

CHAPTER 16

INTEGRATION AND SYNTHESIS FOR DESIGNATED CRITICAL HABITAT

1,3-DICHLOROPROPENE & METOLACHLOR

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16 INTEGRATION AND SYNTHESIS – DESIGNATED CRITICAL HABITAT

16.1 Introduction

The integration and synthesis section is the final step in our assessment of the risk posed to critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action to the status, baseline and the cumulative effects to formulate the agency’s biological opinion as to whether the proposed action is likely to appreciably diminish the value of designated critical habitat as a whole for the conservation of an ESA-listed species.

The effects analysis (Chapter 16) evaluated the effects of the action on the primary and biological features of the designated critical habitat for each species. This analysis included the evaluation of risk hypotheses. The effects analysis concluded with a determination of risk posed to the primary and biological features by the effects of the action, as well as a characterization of confidence. In this section, these effects analysis conclusions are considered in the context of the status, baseline and cumulative effects to determine whether the effects of the action will appreciably diminish the conservation value as a whole.

We treat the information from the status, environmental baseline, and cumulative effects, as “risk modifiers,” in that the effects described in the effects analysis section may be modified by the condition of the environmental baseline, and anticipated cumulative effects. To help guide our risk assessors in making transparent and consistent determinations, we developed several key-questions which were examined for each species and critical habitat (see Chapters 8, 9, 10). However, the ultimate consideration of increased or decreased risk attributable to the status of the species, environmental baseline, or cumulative effects is not restricted to the consideration of the key questions alone. Additional relevant factors were considered depending on the species or critical habitat being assessed.

Once each of the above sections is evaluated, the effects of the action and the risk modifiers are depicted graphically on a “scorecard.” The influence of each modifier on the effects of the action is represented by an arrow. The magnitude of influence (low or high) is represented by the length of the arrow (short or long). The direction an arrow is pointed indicates the directionality of the risk modifier, increasing or decreasing risk. For example, an environmental baseline arrow pointing towards more risk may indicate that environmental mixtures and elevated temperatures occur in the Environmental Baseline, which further stresses the species in question. The level of confidence in the magnitude of modification is indicated by bolding (high confidence) or unbolding (low confidence) the arrow.

An additional arrow representing the influence on risk is graphically depicted on each of the designated critical habitat scorecards. The effects of the proposed action are characterized as high, medium, or low risk to the species on the top bar (“Effects Analysis”) of the scorecard. The scorecard also summarizes how the risk posed by the effects of the action is modified by the environmental baseline, cumulative effects, and status of the critical habitat, as depicted by the three arrows below the Effects Analysis bar. At the bottom of the scorecard (Figure 2), the bar labeled conclusion shows the overall risk and adverse modification determination (the colored bar beginning with green (less risk) to red (more risk)). A narrative is also presented below the scorecard to identify risk drivers and summarize the overall conclusion. The no adverse modification/adverse modification determination for each species designated critical habitat is ultimately an informed best professional judgement, based on best commercial and scientific data available, following ecological risk assessment principles (see Chapters 3 and 14).

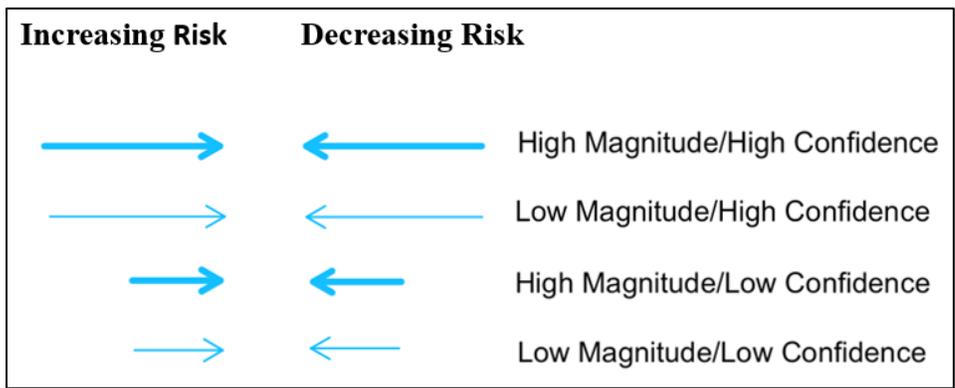


Figure 1. Example of arrows to represent direction, magnitude, and confidence of risk modifiers

Conclusion Section:

We combine the effects analysis conducted in chapters 15 – 17 with the baseline status of the species habitat, and cumulative effects to determine whether the action could reasonably be expected to appreciably diminish the value of designated critical habitat as a whole for the conservation of an ESA-listed species. We state our conclusion as to whether the action is likely to destroy or adversely modify each of the species designated critical habitats.

A scorecard is generated for each species designated critical habitat. The effects of the proposed action is considered based on magnitude and confidence of the three arrows. Next, an adverse modification or no adverse modification vertical blue bar is placed on the horizontal risk bar i.e., the colored bar beginning with green (less risk) to red (more risk) (Figure 2) to depict our conclusion.



Figure 2: Example conclusion graphic

16.2 Designated Critical Habitat Scorecards – 1,3-Dichloropropene



Designated Critical Habitat Scorecard
1,3-Dichloropropene
Chum salmon, Hood Canal summer-run ESU
(*Oncorhynchus keta*)

Effects Analysis

Low Risk/Med Confidence

Status and Baseline

Low Magnitude/High Confidence



Cumulative Effects

Low Magnitude/Low Confidence



Conclusion

Less Risk



More Risk

No Adverse Modification

Figure 3. Designated Critical Habitat Scorecard; Chum salmon, Hood Canal summer-run Evolutionarily Significant Unit (ESU); 1,3-Dichloropropene

Effects Analysis: Low risk/Medium confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Minimal increase in risk; Low magnitude/High confidence

- Spawning and rearing PBFs are degraded
- Migration and rearing PBFs are impaired by loss of floodplain habitat necessary for juvenile growth and development
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- All 12 watersheds of high or medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species' designated critical habitat is low and the confidence associated with that risk is medium due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Chum salmon , Columbia River ESU
 (*Oncorhynchus keta*)

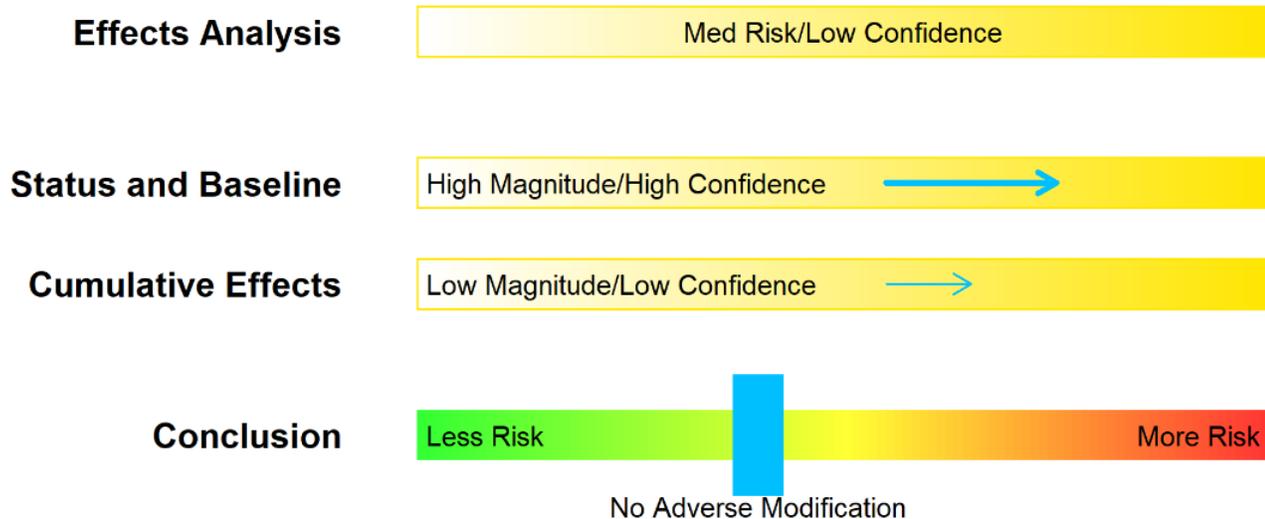


Figure 4. Designated Critical Habitat Scorecard; Chum salmon, Columbia River ESU; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs (water quality and cover) are degraded
- Migration PBFs significantly impacted by dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- All 19 watersheds of high or medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Chinook salmon, Central Valley spring-run ESU
 (*Oncorhynchus tshawytscha*)

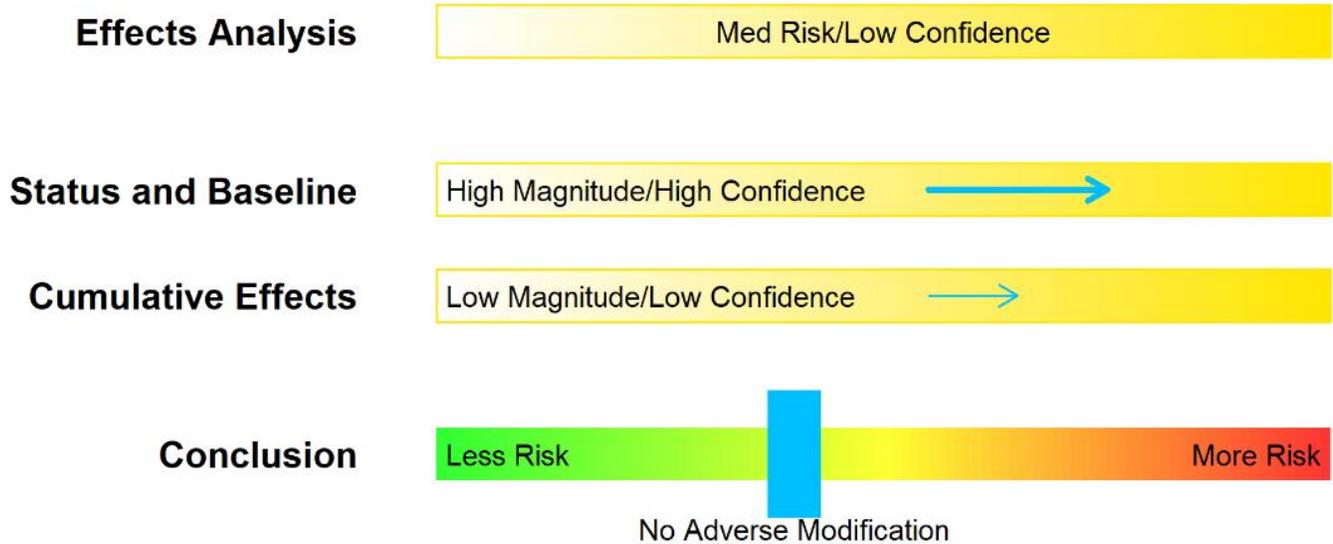


Figure 5. Designated Critical Habitat Scorecard; Chinook salmon, Central Valley spring-run ESU; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning and rearing PBFs are degraded by elevated temperatures, lost access to historic spawning sites, and loss of floodplain habitat
- Migration PBFs degraded by loss of cover and water diversions
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 38 watersheds, 28 are of high and 3 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification

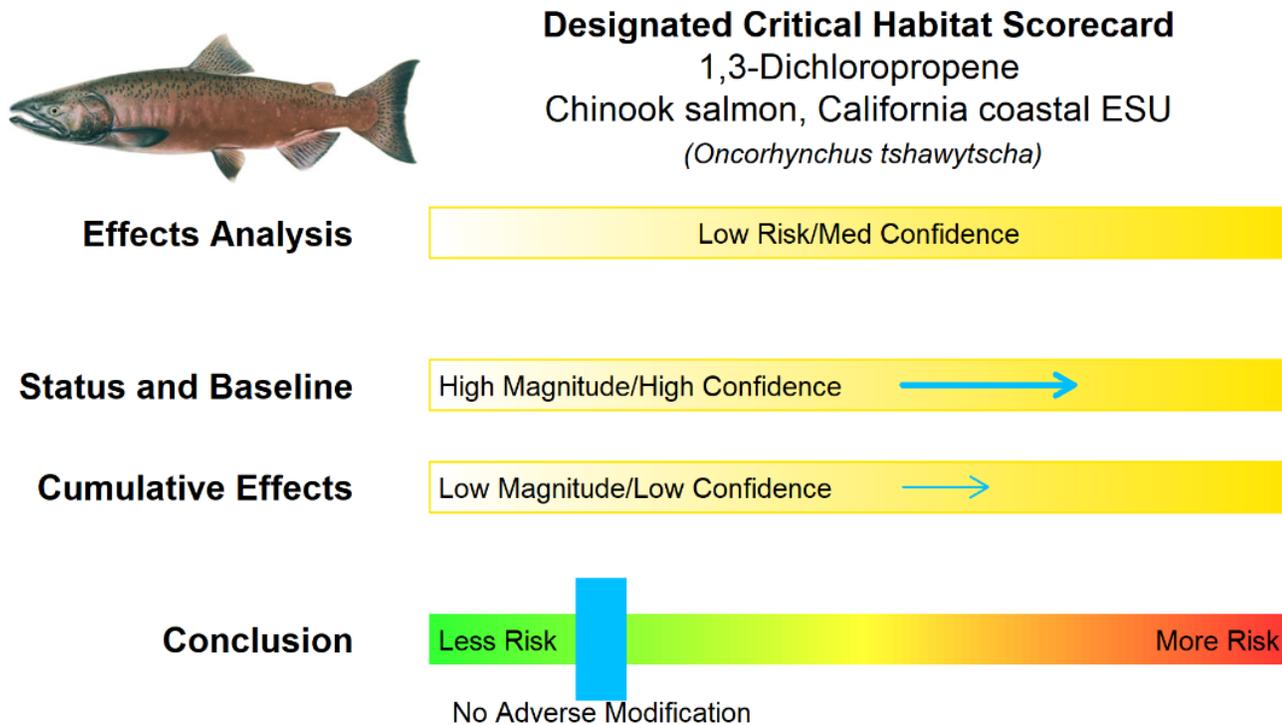


Figure 6. Designated Critical Habitat Scorecard; Chinook salmon, California coastal ESU; 1,3-Dichloropropene

Effects Analysis: Low risk/Medium confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning PBFs are degraded by timber harvest
- Rearing and migration PBFs impacted by dams and invasive species.
- Estuarine PBFs degraded by water quality and saltwater mixing
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 45 watersheds, 27 are of high and 10 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species' designated critical habitat is low and the confidence associated with that risk is medium due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
1,3-Dichloropropene
Chinook salmon, Lower Columbia River ESU
(Oncorhynchus tshawytscha)

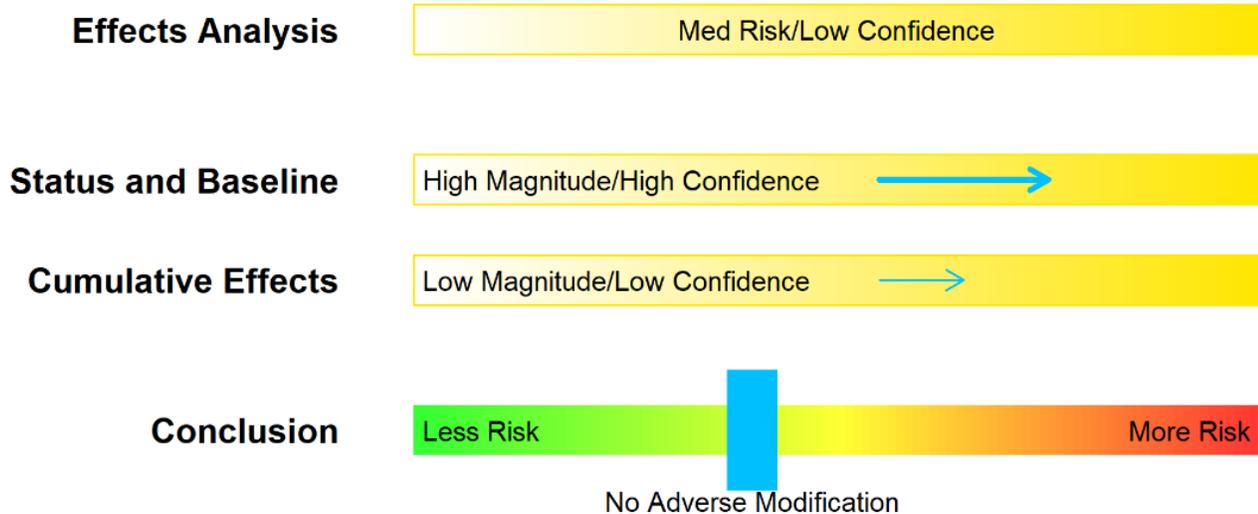


Figure 7. Designated Critical Habitat Scorecard; Chinook salmon, Lower Columbia River ESU; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning and rearing PBFs are degraded by timber harvest, agriculture, urbanization, loss of floodplain habitat, and reduced natural cover
- Migration PBFs impacted by dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of occupied watersheds, 31 are of high and 13 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard

1,3-Dichloropropene
 Chinook salmon, Puget Sound ESU
 (*Oncorhynchus tshawytscha*)

Effects Analysis



Status and Baseline



Cumulative Effects



Conclusion



Figure 8. Designated Critical Habitat Scorecard; Chinook salmon, Puget Sound ESU; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning, rearing and migration PBFs are degraded by forestry, agriculture, urbanization, and loss of habitat
- Estuarine PBFs degraded by water quality, altered salinity, and lack of natural cover
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 61 watersheds, 40 are of high and 9 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
1,3-Dichloropropene
Chinook salmon, Sacramento River winter-run ESU
(*Oncorhynchus tshawytscha*)

