



**FACET**  
Formerly DCG / Watershed

Draft Gap Analysis

# Lewis County Critical Areas Ordinance Update

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*Prepared for:*



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# 1. Introduction

With passage of the Growth Management Act (GMA), local jurisdictions throughout Washington State, including Lewis County (County), were required to develop policies and regulations to designate and protect critical areas. Critical areas are defined in the GMA and the Revised Code of Washington (RCW) 36.70A.030(5) to include wetlands, fish and wildlife habitat conservation areas, frequently flooded areas, critical aquifer recharge areas, and geologically hazardous areas. The GMA requires local jurisdictions to periodically review and evaluate their adopted critical areas policies and regulations.

An ongoing requirement of the GMA is for local jurisdictions to periodically review and evaluate their adopted critical areas policies and regulations. In accordance with the GMA, the county periodically updates the Comprehensive Plan. The County will complete this update to critical areas policies and regulations by June 2025. This includes the requirement to include the best available science (BAS). A BAS document and Department of Commerce (Commerce) Critical Areas Checklist are being drafted concurrently with this report. Any deviations from science-based recommendations will be identified, assessed, and explained per Washington Administrative Code [WAC] 365-195-915. In addition, jurisdictions are to give special consideration to conservation or protection measures necessary to preserve or enhance anadromous fisheries.

The County's critical areas policies are codified in Lewis County Code (LCC) Title 17-Land Use and Development Regulations (Specifically 17.38-Critical Areas), and these will be discussed in the following gap analysis. Critical areas are also addressed in the Shoreline Management Plan (SMP) in Title 17.25 however the SMP is not covered in this Gap Analysis.

This gap analysis provides a review of the current critical areas regulations, noting gaps where existing regulations may not be consistent with BAS or the GMA. It also makes recommendations for improvements to general aspects of the CAO such as clarity, consistency, ease of use etc. The primary intention of this gap analysis is to help guide the update of the County's critical areas policies and regulations. Resources including, but not limited to, the Washington State Department of Commerce (Commerce) Critical Areas Handbook v 3.0<sup>1</sup>, Department of Ecology (Ecology) Wetland Guidance for Critical Areas Ordinance (CAO)<sup>2</sup>, Washington State Department of Fish and Wildlife (WDFW) Priority Habitats and Species Publications<sup>3</sup> and Department of Natural Resources (DNR) Geologic Hazards and the Environment<sup>4</sup> were reviewed to assess any discrepancies between state policies, BAS and the Lewis County CAO.

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<sup>1</sup> CriticalAreasHandbook\_allcombined.pdf | Powered by Box

<sup>2</sup> Wetland Guidance for Critical Areas Ordinance Updates (wa.gov)

<sup>3</sup> Priority Habitats and Species: Publications | Washington Department of Fish & Wildlife

<sup>4</sup> Geologic Hazards and the Environment | WA - DNR

## 1.1 Document Organization

Recommendations for updating the County’s existing critical areas regulations are provided in Sections 2 through 9. Section 2 addresses the general provisions that are applicable to all critical areas; Sections 3 through 9 address the different types of critical areas covered by the GMA. To highlight findings of the gap analysis, a Code review summary table is provided at the beginning of each section. Where a potential gap is identified, subsections provide further discussion.

## 2. Administration

This section addresses code sections that are applicable to all types of critical areas. This includes LCC 17.38.010-110. A summary of recommended updates is provided in Table 1.

Table 1. Administration review summary

| Code Section | Title  | Review Comment / Recommendations  | Reason for Recommendation                                    |
|--------------|--|---|--|
| 17.38.010    | Statement of authority and title                     | No changes required.  |  |
| 17.38.020    | Applicability  | Change “in within” to “within”.   | Clarity.   |
| 17.38.030    | Relationship to other regulations                    | Change to “shall address the requirements for each of the critical areas.”  | Clarity.   |
| 17.38.040    | Mapping of known critical areas                      | No changes required.  |  |
| 17.38.050    | Administration                                       | No changes required.  |  |
| 17.38.060    | Activities that do not require a Lewis County permit | 1-Consider link to Article II in text<br>2-Consider adding no net loss terminology.   | 1-Clarity.<br>2-Consistency with GMA and BAS.                |
| 17.38.070    | Critical area assessment report                      | Consider adding reporting requirements for other impacted critical areas such as CARA and geohazard areas (listed below in mitigation requirements but not here). | Clarity and increased protection of human health and safety. |
| 17.38.080    | General mitigation requirements                      | Consider adding no net loss terminology to mitigation sequencing.   | Consistency with GMA and BAS.                                |
| 17.38.090    | Mitigation monitoring                                | No changes required.  |  |
| 17.38.100    | Mitigation assurance                                 | No changes required.  |  |
| 17.38.110    | Qualified professional required                      | No changes required.  |  |

| Code Section | Title   | Review Comment / Recommendations     | Reason for Recommendation |
|--------------|---|--------------------------------------|---------------------------|
| 17.38.130    | Activities allowed without a permit in critical areas and buffers | 1-Consider moving this to 17.38.060. | 1-Clarity.                |

