
Oregon Department of Forestry Habitat Conservation Plan A Business Case Analysis

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Oregon Department of Forestry

Executive Summary

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Executive Summary

Key Findings

- *HCP preparation will cost ODF up to **\$4.0 million** over three years.*
- *An HCP will reduce average annual ESA compliance costs by approximately **\$2.2 million**.*
- *Over a 50-year timeframe, acres available for harvest would likely increase from the current 51 percent of all BOF forest lands to **63 percent** with an HCP. Without an HCP, available acreage is expected to decline to **46 percent**.*
- *Annual harvest net revenues would likely increase from current \$50 million to **\$53 million** with an HCP while dropping to **\$26 million** by 2070 without an HCP.*
- *The cumulative net present value of the HCP investment over 50 years of implementation is worth over **\$250 million** relative to without an HCP.*

Introduction and Background

State forestlands in western Oregon provide habitat for several fish and wildlife species protected under the Endangered Species Act (ESA). As such, forest management activities must comply with ESA requirements, ensuring that no “take¹” of listed species occurs. Without an incidental take permit, provided by a Habitat Conservation Plan (HCP), the Oregon Department of Forestry (ODF) employs a “take avoidance” approach to ESA compliance. The take avoidance approach costs ODF millions of dollars in survey and monitoring costs annually, and creates uncertainties in timber harvest levels. As the number of listed species increases, ODF faces growing challenges to generate a sustainable and predictable stream of revenue from timber harvest activities while avoiding harm to listed species.

In November 2017, the Board of Forestry (BOF) directed ODF staff to evaluate whether or not pursuing an HCP, and an associated incidental take permit, makes sense from a business perspective. This report addresses the business case by providing analysis on two related questions: what are the estimated costs of developing and implementing an HCP, and how would an HCP affect ODF management activities including costs and revenue? The findings of the analysis allow ODF staff and the BOF to better understand how ODF revenue would respond over time under two scenarios: 1) adopting and implementing an HCP, versus 2) continuing the current “take avoidance” strategy. This executive summary provides a brief synopsis of analysis methods, assumptions, and findings. More detail is provided in the HCP Business Case Analysis Report.

ODF has a long history of adjusting management activities to avoid take of listed species. For almost thirty years, ODF management has been significantly affected by the northern spotted owl, marbled murrelet, and several fish species such as coho salmon. Additional species known

¹ Take is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” (16 U.S. Code [USC] 1532). Harm includes “significant habitat modification or degradation.”

to exist on or adjacent to ODF lands are expected to become listed in the near future; these listings are likely to further constrain ODF's management activities.

The take prohibitions of Section 9 of the ESA are strict, and come with serious penalties for violations. In addition, the ESA has provisions that allow citizens to sue ODF and the federal wildlife agencies for non-compliance. To avoid these risks, ODF may seek to obtain incidental take authorization from the federal government.

The incidental take permit application must include an HCP that describes the requested take authorization and the avoidance, minimization, and mitigation measures the applicant proposes to offset the take of each species covered by the HCP. The HCP must also describe a monitoring and adaptive management program and provide assurances to the federal agencies that the applicant is able to fully fund HCP implementation, among other requirements.

It is important to recognize that ODF operates under certain legal mandates, most significantly, Board of Forestry lands are managed to meet "Greatest Permanent Value" (GPV). This includes providing a full range of social, economic, and environmental benefits to the people of Oregon. A key component of GPV is to maintain these lands as forest lands and actively manage them in a sound environmental manner to provide sustainable timber harvest and revenues to the state, counties, and local taxing districts. Under the current revenue distribution law, approximately one-third of the revenue generated from the timber harvest goes to ODF for operating costs and the remaining revenue goes to the counties and local taxing districts.

The current Forest Management Plan (FMP) is the primary mechanism for achieving GPV, and serves as the baseline to evaluate costs for each scenario in this analysis. This study presents a range of possible outcomes (not negotiation starting points) to inform the Board of Forestry in its consideration of whether or not to continue pursuing an HCP. The actual details of an HCP for ODF would be the result of negotiations with state and federal wildlife agencies. Should the Board of Forestry continue to pursue an HCP, ODF would begin working with state and federal wildlife agencies to negotiate and evaluate potential strategies to be included in an HCP.