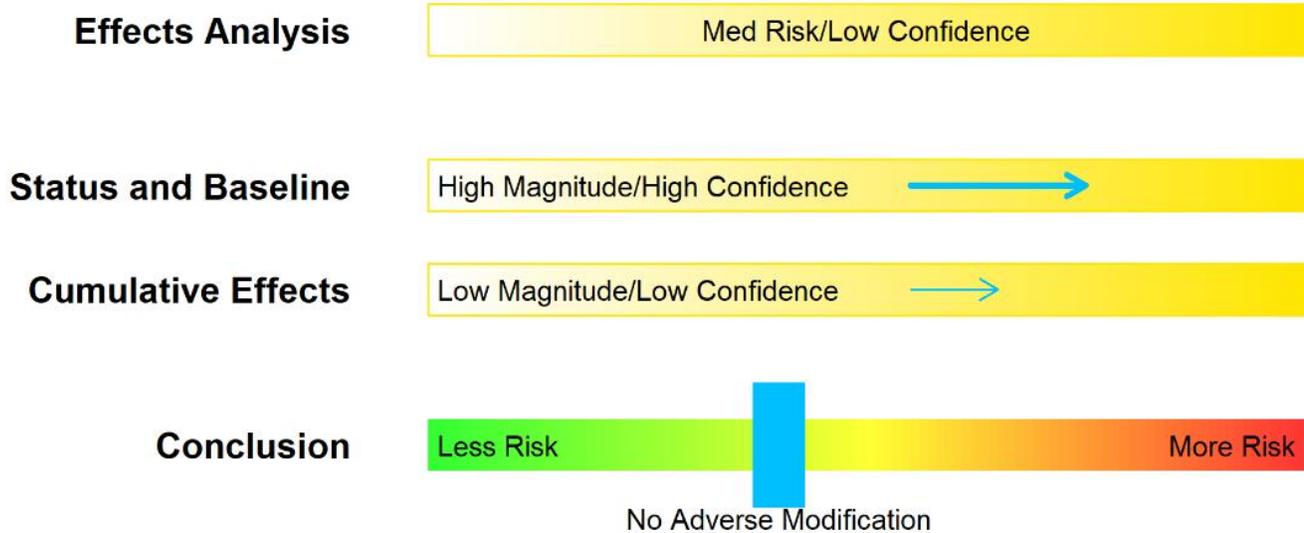


Figure 9. Designated Critical Habitat Scorecard; Chinook salmon, Sacramento River winter-run ESU; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning and rearing PBFs are degraded by elevated temperatures and loss of habitat
- Migration PBFs degraded by lack of natural cover and water diversions
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- The entire Sacramento river and delta are considered of high conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species' designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Chinook salmon, Snake River fall-run ESU
 (*Oncorhynchus tshawytscha*)

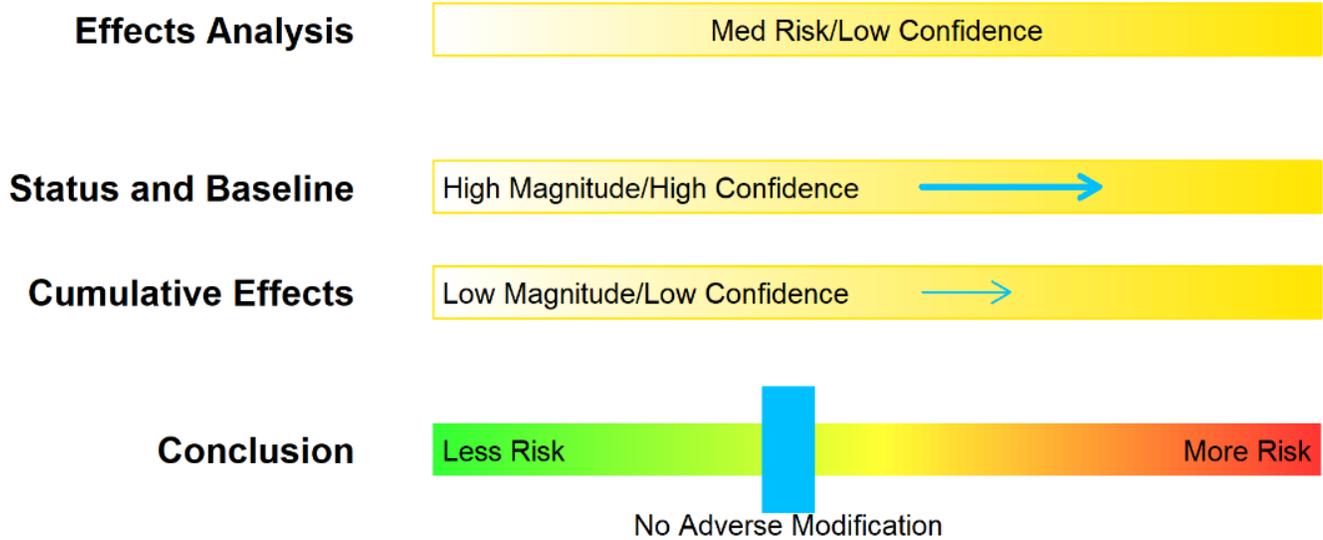


Figure 10. Designated Critical Habitat Scorecard; Chinook salmon, Snake River fall-run ESU; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning, rearing and migration PBFs are degraded by loss of habitat, impaired stream flows, barriers to fish passage, and poor water quality
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- The entire river corridor is considered of high conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Chinook salmon, Snake River spring/summer run ESU
 (*Oncorhynchus tshawytscha*)

Effects Analysis

Med Risk/Low Confidence

Status and Baseline

High Magnitude/High Confidence →

Cumulative Effects

Low Magnitude/Low Confidence →

Conclusion



Figure 11. Designated Critical Habitat Scorecard; Chinook salmon, Snake River spring/summer run ESU; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning, rearing and migration PBFs are degraded by loss of habitat, altered stream flows, barriers to fish passage, dams, loss of cover, and poor water quality
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- The entire river corridor is considered of high conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification

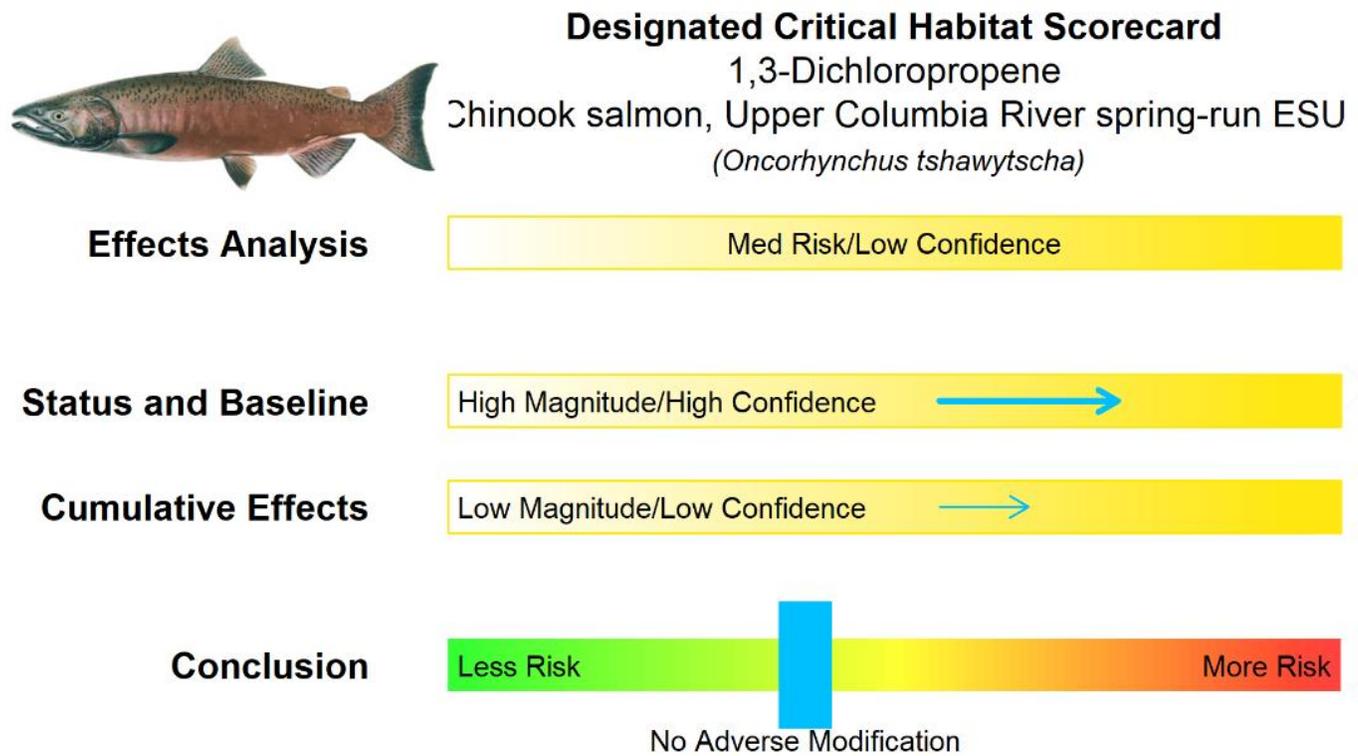


Figure 12. Designated Critical Habitat Scorecard; Chinook salmon, Upper Columbia River spring-run ESU; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning and rearing PBFs are degraded by urbanization and irrigation water diversions
- Migration PBFs degraded by numerous dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of occupied watersheds, 26 are of high and 5 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Chinook salmon, Upper Willamette River ESU
 (*Oncorhynchus tshawytscha*)

Effects Analysis

Med Risk/Low Confidence

Status and Baseline

High Magnitude/High Confidence →

Cumulative Effects

Low Magnitude/Low Confidence →

Conclusion



Figure 13. Designated Critical Habitat Scorecard; Chinook salmon, Upper Willamette River ESU; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Migration, rearing, and estuary PBFs are degraded by dams, water management, loss of riparian vegetation, and quality of floodplain habitat
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 59 assessed watersheds, 22 are of high and 18 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
1,3-Dichloropropene
Coho salmon, Central California coast ESU
(*Oncorhynchus kisutch*)

Effects Analysis

Low Risk/Med Confidence

Status and Baseline

High Magnitude/High Confidence



Cumulative Effects

Low Magnitude/Low Confidence



Conclusion

Less Risk

No Adverse Modification

More Risk

Figure 14. Designated Critical Habitat Scorecard; Coho salmon, Central California coast ESU; 1,3-Dichloropropene

Effects Analysis: Low risk/Medium confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Degradation in quality and quantity of PBFs, especially in southern end of range
- Rearing PBFs degraded by loss of suitable incubation substrate and loss of habitat
- Elevated temperatures anticipated in freshwater habitats
- Environmental mixtures anticipated in freshwater habitats may impact PBFs

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species' designated critical habitat is low and the confidence associated with that risk is medium due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Coho salmon, Lower Columbia River ESU
 (*Oncorhynchus kisutch*)

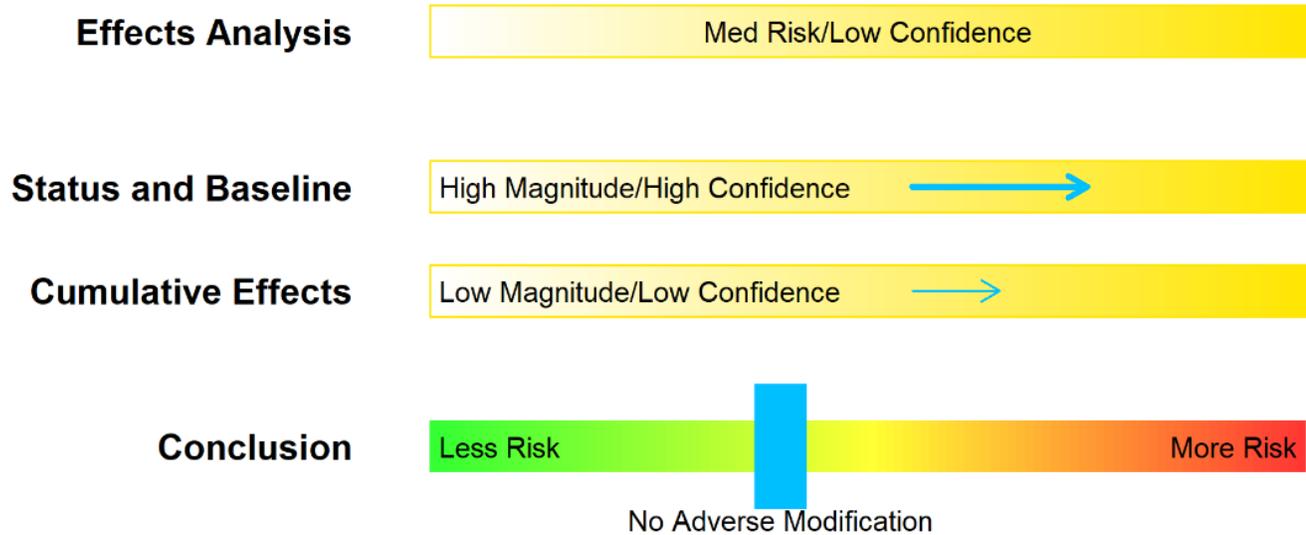


Figure 15. Designated Critical Habitat Scorecard; Coho salmon, Lower Columbia River ESU; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning and rearing PBFs are degraded by timber harvest, agriculture, urbanization, loss of floodplain habitat, and reduced natural cover
- Migration PBFs impacted by dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Coho salmon, Oregon coast ESU
 (*Oncorhynchus kisutch*)

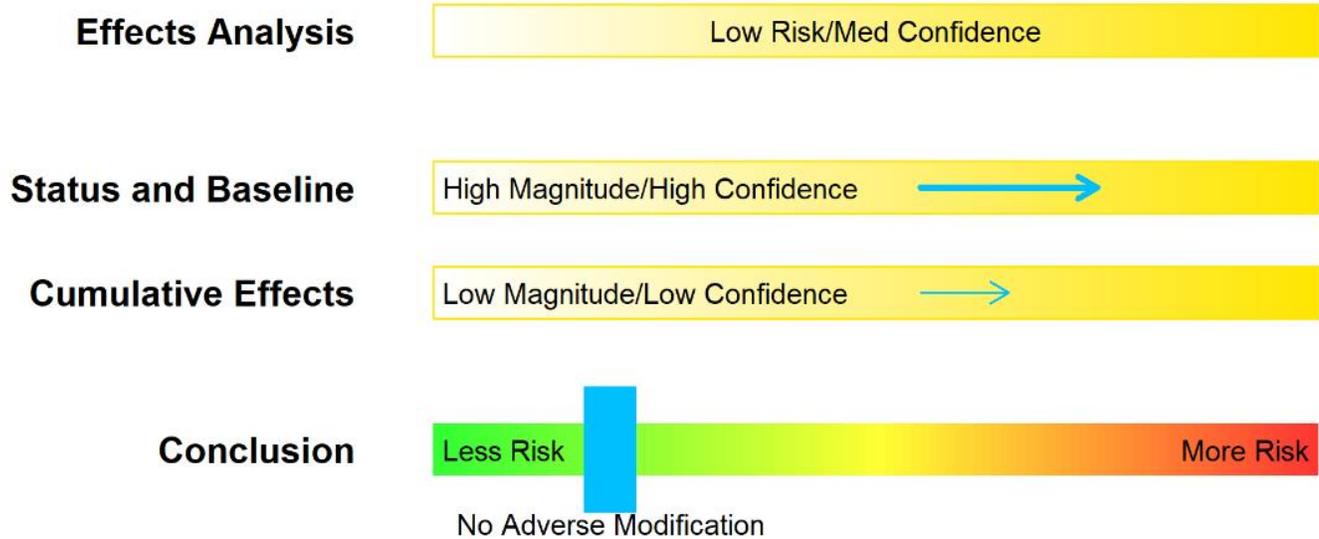


Figure 16. Designated Critical Habitat Scorecard; Coho salmon, Oregon coast ESU; 1,3-Dichloropropene

Effects Analysis: Low risk/Medium confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by elevated water temperature
- All PBFs degraded by reduced water quality from contaminants and excess nutrients
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 80 assessed watersheds, 45 are of high and 27 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is low and the confidence associated with that risk is medium due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
1,3-Dichloropropene
Coho salmon, S. Oregon and N. Calif coasts ESU
(*Oncorhynchus kisutch*)

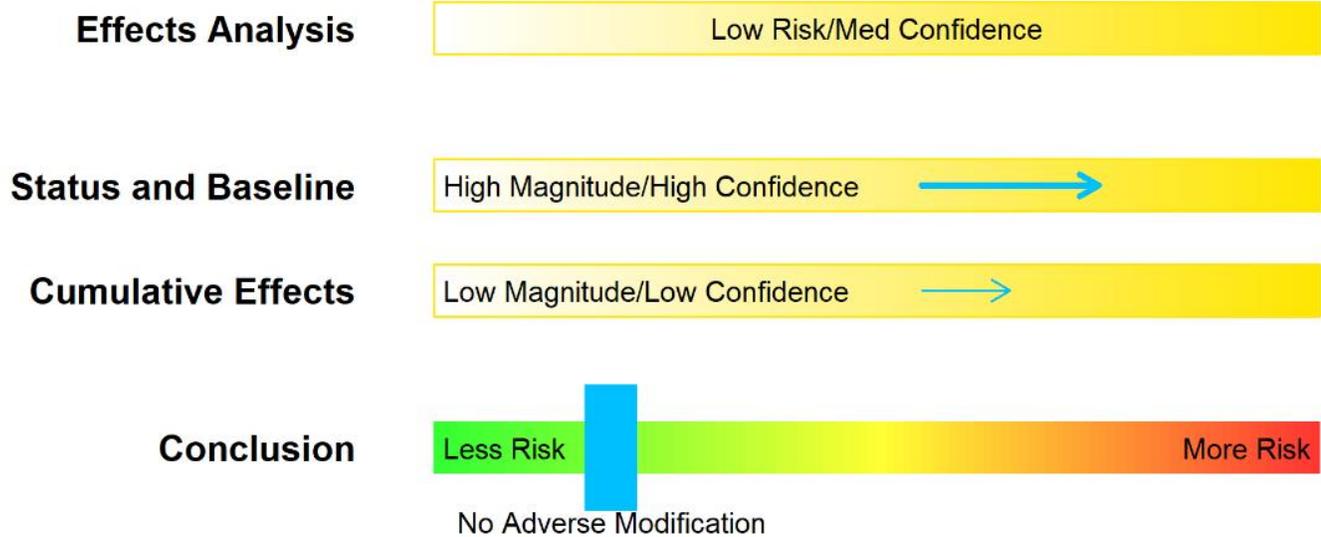


Figure 17. Designated Critical Habitat Scorecard; Coho salmon, S. Oregon and N. Calif coasts ESU; 1,3-Dichloropropene