## 2.1 Applicability (LCC 17.38.020)

LCC code 17.38.020(2) states *“Administrative provisions of this chapter do not apply to lands in within the LCC code 17.38.020(2) states jurisdiction of the Shoreline Management Act (SMA). Projects within the jurisdiction of the SMA shall be processed under the Lewis County shoreline master program, SMP Chapter 7, Shoreline Administration.”* We recommend removing “in” from sentence.

## 2.2 Relationship to other regulations (LCC 17.38.030)

LCC code 17.38.030(1) states *“Areas characterized by multiple critical areas shall address the requirements for each of the areas.”* It is assumed to mean the requirement of each of the critical areas but is somewhat unclear. We recommend changing to *“shall address the requirements for each of the critical areas.”*

## 2.3 Activities that do not require a Lewis County permit (LCC 17.38.060)

This section refers to another section of the code, however a hyperlink is not included. The organization is somewhat confusing with the second separate article listing activities. We recommend moving Article II to this section under Administration.

## 2.4 Critical area assessment report (LCC 17.38.070)

This section states that critical area assessment reports are required for wetlands and fish and wildlife habitat areas but does not mention other critical areas. We recommend adding reporting requirements for other impacted critical areas such as critical aquifer recharge areas, frequently flooded areas and geologically hazardous areas. These areas have requirements for mitigation in subsequent sections and reports based on best available science are recommended for any impacts to critical areas.

## 2.5 General mitigation requirements (LCC 17.38.080)

Washington State policies and agency guidance now contain verbiage for no net loss of function. No net loss is stated in various portions of the code. We recommend adding no net loss terminology to mitigation sequencing.

## 2.6 Activities allowed without a permit in critical areas and buffers (LCC 17.38.130)

See the suggestion in subsection 2.3 above to move Article II (LCC 17.38.130) to LCC 17.38.060.



### 3. Wetlands

This section addresses code sections that are applicable to wetland critical areas as located in LCC 17.38.200 through LCC 14.38.320. A summary of recommended updates is provided in Table 2.

Table 2. Wetland provisions review summary.

| Code Section | Title  | Review Comment / Recommendations   | Reason for Recommendation                          |
|--------------|--|--|--|
| 17.38.200    | Purpose  | Consider adding no net loss terminology.   | Consistency with GMA and BAS.                      |
| 17.38.205    | Other provisions apply                           | No changes required.   |  |
| 17.38.210    | Administration                                   | No changes required.   |  |
| 17.38.220    | Identification                                   | Consider adding USACE delineation manual and regional supplements.   | Consistency with Commerce and BAS.                 |
| 17.38.230    | Classification                                   | No changes required.   |  |
| 17.38.240    | Mitigation Sequencing                            | Consider moving mitigation sequencing for wetlands here vs 17.38.080.  | Efficiency and clarity.                            |
| 17.38.250    | Exemption from the requirements to avoid impacts | No changes required.   |  |
| 17.38.260    | Use intensity and determination of buffer width  | No changes required.   |  |
| 17.38.270    | Required wetland buffers                         | 1-Consider adding total rating score to categories.<br>2-Review and update buffer widths.                                | 1-Consistency with BAS.<br>2-Consistency with BAS. |
| 17.38.280    | Buffer width reduction                           | 1-Capitalize "state" for Washington State Department of Fish and Wildlife.<br>2-Consider adding no net loss terminology. | 1-Clarity.<br>2- Consistency with GMA and BAS.     |
| 17.38.290    | Buffer width averaging                           | No changes required.   |  |
| 17.38.300    | Mitigation                                       | No changes required.   |  |
| 17.38.310    | References                                       | No changes required.   |  |
| 17.38.320    | Wetland Assessment                               | Consider adding "following most current Ecology and USACE guidelines".   | Consistency with BAS.                              |

### **3.1 Purpose (LCC 17.38.200)**

It is recommended that the policy be updated from maintaining ecological functions to no net loss of ecological function for consistency with GMA language and Ecology guidance.