Scope of the Analysis

Timeframe. The analysis considers a 3-year HCP planning timeframe (2018-2020) followed by a 50-year time horizon (2021-2070) under all scenarios, which is approximately equivalent to the time period an HCP would likely cover, if implemented. Future costs and benefits are discounted at a 3 percent real rate. Values are in constant 2018 dollars (without inflation).

Geography. The analysis covers BOF lands in western Oregon, including those in all 8 districts from Astoria in the north to Southwestern Oregon to the south. It does not include lands in the Klamath-Lake district or in eastern Oregon. Due to uncertainty regarding ODF's future management of Common School Forest Lands, only Board of Forestry lands were included in the business case results. The included land is referred to as the "plan area."

Covered Species. The plan area includes a range of forest resources that support a variety of species, including several species listed under state and federal endangered species protection

laws. The analysis team worked with ODF staff to identify a list of 16 species expected to be proposed for coverage in an HCP (Table 1). This species selection process is preliminary, but it was reviewed by staff from the United States Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration Fisheries (NMFS), and Oregon Department of Fish and Wildlife (ODFW). If the Board of Forestry decides to pursue an HCP, ODF will verify this species selection process with additional data and with further input from state and federal agencies.

Table 1. List of Covered Species Assumed for the HCP Business Case

Aquatic Species (NMFS Jurisdiction)	Wildlife Species (USFWS Jurisdiction)
Oregon Coast coho (<i>Oncorhynchus kisutch</i>)	Oregon slender salamander (<i>Batrachoseps wrighti</i>)*
Lower Columbia River coho (<i>O. kisutch</i>)	Columbia torrent salamander (<i>Rhyacotriton kezeri</i>)*
Upper Willamette River spring chinook (<i>O. tshawytscha</i>)	Cascade torrent salamander (<i>R. cascadae</i>)*
Upper Willamette River winter steelhead (<i>O. mykiss</i>)	Northern spotted owl (<i>Strix occidentalis</i>)
Lower Columbia chum (<i>O. keta</i>)	Marbled murrelet (<i>Brachyramphus marmoratus</i>)
South Oregon/Northern California coho (<i>O. kisutch</i>)	Red tree vole (<i>Arborimus longicaudus</i>)*
Lower Columbia chinook (<i>O. tshawytscha</i>)	Coastal marten (<i>Martes caurina caurina</i>)*
Lower Columbia steehead (<i>O. mykiss</i>)	
Eulachon (<i>Thaleichthys pacificus</i>)	

Notes: * Indicates species that are not currently listed as federal threatened or endangered, but which are expected to become listed during the analysis timeframe.

Methods and Assumptions for the Analysis

This analysis defines and models effects on ODF’s costs and management activities for two scenarios: 1) continuing take-avoidance (the “**No HCP Scenario**”) and 2) preparing and implementing an HCP (the “**HCP Scenario**”). Because the purpose of this analysis is to help ODF staff and the BOF decide whether to move forward in developing an HCP, the analysis team made some assumptions about what an HCP would include, but could not fully develop or define the HCP. Therefore, the analysis presents findings that are not precise or spatially explicit, but are accurate within appropriate ranges of assumptions to support ODF’s decision process.

The project team (ECONorthwest and ICF) considered low and high bounding scenarios around the “most likely” scenario for both HCP and no HCP to provide more confidence in the findings should key assumptions differ from those incorporated into an HCP. Upper and lower bounds are primarily based on possible future cost and species conservation acreage requirements. Ranges do not incorporate changes in stumpage prices or deviation from the current FMP in terms of harvest scheduling principles. In general, ranges of outcomes are provided rather than point estimates to better demonstrate this uncertainty.