Effects Analysis: Low risk/Medium confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

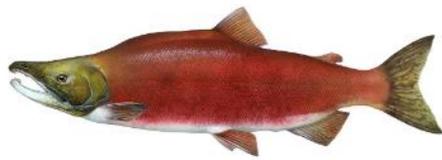
- Spawning PBFs are degraded by logging
- Rearing and migration PBFs degraded by loss of riparian vegetation and loss of floodplain habitat
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species' designated critical habitat is low and the confidence associated with that risk is medium due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard

1,3-Dichloropropene
 Sockeye, Ozette Lake ESU
 (*Oncorhynchus nerka*)

Effects Analysis

Low Risk/Med Confidence

Status and Baseline

High Magnitude/High Confidence



Cumulative Effects

Low Magnitude/Low Confidence



Conclusion

Less Risk



No Adverse Modification

More Risk

Figure 18. Designated Critical Habitat Scorecard; Sockeye, Ozette Lake ESU; 1,3-Dichloropropene

Effects Analysis: Low risk/Medium confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

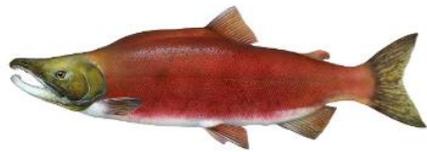
- Rearing PBFs are degraded by excessive predation, invasive species, and loss of habitat
- Spawning and migration PBFs are degraded by low water levels, loss of suitable spawning habitat, and low summer water flows
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- The entire watershed is of high conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species' designated critical habitat is low and the confidence associated with that risk is medium due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard

1,3-Dichloropropene
 Sockeye, Snake River ESU
 (*Oncorhynchus nerka*)

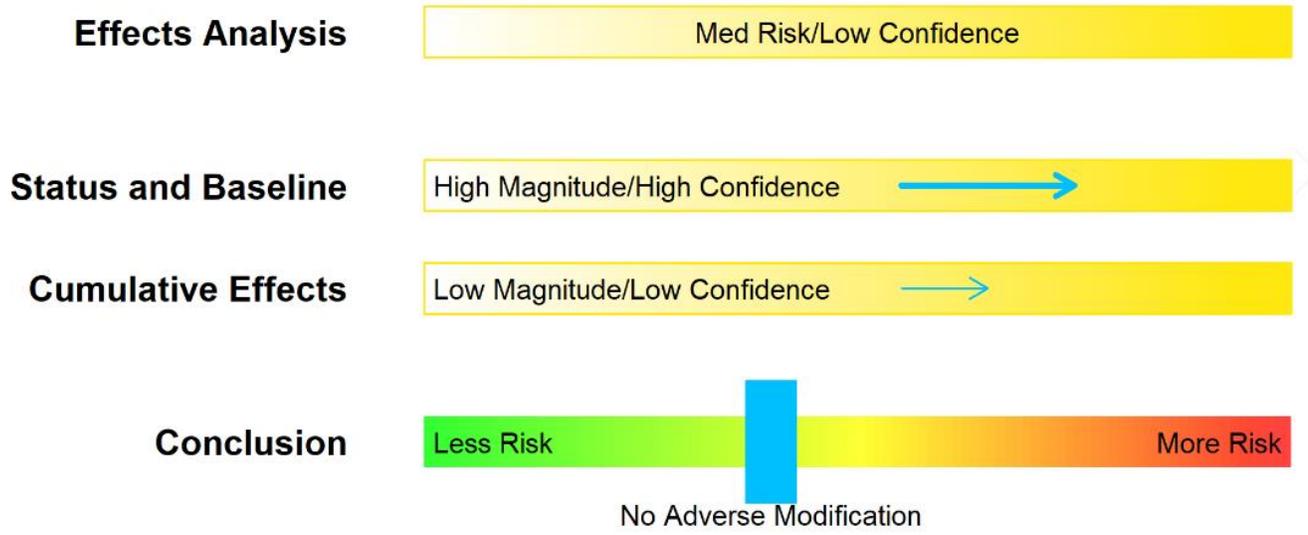


Figure 19. Designated Critical Habitat Scorecard; Sockeye, Snake River ESU; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing and migration PBFs are degraded by impaired water quality from adjacent land uses
- Migration PBFs are degraded by multiple dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- All occupied and used areas of the watershed are of high conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Steelhead, California Central Valley DPS
 (*Oncorhynchus mykiss*)

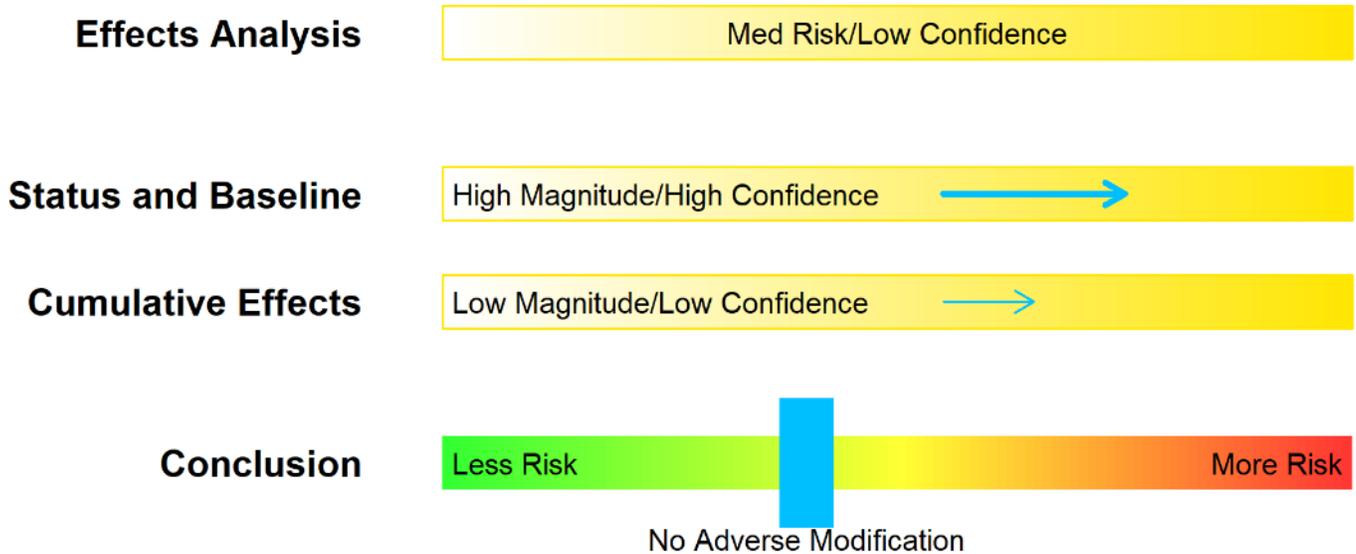


Figure 20. Designated Critical Habitat Scorecard; Steelhead, California Central Valley Distinct Population Segment (DPS); 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning Physical and Biological Features (PBFs) are degraded by altered water flows and temperature
- Rearing and migration PBFs are degraded by altered riverine habitat, dense urbanization and agriculture, poor water quality, and water diversions
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 67 occupied watersheds, 37 are of high and 18 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
1,3-Dichloropropene
Steelhead, Central California coast DPS
(*Oncorhynchus mykiss*)

Effects Analysis

Low Risk/Med Confidence

Status and Baseline

High Magnitude/High Confidence →

Cumulative Effects

Low Magnitude/Low Confidence →

Conclusion



Figure 21. Designated Critical Habitat Scorecard; Steelhead, Central California coast DPS; 1,3-Dichloropropene

Effects Analysis: Low risk/Medium confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning and rearing PBFs are degraded by sedimentation and elevated temperature
- All PBFs are degraded by loss of habitat, low summer flows, erosion, and contaminants
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 47 occupied watersheds, 19 are of high and 15 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is low and the confidence associated with that risk is medium due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
1,3-Dichloropropene
Steelhead, Lower Columbia River DPS
(*Oncorhynchus mykiss*)

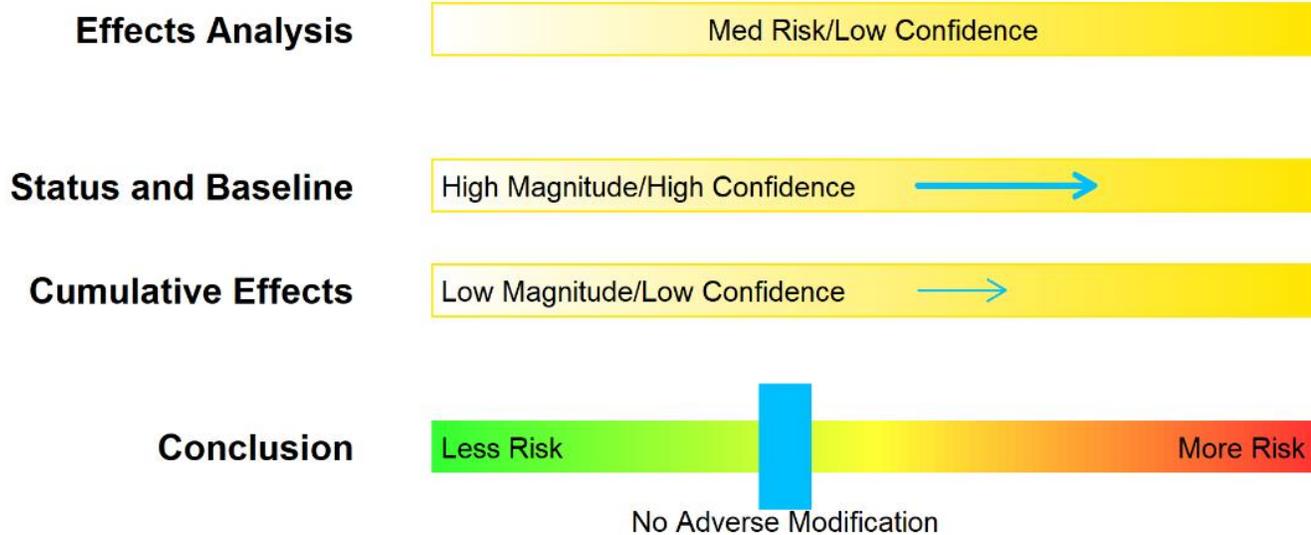


Figure 22. Designated Critical Habitat Scorecard; Steelhead, Lower Columbia River DPS; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by agricultural runoff and lack of available prey
- Spawning, rearing and migration PBFs are degraded by timber harvests, dams, and loss of floodplain habitat
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 41 occupied watersheds, 28 are of high and 11 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species' designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Steelhead, Middle Columbia River DPS
 (*Oncorhynchus mykiss*)

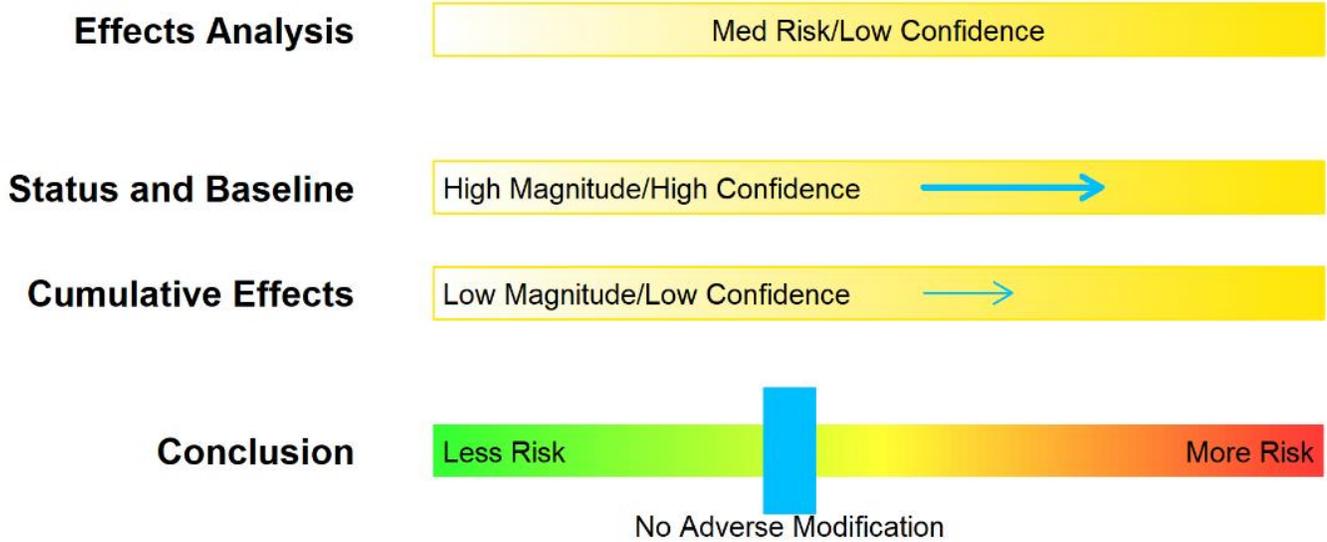


Figure 23. Designated Critical Habitat Scorecard; Steelhead, Middle Columbia River DPS; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by water quality, reduced invertebrate prey, and loss of riparian vegetation
- Migration PBFs are degraded by several dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 106 assessed watersheds, 73 are of high and 24 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Steelhead, Northern California DPS
 (*Oncorhynchus mykiss*)

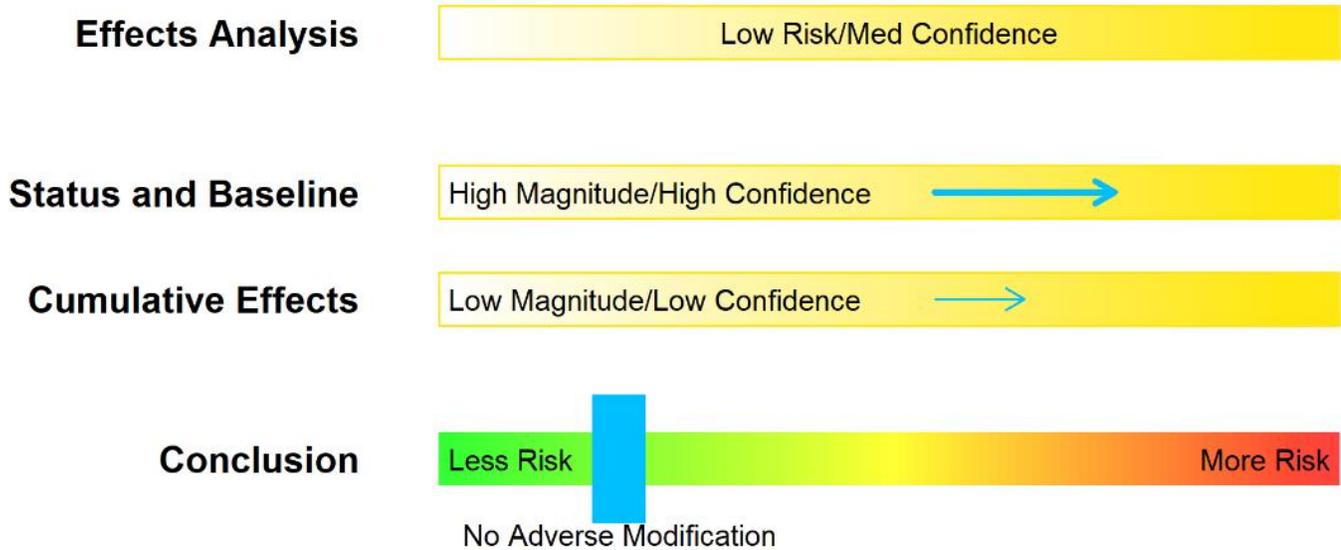


Figure 24. Designated Critical Habitat Scorecard; Steelhead, Northern California DPS; 1,3-Dichloropropene

Effects Analysis: Low risk/Medium confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by loss of riparian vegetation and elevated temperature
- Spawning PBFs are degraded by lack of quality substrate and sedimentation
- Migration PBFs are degraded by bridges, culverts, and forest road construction
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 50 assessed watersheds, 27 are of high and 14 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is low and the confidence associated with that risk is medium due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard

1,3-Dichloropropene
Steelhead, Puget Sound DPS
(*Oncorhynchus mykiss*)

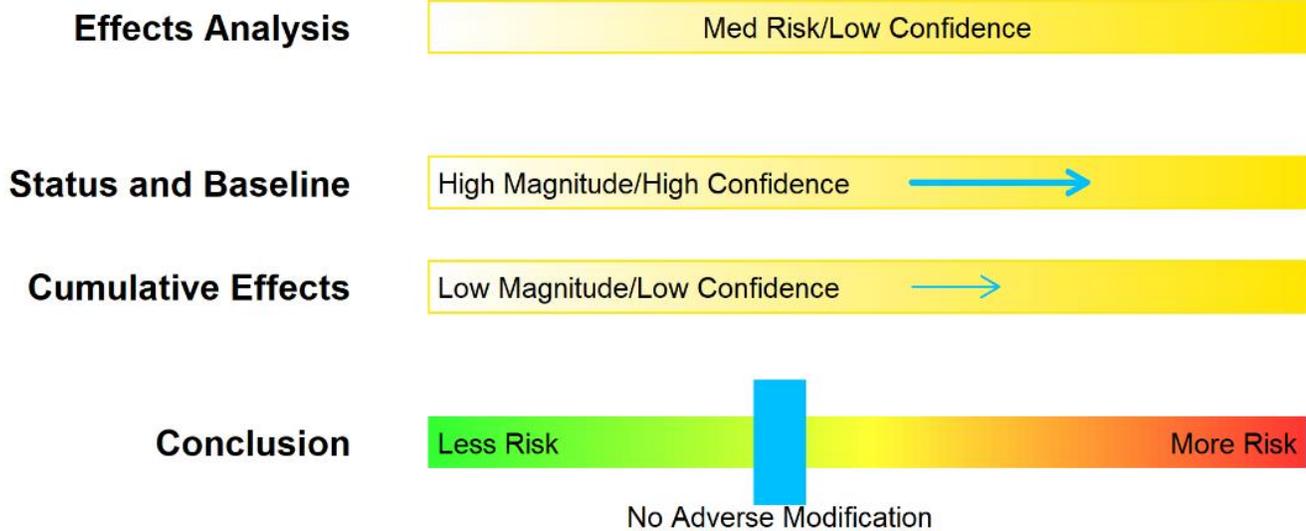


Figure 25. Designated Critical Habitat Scorecard; Steelhead, Puget Sound DPS; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing, migration and spawning PBFs are degraded by forestry, agriculture, urbanization, loss of floodplain habitat, and poor water quality
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Most watersheds are of high or medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Steelhead, Snake River Basin DPS
 (*Oncorhynchus mykiss*)