### **3.2 Administration (LCC 17.38.210)**

Wetland reports are required only when they are within a certain proximity to mapped resources. No comprehensive map of wetlands exists in Lewis County; therefore, a wetland assessment should be provided on any property having suspected wetlands. We suggest that if hydrophytic vegetation, hydric soils, or wetland hydrology are known or suspected on a property, then a wetland review be conducted.

### **3.3 Identification (LCC 17.38.220)**

Wetlands are determined by the 1987 Wetland Delineation Manual by the U.S. Corps of Engineers (USACE) and the 2010 Regional Supplement to USACE Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). We recommend specifying this delineation method in the code.

### **3.4 Classification (LCC 17.38.230)**

A new version of the wetland rating system was released since the code was last revised. The current version of the wetland rating system is the Washington State Wetland Rating System for Western Washington: 2014 Update, Version 2.0 (Hruby & Yahnke 2023). The Current Ecology publication number is 23-06-009. We recommend updating this publication reference and having this code adopt all additional revised versions of the rating system.

The descriptions of rating categories in the SCC differ from the official manual. Although these descriptions are not inaccurate per se, it would support interagency consistency to use the descriptions provided by Ecology.

### **3.5 Exemption from the requirement to avoid impacts (LCC 17.38.240)**

This section allows for certain types of small wetlands to be exempt from the need to avoid impacts, and state that certain wetlands below 1,000 sf are exempt from buffer requirements. Since these wetlands are regulated by the Department of Ecology under the Clean Water Act and Water Pollution Control Act, these exemptions may create circumstances where applicants circumvent or are unaware of state law. If these are maintained in the code, then state and federal approval should also be required for projects which require such authorization. This generally includes projects which involve wetland fill.

### **3.6 Required wetland buffers (LCC 17.38.270)**

Ecology updated buffer width recommendations in 2018 to account for revised habitat score ranges. That Ecology publication #05-06-008, revised July 2018, *Appendix 8-C: Guidance on Buffers and Ratios for Western Washington*, summarizes three buffer width alternatives that vary based on wetland category, land use, application of impact minimization measures, and/or habitat functions score. The most recent Ecology buffer guidance is the *2022 Wetland Guidance for Critical Areas Ordinance (CAO) Updates. Appendix C – Buffer Approaches for Western Washington* of the 2022 document outlines three buffer options as a model for local jurisdictions. The three options vary based on wetland category, application of impact minimization measures, presence/absence of a habitat corridor, and/or land use intensity. Both the 2018 and 2022 Ecology guidance documents are considered to be consistent with BAS and differ primarily in the framework around certain buffer alternatives and options.

The buffer system implemented by Lewis County is a modified version of Buffer Alternative 3 from Appendix 8-C (Ecology 2018). One noted difference is that certain wetlands with special characteristics are excluded, however, such as estuarine, interdunal, and other coastal wetlands are not expected to be present in Lewis County. Another difference is that Lewis County distinguishes between habitat scores of 8 and 9 points for Category I and II wetlands, requiring differing buffers for each. Although this specificity is not required by Ecology, the system is in alignment with BAS requirements. Based on this review, current Lewis County standard buffer widths are already current with BAS and Ecology recommendations. Although there is no change to the newer framework of the *2022 Wetland Guidance for Critical Areas Ordinance (CAO) Updates*, we recommend that Lewis County review new potential buffer frameworks to consider which is best suited for the county.

Ecology (2022) recommends buffer increases on a case-by-case basis under certain conditions, including presence of state or federally-listed plant or animal species and/or priority species and habitats, inadequately vegetated buffers, and proximity to erosion hazards or slopes greater than 30%.

As a condition of approval for the impact to any wetlands, we recommend that the applicant demonstrate compliance with state and federal permit requirements.

### **3.7 Buffer width reduction (LCC 17.38.280)**

Lewis County's table of minimization measures required for buffer reductions has been slightly modified from Ecology (2018). Specifically, activities and uses that cause disturbances are revised slightly, examples are modified, and a new impact category for buffers lacking adequate vegetation is included. The category for buffer vegetation requirements was likely implemented because an underlying assumption for standard buffer widths is that they are vegetated in a natural state. An example is provided that buffers must "ensure minimum vegetation relative density of 20 or plant to 300 stems per acre." We recommend that Lewis County clarify and reevaluate minimum vegetation requirements since these standards are not clear and subject to interpretation. A relative density of 20% represents a relatively low cover that would not meet the standard assumptions in Ecology's buffer guidance. Additionally, appropriate tree (or stem) density is highly dependent on forest types, age, and other factors.

