

Draft Chapter 4
Critical Areas Protection and
Other Laws and Regulations

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Introduction

Critical areas regulations should complement and be consistent with other local regulations, ordinances, and plans. Local plans and regulations change in response to new requirements and new conditions. Updates to the comprehensive plan, development regulations and critical areas protection should be reviewed for consistency. The standards required to protect critical areas may conflict with out-of-date standards or exemptions in other code sections.

Counties and cities should consider reviewing the related codes and standards to ensure consistency and critical area protection. Changes in zoning in areas with extensive riparian habitat should be reviewed for consistency with protection of existing fish and wildlife habitat functions and values. If clearing and grading exemptions allow unrestricted clearing of sensitive land adjacent to critical areas, such regulations may not be fully protecting critical areas. Critical areas regulations should also be reviewed for consistency in implementing other state and federal programs such as the Shoreline Management Act, Forest Practices Act, Endangered Species Act, and Clean Water Act.¹

This chapter includes suggestions for how jurisdictions may review critical areas protection for consistency with these other local, state and federal regulatory requirements. This chapter also provides a roadmap to salmon recovery as it relates to the GMA requirement to give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries.²

The Comprehensive Plan

The GMA requires that the planning goals in RCW 36.70A.020 guide the development and adoption of comprehensive plans and development regulations. These goals include retaining open space; enhancing recreation opportunities; conserving fish and wildlife habitat; protecting the environment and enhancing the state's high quality of life, including air and water quality, and the availability of water.³ Jurisdictions are required to include the best available science in developing policies and development regulations to protect the functions and values of critical areas.⁴

The Division I Court of Appeals held that the Growth Management Hearings Boards may review critical areas policies for compliance with the best available science requirement. The Court acknowledged that the GMA does not require local governments to adopt critical areas policies, but held that if a city or county chooses to adopt critical areas policies, the Board has jurisdiction under RCW 36.70A.280 to review the policies to determine whether they comply with RCW 36.70A.170 and .172(1).⁵

¹ WAC 365-196-735 contains a full list of other authorities.

² RCW 36.70A.172(1)

³ WAC 365-196-485(1)(a)

⁴ WAC 365-196-485(1)(B)

⁵ *Honesty in Environmental Analysis & Legislation (HEAL) v. Central Puget Sound Growth Management Hearings Board*, 96 Wn. App. 522, 979 P.2d 864 (June 21, 1999) (amended Aug. 25, 1999). The court inadvertently referred to RCW 36.70A.171 (which does not exist), rather than RCW 36.70A.170, at 528.

Land Use Element

Quality and quantity of groundwater

Counties and cities planning under RCW 36.70A.040 are required to provide for protection of the quality and quantity of ground water used for public water supplies in the land use element of the comprehensive plan. Where applicable, the land use element must review drainage, flooding and stormwater runoff in the area and in nearby jurisdictions. The land use element must provide guidance to mitigate or cleanse those discharges that pollute waters of the state, including Puget Sound or waters entering Puget Sound.⁶

Open Space and Wildlife Corridors

The GMA directs local governments planning under RCW 36.70A.040 to “identify open space corridors within and between urban growth areas. They shall include lands useful for recreation, wildlife habitat, trails, and connection of critical areas...”⁷

Wildlife corridors maintain connectivity, provide access to larger habitats, and allow populations to interbreed. At the largest scale, wildlife corridors allow easy movement for even the largest mammals. However, smaller wildlife corridors can provide habitat connectivity for other species, including amphibians, fish, and birds. Continuous riparian corridors provide both aquatic and terrestrial connectivity. In urban areas, such corridors can provide significant recreational opportunities and important linkages in a highly fragmented landscape. Whenever feasible, consider incorporating plans that link urban and rural parks and open spaces to form functional wildlife corridors, which can then be ultimately joined to outlying habitat areas.

Changes in Land Use Designations

Many existing data sources can identify, in advance of the development review process, the likely presence of critical areas. When developing and reviewing the comprehensive plan and future land use designations, counties and cities should use available information to avoid directing new growth to areas with a high probability of conflicts between new development and protecting critical areas. Examples include:

- Expanding the urban growth area or expanding the allowed types of development in a floodplain or geologically hazardous area;
- Allowing higher densities or expanding potentially polluting uses in critical aquifer recharge areas;
- Expanding allowed activities in areas with large-scale, complex, and high value critical areas.

Identifying areas with a high probability of critical areas conflicts can help identify lands that are likely to be unsuitable for development and help a county or city better provide sufficient capacity of land that is suitable for development as required by RCW 36.70A.115. Impacts to these areas could be minimized

⁶ RCW 36.70A.070(1) and WAC 365-196-485(1)(d). See additional detail under Critical Areas and Groundwater Protection on p. xx.

⁷ RCW 36.70A.160 and WAC 36-196-485(1)(c)

through measures such as green infrastructure planning, open space acquisition, open space zoning, and the purchase or transfer of development rights.⁸

When considering expanding the urban growth area, counties and cities should avoid including lands that contain large amounts of mapped critical areas. Counties and cities should not designate new urban areas within the one hundred-year flood plain unless no other alternatives exist, and if included, impacts on the flood plain must be mitigated. For counties west of the Cascade crest, expansion of the urban growth into the one-hundred year floodplain is generally prohibited.⁹

Natural Environment Element

The GMA provides the option of adopting a natural environment element in the comprehensive plan. Many jurisdictions have environmental elements in their comprehensive plans that address critical areas. For example, the City of Covington’s Natural Environment Element provides:

- Policy NE-24 - Use incentive programs, acquisition, appropriate regulations and other techniques to preserve critical areas as open space where development may pose hazards to health, property, or important ecological functions.
- Policy NE-27 – Ensure the effectiveness of critical area mitigation by requiring adequate critical area studies and mitigation plans, the application of mitigation sequencing, financial assurances from developers to ensure mitigation success, and by improving City oversight of maintenance and monitoring of mitigation sites.
- Policy NE-28 – Require and enforce mitigation to ensure no net loss of critical area functions, including mitigation designed to replace critical area acreage lost due to development.

The City of Wenatchee’s Natural Environment Element focuses on education to raise public awareness in Goal 1, as well as protection of critical areas in Goal 2:

- Policy 1 – Be an active player in education and involvement programs that raise public awareness about environmental issues, advocate respect for the environment, and demonstrate how individual and cumulative actions directly affect our surroundings.
- Policy 2 – Work in cooperation with public agencies, local organizations, associations, departments, and groups in creating and carrying out environmentally related programs and outreach efforts.
- Policy 8 – Where avoidance measures are not possible for critical area impacts, ensure the mitigation measures include appropriate performance measures to provide successful implementation of mitigation and the maintenance of functions and values of the applicable critical area consistent with best available science.

The City of Bellingham’s Environment Chapter includes policies such as:

- Policy EV-12 – Safeguard the long-term functions and values of critical areas through effective mitigation measures when avoidance is not feasible.

⁸ WAC 365-196-485

⁹ RCW 36.70A.110(8) and WAC 365-196-485(4)(b). The 100-year floodplain is also referred to as the one percent floodplain or the Special Flood Hazard Area.

- Policy EV-13 – Select wetland mitigation sites for unavoidable impacts based on current state mitigation guidance documents and on the watershed approach with an emphasis on the ecologically-preferable site.
- Policy EV-18 – Identify and conserve wildlife habitat, considering the full range of the life-cycle needs for the species dependent on it.

Protection of Critical Areas and Other Development Regulations

Development regulations that are not part of the critical areas ordinance but affect critical areas must still meet GMA requirements for critical areas protection. The Division 3 Court of Appeals upheld this determination by the Eastern Washington Growth Management Hearings Board. The court concluded that the county subdivision code failed to protect critical areas as required by the GMA. Significantly, the code did not address impervious surface coverage in multiple important contexts, it did not apply county-wide, and it did not mention methods for addressing storm water or impervious surface coverage.¹⁰

The required level of protection of wetlands and riparian buffers must be reasonably based on relevant science; however, a county has a range of discretion as to how exactly that level is met. To the extent a county relies on other statutes as part of its protection scheme, they should be referenced in the ordinance. A citizen should be able to understand what protection elements exist by reading the ordinance.¹¹

Consistency with Other Development Regulations

Critical areas regulations should be complementary to other local regulations, ordinances, and plans. The development regulations, including critical areas regulations, must be internally consistent.¹² And, at a minimum, any amendment to the comprehensive plan or development regulations must be reviewed for consistency during the review and update process.¹³

Accordingly, changes to the following local land use regulations adopted since your last periodic update should be reviewed and updated to be consistent with the goals of the local critical areas program.

Regulation or Standard	Review for the Following
Zoning	Zoning change criteria that address critical areas should be reviewed for consistency with critical areas requirements.
Subdivisions	Subdivision provisions that refer to critical areas should be reviewed for consistency with the critical areas requirements.

¹⁰ *Stevens County v. Eastern Washington Growth Management Hearings Board*, 163 Wn. App. 680 (2011), review denied, 173 Wn.2d 1019 (2012).

¹¹ *Id.*

¹² WAC 365-196-500(3).

¹³ WAC 365-196-500(4).