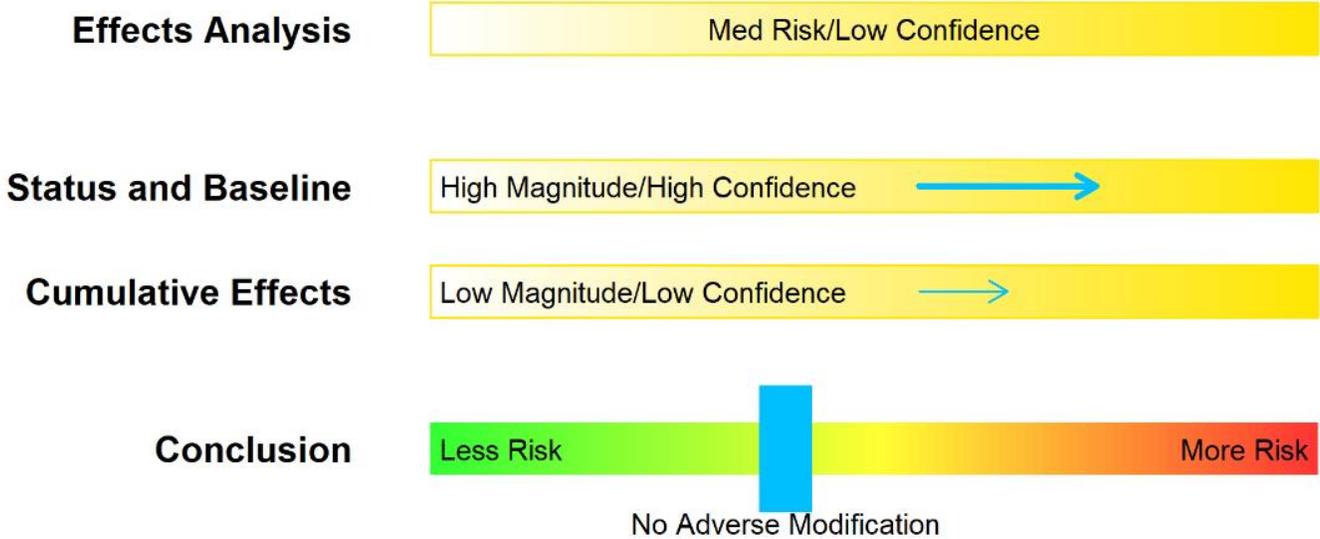


Figure 26. Designated Critical Habitat Scorecard; Steelhead, Snake River Basin DPS; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by agricultural runoff, reduced invertebrate prey, loss of riparian vegetation, and elevated temperature
- Migration PBFs are degraded by several dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of assessed watersheds, 229 are of high and 41 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Steelhead, South-Central California coast DPS
 (*Oncorhynchus mykiss*)

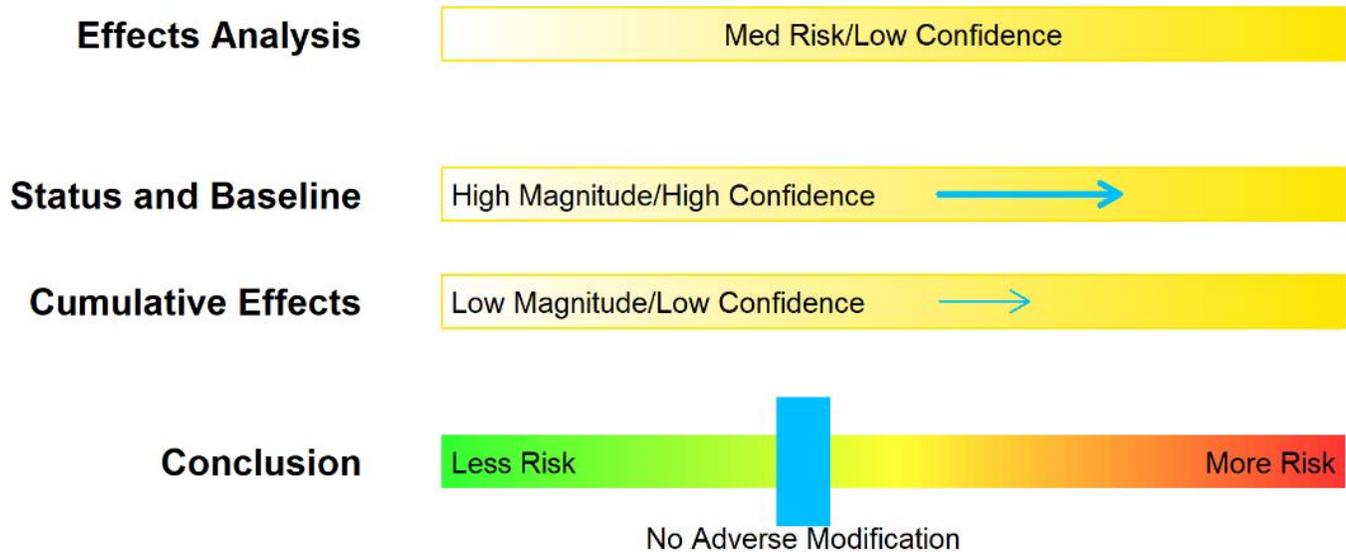


Figure 27. Designated Critical Habitat Scorecard; Steelhead, South-Central California coast DPS; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing and migration PBFs are degraded by elevated temperatures and contaminants from urban and agricultural runoff
- Estuarine PBFs are degraded by altered habitat and contaminated runoff
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 29 occupied watersheds, 12 are of high and 11 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Steelhead, Southern California DPS
 (*Oncorhynchus mykiss*)

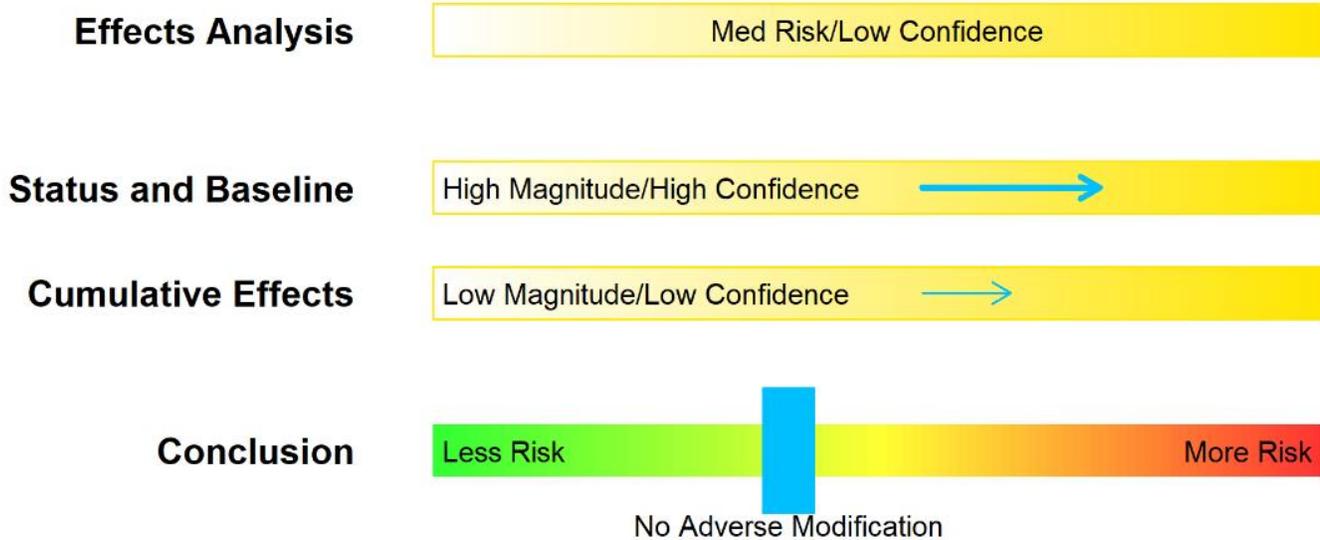


Figure 28. Designated Critical Habitat Scorecard; Steelhead, Southern California DPS; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- All PBFs are degraded by pollutants in urban and agricultural runoff, elevated temperatures, erosion, and low water flows
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 29 freshwater and estuarine watersheds, 21 are of high and 5 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Steelhead, Upper Columbia River DPS
 (*Oncorhynchus mykiss*)

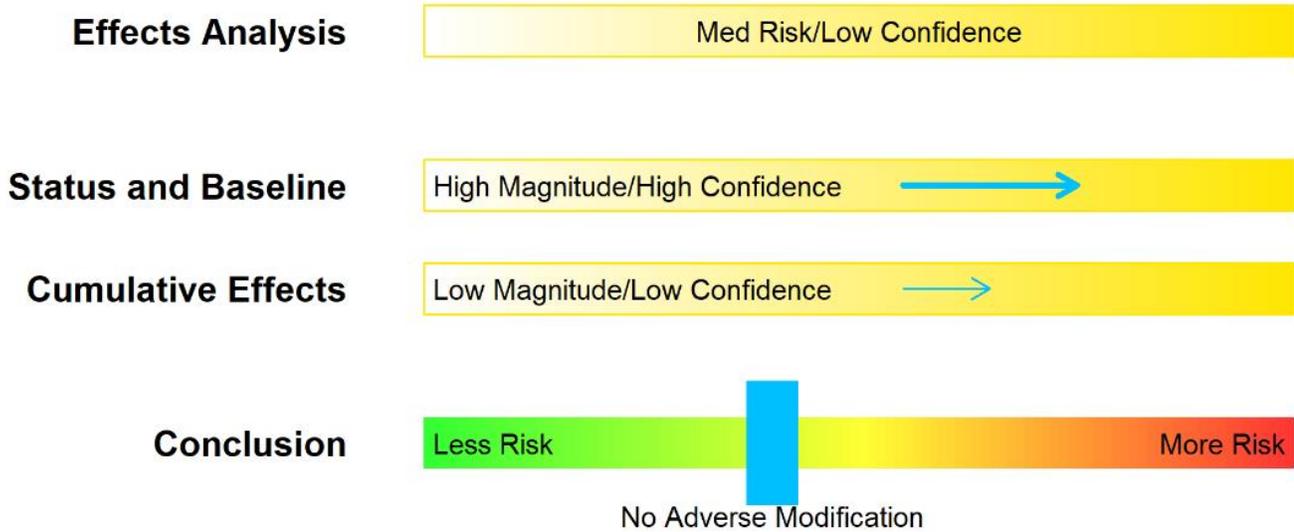


Figure 29. Designated Critical Habitat Scorecard; Steelhead, Upper Columbia River DPS; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by agricultural runoff and lack of available prey
- Migration PBFs are degraded by several dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 41 occupied watersheds, 31 are of high and 7 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 1,3-Dichloropropene
 Steelhead, Upper Willamette River DPS
 (*Oncorhynchus mykiss*)

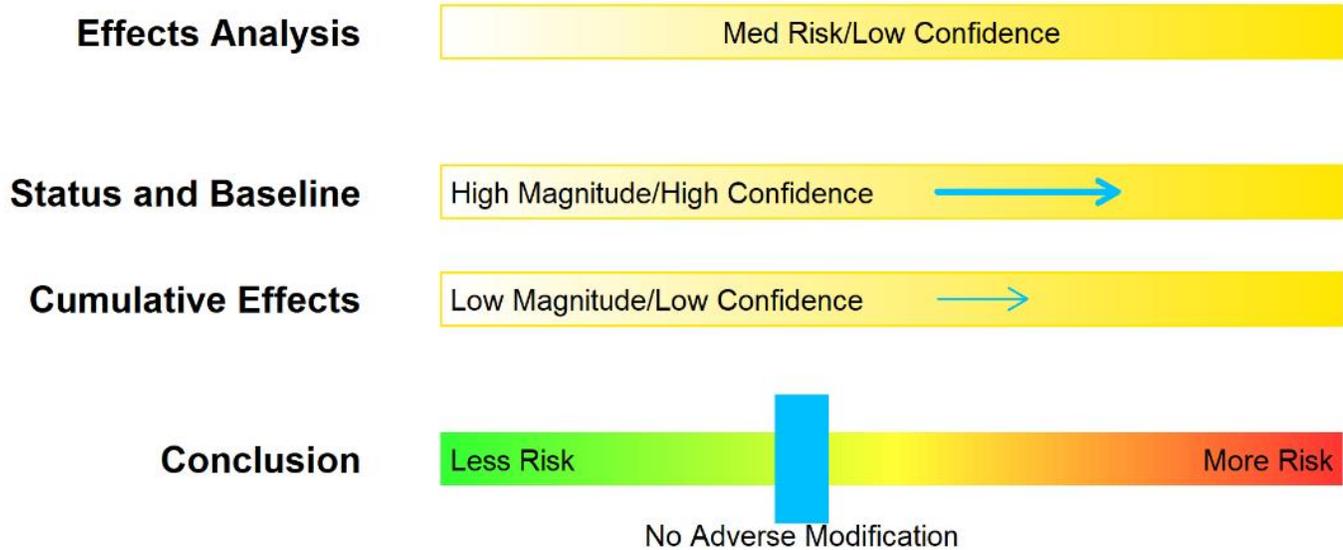


Figure 30. Designated Critical Habitat Scorecard; Steelhead, Upper Willamette River DPS; 1,3-Dichloropropene

Effects Analysis: Medium risk/Low confidence

- Significant reductions in invertebrate prey availability and/or vegetative cover are not expected.
- Degradation of water quality via direct toxicity to fish may occur in some low flow, low volume habitats.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by agricultural runoff and lack of available prey
- Migration PBFs are degraded by dams and elevated temperatures
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of assessed watersheds, 14 are of high and 6 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species' designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in invertebrate prey availability and vegetative cover are not expected. 1,3-D products containing chloropicrin may result in exposures which could degrade water quality in proximity to low flow, low volume species habitats, where take could occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

1,3-Dichloropropene is not likely to adversely modify designated critical habitat: No Adverse Modification

16.3 Designated Critical Habitat Scorecards – Metolachlor

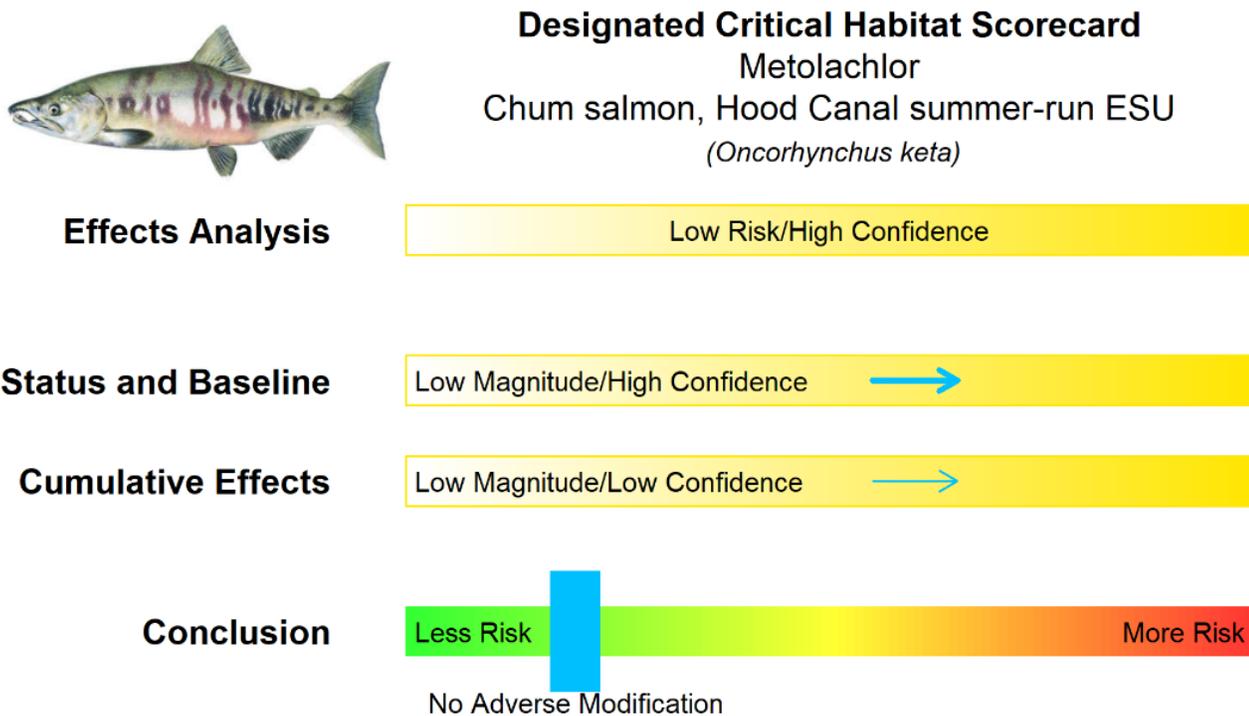


Figure 31. Designated Critical Habitat Scorecard; Chum salmon, Hood Canal summer-run Evolutionarily Significant Unit (ESU); Metolachlor

