	7	5	10	9	17	18	17
GEORGIA-PACIFIC CPLP WAUNA	COLUMBIA	86310	14	5	5	5	4	3	5	5	9	9	10
HILLSBORO-CHERRY GROVE	WASHINGTON	15565	51	10	10	10	9	7	11	10	19	18	19
HILLSBORO-FOREST GROVE-BEAVERTON	WASHINGTON	115415	16	7	7	7	6	5	8	7	13	14	14
JEWELL SD #8	CLATSOP	31913	58	6	6	6	5	4	6	6	11	11	11
LYONS MEHAMA WATER DISTRICT	MARION	107684	14	7	7	8	5	4	7	7	12	12	12
PHILOMATH PUBLIC WORKS	BENTON	85972	10	8	9	9	6	5	9	9	14	15	14
SILVERTON, CITY OF	MARION	31659	14	8	8	8	5	5	7	8	12	13	12
TILLAMOOK WATER DEPT, CITY OF	TILLAMOOK	3074	63	2	2	2	2	2	2	2	3	3	3
TIMBER WATER ASSOCIATION	WASHINGTON	7787	98	6	7	7	6	5	7	7	12	12	12

[4] Data from Oregon Department of Environmental Quality (https://www.oregon.gov/deq/wq/dwp/pages/dwp-maps.aspx)