Clearing and Grading	Standards should be adopted to regulate clearing and grading activities prior to site development approval. Review clearing and grading exemptions to ensure adequate regulatory oversight for projects located within critical areas or buffers.
Stormwater Management	Stormwater management regulations that are consistent with Ecology recommendations should be adopted. The Clean Water Act Municipal Stormwater Permits ¹⁴ require nearly all urban and urbanizing jurisdictions to adopt comprehensive stormwater management programs, including requirements for low impact development.
Shoreline Master Program	Work with Ecology regional office staff if your jurisdiction is considering amending Shoreline Environment designations or development standards to protect shorelines under the Shoreline Master Program as part of a critical areas ordinance update.
State Environmental Policy Act (SEPA)	Counties and cities may select certain categorical exemptions from SEPA that do not apply in designated critical areas pursuant to WAC 197-11-908 . Also see WAC 197-11-158 . SEPA review procedures should rely first on critical areas review requirements to address environmental impacts. Local governments are encouraged to complete review under the critical areas regulations prior to making a threshold determination. Counties and cities may then make a determination that some or all of the environmental impacts of a project have been adequately addressed by critical areas regulations. ¹⁵ SEPA and critical area review procedures should be evaluated to ensure project and environmental review procedures are integrated and not duplicative. ¹⁶
Local Development Review	Review project noticing rules to ensure that a statement regarding critical areas is included on the Notice of Application, thereby communicating to the public whether or not critical areas have been determined to be present and how they will be protected.

To ensure that other regulations do not conflict with adopted critical areas standards, local codes may include a provision that has the stronger regulation apply, such as a statement like the following:

When any provision of this Title or any existing regulation, easement, covenant, or deed restriction conflicts with these critical areas regulations, that which provides more protection to the critical areas shall apply.

The Western Washington Growth Management Hearings Board rejected the argument that the RCW 36.70A.172 requirement to include best available science must apply to all development regulations that may impact critical areas. However, the Board found that if newly adopted regulations impact the

¹⁴ <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits>

¹⁵ RCW 43.21C.240 and WAC 197-11-158.

¹⁶ RCW 36.70B.060.

effectiveness of the critical areas regulations, then the challenge to those new regulations would be that they violate the requirement to protect critical areas. A challenge to development regulations that changes the protectiveness of critical areas regulations would rest on RCW 36.70A.060, rather than on the failure to include best available science pursuant to RCW 36.70A.172.¹⁷

Zoning Ordinance

Zoning ordinances address the development of specific land uses consistent with the comprehensive plan. They typically include such provisions as limitations on height, bulk, number of stories and size of buildings and structures; the size of yards, courts and other open spaces; the density of population; lot coverage by buildings and structures; and the area required for off-street parking.¹⁸ Zoning ordinances may also include setbacks and other requirements for development. Zoning changes must be consistent with the comprehensive plan land use designations. Zoning change criteria in the comprehensive plan and zoning ordinance used to evaluate zoning change proposals that address critical areas should be reviewed for consistency with critical areas requirements.

WDFW provides guidance¹⁹ that describes various species' expected ability to persist at various densities. As zoning for increased density is contemplated, local jurisdictions can use this information to understand likely impacts to local populations of species.

The Eastern Washington Growth Management Hearings Board found that the critical areas ordinance is not the only regulation that serves to protect critical areas. The Board found a county's zoning districts, uses and densities, and development and design standards also specifically set environmental performance standards. Because the critical areas ordinance did not address impervious surfaces or stormwater runoff, these aspects of environmental protection were left to other development regulations.²⁰

Subdivision Ordinance

All subdivision ordinances are required to conform to the requirements of Chapter 58.17 RCW. Subdivision ordinances are included in the definition of development regulations under GMA.²¹ Local governments are required to make written findings determining that:

- (a) Appropriate provisions are made for the public health, safety, and general welfare and for such open spaces, drainage ways, streets or roads, alleys, other public ways, transit stops, potable water supplies, sanitary wastes, parks and recreation, playgrounds, schools and schoolgrounds and all other relevant facts, including sidewalks and other planning features that

¹⁷ *Overton et al. v. Mason County*, 05-2-0009c, FDO, November 14, 2005.

¹⁸ RCW 36.70.750

¹⁹ *Landscape Planning for Washington's Wildlife: Managing for Biodiversity in Developing Areas*, 2009, <https://wdfw.wa.gov/publications/00023/>

²⁰ *Larson Beach/Wagenman v. Stevens County*, 07-1-0013, FDO at 47 (Oct. 6, 2008), pp 49 - 50.

²¹ RCW 36.70A.030(7).

assure safe walking conditions for students who only walk to and from school; and (b) the public use and interest will be served by the platting of such subdivision and dedication.²²

Reviews of the critical areas regulations should include a review for consistency with any references to critical areas in the subdivision ordinance.

Clearing and Grading Ordinance

Clearing and grading activities that precede land development can impact landscape and infrastructure in a number of ways, including increased erosion and sedimentation, increased airborne dust, mobilization and transport of contaminants, reduced slope stability, increased soil compaction, damage to sensitive and critical areas (e.g., loss of riparian vegetation), disruption of existing hydrologic patterns, and negative impacts to fisheries and aquatic life. A number of counties and cities in Washington have adopted either specific clearing and grading ordinances, or utilize stormwater management, protection of trees and natural landscape or vegetation, stormwater ordinances, and critical areas ordinances to address land development impacts from clearing and grading. Most of these approaches seek to minimize the impacts from land disturbance through methods such as temporary erosion and sediment controls.

If a county or city has clearing and grading regulations, then they should be reviewed for consistency with the critical areas regulations. If clearing and grading regulations are being used to protect critical areas, any updates to the regulations should review, and if necessary, revise for inclusion of the best available science. If local jurisdictions are not currently using clearing or grading regulations, they may wish to consider doing so in order to avoid any unintended consequences in relation to critical areas.

Preserving Buildable Land Capacity in Urban Growth Areas

A common concern is that protecting critical areas comes at the expense of meeting the goal to accommodate growth and provide sufficient land capacity suitable for development. Several techniques can be built into development regulations to allow for both protection of critical areas and the achievement of urban densities. Successful techniques include:

- Lot size averaging that allows the creation of smaller lots to compensate land area devoted to critical areas and allowing the same number of lots.²³
- Onsite density transfer. A number of other provisions allow the allowable number of units lost to protect critical areas to be transferred and used on site in a number of other ways by adjusting density calculations. These are called buffer credits or density calculation provisions.²⁴ Planned unit development tools can also achieve the same goals.
- Buffer width averaging within the critical areas regulations can also provide additional design flexibility without compromising critical areas protections.²⁵

²² RCW 58.17.110(2)

²³ For an example of lot size averaging, see Snohomish County Code 30.23.210.

²⁴ MRSC lists several different examples of onsite density transfers here: <http://mrsc.org/Home/Explore-Topics/Environment/Special-Topics/Flexibility-in-Environmental-Regulation.aspx>.

²⁵ For guidance on wetland buffer width averaging, consult the Western Washington Wetland Rating System Appendix 8C.2.6, <https://fortress.wa.gov/ecy/publications/summarypages/1406029.html>

Protecting Critical Areas and Listed Species

Federal and State Listed Species

Commerce’s WAC 365-190-130(2)(a) states that fish and wildlife habitat conservation areas that must be considered for classification and designation include “areas where endangered, threatened, and sensitive species have a primary association.” Species that are listed by either the state or federal governments are included in this definition. The federal government under the Endangered Species Act (ESA) lists species as either “endangered” or “threatened.” The Washington State Fish and Wildlife Commission lists animal species as “endangered,” “threatened,” or “sensitive” (WAC 220-610-110). WDNR maintains a list of plant species using the same three categories.²⁶

The purpose of federal and state listing is to protect and recover imperiled species and the ecosystems upon which they depend. Under the ESA and state rules, “endangered” means a species is in danger of extinction throughout all or a significant portion of its range and “threatened” means a species is likely to become endangered within the foreseeable future. The state category of “sensitive” means that a species is vulnerable or declining and is likely to be listed as threatened or endangered.

When identifying fish and wildlife habitat conservation areas for listed species, local governments are encouraged to consult WDFW’s Priority Habitat and Species (PHS) Program and species recovery plans. PHS identifies “Priority Areas” for listed species should be protected. State species recovery plans are²⁷available on the [Washington State Species of Concern web page](#).²⁸ Federal recovery plans are available on the US Fish and Wildlife Service’s (USFWS) [Environmental Conservation Online System web page](#).²⁹ Counties and cities should not rely solely on federal designations of habitat under the ESA in designating fish and wildlife habitat conservation areas under the GMA.

The Eastern Washington Growth Management Hearings Board found that, under WAC 365–190–130(2), a county must classify and designate those areas where endangered, threatened, sensitive species have a primary association.³⁰ The Board cited Court of Appeals and Supreme Court decisions holding that the GMA directs counties to determine what lands are primarily associated with listed species, and then to adopt regulations protecting those lands.³¹

In this 2014 Eastern Board case, Petitioners challenged the County’s election not to designate habitat for bull trout in part because there is no federally-designated “critical habitat” for the species in the County. The Board held that federal Endangered Species Act has different standards for designating habitat than the GMA. Thus, the absence of federally-designated critical habitat is not a determinative fact for purposes of a county’s GMA designation of areas where endangered, threatened, or sensitive species have a “primary association.” It went on to find substantial evidence in the record demonstrating that

²⁶ WDNR [Natural Heritage Program Species Lists](#), <https://www.dnr.wa.gov/NHPLists>

²⁷ WAC 365-190-130(4)

²⁸ <https://wdfw.wa.gov/conservation/endangered/All/>

²⁹ <https://ecos.fws.gov/ecp0/reports/species-listed-by-state-report?state=WA&status=listed>

³⁰ *Concerned Friends of Ferry County v. Ferry County*, 97–1–0018c, Order Finding Continuing Noncompliance, (February 5, 2014).