To develop the analysis, the project team worked closely with ODF staff to identify and interpret relevant data on costs, forest inventory, and management activities; develop assumptions about future conditions; and review model inputs and outputs. The project team contributed their subject-matter expertise and knowledge developed from experience preparing and implementing over 75 HCPs around the country to vet and affirm all data and assumptions that were ultimately used in the analysis. Timber inventory and harvest plans are based on comprehensive inventory data and district-level implementation plans for the six districts with

the greatest BOF forest acreage: Astoria, Forest Grove, Tillamook, West Oregon, North Cascade, and Western Lane. Harvest plans for Coos and Southwest are extrapolated from the above six districts with Implementation Plans based on inventory proportions.

Key Assumptions. Assumptions applied in this analysis include future species conditions and policy, market conditions, and a range of negotiated terms of a potential HCP. Although these assumptions hold a degree of inherent uncertainty, they are based on review of the best available data, and are described in more detail in the main report.

Key assumptions for the most likely HCP and No HCP Scenarios are:

- All agency costs will increase at a real (inflation adjusted) rate of 0.5 percent annually.
- Under the No HCP Scenario survey costs and ODF administrative costs will continue to rise over time at about 2.8 percent annually to maintain the no take approach to ESA compliance.
- Initial constraints are based on take avoidance protections associated with sites currently occupied by listed species.
- Under the HCP Scenario, stream buffers will decrease acres available for harvest by about 11,000 acres immediately based on HCP's covering similar species elsewhere.
- Under the HCP Scenario, conservation acreage for northern spotted owl and marbled murrelet will increase by 15,000 acres under the HCP, and an additional 20,000 acres for new species listings (for a total of 46,000 acres in both terrestrial protections and stream buffers).
- Under the No HCP Scenario, constrained acreage due to habitat requirements for the northern spotted owl, marbled murrelet, and future listed species will gradually increase over time by about 59,000 additional acres by 2070.
- Under the HCP Scenario, areas currently managed with limited harvest (about 10 percent)—landscape design and conservation (Terrestrial Anchor Sites)—will gradually be released back to available acres.
- Timber prices are the average of ODF stumpage prices from 2013 to 2017 (\$350/MBF).
- Harvest schedules assume implementation of non-declining even flow.
- Harvest schedules were adjusted to update for current inventory levels.
- Future costs and benefits are discounted at a real (inflation-adjusted) discount rate of 3 percent.

Actions Affected

The HCP is likely to affect only a subset of actions that ODF engages in while fulfilling its mission. The analysis focuses on those actions that may result in changes in cost and revenue to ODF, if an HCP were pursued. It is based on the expert judgement of the project team and input from ODF staff. These actions include:

- **Administration of ESA Compliance**—Staff time is required to ensure ODF is operating in compliance with the ESA, including internal coordination with harvest planners, and coordination with USFWS, NMFS, and ODFW to confirm take avoidance. *From a business case perspective, changes in these actions affect ODF costs.*
- **Pre-Harvest Species Surveys**—Efforts are undertaken to survey for species presence in harvest units prior to offering units for harvest. *From a business case perspective, changes in these actions affect ODF costs.*
- **Species Habitat Management Actions**—Efforts are undertaken to monitor the forest and collect data to determine if species and habitat management activities are achieving their intended objectives. This monitoring is distinct from pre-harvest surveying. *From a business case perspective, changes in these actions affect ODF costs.*
- **Harvest Activities and Inventory Management**—All activities involving planning and design of harvest units, redesign efforts should surveys identify the presence of listed species, and restrictions imposed on harvest to avoid take. *From a business case perspective, changes in these actions affect ODF costs and revenues.*
- **Other Activities**—An HCP may affect the planning and implementation of actions affecting other forms of resource planning on ODF lands, including recreation and ecosystem management (which produces goods and services, such as carbon and habitat). Based on discussion with ODF staff, the effects of an HCP on these activities are likely indirect and limited. *Changes in these actions primarily affect benefits enjoyed by the public, therefore these are less important for a business case analysis; the analysis addresses these effects qualitatively.*

Effects of an HCP

HCP Preparation and ESA Compliance Costs

Table 2 summarizes the costs to ODF for preparing an HCP. Total cost over three years to ODF would be about \$4.0 million. In 2018, ODF was awarded a \$750,000 USFWS Habitat Conservation Planning Technical Assistance grant cover Phase 1 of the HCP, offsetting costs for the first year of HCP preparation. ODF will continue to seek grant funding to cover costs associated with developing an HCP, under the direction of the Board of Forestry.