LCC code 17.38.280(1)(i) states “as defined by the Washington state Department of Fish and Wildlife.” We recommend capitalizing “State.”

### **Buffer Reductions – Existing Developments [LCC 17.38.280(2) and (3)]**

Consider updating language to reflect the functionally disconnected buffer area guidance from Ecology. This is an opportunity to provide additional clarity on buffer reductions to account for existing legally established land uses.

The rules for common line buffers could allow for extremely large buffer reductions depending on the orientation of surrounding land uses. Since reduction of this type do not align with Ecology’s guidance or BAS, we recommend that Lewis County consider whether it would be appropriate to continue its use.

If common line buffers are continued, we recommend that the code acknowledge that there are circumstances in which this cannot be applied in circumstances where the maintenance of existing function is infeasible. It is also recommended that the code include no net loss verbiage in the reduction criteria.

### **3.8 Buffer Width Averaging (LCC 17.38.290)**

Consider adopting the code language of Ecology (2022) to simplify this section.

### **3.9 Mitigation (LCC 17.38.300)**

Consider adding preservation to the mitigation ratio table. This would allow preservation if it is demonstrated to be the best mitigation option, the site is under threat of ecologic change, the area is of high quality or important to ecologic sustainability of the watershed or sub-basin, and permanent legal preservation is provided. See 2022 Ecology Publication 22-06-014, Appendix A, section 070.E.3 and Appendix E for details.

Consider listing mitigation options consistent with Ecology (2022) in order of preference to add clarity for applicants.

### **3.10 Wetland Assessment (LCC 17.38.320)**

Guidance can change based on case law and best available science for wetland assessments. We recommend adding “following most current Ecology and USACE guidelines,” especially for LCC 17.38.320 (3) regarding mitigation requirements.

## **4. Fish and Wildlife Conservation Areas**

This section addresses code sections that are applicable to Fish and Wildlife Habitat Conservations Areas. This includes LCC 17.38.400-17.38.510. A summary of recommended updates is provided in Table 3.

**Table 3.** Fish and Wildlife Habitat provisions review summary.

| Code Section | Title  | Review Comment / Recommendations   | Reason for Recommendation                             |
|--------------|--|--|---|
| 17.38.400    | Purpose  | No changes required.   |   |
| 17.38.410    | Administration   | Consider adding other impacts to avian habitat such as foraging habitat removal and noise.   | Consistency with BAS.                                 |
| 17.38.420    | Designation  | Consider adding riparian management zones.   | Consistency with WDFW guidance.                       |
| 17.38.425    | Mitigation sequencing                                    | No changes required.   |   |
| 17.38.430    | Buffer width reduction or averaging                      | No changes required.   |   |
| 17.38.440    | Reduction of impacts                                     | No changes required.   |   |
| 17.38.450    | Designation of locally important habitat                 | Consider adding Best Available Science.  | Consistency with BAS.                                 |
| 17.38.465    | Identification of aquatic habitat                        | 1-Consider moving to earlier section.<br>2-Add that areas do not include "do not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of and are maintained by a port district or an irrigation district or company". | 1-Clarity.<br>2-Consistency with Commerce guidelines. |
| 17.38.470    | Classification   | Consider moving to earlier section.  | Clarity.  |
| 17.38.480    | Classification of wildlife habitat                       | Consider moving to earlier section.  | Clarity.  |
| 17.38.490    | Inconsistencies between conditions on ground and mapping | No changes required.   |   |
| 17.38.500    | Aquatic habitat area assessment                          | No changes required.   |   |
| 17.38.510    | Fish and wildlife habitat mitigation plan                | No changes required.   |   |

#### **4.1 Administration (LCC 17.38.410)**

Since no comprehensive maps exist for species of concern, we recommend that consultation with WDFW occur in any circumstances where a species is known or suspected to occupy a site.

In LCC 17.38.410(1)(a)(ii), it is implied but not expressly stated that projects may be allowed to exceed development standards with the submittal of a mitigation plan. This should be clarified to reduce

ambiguity, and we recommend that any impacts beyond the permitted development standards be channeled through a variance or RUE with the oversight of a hearing examiner.

Regarding LCC 17.38.410(1)(b)(i)(B), "avian habitat" is not a designation that WDFW has included as a priority habitat and is not otherwise mapped by WDFW. All lands in Lewis County provide avian habitat in varying capacity. We recommend that Lewis County consider the goal of this provision and consider alternative regulations to achieve it. Furthermore, certain threatened and endangered species are highly sensitive to human disturbance, and such excludes could result in "take" of a listed species, actions which may be illegal under state and federal law.