³¹ *Stevens County v. Futurewise*, 146 Wn. App. 512 (2008), rev. denied, *Stevens County v. Futurewise*, 165 Wn.2d 1038 (2009); *Ferry County v. Concerned Friends of Ferry County*, 155 Wn.2d 824, 837 – 839 (2005).

bull trout is present in Ferry County and has a primary association with certain areas of the County. Accordingly, the County's failure to designate any bull trout habitat was not supported by substantial evidence in the record and represented a departure from best available science without any reasoned justification.

Protecting Species of Local Importance

WAC 365-190-130(2)(b) provides that habitats and species of local importance, as determined locally, must be considered for designation as fish and wildlife habitat conservation areas. Section 4(b) says that PHS should be consulted when identifying habitats and species of local importance. In addition to listed species, PHS identifies Priority Species based on their vulnerability to land use actions (e.g., due to a tendency to aggregate, such as heron rookeries) and species of cultural significance (e.g., mule deer). PHS also identifies Priority Habitats, based on their importance to sustaining fish and wildlife. While PHS reflects the priorities of WDFW, the species, habitats, and priority areas identified by PHS reflect best available science and should be reflected in local designations of fish and wildlife habitat conservation Areas.

In a Ferry County case, the Washington Supreme Court affirmed that because Ferry County did not develop its own scientifically justified list of species of local importance, did not follow WDFW's recommendation to protect PHS-identified Priority Habitats and Species, and did not provide justification for such a departure, it was in violation of the GMA.³²

Anadromous Fisheries – Roadmap to Salmon Recovery

Salmon, steelhead and trout are in the family Salmonidae, and referred to collectively as salmonids. Some salmonids are anadromous, meaning that they spawn in fresh water, but reside in both fresh water (including lakes, rivers, and streams, as well as wetlands) and salt water (including estuary and open ocean) environments for at least some portion of their lifetime. However, some species exhibit a higher propensity to reside wholly in fresh water.

Salmon species in the State of Washington that are currently listed under the federal ESA are on the USFWS' [Environmental Conservation Online System web page](#).³³ The [Recreation and Conservation Office website](#)³⁴ provides listed salmon by Salmon Recovery Region and affected counties. For salmonid populations to achieve recovery and ultimately a delisting, the ESA requires the federal government to develop recovery plans. The ESA is concerned with the extinction risk faced by an entire Evolutionary Significant Unit (ESU) that is defined by regional geographic extent and genetic differentiation. Therefore, NOAA-Fisheries has determined that recovery plans need to be prepared at an ESU scale, or regional basis.

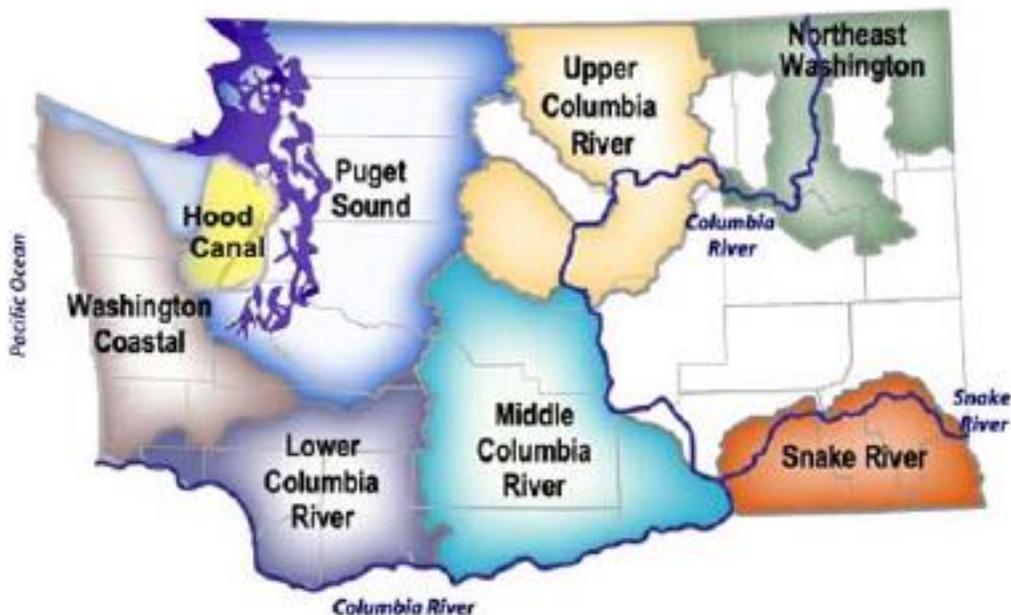
³² *Ferry Co. v. Concerned Friends of Ferry County*, 155 Wn.2d 824, 837 – 839 (2005).

³³ <https://ecos.fws.gov/ecp0/reports/species-listed-by-state-report?state=WA&status=listed>

³⁴ https://www.rco.wa.gov/salmon_recovery/listed_species.shtml

In Washington State, [Regional Salmon Recovery Organizations](#)³⁵ have been formed to coordinate the development and implementation of regional salmon recovery plans. Recovery plans are a resource for local planners regarding listed salmonids and priority habitat recommendations in their regions. Recovery plans include watershed profiles as well as lead entity strategies.

WDFW's SCoRE ([Salmon Conservation Recovery Engine](#)³⁶) provides access to up-to-date information about salmon population status statewide and key information related to salmon species, recovery, hatcheries, habitat, and harvest.



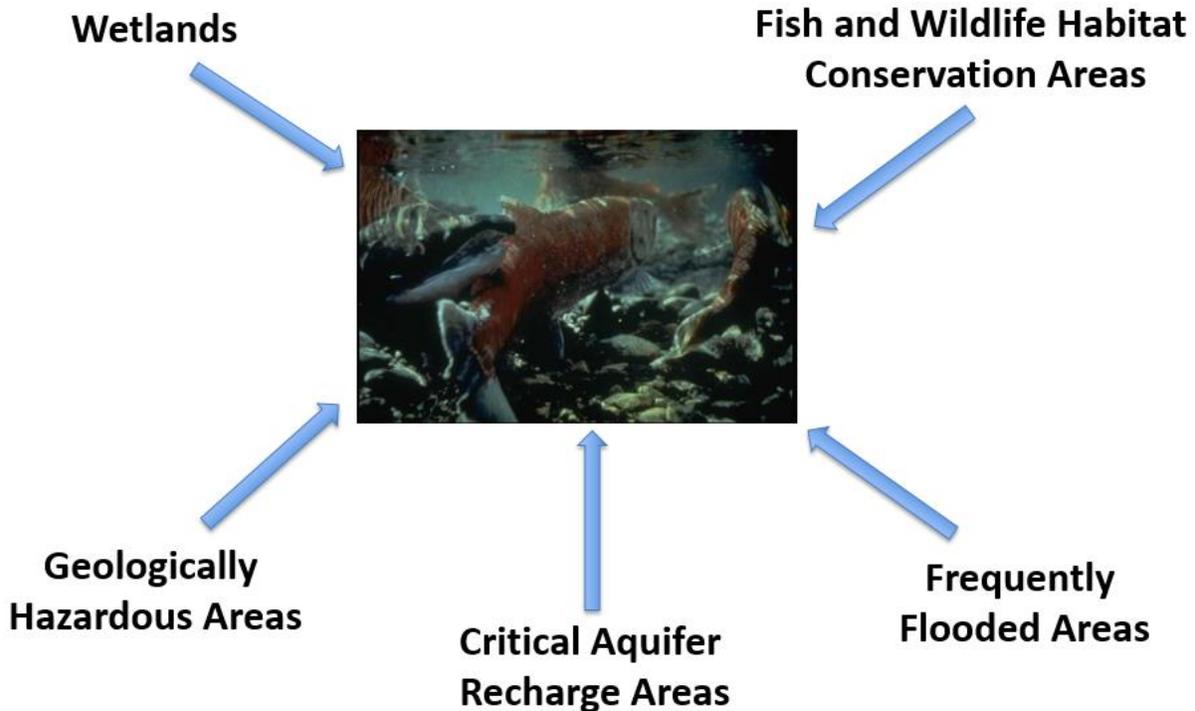
Graphic courtesy of Governor's Salmon Recovery Office

Another key resource for local planners is [Land Use Planning for Salmon, Steelhead and Trout](#)³⁷, published by WDFW to help integrate local land use planning programs and state salmonid recovery efforts. The scope of this guidance is to provide technical assistance to protect salmonid habitat through GMA plans and regulations, including critical area ordinances. This guidance document translates existing science into planning tools, including model policies and regulations that can be incorporated into GMA and SMA planning programs to protect salmonids and prevent further loss or degradation of habitat. The document is also a desk reference for salmonid planning in Washington State as it includes numerous sources of planning and scientific resources.

³⁵ https://www.rco.wa.gov/salmon_recovery/regions/regional_orgs.shtml

³⁶ <https://fortress.wa.gov/dfw/score/score/recovery/recovery.jsp>

³⁷ Knight, K. 2009. Land Use Planning for Salmon, Steelhead and Trout. Washington Department of Fish and Wildlife. Olympia, Washington. <https://wdfw.wa.gov/publications/pub.php?id=00033>



Each type of critical area defined under the GMA either provides critical habitat or has the potential for contributing to habitat conditions needed to conserve or protect anadromous fisheries. In addition to reviewing salmon recovery plans, planners will want to consider the following resources.