Table 2. HCP Preparation Costs

Cost Category	Annual Cost (2018 Dollars)	Total Cost (Over 3 years)
ODF Staffing	\$388,000	\$1,164,000
HCP Consultant	\$450,000	\$1,350,000
Economic Consultant	\$50,000	\$150,000
Environmental Impact Statement (EIS) Consultant	\$300,000	\$900,000
HCP Facilitators	\$165,000	495,000
Total	\$1,353,000	\$4,049,000

Annual ESA compliance costs are expected to decline substantially with implementation of an HCP. Starting in 2021, ESA compliance is expected to cost ODF an estimated \$5.2 million in direct administration and species survey costs (Table 3). This amount includes \$2.5 million of

current species surveys costs as well as an additional estimated \$1.7 million due to future listings and increased regulations. Under an HCP, these costs are expected to be less by \$2.2 million annually. Species management costs include stream restoration and barred owl control, much or all of which can potentially be provided via grants and partner agency contributions, reducing these costs potentially to zero. This suggests that approximately two years under the HCP should more than pay for the costs to ODF of preparing the HCP in terms of reduced direct costs of ESA compliance.

Table 3. ESA Compliance Costs to ODF With and Without HCP

Cost Category	No HCP	HCP	Annual HCP Cost Savings
Administration of ESA Compliance	\$784,000	\$490,000	\$294,000
Pre-Harvest Species Surveys	\$4,216,000 ^a	\$2,121,000	\$2,095,000
Species Management Costs ^b	\$150,000	\$350,000	(\$200,000)
Total	\$5,150,000	\$2,961,000	\$2,189,000

Notes: ^a Assumes new species listing would result in over \$1.7 million of additional annual survey costs.

^b Assumes continued grant-funding of stream restoration.

Changes in Timber Harvest and Revenues

More acres are expected to be available for harvest with an HCP than without by the end of the 50-year implementation timeframe (Figure 1). Without an HCP, future acres available for harvest are expected to decline by approximately 59,000 acres over time due to increased protections for currently listed species and new species listings. These increasing take avoidance measures draw from areas of limited harvest availability (policy constrained) and available acres (about 29,500 of each).