Effects Analysis: Low risk/High confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Minimal increase in risk; Low magnitude/High confidence

- Spawning and rearing PBFs are degraded
- Migration and rearing PBFs are impaired by loss of floodplain habitat necessary for juvenile growth and development
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- All 12 watersheds of high or medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is low and the confidence associated with that risk is high due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
 Metolachlor
 Chum salmon, Columbia River ESU
 (*Oncorhynchus keta*)

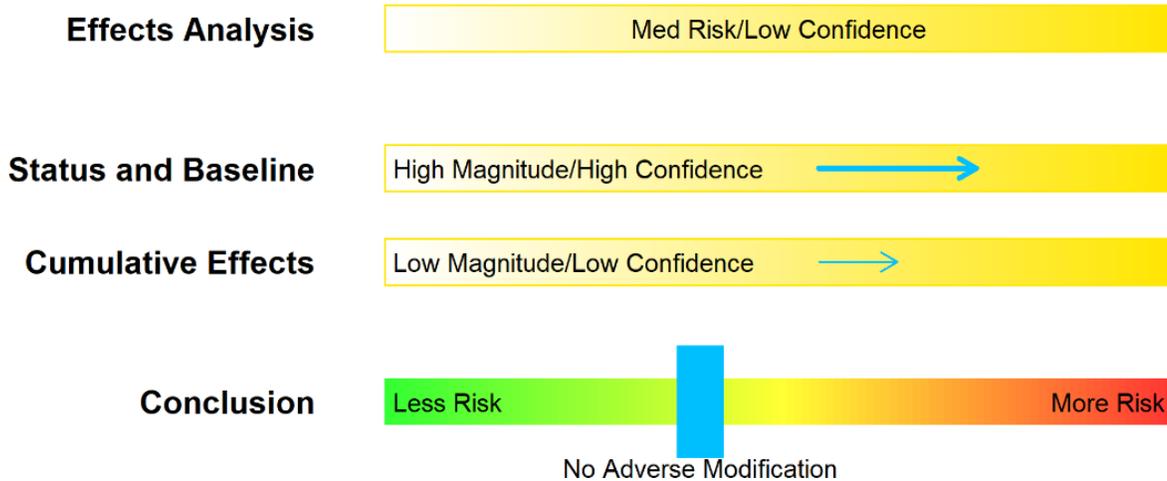


Figure 32. Designated Critical Habitat Scorecard; Chum salmon, Columbia River ESU; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs (water quality and cover) are degraded
- Migration PBFs significantly impacted by dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- All 19 watersheds of high or medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Chinook salmon, Central Valley spring-run ESU
(Oncorhynchus tshawytscha)

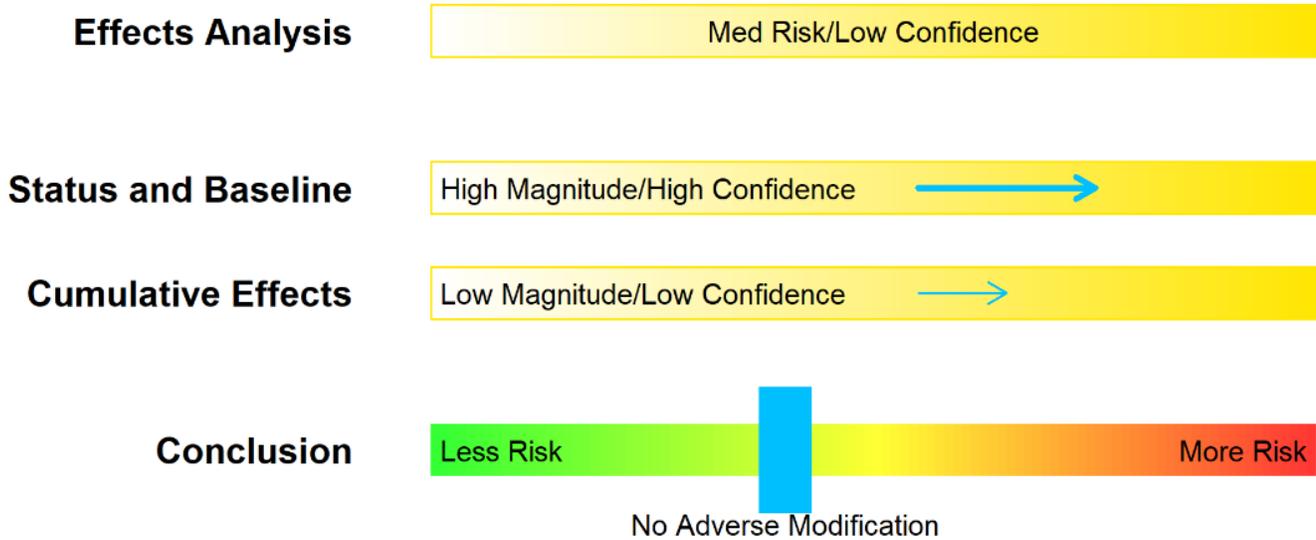


Figure 33. Designated Critical Habitat Scorecard; Chinook salmon, Central Valley spring-run ESU; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning and rearing PBFs are degraded by elevated temperatures, lost access to historic spawning sites, and loss of floodplain habitat
- Migration PBFs degraded by loss of cover and water diversions
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 38 watersheds, 28 are of high and 3 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
 Chinook salmon, California coastal ESU
 (*Oncorhynchus tshawytscha*)



Figure 34. Designated Critical Habitat Scorecard; Chinook salmon, California coastal ESU; Metolachlor

Effects Analysis: Low risk/High confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning PBFs are degraded by timber harvest
- Rearing and migration PBFs impacted by dams and invasive species.
- Estuarine PBFs degraded by water quality and saltwater mixing
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 45 watersheds, 27 are of high and 10 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is low and the confidence associated with that risk is high due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Chinook salmon, Lower Columbia River ESU
(Oncorhynchus tshawytscha)

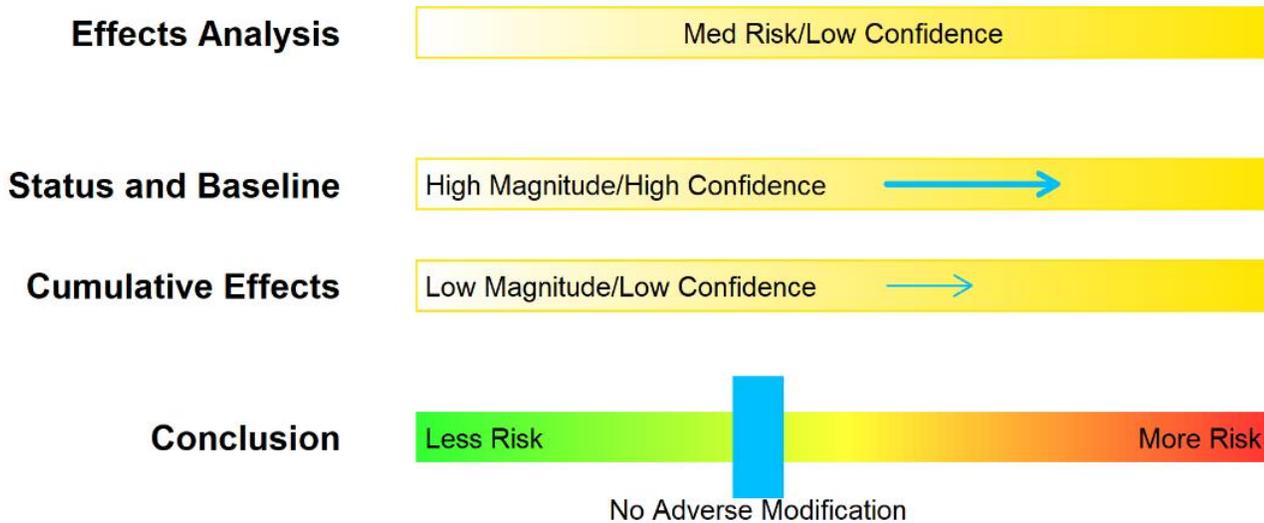


Figure 35. Designated Critical Habitat Scorecard; Chinook salmon, Lower Columbia River ESU; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning and rearing PBFs are degraded by timber harvest, agriculture, urbanization, loss of floodplain habitat, and reduced natural cover
- Migration PBFs impacted by dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of occupied watersheds, 31 are of high and 13 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard

Metolachlor

Chinook salmon, Puget Sound ESU

(*Oncorhynchus tshawytscha*)

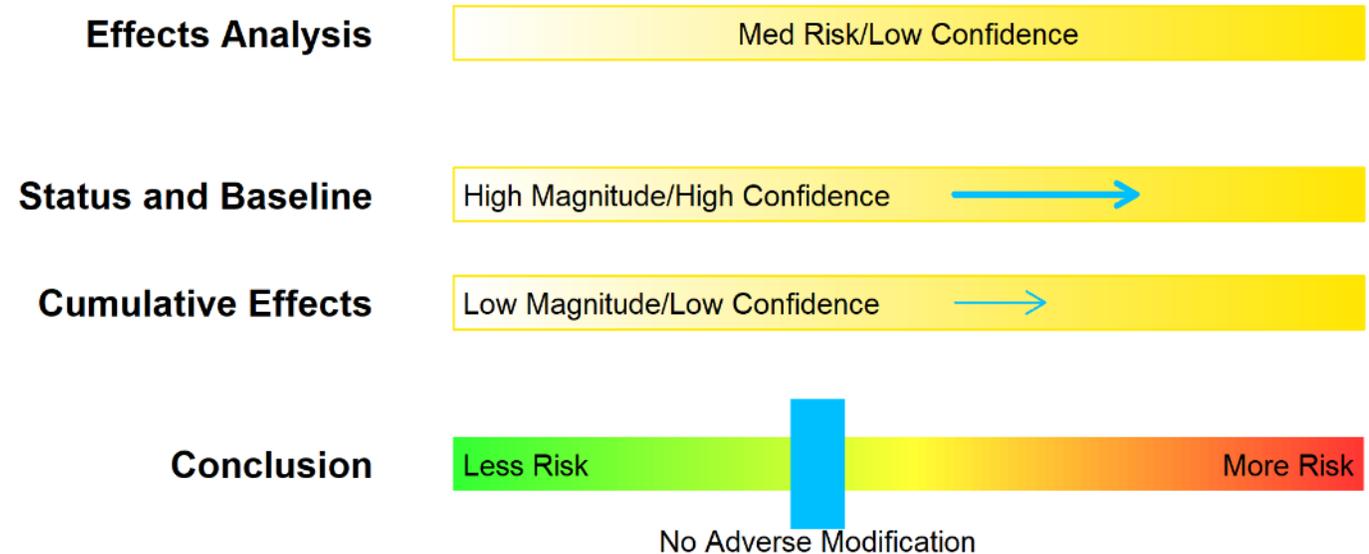


Figure 36. Designated Critical Habitat Scorecard; Chinook salmon, Puget Sound ESU; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning, rearing and migration PBFs are degraded by forestry, agriculture, urbanization, and loss of habitat
- Estuarine PBFs degraded by water quality, altered salinity, and lack of natural cover
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 61 watersheds, 40 are of high and 9 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
 Chinook salmon, Sacramento River winter-run ESU
(Oncorhynchus tshawytscha)

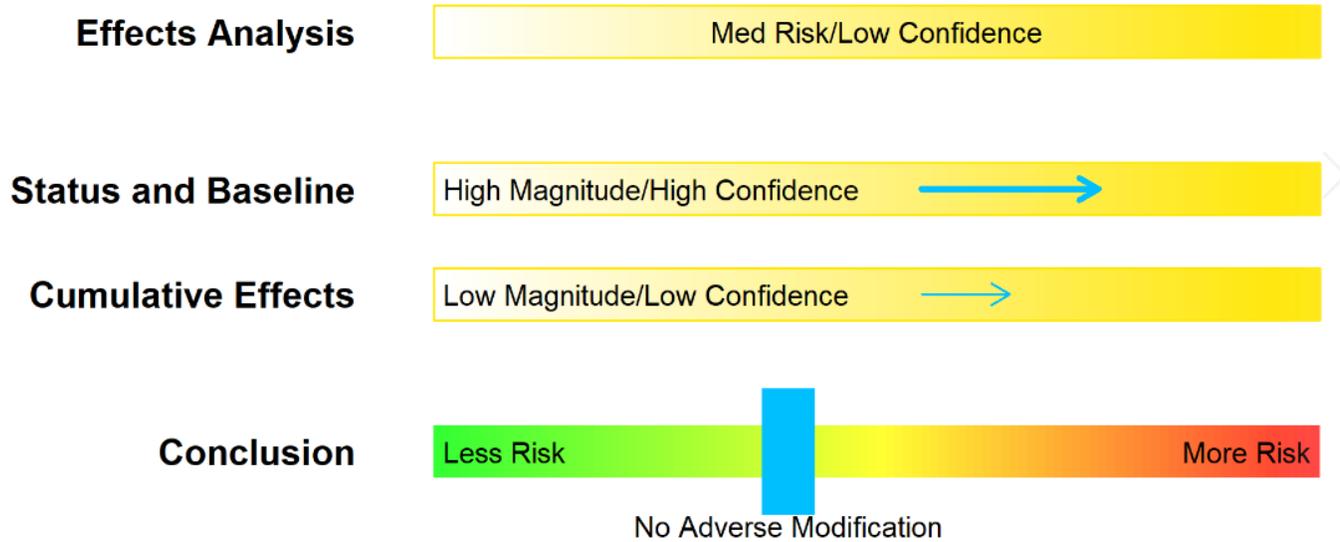


Figure 37. Designated Critical Habitat Scorecard; Chinook salmon, Sacramento River winter-run ESU; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning and rearing PBFs are degraded by elevated temperatures and loss of habitat
- Migration PBFs degraded by lack of natural cover and water diversions
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- The entire Sacramento river and delta are considered of high conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
 Chinook salmon, Snake River fall-run ESU
(Oncorhynchus tshawytscha)

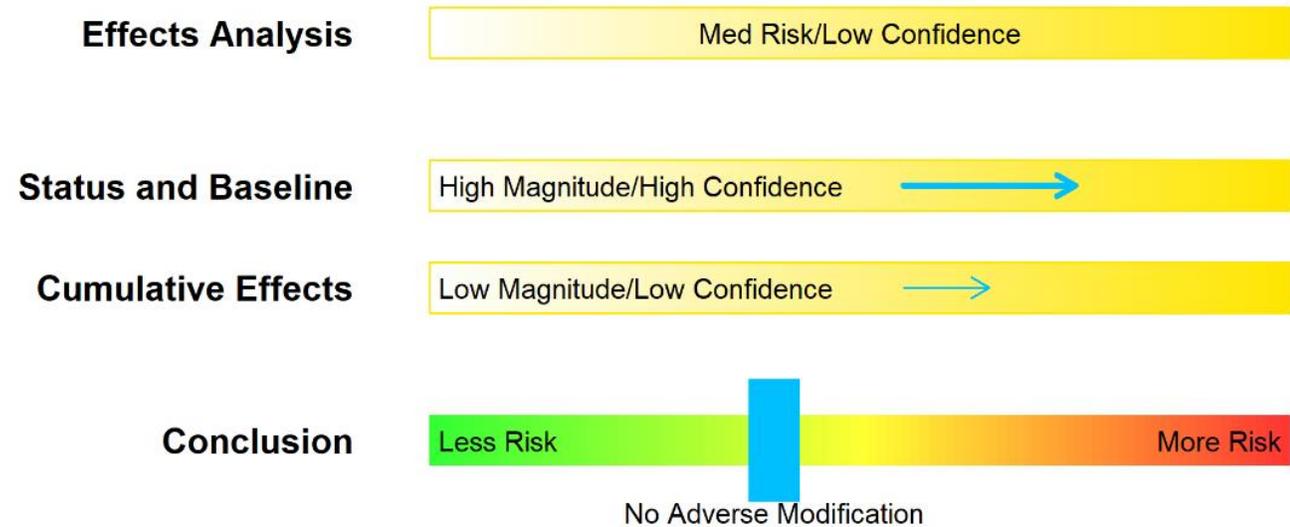


Figure 38. Designated Critical Habitat Scorecard; Chinook salmon, Snake River fall-run ESU; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning, rearing and migration PBFs are degraded by loss of habitat, impaired stream flows, barriers to fish passage, and poor water quality
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- The entire river corridor is considered of high conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species' designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification

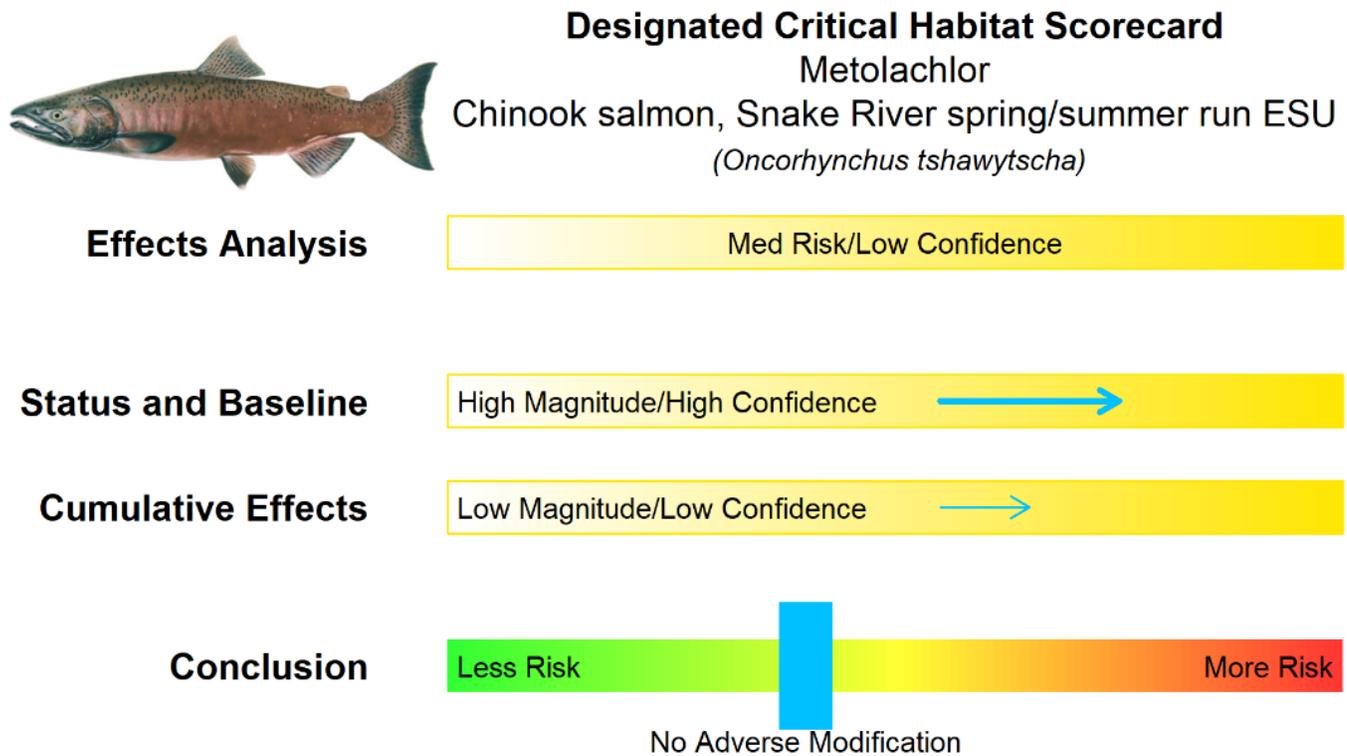


Figure 39. Designated Critical Habitat Scorecard; Chinook salmon, Snake River spring/summer run ESU; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning, rearing and migration PBFs are degraded by loss of habitat, altered stream flows, barriers to fish passage, dams, loss of cover, and poor water quality
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- The entire river corridor is considered of high conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Chinook salmon, Upper Columbia River spring-run ESU
(*Oncorhynchus tshawytscha*)

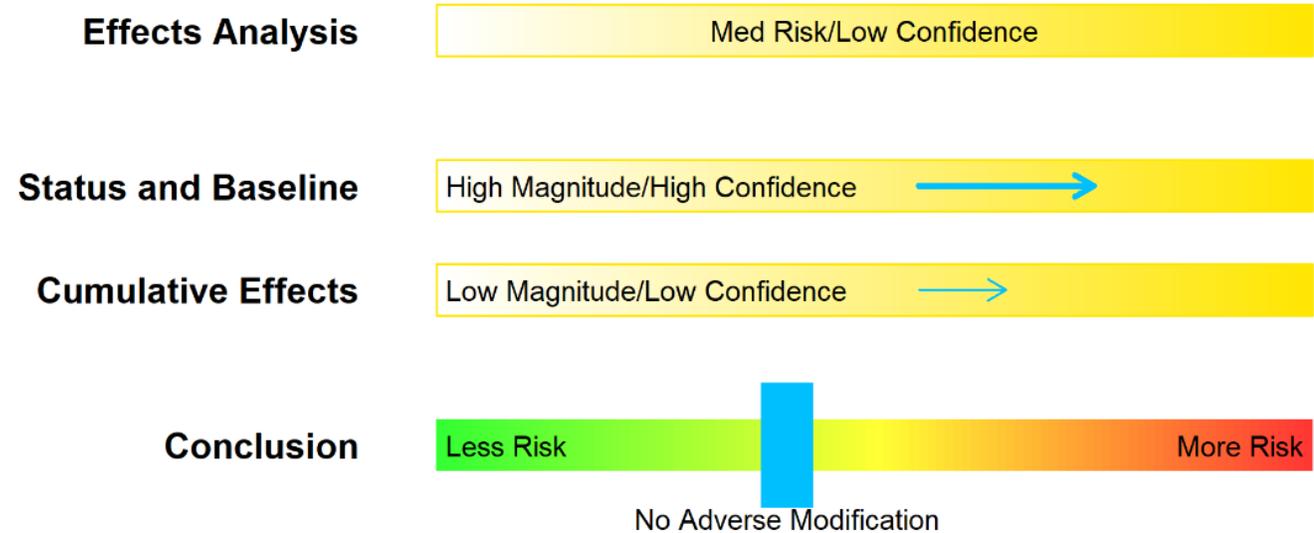


Figure 40. Designated Critical Habitat Scorecard; Chinook salmon, Upper Columbia River spring-run ESU; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning and rearing PBFs are degraded by urbanization and irrigation water diversions
- Migration PBFs degraded by numerous dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of occupied watersheds, 26 are of high and 5 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species' designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Chinook salmon, Upper Willamette River ESU
(Oncorhynchus tshawytscha)

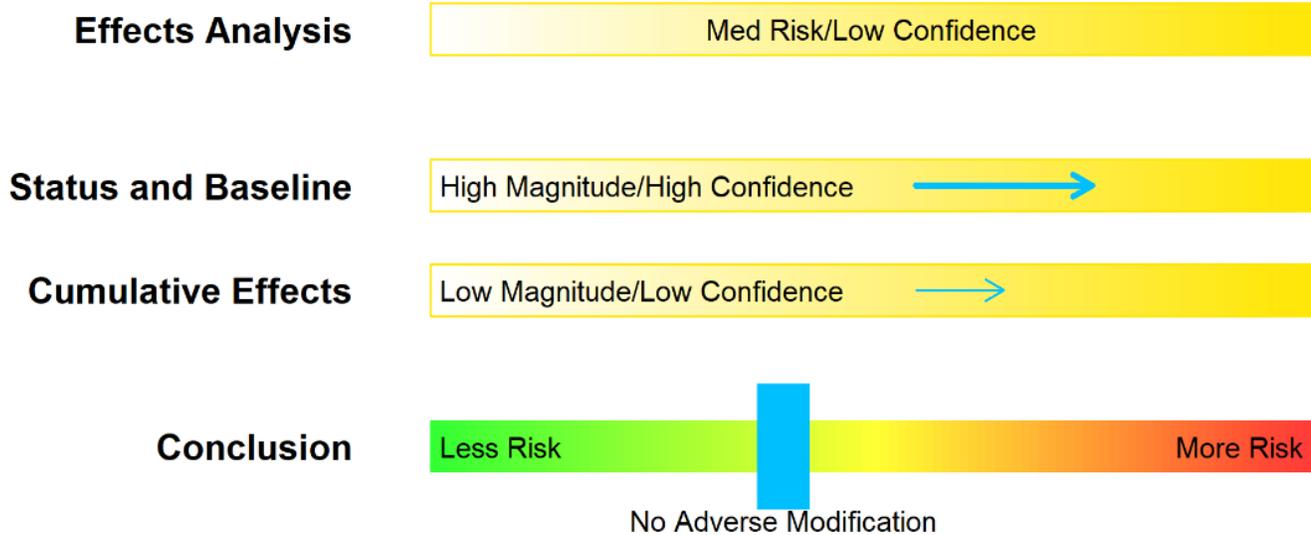


Figure 41. Designated Critical Habitat Scorecard; Chinook salmon, Upper Willamette River ESU; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Migration, rearing, and estuary PBFs are degraded by dams, water management, loss of riparian vegetation, and quality of floodplain habitat
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 59 assessed watersheds, 22 are of high and 18 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Coho salmon, Central California coast ESU
(Oncorhynchus kisutch)

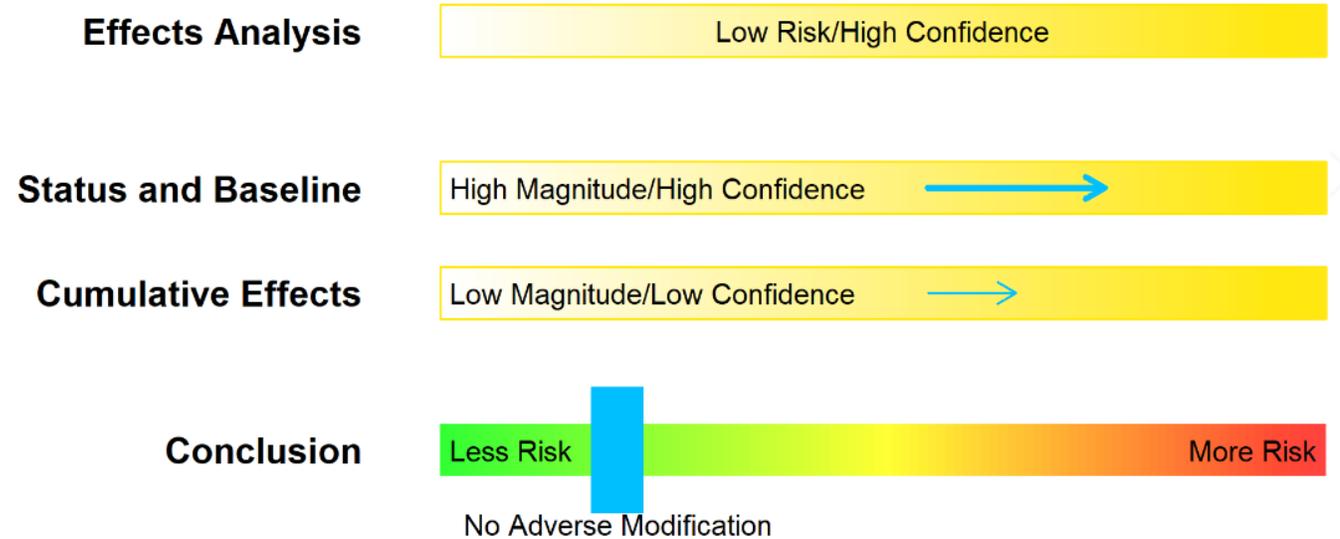


Figure 42. Designated Critical Habitat Scorecard; Coho salmon, Central California coast ESU; Metolachlor

Effects Analysis: Low risk/High confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Degradation in quality and quantity of PBFs, especially in southern end of range
- Rearing PBFs degraded by loss of suitable incubation substrate and loss of habitat
- Elevated temperatures anticipated in freshwater habitats
- Environmental mixtures anticipated in freshwater habitats may impact PBFs

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is low and the confidence associated with that risk is high due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
 Coho salmon, Lower Columbia River ESU
(Oncorhynchus kisutch)

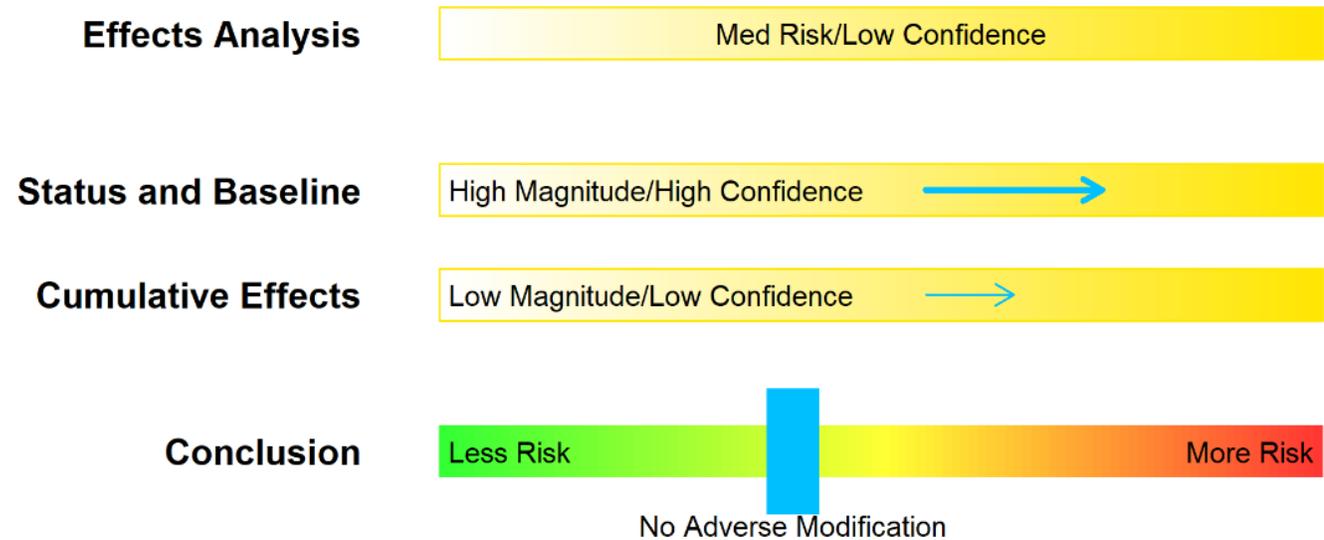


Figure 43. Designated Critical Habitat Scorecard; Coho salmon, Lower Columbia River ESU; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning and rearing PBFs are degraded by timber harvest, agriculture, urbanization, loss of floodplain habitat, and reduced natural cover
- Migration PBFs impacted by dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Coho salmon, Oregon coast ESU
(*Oncorhynchus kisutch*)

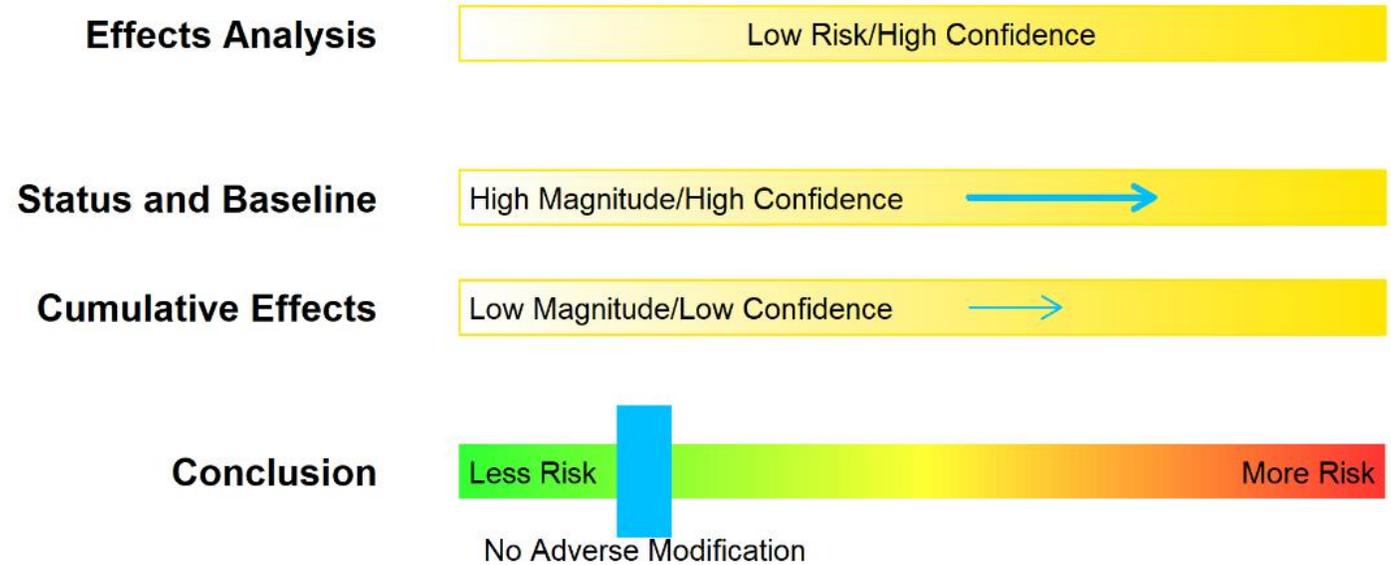


Figure 44. Designated Critical Habitat Scorecard; Coho salmon, Oregon coast ESU; Metolachlor

Effects Analysis: Low risk/High confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by elevated water temperature
- All PBFs degraded by reduced water quality from contaminants and excess nutrients
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 80 assessed watersheds, 45 are of high and 27 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species' designated critical habitat is low and the confidence associated with that risk is high due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
 Coho salmon, S. Oregon and N. Calif coasts ESU
(Oncorhynchus kisutch)

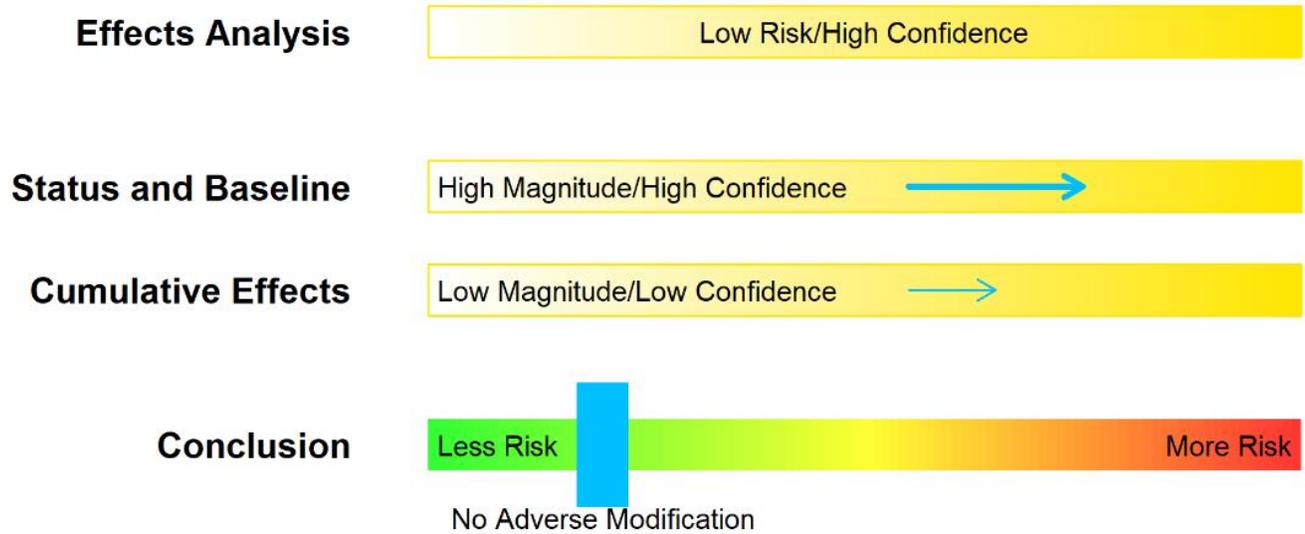


Figure 45. Designated Critical Habitat Scorecard; Coho salmon, S. Oregon and N. Calif coasts ESU; Metolachlor