Wetlands

Wetland buffers protect water quality and flow regime, and provide habitat structure and a source of food for fish. Ecology’s 2014 updated wetlands rating system guidance for [Eastern](#) and [Western](#) Washington discusses the influence of forested wetlands.³⁸ They influence channel form, and create pools, riffles, and side channels that are essential habitat for many fish and other aquatic species. The guidance also notes that wetlands with streams running through them in the Puget Sound area and on the Columbia River will probably provide habitat for one or more species of threatened or endangered fish.

Wetlands are identified as a Priority Habitat by WDFW for salmonids in every county in the state.³⁹ Wetlands and associated vegetation provide essential off-channel habitat to sustain young salmonid growth and protect them from predators. Wetland habitat also hosts amphibious species and insects that are potential food sources for salmonids. Wetlands moderate stream flows by preserving adequate water recharge to streams during low flow periods and protect rearing salmonids from the effects of high flows. Consequently, WDFW recommends adhering to Ecology guidance for identifying, classifying and protecting wetlands.⁴⁰

³⁸ <https://ecology.wa.gov/Water-Shorelines/Wetlands/Regulations/Local-regulations>

³⁹ WDFW [Priority Habitats and Species List](#).

⁴⁰ WDFW [Land Use Planning for Salmon, Steelhead and Trout](#), page 55.

Fish and Wildlife Habitat Conservation Areas

Maintaining riparian ecosystem connectivity and the quality and quantity of riparian vegetation are key to functioning salmonid habitat. Counties and cities may use information prepared by the U.S. Fish and Wildlife Service, NOAA-Fisheries, the WDFW, the State Recreation and Conservation Office (RCO), and the Puget Sound Partnership to designate, protect, and restore salmonid habitat.⁴¹ Counties and cities should consider recommendations found in salmon recovery plans. As previously noted, the [Governor's Salmon Recovery Office and RCO](#) website provides links to the recovery plans, monitoring efforts, policies, and the lead entities that coordinate salmon recovery locally.⁴² WDFW's [Land Use Planning for Salmon, Steelhead and Trout](#)⁴³ provides guidance for counties and cities to protect and restore salmonid habitat.

As of the writing of this guidance, WDFW is in the process of updating its riparian ecosystem PHS management recommendations. Volume 1 of that document is a science synthesis that has been reviewed by the Washington State Academy of Sciences and is able to be cited and relied upon as a source of best available science. Volume 2 of that document is WDFW's management recommendations and aims to inform local government decisions related to riparian ecosystems and aquatic resources. [Riparian Ecosystems, Volume 2, Management Recommendations \(Public Review Draft\)](#)⁴⁴ is expected to be finalized in the fall of 2018.

Commerce Minimum Guidelines provide guidance for addressing "waters of the state" as fish and wildlife habitat conservation areas.⁴⁵ Also, the GMA requires that "where applicable, the land use element shall review drainage, flooding, and storm water run-off in the area and nearby jurisdictions and provide guidance for corrective actions to mitigate or cleanse those discharges that pollute waters of the state, including Puget Sound or waters entering Puget Sound."⁴⁶ Water quality, water quantity, and water temperature are all related and all vital to supporting anadromous fish habitat.

Frequently Flooded Areas

Historic losses to salmon habitat have occurred as a result of development encroaching into floodplains. Floodplains are also ideal locations for salmon habitat restoration. While floodplains are potentially hazardous areas for development due to flooding and erosion, fish and wildlife depend on the habitat created when a river is allowed to migrate and overflow its banks. Natural floodplains, channel migration zones, and associated riparian wetlands are critical components of a properly functioning aquatic ecosystem.

Increasingly, there is recognition of the importance of floodplains as vital habitat to support salmon and other species. Relevant information may be found in updates to salmon recovery plans, channel migration zone mapping or other sources. These sources should be considered in development of

⁴¹ WAC 365-190-130(4)(i)

⁴² https://www.rco.wa.gov/salmon_recovery/gfro.shtml

⁴³ <https://wdfw.wa.gov/publications/00033/>

⁴⁴ <https://wdfw.wa.gov/publications/01988/>

⁴⁵ WAC 365-190-130(2)(f)

⁴⁶ RCW 36.70A.070(1)

revised critical areas ordinances provisions which better protect riparian habitat. These protections may be addressed under frequently flooded area provisions or within the fish and wildlife habitat conservation area provisions of critical areas ordinances.

For more information on protecting frequently flooded areas for salmon, see the WDFW's [*Land Use Planning for Salmon, Steelhead and Trout: A land use planner's guide to salmonid habitat protection and recovery*](#).⁴⁷

FEMA Guidance on National Marine Fisheries Service Puget Sound Biological Opinion

Most cities and counties in Washington participate in the National Flood Insurance Program (NFIP), a federal program that makes flood insurance available to individual property owners. In order to make flood insurance available within its jurisdiction, a community must adopt and enforce a minimum set of floodplain development standards established in 44 CFR 60.3 and Chapter 86.16 RCW. Most of the minimum standards relate to building design and construction. However, NFIP regulatory implementation needs to meet federal Endangered Species Act (ESA) requirements. While many communities adopt their NFIP related standards in a stand-alone code chapter, ESA related requirements can be integrated with critical areas requirements.

The National Marine Fisheries Service (NMFS) issued a [Biological Opinion](#) (BiOp) under the ESA on the NFIP in Puget Sound.⁴⁸ The BiOp was provided following consultation with FEMA regarding effects of NFIP on listed species within the Puget Sound Region – chinook salmon, Puget Sound steelhead, Hood Canal summer-run chum salmon, and Southern Resident killer whales. FEMA has the ultimate authority for determining the adequacy of BiOp compliance. FEMA has provided three options for local government compliance with the ESA:

- **Door #1: Model Ordinance approach** – This approach combines standard NFIP floodplain requirements with BiOp habitat protection requirements. FEMA guidance on Floodplain Management and the Endangered Species Act: A Model Ordinance (November 2013) for developing a Door 1 program is posted on FEMA's [web site](#) Door 1 model ordinances must be approved by FEMA.⁴⁹
- **Door #2: Community Checklist/Programmatic approach** – This approach uses existing state requirements, such as GMA, SMA, drainage, and grading requirements adopted at the local level to provide flexibility, while meeting the minimum requirements for salmon in the BiOp. A critical areas ordinance that addresses the habitat concerns identified in the BiOp can support a Door 2 programmatic response. A community that uses Door 2 can implement the Puget Sound BiOp compliance through its own codes and procedures. A Checklist for Programmatic

⁴⁷ <https://wdfw.wa.gov/publications/00033/>

⁴⁸ https://www.fema.gov/media-library-data/20130726-1900-25045-9907/nfip_biological_opinion_puget_sound.pdf

⁴⁹ https://www.fema.gov/media-library-data/1383597893424-4747f702310a2bbc7e04ea83d66f73f5/NFIP_ESA_Model_Ordinance.pdf

Compliance (November 2013) is also on the [FEMA web site](#).⁵⁰ Door 2 programs must be approved by FEMA.

- **Door #3: Permit by permit demonstration of compliance/Individual approach** - In 2013, FEMA provided updated guidance on how to prepare a habitat assessment, [Floodplain Habitat Assessment and Mitigation: Regional Guidance for the Puget Sound Basin](#).⁵¹ Implementing the FEMA guidance will assist local governments in addressing compliance with the ESA BiOp. The critical areas regulation updates provide an opportunity for local governments to include or reference procedures for BiOp implementation in their floodplain management regulations or combined floodplain management regulations/critical areas regulations. This will help ensure that all staff and other parties are aware of these procedures required to comply with the BiOp.

Geologically Hazardous Areas

Geologically hazardous areas may affect salmonids in a variety of ways. Steep slopes along shorelines can include feeder bluffs that benefit salmon habitat by providing gravels, boulders, and sediment. However, erosion and mass wasting slide events overload streams with sediment in the short term. Seismic events can cause built objects to fall into streams, including pollutants such as chemicals and spilled fuels.

WDFW recommends local government seek to maintain sediment inputs into rivers at rates that are within the historic range of natural variability. This involves giving special protection to landslide hazard areas that can contribute sediment and large wood to rivers and streams during mass wasting events. It entails avoiding armoring within Channel Migration Zones and marine bluffs and retaining vegetation and managing drainage on steep slopes. Such measures provide for more natural channel morphology and beach nourishment, and avoid elevated levels of suspended sediments and turbidity.⁵²

Critical Aquifer Recharge Areas

Some aquifers may also have critical recharging effects on streams, lakes, and wetlands that provide critical fish and wildlife habitat. Protecting adequate recharge of these aquifers may provide additional benefits in maintaining fish and wildlife habitat conservation areas.⁵³

Critical aquifer recharge areas contribute to groundwater quality and in-stream flow. While critical aquifer recharge areas are designated and protected to ensure availability of potable water, the ground water resource also interacts with surface water. Both discharge and recharge areas help to cool summer daytime temperatures and provide year round habitat for invertebrates, and important salmonid food sources.