Regarding LCC 17.38.410(1)(b)(ii)(A&B), we note that WDFW has not developed management recommendations for all species at a site-scale, though consultation is still advisable. We would recommend that deviations from WDFW recommendations through the creation of a fish and wildlife habitat mitigation plan only be allowed when the plan provides equivalent or greater protection, or if it is infeasible to implement WDFW because of site-specific constraints.

Regarding LCC 17.38.410(1)(b)(iii), we recommend that this section reference no net loss of habitat function to be specifically within FWHCA critical areas. As written, the broad restriction on no net loss of habitat function" on all lands is generally not possible, nor the intent of the code.

## **4.2 Designation (LCC 17.38.420)**

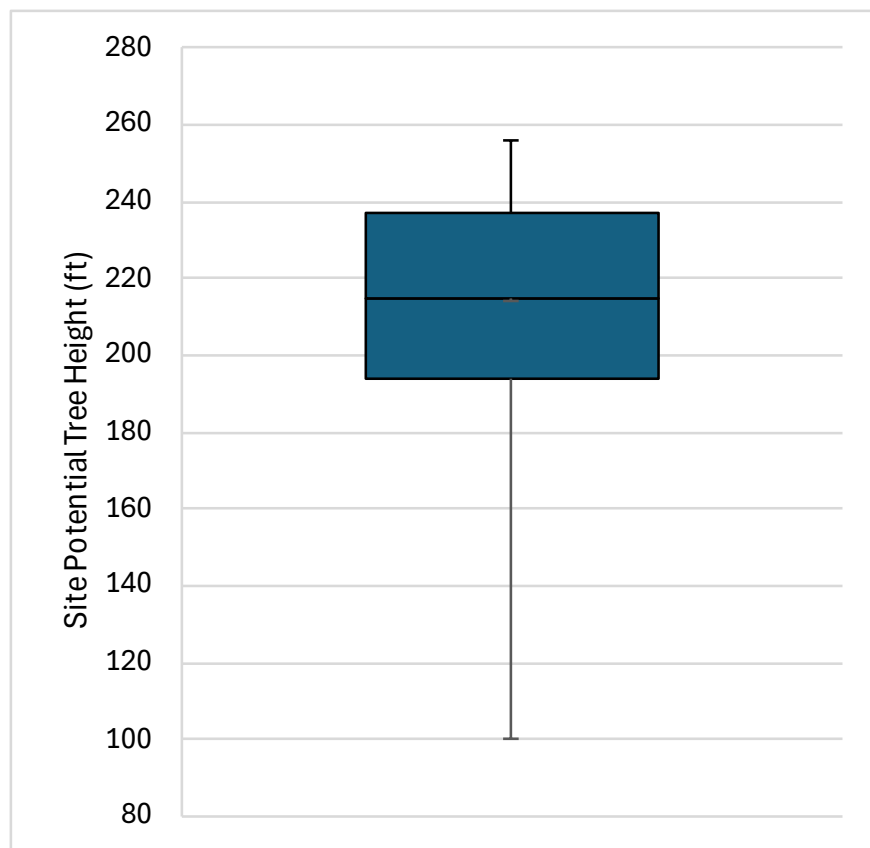
### **Aquatic Priority Habitats**

In 2020, the Washington Department of Fish and Wildlife released new guidance (Rentz et al. 2020) for the protection of riparian areas. The guidance emphasizes a shift in terminology from the concept of "stream buffers" to "riparian management zones" (RMZs). A RMZ is defined as "...a scientifically based description of the area adjacent to rivers and streams that has the potential to provide full function based on the SPTH [site potential tree height] conceptual framework." Further, a RMZ is recommended to be regulated as a fish and wildlife habitat conservation area itself to protect its fundamental value, rather than as a buffer for rivers and streams (Quinn et al. 2020). Stream buffers are established in local critical areas ordinances based on best available science and are intended to protect streams but may or may not provide full riparian function or a close approximation of it. To achieve full riparian function, the guidance recommends that RMZs be considered a delineable, regulatory critical area and that the guidance be applied to all streams and rivers, regardless of size and type.

Washington Department of Fish and Wildlife's current recommendations for establishing RMZ widths are based primarily on a site potential tree height framework. The site potential tree height is defined as "...the average maximum height of the tallest dominant trees (200 years or more) for a given site class." Exceptions may occur where site potential tree height is less than 100 feet, in which case the agency recommends assigning a RMZ width of 100 feet at a minimum to provide adequate biofiltration and infiltration of runoff for water quality protection from most pollutants, but also in consideration of other habitat-related factors including shade and wood recruitment. A 100-foot-wide buffer is estimated to achieve 95% pollution removal and approximately 85% surface nitrogen (Rentz et al. 2020). Washington Department of Fish and Wildlife recommends measuring RMZ widths from the

outer edge of the channel migration zone, where present, or from the ordinary high water mark where a channel migration zone is not present.