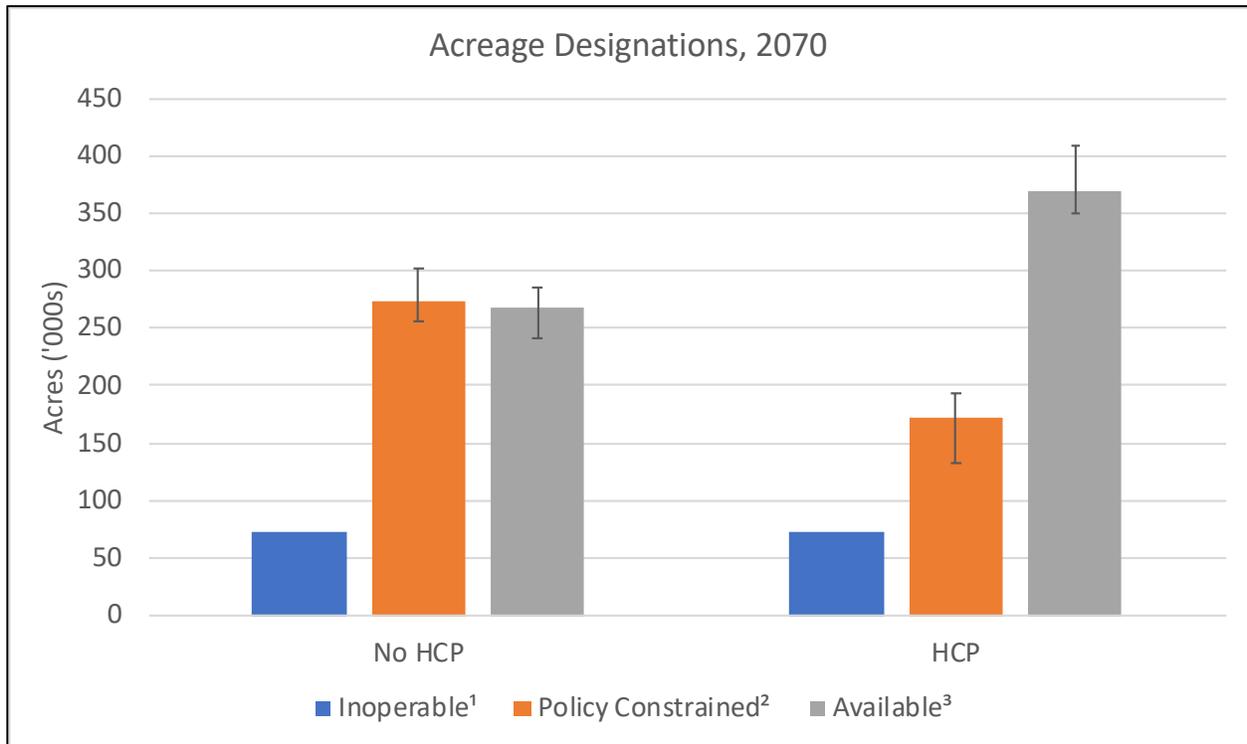


Figure 1. Acreage Designations by Scenario, 2070

Notes: Error bars show ranges of high and low scenario range estimates.

¹ Inoperable acres either do not hold forest or would be impractical to harvest.

² Policy constrained acres are either unavailable for harvest or severely limited for harvest by policy and regulatory constraints (e.g., Oregon Forest Practices Act, federal Endangered Species Act and FMP stream buffers).

³ Available acres would be available for harvest according to appropriate policy requirements.

In contrast, total available acres for timber harvest are expected to increase over time with an HCP because policy objectives can be more deliberately aligned with potential HCP conservation strategies. Approximately 11,000 of currently available acres become unavailable under an HCP due to a potential increase in stream buffers. An additional 35,000 acres would be excluded from all harvest for protection of northern spotted owl, marbled murrelet and covered species habitat. These 35,000 acres are primarily drawn from areas currently under policy constraints with limited harvest potential. With ESA compliance assured under the HCP, a portion of the acres currently constrained for policy objectives can transition over time to fully available for harvest. It is important to recognize that an HCP may require harvest practices that minimize environmental impacts in these areas.

Without an HCP, acres available for harvest are expected to decline from current conditions of 51 percent of BOF forest lands to 46 percent. Under an HCP, acres available for harvest are projected to increase 51 percent to 63 percent of BOF forest lands. In both scenarios, 72,000 acres are considered inoperable (i.e. roads, non-forest, unable to log and administratively removed areas).

Across the full range of scenarios analyzed, available acres are greater for all with HCP scenarios than all No HCP scenarios by 2070 .These resulting acreage ranges are based primarily upon the identified ranges of possible acreage requirements for northern spotted owl, marbled murrelet, and new species listings. These ranges correspond to available acres as a share of all BOF forest lands at 41 to 49 percent (about 241,000 to about 285,000 acres) for No HCP scenarios and 59 to 70 percent (about 349,000 to about 409,000 acres) for the with HCP scenarios.

Under the HCP Scenario ranges, harvests are expected to stay relatively consistent or slightly climb over time (Figure 2). Decline over the first time period in the HCP Scenario is due to reduction in available acres associated with stream buffer constraints. Without an HCP though, harvests are expected to consistently decline over the full timeframe, falling farther and farther below planned harvests. This decline is primarily due to increasing ESA constraints on available acres and inability to access currently constrained acres anticipated to be accessible with an HCP. Note that annual variability will cause actual annual harvest trends to vary more than the chart suggests, although the harvests are expected to be more consistent under an HCP than otherwise.