⁵⁰ https://www.fema.gov/media-library-data/1383597499829-c4d2a589c8ae1463357c1cac8d043ce7/NFIP_ESA_Biological_Opinion_Checklist.pdf

⁵¹ https://www.fema.gov/media-library-data/1383598118060-e34756afe271d52a0498b3a00105c87b/Puget_Sound_R10_Habitat_Assess_guide.pdf

⁵² WDFW *Land Use Planning for Salmon, Steelhead and Trout*, page 75. (<https://wdfw.wa.gov/publications/pub.php?id=00033>)

⁵³ WAC 364-190-100(4)(c)

Incentives for Protection and Restoration

The GMA requires counties and cities to protect the functions and values of critical areas through regulations. Incentives are another tool in the tool box for protection, and for restoration. Local governments are encouraged to adopt incentive programs in addition to their critical area regulations.

Incentives for protection and restoration are addressed more broadly and comprehensively in **Chapter 6**. Incentives specific to salmon recovery include:

- Grant programs for riparian habitat conservation and restoration projects on public and private lands through the [Recreation and Conservation Office](#)⁵⁴ and Salmon Recovery Funding Board, and [WDFW](#)⁵⁵.
- Use of transfer or purchase of development rights or other conservation easement programs to encourage retention of appropriate agriculture, forestry, and open space uses of the floodplain and infill of urban lands. Commerce provides links to TDR programs around Puget Sound on the [Regional Transfer of Development Rights web site](#).⁵⁶
- [Voluntary Stewardship Program](#)⁵⁷ managed by the Washington State Conservation Commission for agricultural activities in participating counties. Also see Chapter 5, Critical Areas and Natural Resource Lands for more discussion of this program.
- Participate in state and federal conservation incentive programs (See **Chapter 6** for a full list).
- [Local land trusts](#)⁵⁸ that can help landowners conserve their property, often leveraging funds from foundations and other non-government sources.
- Public Benefit Rating System Open Space Tax Program (RCW 84.34.055) to allow property owners a tax incentive to protect critical salmonid habitat on their property.
- Conservation Futures tax levy (RCW 84.34.230) to secure funds for acquisition or restoration of critical salmonid habitat.
- Coordinate with landowner incentive programs (local, state and federal), including Farm Bill and Lead Entity identified restoration sites and other watershed mitigation and restoration efforts. Ecology's [Puget Sound Watershed Characterization Project](#)⁵⁹ provides a tool that allows planners and resource managers to identify the most important areas to protect and restore watershed resources, and areas more suitable for development. WDFW has collaborated with seven counties to develop [Local Habitat Assessments](#)⁶⁰ to inform local planning initiatives.
- Direct mitigation, including off-site and compensatory mitigation, towards critical habitat areas and recovery needs for salmon.
- Incentives to encourage redevelopment activities to include salmonid habitat restoration where shorelines have been modified.
- Removal and control of noxious weeds in shoreline areas, and replacement with native species in consultation with local conservation districts.

⁵⁴ <https://www.rco.wa.gov/grants/index.shtml>

⁵⁵ <https://wdfw.wa.gov/grants/>

⁵⁶ <http://www.commerce.wa.gov/serving-communities/growth-management/growth-management-topics/development-rights/>

⁵⁷ <http://scc.wa.gov/vsp/>

⁵⁸ <https://walandtrusts.org/>

⁵⁹ <https://ecology.wa.gov/Water-Shorelines/Puget-Sound/Watershed-characterization-project>

⁶⁰ <https://wdfw.wa.gov/conservation/habitat/planning/lha/>

- Participation in off-site mitigation programs, when habitat impacts cannot be mitigated on-site, to prevent habitat loss in a sub-basin. Off-site mitigation programs should be limited to the sub-basin and be consistent with watershed and salmon recovery plan priorities.

Critical Areas and the Clean Water Act

Stormwater Regulations – National Pollutant Discharge Elimination System

Stormwater is rain water that runs off surfaces such as rooftops, paved streets, highways, and parking lots. As stormwater runs off these surfaces, it picks up pollution such as oil, fertilizers, pesticides, pet waste, and trash and carries this pollution into our lakes, streams, rivers, and bays. Polluted runoff that goes into a storm drain is usually not treated and winds up in our downstream waters.

In 1987, Congress changed the Clean Water Act to include stormwater discharges in the National Pollutant Discharge Elimination System (NPDES) permit program. The U.S. Environmental Protection Agency (EPA) developed rules to implement the new stormwater requirements. Ecology implements these stormwater rules through the Construction and Municipal stormwater permits. The Construction General Permit requires the development of a Stormwater Water Pollution Prevention Plan and implementation of stormwater management Best Management Practices (BMPs) during the construction phase of large projects.

The [Municipal Stormwater Permit](#) requires implementation of stormwater management programs for the public stormwater systems. The Municipal Stormwater Permits were issued in two phases based on population served by the public stormwater system:

- 1990: Phase I permit covers jurisdictions, such as cities and counties, serving more than 100,000 people. This includes the cities of Seattle and Tacoma; unincorporated King, Pierce, Snohomish, and Clark counties; and the ports of Seattle and Tacoma.
- 1999: Phase II permit covers smaller, urbanized, jurisdictions serving less than 100,000. Phase II requires permits for cities and counties located within census-defined urbanized areas and cities with populations more than 10,000 outside of these areas. The areas covered by the permit include the entire incorporated area of a city. For Phase II counties, the permit covers the census-defined urbanized areas and urban growth areas (as defined by the GMA) that extend outside of a city.⁶¹

Ecology issued the first Washington State Phase I permit in 1995, and the first Phase II permit in 2007. There are separate Phase II permits for eastern and western Washington.

EPA rules also require permits for public districts that own or operate a separate storm sewer system in Phase I and Phase II areas. Examples of these districts are ports, diking and drainage districts, public universities, flood control districts, prison complexes, and parks and recreation districts. These districts are also called secondary permittees. A separate general permit covers the Washington State Department of Transportation.

⁶¹ For more information about the Phase I and Phase II permits, see <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/Stormwater-general-permits/Municipal-stormwater-general-permits>.

For both Phase I and Phase II jurisdictions, the EPA rules require operators of municipal separate storm sewer systems (MS4s) to develop and implement a stormwater management program that:

- Reduces the discharge of pollutants to the “maximum extent practicable.”
- Protects water quality.

A stormwater management program involves planning, public education and involvement, illicit discharge detection programs, and adopting appropriate ordinances to reduce stormwater pollution. The Minimum Requirements in Appendix 1 include requirements for clearing and grading and post-construction activities that are designed to minimize impacts to critical areas. For example, critical or sensitive areas, buffers, native growth protection easements, or tree retention areas as may be required by local jurisdictions, must be delineated on site plans and the development site under the construction stormwater pollution prevention plan (SWPPP).⁶² The SWPPP must also include seasonal work limitations, vegetation preservation and clearing limits, limitations on construction access, stormwater retention facilities for stormwater runoff from the construction site, sediment discharge controls, and soil stabilization. Direct and indirect impacts to wetlands from the proposed development must also be considered when determining the needed BMPs.

Ecology has also published [stormwater management manuals](#) for both western and eastern Washington. These manuals provide the technical guidance needed to manage stormwater runoff.⁶³ These extensive manuals are available in both a traditional document style and in a web-based format that is interactive and easy to navigate on a variety of platforms.

Stormwater and Critical Areas Regulations

Stormwater management practices that treat stormwater runoff on site and mimic natural processes help address or manage impacts to critical areas. These practices treat runoff pollution and reduce flows that can impact the functions and values of critical areas such as wetlands. Critical areas regulations should include guidance on locating/siting stormwater best management practices to ensure that the functions and values of critical areas and their buffers are not adversely impacted.

Relying on the stormwater management regulations associated with the Municipal Stormwater Permit does not take the place of good land use planning. Stormwater BMPs can be applied to areas outside of permit coverage in order to provide protection to critical areas from stormwater impacts associated with development.

The Western Washington Growth Management Hearings Board noted that the question of reliance on stormwater regulations for protection of critical areas functions and values had come before the Board in several recent decisions. The Division II Court of Appeals set the standard in *WEAN v. Island County*, 122 Wn.App. 156, 180, 93 P.3d 885 (2004), stating that if a local government is relying substantially on preexisting regulations to satisfy its obligations under RCW 36.70A.172, then “those regulations must be subject to the applicable critical areas analysis to ensure compliance with the GMA.”

⁶² See Section 4, Minimum Requirement #2: Construction Stormwater Pollution Prevention Plan

⁶³ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals>

Low Impact Development

Phase I and Phase II permittees under the municipal stormwater permit are now required to include low impact development (LID) provisions in their development regulations, with the intent of making LID the “preferred and commonly-used approach to site development.” The deadline for this requirement was December 2016. The Department of Ecology provides training and [Low Impact Development Guidance](#).⁶⁴

Municipal stormwater permittees were required to review all development-related codes, rules, standards or other enforceable documents to incorporate and require LID principles and LID BMPs, which are defined as:

LID Principles means land use management strategies that emphasize conservation, use of on-site natural features, and site planning to minimize impervious surfaces, native vegetation loss, and stormwater runoff.

Low Impact Development Best Management Practices means distributed stormwater management practices, integrated into a project design, that emphasize pre-disturbance hydrologic processes of infiltration, filtration, storage, evaporation and transpiration. LID BMPs include, but are not limited to, bioretention, rain gardens, permeable pavements, roof downspout controls, dispersion, soil quality and depth, vegetated roofs, minimum excavation foundations, and water re-use.