Riparian management zones or buffers that vary by location may present practical challenges for implementation and have considerations in equity. To analyze the potential range of SPTH in Lewis County, we conducted a review of the data available from the WDFW Site Potential Tree Height Mapping Tool, as described below. All overlapping polygons were removed so only polygons with the greatest SPTH in each area are included. The WDFW dataset is not inclusive of all lands in Lewis County but is believed to be representative. When multiple SPTH for various species were provided, only the largest SPTH was used in this calculation. The average SPTH in Lewis County is 211 ft: with a minimum of 100 ft, a first quartile of 194 ft, a median of 215 ft, a third quartile of 237 ft, and a maximum of 256 (Figure 1).



**Figure 1.** Box plot of SPTH distribution in Lewis County using data from the WDFW Site Potential Tree Height Mapping Tool. Upper and lower fences are Q3 and Q1 respectively with median in center, and whiskers are minimum and maximum; raw data downloaded on 6/18/24.

As a part of the CAO update, we recommend that Lewis County consider whether or not to follow WDFW recommended RMZ approach to stream classifications and buffer widths, including whether to incorporate the SPTH<sub>200</sub> Mapping Tool as part of stream buffer protection standards. This includes

consideration of extending the buffer from the edge or channel migration zone or OHWM, whichever is greater, to align with the RMZ buffer recommendations in Rentz et al. (2020).

Regarding Table 17.38-6, we recommend that Lewis County further define water types by adopting WAC 222-16-030 by reference. The “DNR water types” have been subject to change over time, and this would avoid potential ambiguity. Additionally, the table implies that buffers extend only from the OHWM of streams. This should clarify that buffers extend from the OHWM of all aquatic priority habitats including lakes, ponds, streams, rivers, streams, and all other Waters of the State.

### **WDFW Priority Habitats and Species**

The code states: “Areas identified by and consistent with WDFW priority habitats and species criteria for federal or state endangered, threatened or sensitive species. The county shall defer to WDFW in regard to classification, mapping and interpretation of priority habitats and species.” Due to the abundance of regulated species and habitat use of each species, it is not always clear what types of habitats are regulated for each species. There are many ways which this can be described, and a common term in critical areas ordinance are habitats in which priority species have a “primary association.” Although this is still subject to interpretation it excludes habitats in which a species may be found that are not a core part of its life history requirements.

## **4.3 Buffer width reduction or averaging (LCC 17.38.430)**

LCC 17.38.430(1)(c) states that buffer averaging standards must be limited to specified amounts “*except if the project is mitigated in accordance with LCC 17.38.080.*” However, it is not explicitly stated that buffers can be reduced according to the code standards except through a variance or RUE. This should be clarified to state the intended regulation.

The allowance for buffer averaging up to 50% of the buffer width is greater than advised by the Department of Ecology and WDFW (Ecology 2022; Rentz et al. 2020).

## **4.4 Designation of locally important habitat (LCC 17.38.450)**

We recommend that designations and reviews to the listing and delisting of species of local importance be based on best available science.

## **4.5 Identification of aquatic habitat (LCC 17.38.465)**

Critical areas ordinances generally define and classify the critical area early in the section of code and other sections of this code define the critical areas earlier. Consider moving to an earlier section such as LCC 17.38.420 - *Designation*.

Current Department of Commerce Guidelines recommend adding the following phrase to the identification of habitat “*do not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of and are maintained by a port district or an irrigation district or company*” (See Appendix A). Although similar language is used to define streams in LCC 17.14, it is not specified in the code that these features



are not regulated aquatic areas. We recommend that this exclusionary language be updated in the definitions and be appropriately referenced in the critical areas code.

#### 4.6 Classification (LCC 17.38.470)

See above recommendation for Critical Areas Ordinance organization. We recommend moving this section up towards beginning of Article.

#### 4.7 Classification of wildlife habitat (LCC 17.38.480)

See above recommendation for Critical Areas Ordinance organization. We recommend moving this section up towards beginning of Article.

Regarding resource versions, the most recent PHS Species List is credited with a publication date in 2008 and revised date in 2023. Additionally, WDFW has now published a wide range of PHS species management documents located at <https://wdfw.wa.gov/species-habitats/at-risk/phs/recommendations>. WDFW resource information should be updated to reflect current documents.