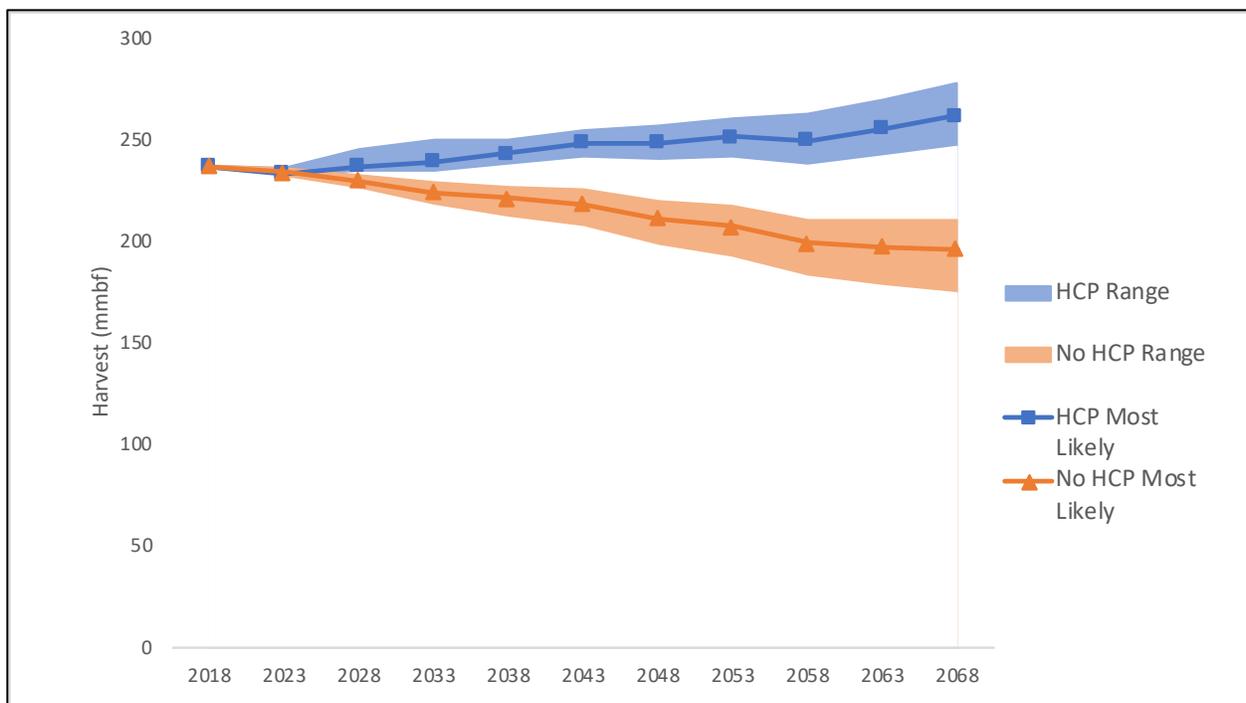


Figure 2. Annual Harvest Volume Range, With HCP and No HCP

Note: Points represent 5-year averages (e.g., 2023 represents 2021-2025).

Similar to harvest volume, net revenue is expected to increase under an HCP and decline without one. Net revenue in this case is gross timber revenue including county payments minus ODF costs. The most likely No HCP Scenario shows a decline from current net revenue levels of \$50 million down to \$26 million annually by 2070, compared to a slight increase to \$53 million with an HCP (in 2018 dollars) (Figure 3). These trends are due to the declining available acres for harvest without an HCP combined with climbing cost assumptions across all scenarios, particularly without an HCP.