Jurisdictions not currently covered by the Municipal or Construction permits can choose to apply LID and stormwater management techniques and BMPs to protect critical areas. These techniques can be applied as conditions of approval for land use and development-related permits.

Wetlands under the Clean Water Act and Other State Laws

In general, the state emphasizes a local approach to wetland protection and regulation under the GMA. Ecology plays an advisory role by providing comments during critical areas regulation updates, and offering technical assistance. However, Ecology also has regulatory authority to protect and manage wetlands through the state Water Pollution Control Act⁶⁵ and the Shoreline Management Act. Ecology also uses the State Environmental Policy Act (SEPA) process to identify potential wetland-related concerns early in the permitting process.

The federal Clean Water Act enables states to approve, condition, or deny projects proposed in waters of the United States – including wetlands – when a federal permit is needed. Ecology’s issuance of a [Section 401 Water Quality Certification](#)⁶⁶ under the federal Clean Water Act means that Ecology has

⁶⁴ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Low-Impact-Development-guidance>

⁶⁵ [Chapter 90.48 RCW](#)

⁶⁶ <https://ecology.wa.gov/Regulations-Permits/Permits-certifications/401-Water-quality-certification/non-hydropower-401-certifications>

reasonable assurance that an applicant’s project will comply with state water quality standards and other requirements for protecting aquatic resources. Ecology regional [wetlands staff review](#)⁶⁷ applications for projects that have the potential to impact wetlands and other “waters of the state.”

Critical Areas and the Shoreline Management Act

The Shoreline Management Act (SMA) applies to all marine waters, lakes over 20 acres, and larger streams, as well as a 200-foot wide upland area (“shorelands”), associated wetlands and all or portions of floodplains. The goals and policies of the SMA as set forth in RCW 90.58.020 are the fourteenth goal of the GMA. The goals and policies of a shoreline master program (SMP) for a county or city, approved by Ecology under Chapter 90.58 RCW, are considered an element of the comprehensive plan. All other portions of the Shoreline Master Program (SMP), including use regulations, are considered a part of a county or city’s development regulations.⁶⁸

The SMA requires local governments to plan for preferred uses of the shoreline (such as water-dependent uses, single family homes, and public access) while also protecting the environment. Ecology adopted rules in 2003 based on a negotiated settlement that require SMP regulations to assure “no net loss of ecological functions necessary to sustain shoreline natural resources.” This is accomplished in each SMP through a combination of environment designations (shoreline-specific zoning overlays), detailed regulations for specific uses and shoreline modifications, careful mitigation sequencing, and critical area protections (either adopted by reference or developed for unique shoreline circumstances).⁶⁹

Critical areas regulations adopted under the GMA apply in shoreline jurisdiction until Ecology approves a comprehensive SMP update consistent with the 2003 SMP Guidelines (Chapter 173-26 WAC).⁷⁰ However, as part of the comprehensive SMP update many jurisdictions have adopted their GMA critical areas regulations by reference. During the comprehensive SMP update process, local governments and Ecology address the distinct substantive and procedural differences between critical areas regulations and shoreline regulations.

The SMA also requires periodic reviews of the SMP every eight years on an alternate schedule to that of the GMA (2019 – 2022 and every eight years thereafter).⁷¹ Ecology rules clarify the review includes a requirement to amend SMPs for consistency with changed laws and rules, and to consider changed circumstances, new information, or improved data.

The SMA establishes a cooperative program between local governments and the state. Like under GMA, Ecology and other state agencies are directed to provide technical assistance. However, the state has a much stronger role under the SMA.⁷² After local governments adopt SMPs, Ecology must approve them before they are effective.⁷³ If an SMP that has been approved by Ecology is appealed, Ecology joins in

⁶⁷ <https://ecology.wa.gov/Water-Shorelines/Wetlands/Tools-resources/Contacts-by-subject-region>

⁶⁸ RCW 36.70A.480, and WAC 365-196-580

⁶⁹ WAC 173-26-201(2)(c)

⁷⁰ RCW 36.70A.480(3)

⁷¹ RCW 90.58.080(4)(b)

⁷² *Citizens for Rational Shoreline Planning v. Whatcom County*, 155 Wn. App. 937, 943 (2010).

⁷³ RCW 90.59.090

the appeal as a co-defendant with the local government. Ecology also has an ongoing oversight role in shoreline permitting. Ecology has final approval authority over all locally-issued conditional use permits and variances in shorelines.

Inclusion/Use of Science and No Net Loss

The SMA has a provision similar to the inclusion of best available science to protect critical areas functions and values. Local governments must use a systematic interdisciplinary approach; consult with relevant agencies; and use all available information regarding hydrology, geography, topography, ecology, economics, and other pertinent data.⁷⁴ The SMP Guidelines require use of “the most current, accurate and complete scientific and technical information available.”⁷⁵ As clarified by the Central Puget Sound Growth Management Hearings Board, “The SMA process does incorporate the use of scientific information, but it does so as part of the process of balancing a range of considerations such as public access, priority uses, and the development goals and aspirations of the community.”⁷⁶

Consistent with the GMA requirement to protect existing functions and values (the “no harm” standard⁷⁷), the object of “no net loss” requirements is to halt the introduction of new impacts from new development. Regulations may not require mitigation in excess of that required to achieve no net loss. To achieve restoration of functions above the baseline of current conditions, local governments prepare restoration plans that identify voluntary opportunities. SMPs may also include incentive-based approaches to accomplish restoration.

Critical Areas Regulations and the State Environmental Policy Act

Consideration of environmental factors when making informed planning decisions is the foundation of the State Environmental Policy Act (SEPA). Non-project environmental review at the time the comprehensive plan and development regulations are adopted or amended allows a jurisdiction to analyze impacts and determine mitigation system-wide, rather than project-by-project. This allows cumulative impacts to be identified and addressed, and provides a more consistent framework for future permit review.⁷⁸ Integration of a well-documented SEPA process contributes to general public knowledge, environmental protection, and fiscal efficiency for local government services.

Non-project proposals follow the same procedural requirements under SEPA as project proposals. However, environmental review of an amendment to the critical areas regulations should be used to address the cumulative impacts not addressed in project proposals. The more specific the analysis is at this level, the less environmental review will be needed when a project permit application is submitted. Section D of the SEPA checklist should be used for non-project actions.⁷⁹

⁷⁴ RCW 90.58.100

⁷⁵ WAC 173-26-201(2)(a)

⁷⁶ *Lake Burien Neighborhood, et. al, v City of Burien and Department of Ecology*, 13,3-0012 (6/16/2014)

⁷⁷ *Swinomish Indian Tribal Community v. Western Washington Growth Management Hearings Board*, 161 Wn.2d 415 (2007).

⁷⁸ See Ecology’s [State Environmental Policy Handbook](#), Publication Number 98-114, Published September 1998 and Revised January 2204.

⁷⁹ For more information, go to [SEPA checklist guidance, Section D: Nonproject actions](#).

Benefits to this approach include:

- A more predictable future for the community.
- A better understanding of the capacity of the built and natural environment and the cumulative impacts of planned development community-wide, increasing the potential for protection of environmental values.
- Efficient use of public funds for the provision of public facilities, infrastructure, and services.
- A decrease in the time and cost associated with obtaining permit approval for appropriate projects in suitable locations resulting from early decisions on land use, services, and mitigation strategies.

SEPA documents, developed in conjunction with plan policies, regulations, or incentive programs, and that include a checklist or an EIS, are a good place to list the scientific sources of information that are relied upon in establishing the management standards for critical areas. However, SEPA cannot substitute for critical areas regulations because of the many exemptions in SEPA and the lack of specific standards.

Critical Areas and Groundwater Protection

Planning Responsibility for Groundwater Protection

Protection of critical aquifer recharge areas is not only a critical areas protection responsibility under GMA, it is a fundamental planning responsibility for local governments under the Planning Commission and Planning Enabling Acts. RCW 35.63.090 states that the local jurisdiction's comprehensive plan "shall be designed...to facilitate the adequate provision of...water...including protection of the quality and quantity of groundwater used for public water supplies." This applies to all non-code cities and towns, regardless of whether they are fully or partially planning under the GMA.

Both RCW 35A.63.061(1) and RCW 36.70.330(1) state that the local jurisdiction's land use element within its comprehensive plan "shall...provide for protection of the quality and quantity of groundwater used for public water supplies." This applies to all code cities and counties.

RCW 36.70A.070(1) requires that the land use element of the comprehensive plan "provide for protection of the quality and quantity of groundwater used for public water supplies." An additional requirement for Puget Sound counties and cities states:

Where applicable, the land use element shall review drainage, flooding, and storm water run-off in the area and nearby jurisdictions and provide guidance for corrective actions to mitigate or cleanse those discharges that pollute waters of the state, including Puget Sound or waters entering Puget Sound.

Many local comprehensive plans tend to focus on water availability to serve growth. Protection of both ground and surface water resources is not only a foundation of planning, but is also within both state and local jurisdictions' fundamental purview. Furthermore, RCW 35.88.010 invests broad authority in cities and towns as related to protecting water sources:

For the purpose of protecting the water furnished to the inhabitants of cities and towns from pollution, cities and towns are given jurisdiction over all property occupied by the works, reservoirs, systems, springs, branches and pipes, by means of which, and of all the lakes, rivers, springs, streams, creeks, or tributaries constituting the sources of supply from which the cities and towns or the companies or individuals furnishing water to the inhabitants thereof obtain their supply of water, or store or conduct it, and over all property acquired for any of the foregoing works or purposes or for the preservation and protection of the purity of the water supply, and over all property within the areas draining into the lakes, rivers, springs, streams, creeks, or tributaries constituting the sources of supply whether they or any of them are within the city or town limits or outside.