## 5. Geologically Hazardous Areas

This section addresses code sections that are applicable to geologically hazardous areas, as located in LCC 17.38.600 through LCC 17.38.720. A summary of recommended updates is provided in Table 4.

Table 4. Geologically hazardous areas review summary.

| Code Section | Title  | Review Comment / Recommendations                        | Reason for Recommendation                   |
|--------------|--|---|---|
| 17.38.600    | Purpose  | No changes required.                                    |   |
| 17.38.610    | Administration   | No changes required.                                    |   |
| 17.38.620    | Designation  | No changes required.                                    |   |
| 17.38.630    | Standards  | No changes required.                                    |   |
| 17.38.640    | Classification of erosion hazard areas                   | Consider adding considerations for salmonid protection. | Consistency with Commerce guidance and BAS. |
| 17.38.650    | Classification of steep slope and landslide hazard areas | Consider adding considerations for salmonid protection. | Consistency with Commerce guidance and BAS. |
| 17.38.660    | Seismic hazard areas                                     | No changes required.                                    |   |

| Code Section | Title                             | Review Comment / Recommendations   | Reason for Recommendation                  |
|--------------|-----------------------------------|--|--|
| 17.38.670    | Volcanic hazard areas             | No changes required.   |  |
| 17.38.680    | Mine hazard areas                 | No changes required.   |  |
| 17.38.690    | Channel migration zones           | Consider adding Ecology guidance on CMZ delineation including Channel Migration Toolbox. | Consistency with Ecology guidance and BAS. |
| 17.38.695    | Alluvial fan hazards              | No changes required.   |  |
| 17.38.710    | Geotechnical report               | No changes required.   |  |
| 17.38.720    | Standards for mine hazard studies | No changes required.   |  |

## 5.1 Classification of erosion hazard areas and landslide hazard areas (17.38.640 and 17.38.650)

Erosion hazard areas may affect salmonids according to Commerce and WDFW. Erosion and mass wasting slide events can block streams or overload them 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 that local governments give special protection to erosion and landslide hazard areas that can damage rivers and streams during mass wasting events. Riparian buffers help retain vegetation and control drainage on steep slopes. Protecting bluffs allows natural functions and avoids elevated

## 5.2 Channel migration zones (17.38.690)

We recommend adding Ecology guidance on CMZ delineation including Channel Migration Toolbox.

## 6. Critical Aquifer Recharge Areas (CARAs)

This section addresses code sections that are applicable to CARAs areas as located in LCC 17.38.800 through LCC 17.38.870. A summary of recommended updates is provided in Table 5.

Table 5. Critical aquifer recharge areas review summary

| Code Section | Title          | Review Comment / Recommendations | Reason for Recommendation           |
|--------------|----------------|----------------------------------|-------------------------------------|
| 17.38.800    | Purpose        | Expand on statement of purpose.  | Consistency with state regulations. |
| 17.38.810    | Administration | None                             |                                     |

| Code Section | Title   | Review Comment / Recommendations   | Reason for Recommendation                               |
|--------------|---|--|---|
| 17.38.820    | Designation   | Consider adding RCW 90.44, 90.48 and 90.54 and WAC 173-11 and 173-200, DOH's Source Water Assessment Program (SWAP) and Ecology CARA guidance document to designation. | Consistency with Commerce and Ecology guidance and BAS. |
| 17.38.830    | Standards   | No changes required.   |   |
| 17.38.840    | Conditions  | No changes required.   |   |
| 17.38.850    | Aquifer sensitivity rating for Lewis County soil types                                | Consider adding additional factors for vulnerability such as depth to groundwater, aquifer connectivity and characteristics of vadose zone.                            | Consistency with Commerce guidance and BAS.             |
| 17.38.860    | Critical aquifer recharge area report requirements                                    | No changes required.   |   |
| 17.38.870    | Regulated activities and best management practices in critical aquifer recharge areas | No changes required.   |   |

## 6.1 Purpose (17.38.800)

In addition to compliance with the Water Pollution Control Act, CARA regulations administer the Washington State Department of Health's wellhead protection guidance. These regulations also protect, not just recognize the connection between surface and ground waters, such as those important to the maintain base stream flows for anadromous fish. These may added to the purpose of this code.

## 6.2 Designation (17.38.820)

Consider adding reference to RCW 90.44, 90.48 and 90.54 and WAC 173-11 and 173-200, DOH's Source Water Assessment Program (SWAP) and Ecology CARA guidance document to the designation.