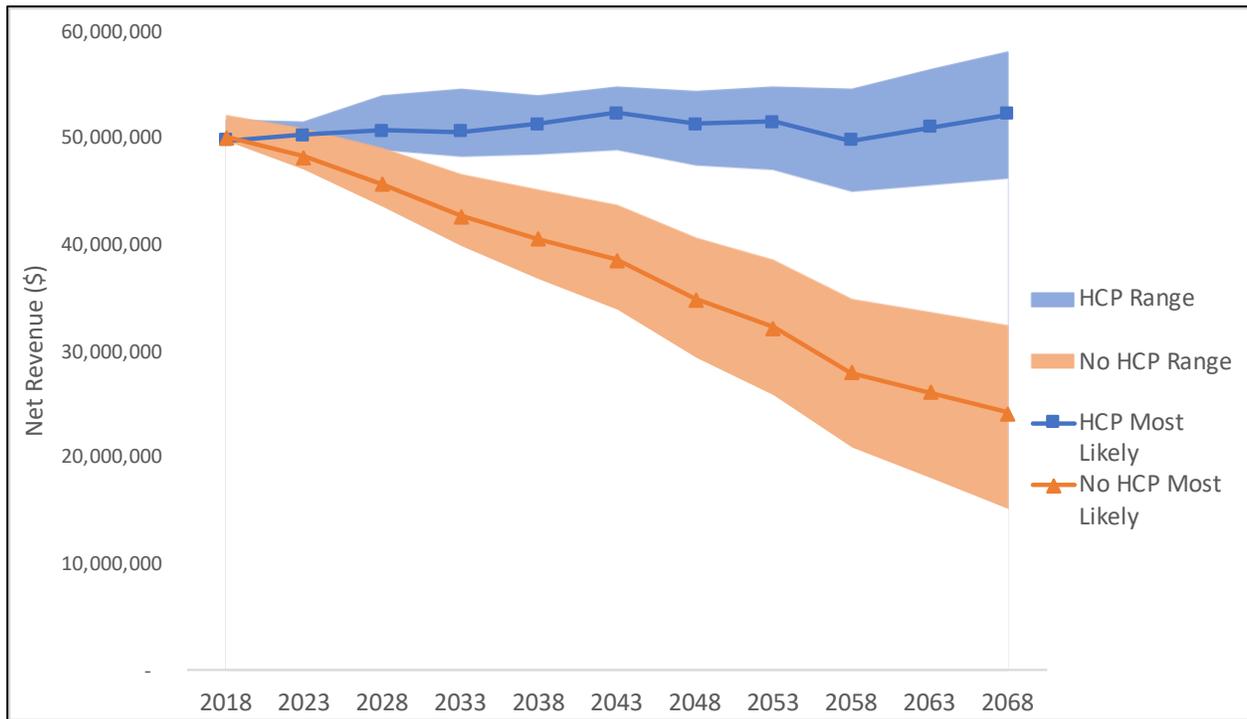


Figure 3. Annual Harvest Net Revenue Range, With and Without HCP

Note: Points represent 5-year averages (e.g., 2023 represents 2021-2025).

Summed over the 50-year timeframe of 2021 to 2070 and discounted at 3 percent, the cumulative net revenue under the most likely No HCP Scenario would be \$900 million compared to \$1.15 billion for the most likely With HCP Scenario. This is a \$250 million net revenue benefit of the HCP over a 50-year timeframe.

Across the range of assumptions for both scenarios, the financial (business case) outcome is better with an HCP than without. In all cases the costs are lower and harvests greater under an HCP. These ranges are based on the highest and lowest possible costs and acreage constraints identified, described in more detail in the full report.

Reduction in Regulatory and Legal Risk

An important benefit of a comprehensive HCP are the regulatory assurances provided by USFWS and NMFS to ODF through the incidental take permits. These assurances guarantee that USFWS and NMFS will not require HCP permittees to provide any more land, water, or money than what is committed to in the HCP in the event of unforeseen circumstances.

Unforeseen circumstances are defined as changes to the environment that may affect the status of the covered species that were not anticipated by those who prepared the HCP. These assurances provided by an HCP will enable ODF to greatly reduce the uncertainty and increase the predictability of its costs related to listed and other non-listed species. An HCP may also reduce litigation costs in the long-term, but the present value of these costs is probably not material to the business case. Rather it is the increase in predictability and certainty that is significant.

Conclusions

These analyses suggest that while there are initial costs to prepare an HCP to receive an incidental take permit, annual ESA compliance cost savings achieved by obtaining such a permit more than cover the preparation costs in the first couple of years of implementation. Furthermore, timber harvest revenue is expected to be much greater under an HCP. Without an HCP, harvest volumes and revenues are expected to consistently decline. This results in approximately \$250 million in (cumulative) net present value of the HCP over 50 years of timber harvests, in terms of summed net revenue under an HCP vs. without an HCP. In addition, the HCP will reduce litigation risk and associated costs as well as the significant amount of staff time required for continued forest management plan revision processes.