Finally, RCW 90.54.140 makes aquifer protection an “uppermost priority” of state as well as local governments:

The legislature hereby declares that the protection of groundwater aquifers which are the sole drinking water source for a given jurisdiction shall be of the uppermost priority of the state department of ecology, department of social and health services, and all local government agencies with jurisdiction over such areas. In administration of programs related to the disposal of wastes and other practices which may impact such water quality, the department of ecology, department of social and health services, and such affected local agencies shall explore all possible measures for the protection of the aquifer, including any appropriate incentives, penalties, or other measures designed to bring about practices which provide for the least impact on the quality of the groundwater.⁸⁰

State Requirements for Protecting Groundwater

State Pollution Control Act

The State Pollution Control Act, Chapter 90.48 RCW, prohibits pollution of waters of the state, which include “underground waters.” The State Ground Water Quality Standards, Chapter 173-200 WAC, establish groundwater quality standards. Those standards, together with the state's technology-based treatment requirements, provide for the protection of the environment and human health and protection of existing and future beneficial uses of groundwater.

Ecology implements the Ground Water Quality Standards through State Waste Discharge Permits that control wastewater discharge to the ground to protect groundwater quality. Ecology's [Implementation Guidance for the Ground Water Quality Standards](#)⁸¹ details how the standards are implemented. Local jurisdictions may adopt state groundwater protection laws and rules by reference.⁸² Local jurisdictions should adopt these state laws and rules for authority to prevent groundwater contamination and to

⁸⁰ References to the Department of Social and Health Services date to a time when state environmental health functions resided within that agency; the statute has not been updated. Today, such programs are within the Department of Health.

⁸¹ <https://fortress.wa.gov/ecy/publications/SummaryPages/9602.html>

⁸² Chapter 35.21 RCW

require correction where necessary. This should include an enforcement policy and mechanism to implement it. The Ground Water Quality Standards have provisions for establishing Special Protection Areas.

Groundwater Management Areas

State statute also provides for the establishment of Ground Water Management Areas.⁸³ RCW 90.44.400 directs Ecology to adopt standards, criteria, and a process for the designation of specific groundwater management areas or subareas.

Underground Injection Control Wells

The Safe Drinking Water Act of 1974 created the Underground Injection Control (UIC) Program to protect drinking water sources from contamination. Washington received primacy from EPA to administer the UIC Program in 1984. EPA organizes UIC wells into six classifications. In Washington, the majority of classifications are prohibited.⁸⁴ Class V wells are the predominant UIC well type used in Washington, and they are mainly used to manage stormwater. Discharges from UIC wells also have to meet the Ground Water Quality Standards at the top of the water table.

The Ground Water Quality Standards and the UIC rule require that all discharges are provided with all known, available, and reasonable methods of prevention, control, and treatment (AKART)⁸⁵, which include review to determine treatment and implementation of source control to reduce contaminants in the stormwater. UIC wells best management practices to meet AKART are described in Ecology's [Guidance for UIC Wells that Manage Stormwater \(UIC Guidance\)](#)⁸⁶, and Ecology's NPDES [Stormwater Management Manuals for Eastern and Western Washington](#)⁸⁷. The UIC Guidance will be updated and incorporated into both of Ecology's stormwater manuals as part of the current manual revision process.

Critical Areas Regulations and State Hazard Mitigation Planning

The Washington State Enhanced Hazard Mitigation (SEHMP) Plan, developed by Washington Emergency Management (EMD), profiles natural and man-made hazards, identifies risks and vulnerabilities, and proposes strategies and actions to reduce risks to people, property, the economy, the environment, infrastructure, and first responders. Most local jurisdictions, cities, towns, counties, tribes, and many special districts, develop local hazard mitigation plans to complement the state plan. These plans are required by FEMA under 44 CFR parts 201.4 and 201.5 to keep the state, as well as all eligible local jurisdictions, qualified to obtain disaster assistance, including hazard mitigation grants. The enhanced

⁸³ RCW 90.44.400 and Chapter 173-100 WAC

⁸⁴ Chapter 173-218 WAC

⁸⁵ AKART, consistent with the NPDES stormwater program.

⁸⁶ <https://fortress.wa.gov/ecy/publications/SummaryPages/0510067.html>

⁸⁷ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Stormwater-permittee-guidance-resources/Stormwater-manuals>

portion of the plan allows the state to seek significantly higher funding following Presidentially-declared disasters (20 percent of federal disaster expenditures versus 15 percent with a standard plan.)

Local hazard mitigation plans are updated every five years through a process that includes stakeholder engagement, robust public outreach, risk and vulnerability identification, and mitigation strategy development. The local emergency management agency usually leads this effort in coordination with public works, community development, and others.

A key mitigation strategy for many local jurisdictions is risk prevention or avoidance through land use decisions that consider natural hazard risk. A community's critical areas regulations, zoning code, floodplain regulations, and other related codes and regulations are essential elements of a strong risk prevention, or regulatory mitigation, strategy. The updated risk assessment from a local hazard mitigation plan is also an essential source of best available science on frequently flooded and geologically hazardous areas.

The following table details areas of potential overlap and opportunities for local jurisdictions to coordinate mitigation planning, comprehensive planning, and the critical areas regulations. Under certain circumstances, planning grants may be available to help a community in this effort.

Crosswalk of Critical Areas, GMA, and Hazard Mitigation Planning										
FEMA Natural Hazard Mitigation Plan	Designate Critical Areas	Protect Critical Areas	Best Available Science	Periodic Update	Comprehensive Plan - Urban Growth Areas	Comprehensive Plan - Avoiding Conflicts	Comprehensive Plan - Land Use Element	Comprehensive Plans - Public Participation	WAC Implementation Plan	
A1										
A2										
A3										
A4										
A5										
A6										
B1										
B2										
B3										
C1										
C2										
C3										
C4										
C5										
C6										

Mitigation plans, comprehensive plans, and the critical areas regulations are most closely related through the planning process, risk and vulnerability assessment, and mitigation strategy implementation. The plans can be closely coordinated through:

- Coordinated development with intersecting processes to meet shared public and stakeholder engagement requirements.
- Risk identification elements and agreement on geologically hazardous and frequently flooded areas
- The development and implementation of mitigation strategies, especially those pertaining to land use.
- [Hazard Mitigation Assistance Grants](https://mil.wa.gov/emergency-management-division/grants/hazard-mitigation-grants)⁸⁸ can be used to support the joint updates of critical Areas ordinances and Hazard Mitigation Plans.

⁸⁸ <https://mil.wa.gov/emergency-management-division/grants/hazard-mitigation-grants>

Improving coordination between these planning mechanisms is an important goal and mitigation strategy for the State Hazard Mitigation Plan. For more details on coordination between critical areas and hazard mitigation planning, please contact the State Hazard Mitigation Strategist at [Washington Emergency Management Division](#). For more general details on plan integration, please see FEMA's guide on Integrating [Hazard Mitigation into the Comprehensive Plan](#).

Protecting Critical Areas in Already Urbanized Areas

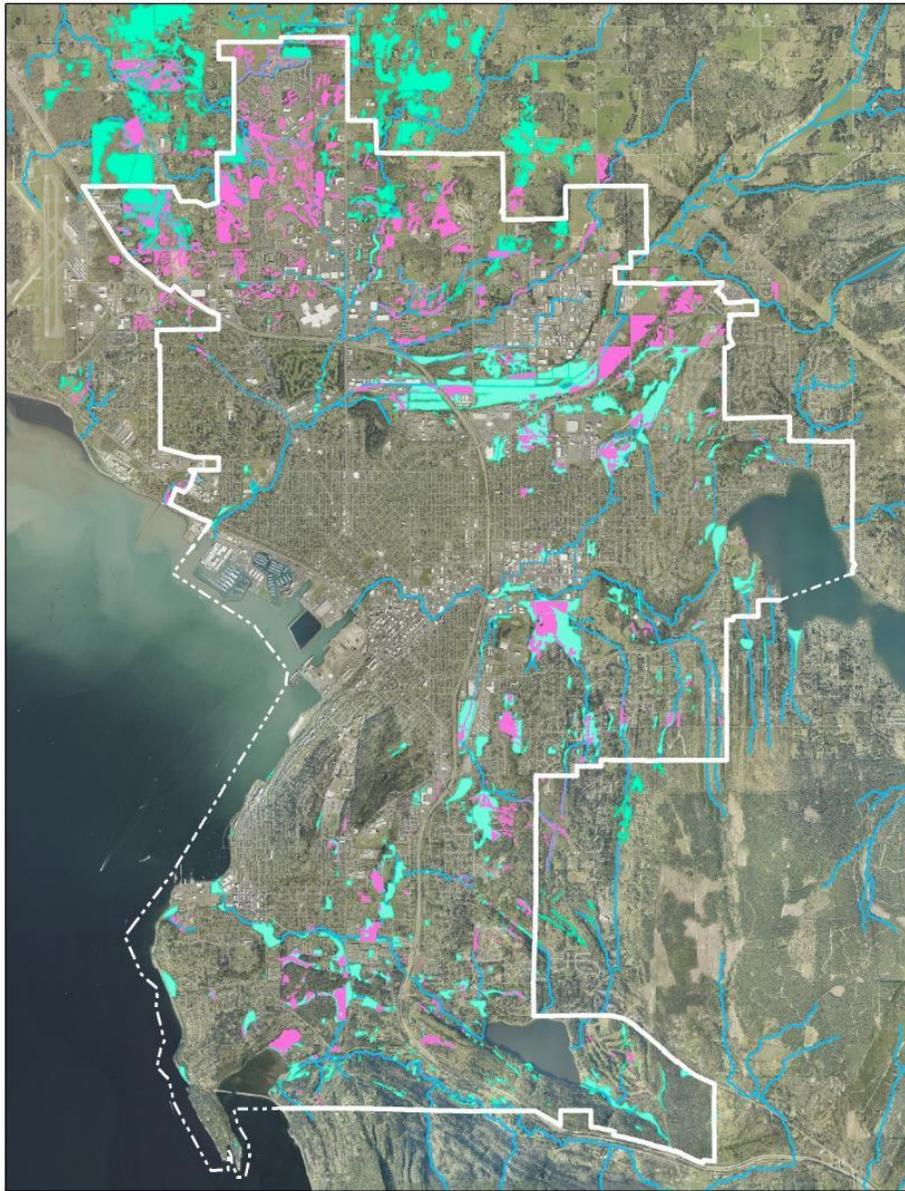
Critical areas must be protected wherever they are found. However, the existing functions and values of critical areas in already urbanized areas can be different than in rural areas. A key consideration for protecting critical areas is the extent to which the area has already been built out, such that they offer little or limited ecological function. Streamside vegetated areas may offer limited habitat value or be in need of restoration efforts. Wetlands may be degraded and provide limited functions. Frequently flooded areas may have structures built that are at risk from the next flood. Land uses involving potential pollutants that existed prior to today's critical areas regulations may be situated over sensitive aquifer recharge areas.