Effects Analysis: Low risk/High confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

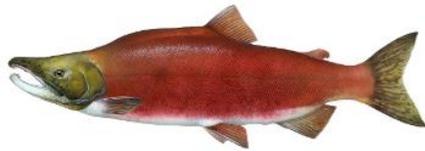
- Spawning PBFs are degraded by logging
- Rearing and migration PBFs degraded by loss of riparian vegetation and loss of floodplain habitat
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is low and the confidence associated with that risk is high due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Sockeye, Ozette Lake ESU
(Oncorhynchus nerka)

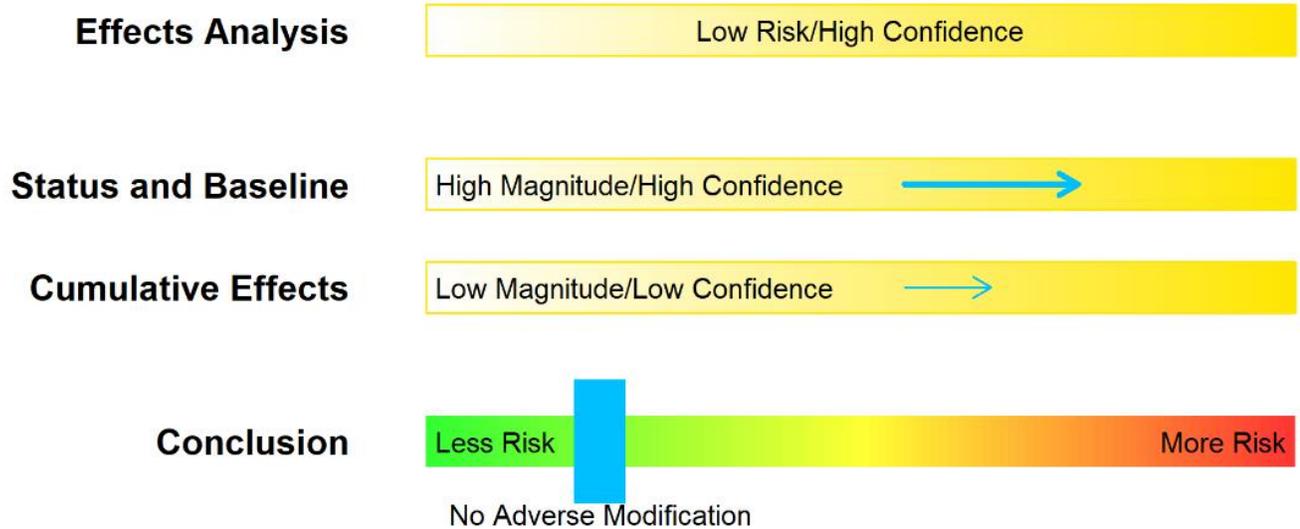


Figure 46. Designated Critical Habitat Scorecard; Sockeye, Ozette Lake ESU; Metolachlor

Effects Analysis: Low risk/High confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by excessive predation, invasive species, and loss of habitat
- Spawning and migration PBFs are degraded by low water levels, loss of suitable spawning habitat, and low summer water flows
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- The entire watershed is of high conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is low and the confidence associated with that risk is high due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard

Metolachlor
 Sockeye, Snake River ESU
 (*Oncorhynchus nerka*)

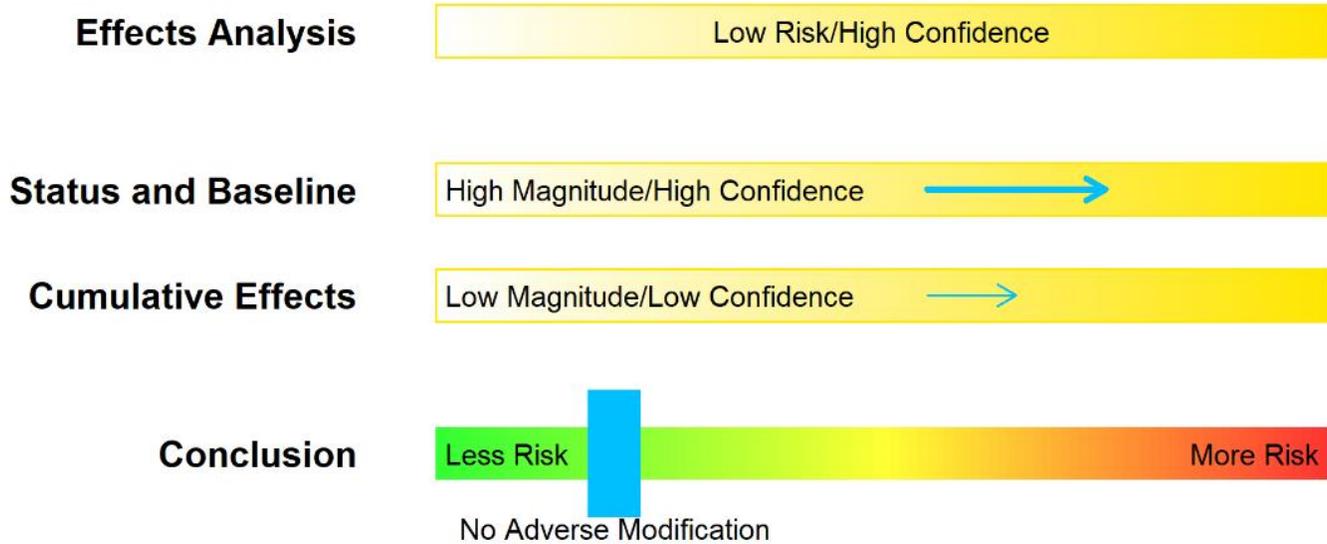


Figure 47. Designated Critical Habitat Scorecard; Sockeye, Snake River ESU; Metolachlor

Effects Analysis: Low risk/High confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing and migration PBFs are degraded by impaired water quality from adjacent land uses
- Migration PBFs are degraded by multiple dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- All occupied and used areas of the watershed are of high conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is low and the confidence associated with that risk is high due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Steelhead, California Central Valley DPS
(Oncorhynchus mykiss)

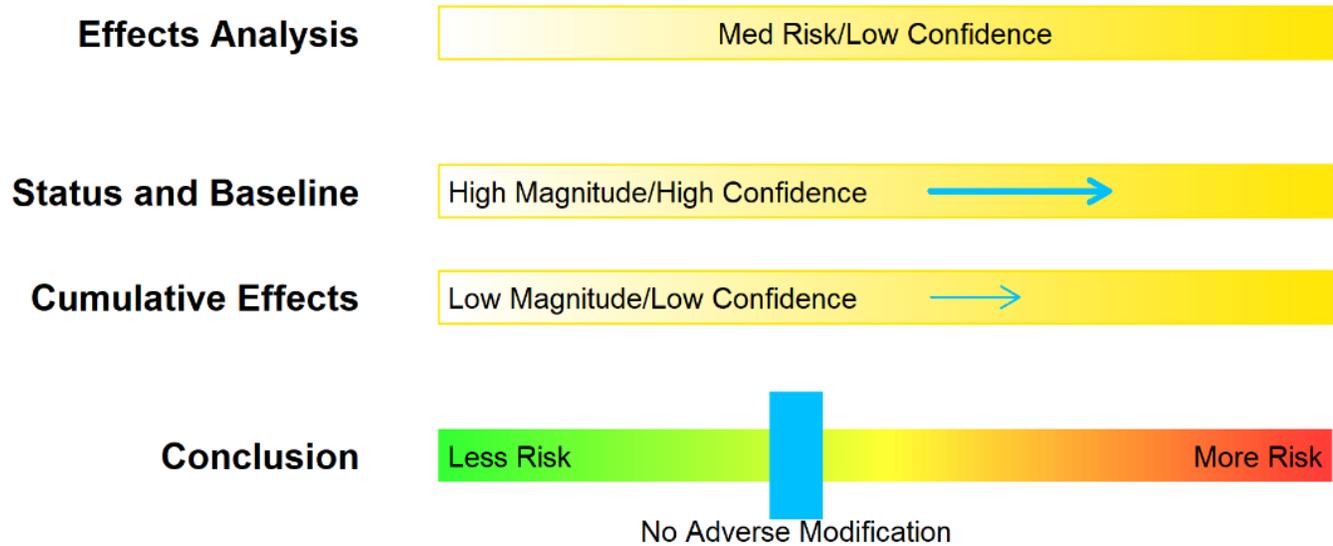


Figure 48. Designated Critical Habitat Scorecard; Steelhead, California Central Valley Distinct Population Segment (DPS); Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning Physical and Biological Features (PBFs) are degraded by altered water flows and temperature
- Rearing and migration PBFs are degraded by altered riverine habitat, dense urbanization and agriculture, poor water quality, and water diversions
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 67 occupied watersheds, 37 are of high and 18 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species' designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Steelhead, Central California coast DPS
(*Oncorhynchus mykiss*)

Effects Analysis

Med Risk/Low Confidence

Status and Baseline

High Magnitude/High Confidence →

Cumulative Effects

Low Magnitude/Low Confidence →

Conclusion



Figure 49. Designated Critical Habitat Scorecard; Steelhead, Central California coast DPS; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Spawning and rearing PBFs are degraded by sedimentation and elevated temperature
- All PBFs are degraded by loss of habitat, low summer flows, erosion, and contaminants
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 47 occupied watersheds, 19 are of high and 15 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Steelhead, Lower Columbia River DPS
(Oncorhynchus mykiss)

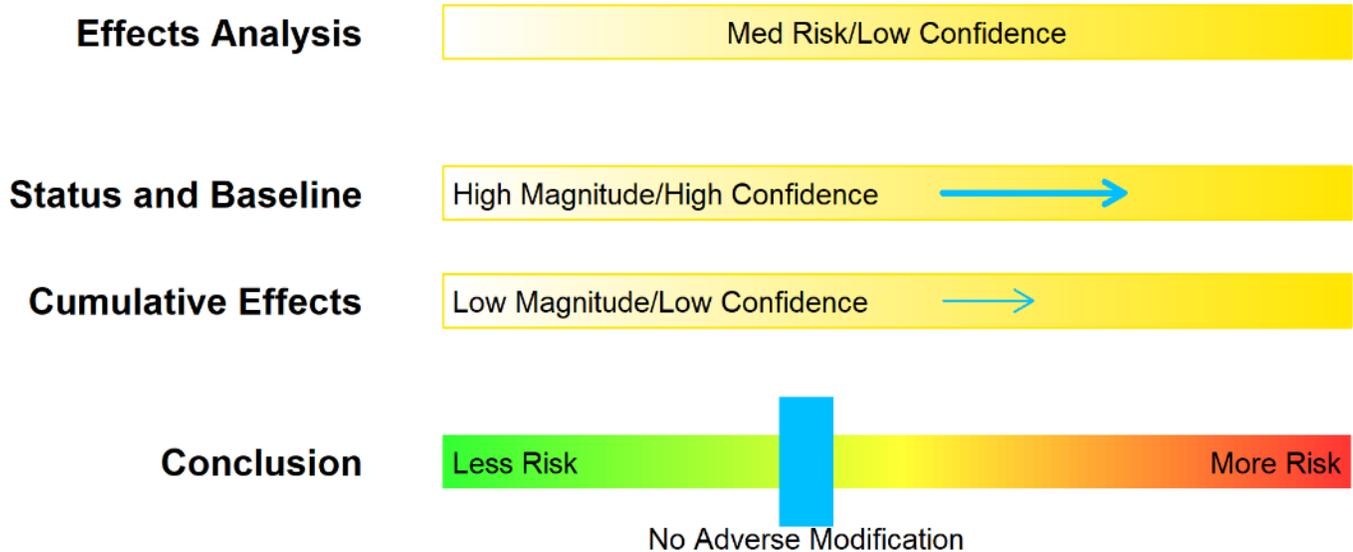


Figure 50. Designated Critical Habitat Scorecard; Steelhead, Lower Columbia River DPS; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by agricultural runoff and lack of available prey
- Spawning, rearing and migration PBFs are degraded by timber harvests, dams, and loss of floodplain habitat
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 41 occupied watersheds, 28 are of high and 11 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Steelhead, Middle Columbia River DPS
(Oncorhynchus mykiss)

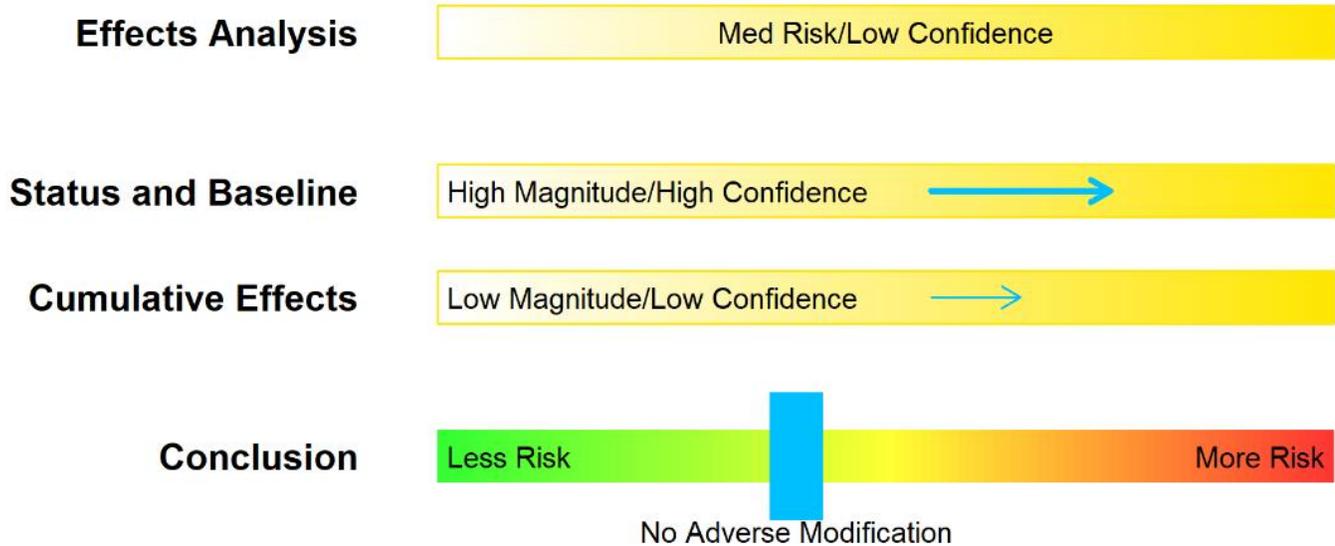


Figure 51. Designated Critical Habitat Scorecard; Steelhead, Middle Columbia River DPS; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by water quality, reduced invertebrate prey, and loss of riparian vegetation
- Migration PBFs are degraded by several dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 106 assessed watersheds, 73 are of high and 24 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Steelhead, Northern California DPS
(Oncorhynchus mykiss)

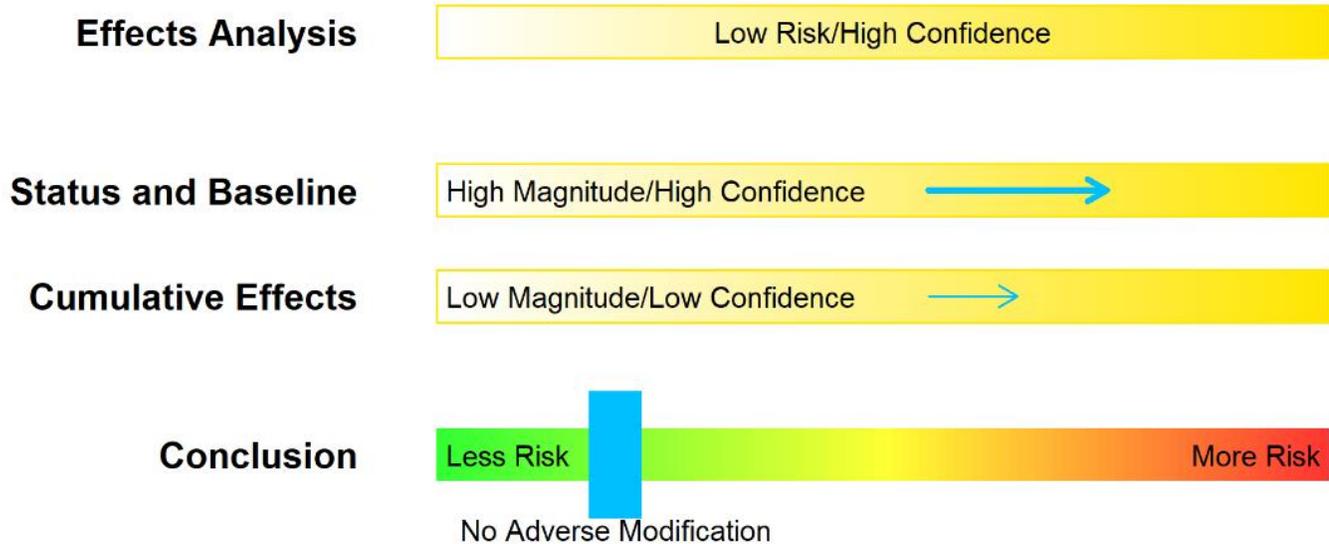


Figure 52. Designated Critical Habitat Scorecard; Steelhead, Northern California DPS; Metolachlor

Effects Analysis: Low risk/High confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by loss of riparian vegetation and elevated temperature
- Spawning PBFs are degraded by lack of quality substrate and sedimentation
- Migration PBFs are degraded by bridges, culverts, and forest road construction
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 50 assessed watersheds, 27 are of high and 14 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is low and the confidence associated with that risk is high due to the minimal extent of authorized use sites and resulting exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Steelhead, Puget Sound DPS
(Oncorhynchus mykiss)

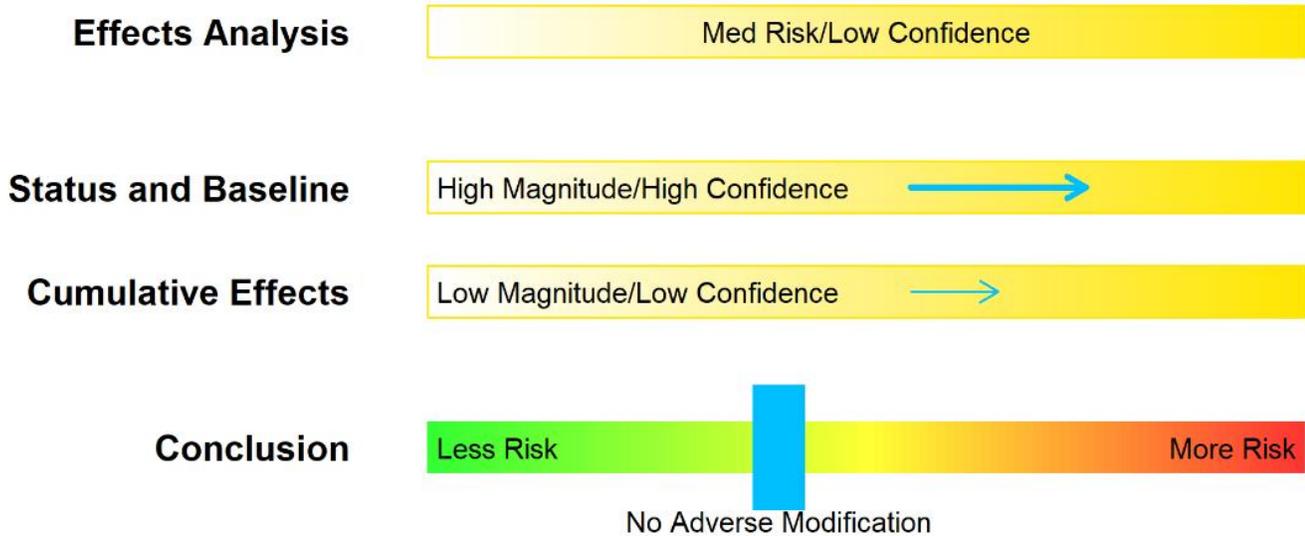


Figure 53. Designated Critical Habitat Scorecard; Steelhead, Puget Sound DPS; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing, migration and spawning PBFs are degraded by forestry, agriculture, urbanization, loss of floodplain habitat, and poor water quality
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Most watersheds are of high or medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Steelhead, Snake River Basin DPS
(Oncorhynchus mykiss)

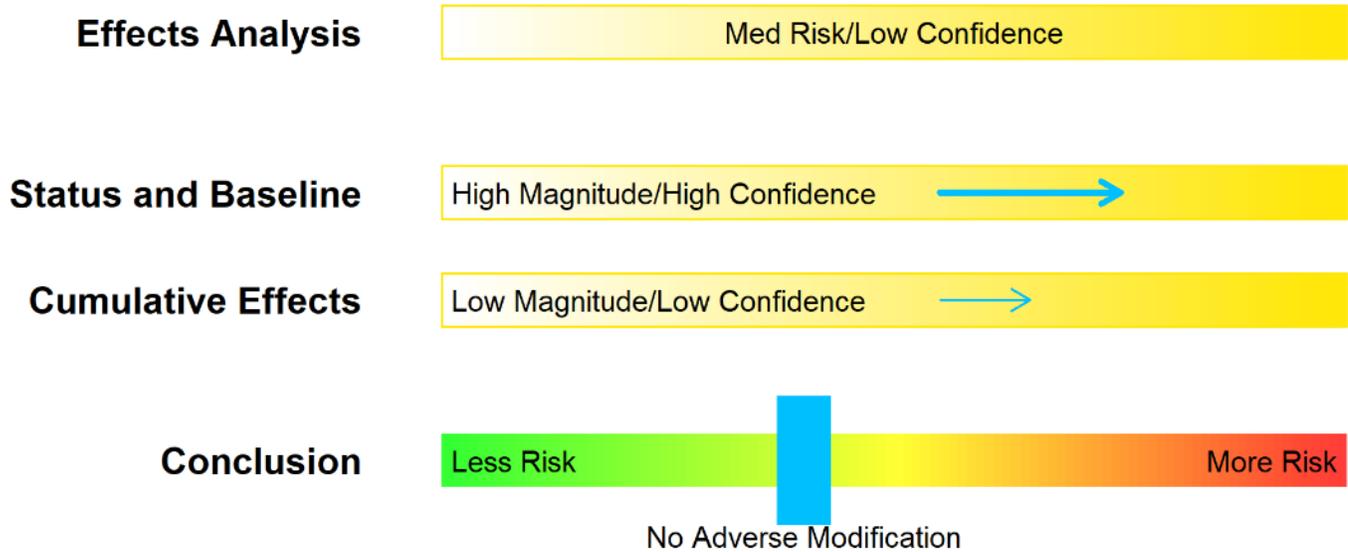


Figure 54. Designated Critical Habitat Scorecard; Steelhead, Snake River Basin DPS; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by agricultural runoff, reduced invertebrate prey, loss of riparian vegetation, and elevated temperature
- Migration PBFs are degraded by several dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of assessed watersheds, 229 are of high and 41 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Steelhead, South-Central California coast DPS
(Oncorhynchus mykiss)

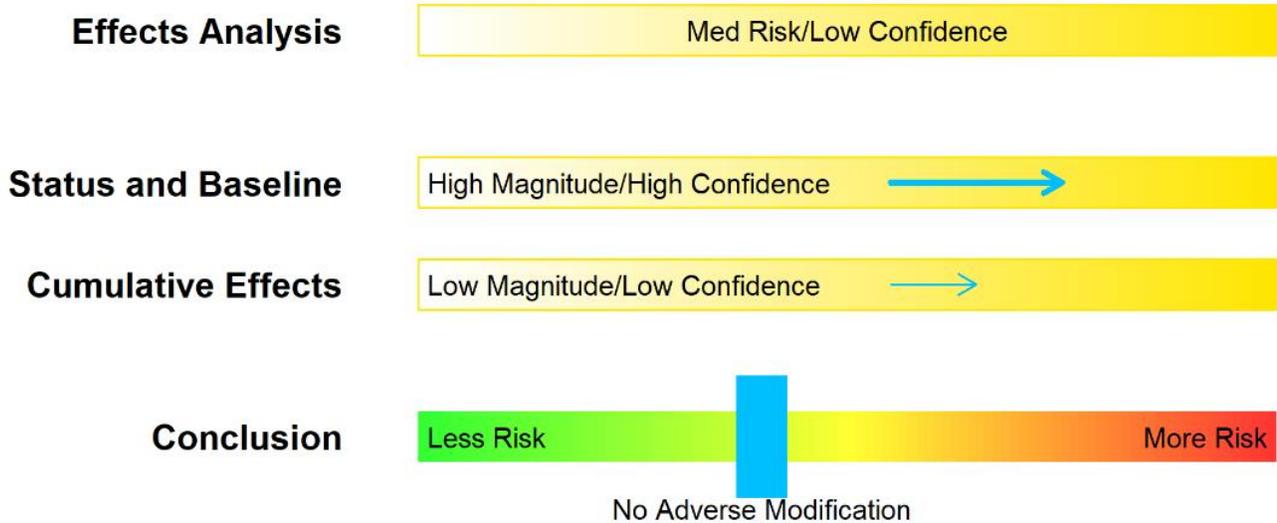


Figure 55. Designated Critical Habitat Scorecard; Steelhead, South-Central California coast DPS; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing and migration PBFs are degraded by elevated temperatures and contaminants from urban and agricultural runoff
- Estuarine PBFs are degraded by altered habitat and contaminated runoff
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 29 occupied watersheds, 12 are of high and 11 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Steelhead, Southern California DPS
(Oncorhynchus mykiss)

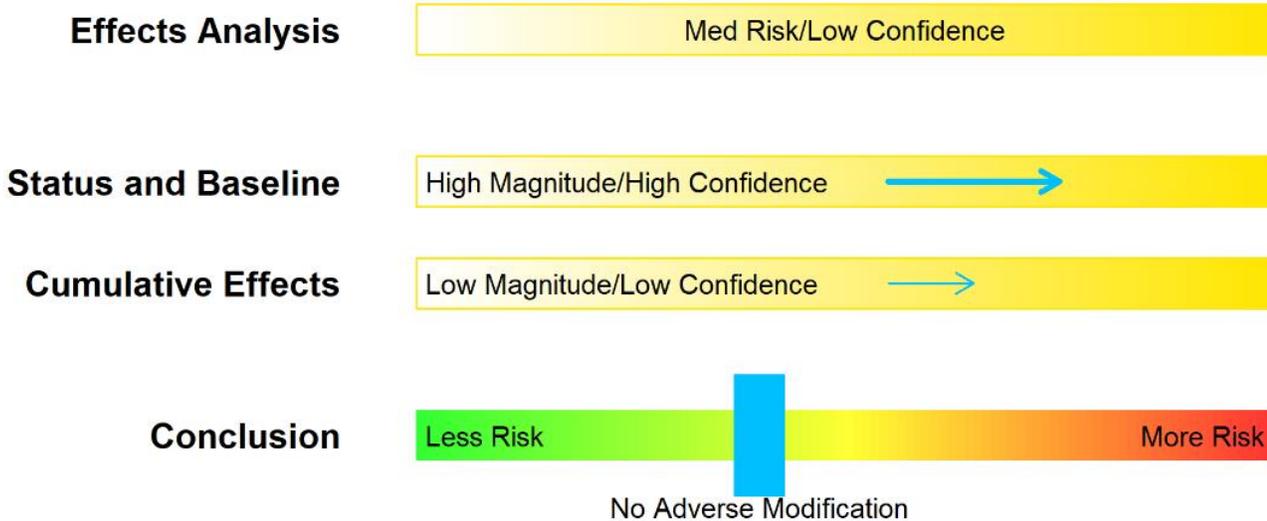


Figure 56. Designated Critical Habitat Scorecard; Steelhead, Southern California DPS; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- All PBFs are degraded by pollutants in urban and agricultural runoff, elevated temperatures, erosion, and low water flows
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 29 freshwater and estuarine watersheds, 21 are of high and 5 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Steelhead, Upper Columbia River DPS
(*Oncorhynchus mykiss*)

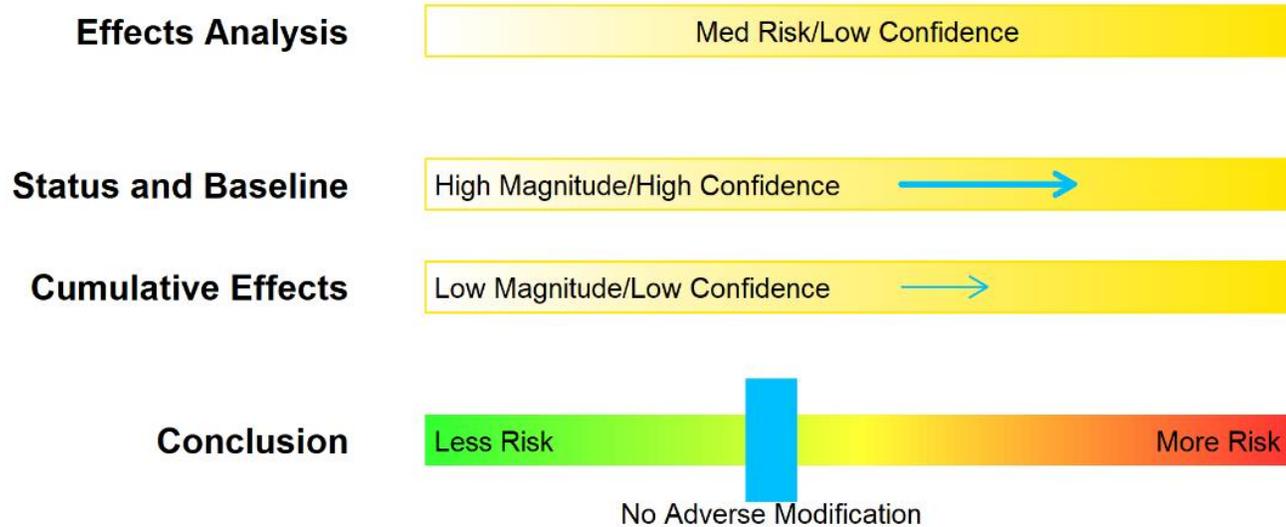


Figure 57. Designated Critical Habitat Scorecard; Steelhead, Upper Columbia River DPS; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by agricultural runoff and lack of available prey
- Migration PBFs are degraded by several dams
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of 41 occupied watersheds, 31 are of high and 7 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species' designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification



Designated Critical Habitat Scorecard
Metolachlor
Steelhead, Upper Willamette River DPS
(Oncorhynchus mykiss)

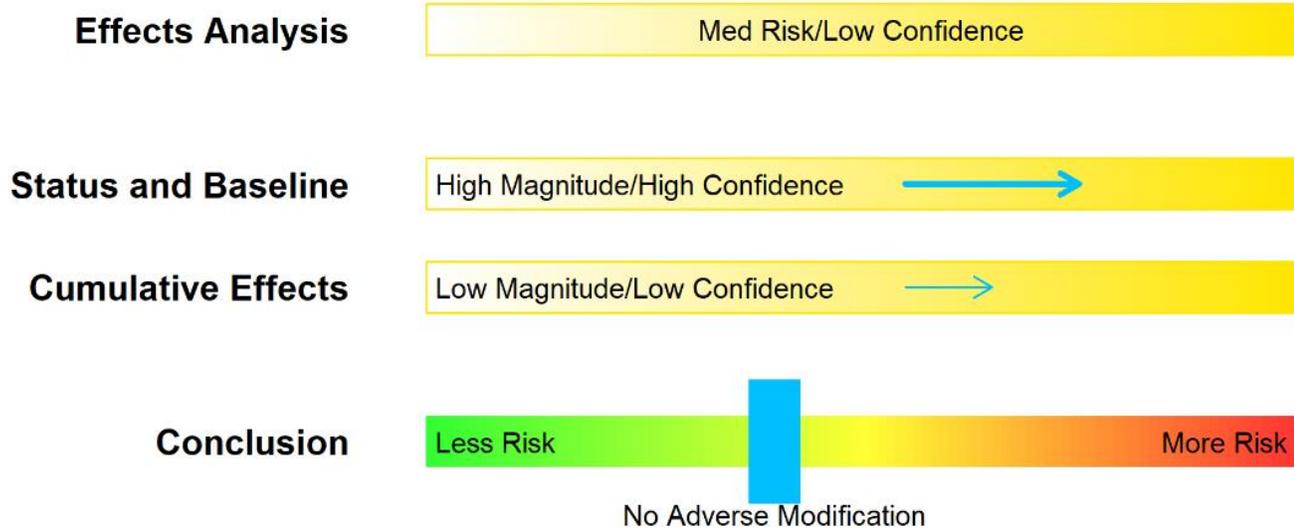


Figure 58. Designated Critical Habitat Scorecard; Steelhead, Upper Willamette River DPS; Metolachlor

Effects Analysis: Medium risk/Low confidence

- Significant reductions in prey availability and/or overall water quality are not expected.
- Adverse effects to aquatic and terrestrial vegetation may occur, but are anticipated to be limited by the minimal extent of authorized use sites.

Status and Baseline: Increased risk; High magnitude/High confidence

- Rearing PBFs are degraded by agricultural runoff and lack of available prey
- Migration PBFs are degraded by dams and elevated temperatures
- Elevated temperatures and environmental mixtures anticipated in freshwater habitats
- Of assessed watersheds, 14 are of high and 6 are of medium conservation value

Cumulative Effects: Minimal increase in risk; Low magnitude/Low confidence

- Future elevated temperatures likely; global climate change may threaten PBFs
- Anticipated hydrologic effects in freshwater areas may impact PBFs

Conclusion: We find the overall risk to this species’ designated critical habitat is medium and the confidence associated with that risk is low due to exposures predicted over the 15-year duration of the action. Reductions in prey availability and overall water quality are not expected. Adverse effects to aquatic and terrestrial vegetation may occur, however, the conservation value of designated critical habitat, taken as a whole, is not anticipated to decrease over the 15-year action.

Metolachlor is not likely to adversely modify designated critical habitat: No Adverse Modification

Table 1. Summary of designated critical habitat determinations for 1,3-D and Metolachlor

Salmon Type	ESU/DPS	1,3-D (Telone)		Metolachlor	
		Adverse Modification	No Adverse Modification	Adverse Modification	No Adverse Modification
Chum	Columbia River		X		X
Chum	Hood Canal summer-run		X		X
Chinook	California Coastal		X		X
Chinook	CA Central Valley spring-run		X		X
Chinook	Lower Columbia River		X		X
Chinook	Puget Sound		X		X
Chinook	Sacramento River winter-run		X		X
Chinook	Snake River fall-run		X		X
Chinook	Snake River spring/summer-run		X		X
Chinook	Upper Columbia River spring-run		X		X
Chinook	Upper Willamette River		X		X
Coho	Central California Coast		X		X
Coho	Lower Columbia River		X		X
Coho	Oregon Coast		X		X
Coho	S. Oregon N. California Coast		X		X
Sockeye	Ozette Lake		X		X
Sockeye	Snake River		X		X
Steelhead	CA Central Valley		X		X
Steelhead	Central California Coast		X		X
Steelhead	Lower Columbia River		X		X
Steelhead	Middle Columbia River		X		X
Steelhead	Northern California		X		X
Steelhead	Puget Sound		X		X
Steelhead	Snake River Basin		X		X
Steelhead	South-Central California Coast		X		X
Steelhead	Southern California		X		X
Steelhead	Upper Columbia River		X		X
Steelhead	Upper Willamette River		X		X