In already urbanized areas it is important to document the existing conditions of the critical areas to understand where opportunities may occur to protect whatever function currently exists. Many existing documents such as salmon recovery plans and shoreline restoration plans identify restoration opportunities to improve habitat over time using incentives or compensatory mitigation. Stormwater management is key to protecting critical areas in urbanizing areas, with special attention to low impact development techniques where feasible, so long as urban densities are still being achieved.



Photo courtesy of Paul Inghram

A critical area program that addresses such issues in a comprehensive way may be the best way to demonstrate “protection” is occurring. Consulting with a scientific expert or a team of experts may help with review of available inventories and assessments of local critical areas functions.



Bellingham Site-specific Wetland Delineations (pink)

Some jurisdictions have used the permit process to update mapping of critical areas. For example, the Cities of Bellingham and Tacoma digitize the location of wetlands delineated during the permit process.

“Protection” of habitat can also be realized through zoning techniques, such as clustering of buildings and open space corridor designations.⁸⁹ Other techniques previously noted in this chapter include lot size averaging, on-site density transfer (also called buffer credits or density calculation provisions), and critical area buffer width averaging.

⁸⁹ RCW 36.70A.160 requires that fully planning jurisdictions identify open space corridors within and between urban growth areas that will be useful for recreation, wildlife habitat, trails, and connection of critical areas.

For particularly dangerous areas, such as floodways, meander belts, and frequently flooded areas, the local jurisdiction could explore a buyout program. Federal funds may be available. Buyout programs protect human life and reduce flood damages over the long-term to avoid repeatedly damaged properties being rebuilt and damaged again. The buyout area can also become a park or greenway and provide increased buffers along rivers, streams, and other waterways even in built up areas. King and Pierce counties are examples of local governments that have successful buyout programs. Ecology is the state coordinating agency for the National Flood Insurance Program (NFIP) and can provide information about NFIP programs and funding programs.

Evaluating the functionality of a known critical area is a unique inquiry. For critical areas located in urbanized or urbanizing areas, evaluating the type and function of a critical area that exists will offer the jurisdiction the ability to protect whatever critical area function is currently provided and identify opportunities for improving its function over time. Development standards can be designed to accomplish this, once the scientific information is developed and analyzed. The SEPA process should support this effort and identify the principal analytical documents and other materials used in developing the management recommendations and ordinance.

Common sources of “science” that should be relied upon are:

Assessment data: This is data that is developed through inspection and evaluation of site-specific information by a qualified scientific expert. An assessment may or may not involve collection of new data.

Inventory data: This is data that is collected from an entire population or population segment (e.g., individuals in a plant or animal species) or an entire ecosystem or ecosystem segment (e.g., the species in a particular wetland or pond).

Survey data: This is data that is collected from a statistical sample from a population or ecosystem.

Modeling data: This is data that is generated as a mathematical or symbolic simulation or representation of a natural system. Models generally are used to understand and explain occurrences that cannot be directly observed. Modeling methods should be peer reviewed.

Expert opinion: Expert opinion assists the planner with understanding how the scientific information can be translated into management approaches or performance measures that eliminate risk to critical areas functions or values.

Protecting Wetlands in Urban Areas

Wetlands in urban areas may provide different functions than wetlands in rural areas. In particular, wetlands in urban areas may not provide the same type or degree of wildlife habitat, primarily due to isolation from other habitats. However, some urban wetlands may provide critical habitat for one or more species, such as amphibians and birds. Additionally, many urban wetlands provide important water quality or water quantity functions important to aquifer recharge and flood retention.

Protecting wetland functions in urban areas can best be accomplished by taking a comprehensive approach that includes an inventory and assessment of existing wetlands, good surface and stormwater management requirements, and a landscape-based approach to maintaining wildlife habitat.

For more information and guidance for protecting wetlands in urban areas, see Ecology’s [Best available science for wetlands web site](#).⁹⁰

Criteria for Assessing the Wildlife Potential of an Urban Area

The following questions can help with assessing the potential for wildlife habitat within an urbanized or urbanizing area:

Contextual or External Considerations When Determining Wildlife Habitat Designations

1. What type of habitat is it? Some habitat types are more critical than others because of limited supply, sensitivity to disturbance, unique wildlife species, or other factors. WDFW provides the [Priority Habitats and Species \(PHS\) List](#)⁹¹ to local governments, agencies, landowners, and members of the public by county. The PHS list is a catalog of habitats and species considered to be priorities for conservation and management.
2. How large is the area? Generally, large patches of a given habitat type are more valuable than small patches. Optimal patch size in Western Washington may be around 75-100 acres. However, the case can be made to protect relatively smaller patches (e.g., 5-20 acres) of diverse vegetation that are more widely distributed across the urban landscape, because these areas help to bring more people in contact with urban wildlife that persist in these smaller patches. Woodlots often serve as “island refuges” for species that would otherwise not be found in a residential neighborhood.
3. Does the area serve as a “corridor” to link otherwise isolated natural areas, parks, preserves, open spaces, or large tracts of land designated for long-term forestry? Corridors are valuable in facilitating movement of animals and in minimizing negative attributes (i.e., reduced numbers and greater vulnerability to local extinction) of island populations. Riparian areas usually provide important movement corridors in urban-rural landscapes.
4. Does the area serve as a “buffer,” or is it surrounded by a native vegetation buffer area? Buffers are especially important when human activity may affect the area.
5. What are the surrounding habitat types or land uses? The wildlife in the area may be positively or negatively affected by adjacent habitat or land uses. An area adjacent to an existing park will be more valuable to wildlife than a similar area adjacent to commercial or industrial development.

Internal Considerations When Determining Wildlife Habitat Designations

⁹⁰ <https://ecology.wa.gov/Water-Shorelines/Wetlands/Tools-resources/Best-available-science>

⁹¹ <https://wdfw.wa.gov/conservation/phs/list/>

1. How structurally diverse (vertically and horizontally) is the habitat? Vertical diversity is derived from the amount and distribution of vegetation and other structural elements in various zones ranging from underground to the tops of the tallest trees. Horizontal diversity is determined by the size and distribution of vegetation patches across the landscape. Greater structural diversity generally increases the area's wildlife diversity. Therefore, a wetland with a patch of trees or open water is generally more valuable than a uniform stand of cattails or spirea. Similarly, a forest with a well-developed understory is generally more valuable than a dense forest with no understory, and it is generally more valuable than a golf course with widely scattered trees amid acres of lawn. It should be remembered, however, that structural diversity is not static; areas with low structural diversity may become more valuable to fish and wildlife through restoration efforts, particularly in areas that have been degraded by human activities.
2. What are the "edge" conditions? Edges (ecotones) are utilized by relatively greater numbers of species. An area with a mosaic of habitat types that provide an undulating edge is more valuable to wildlife than an area of equal size but with a linear edge.
3. Are snags and/or large trees present? Snags serve a number of important functions for wildlife, especially cavity-nesting birds and mammals. If snags have to be removed for safety reasons, the stump should be left and should be as tall as possible; even decaying stumps only a few feet high can be beneficial to wildlife.
4. Are downed logs present? Logs also serve a number of important functions for some wildlife species, particularly in or near streams and wetlands.
5. Is water present or can it be safely accessed nearby by wildlife? Water is one of the essential components of habitat; wetlands and riparian areas are especially important to wildlife.
6. Do any endangered, threatened, or other priority species ([Species of Concern](#), as defined by the Washington Department of Fish and Wildlife⁹²) use the area at some time during the year for reproduction? For foraging? For shelter? Areas with priority species are generally more valuable than areas without these species.

⁹² <https://wdfw.wa.gov/conservation/endangered/>