## 6.3 Aquifer sensitivity rating for Lewis County soil types (17.38.850)

Consider adding additional factors for vulnerability such as depth to groundwater, aquifer connectivity and characteristics of vadose zone.

## 7. Frequently Flooded Areas (FFAs)

This section addresses code sections that apply to frequently flooded areas as located in LCC 17.38.900 through LCC 17.38.930 and Chapter 15.35 *Flood Damage Prevention*. A summary of recommended updates is provided in Table 6.

Table 6. Frequently flooded areas review summary

| Code Section | Title                          | Review Comment / Recommendations | Reason for Recommendation |
|--------------|--------------------------------|----------------------------------|---------------------------|
| 17.38.900    | Purpose                        | No changes required.             |                           |
| 17.38.910    | Classification                 | No changes required.             |                           |
| 17.38.920    | Designation                    | No changes required.             |                           |
| 17.38.930    | Standards for permit decisions | No changes required.             |                           |

No changes are recommended for the Critical Areas chapter, however the following recommendations are for the Buildings and Construction chapter during future code updates as they relate to flood damage prevention.

### 7.1 Purpose (LCC 15.35.020)

Consider adding to the purpose to include the retention of the natural channel, shoreline, and floodplain creation processes and other natural floodplain functions that protect, create, and maintain habitat for threatened and endangered species.

### 7.2 Development permits (LCC 15.35.140)

Although it may not be necessary to include an exhaustive list of application requirements in the code, there are several key requirements not included in this section. For example, the project description should include information applications in the entire special flood hazard area and not be limited to the watercourse. Calculations to show fill and cut volumes and descriptions of design criteria to show floodproofing are also necessary to ensure compliance with the code.

The Lewis County code requires that elevations be submitted in the vertical datum of *mean sea level* (MSL). However, FEMA uses the datum *North American Vertical Datum of 1988* (NAVD 1988), or *North American Vertical Datum of 1927* (NAVD 1927) for projects predating 1988. There are also plans to adopt a newer version of NAVD, however, this is still in progress. We recommend that Lewis County review the datum used for elevation standards and ensure that it aligns with engineering and FEMA standards.

### **7.3 Shoreline permits and exemptions (LCC 15.35.150)**

There are some circumstances where a SFHA may be designated on aquatic areas smaller than the minimum requirements to be designated as Shorelines of the State. We would recommend that this section be modified to clarify whether shoreline permits are required in these circumstances.

### **7.4 Variances (LCC 15.35.170)**

Since floodplain projects are required to review impacts so Endangered Species Act (ESA) listed species under the NFIP Biological Opinion for Puget Sound, we recommend that this also be included as a consideration for a variance in LCC 15.35.170(3), and that no variance be granted that cannot meet these federal requirements.

LCC 15.35.170(4) allows for a variance for elevation standards in new construction on small lots if surrounding buildings are below the required elevation. We recommend that Lewis County consider this allowance because it increases risk to life and property.

### **7.5 Flood hazard reduction - specific standards (LCC 15.35.190)**

In 2008, the National Marine Fisheries Service (NMFS) issued a Biological Opinion under Section 7 of the Endangered Species Act, which found that the implementation of the National Flood Insurance Program (NFIP) in the Puget Sound region jeopardized the continued existence of federally threatened salmonids and resident killer whales. As a result, NMFS established Reasonable and Prudent Alternatives to ensure that development within the Special Flood Hazard Area (100-year floodplain), floodway, Channel Migration Zone (CMZ), and riparian buffer zone do not adversely affect water quality, flood volumes, flood velocities, spawning substrate, or floodplain refugia for listed salmonids. Because the NFIP is implemented by the Federal Emergency Management Agency (FEMA) through participation by local jurisdictions that adopt and enforce floodplain management ordinances, FEMA has delegated responsibility to the local jurisdictions to ensure that development does not adversely affect listed species. Projects within FEMA-designated floodplains are required to prepare habitat assessments to ascertain their potential effects on federally-listed endangered species. In particular, floodplain storage volumes may not be decreased, nor base flood level elevations increased.

If Lewis County does not administer ESA review through this program than projects will be required to independently go through the ESA Section 7 processes, requiring consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service. We recommend that Lewis County administer habitat assessment review according to the biological opinion and codify the requirements and application review process.

## 8. Miscellaneous provisions

This section addresses code sections that are applicable to miscellaneous provisions areas as located in LCC 17.38.1000 through LCC 17.38.1040. A summary of recommended updates is provided in Table 7.

Table 7. Miscellaneous provisions review summary

| Code Section | Title                                 | Review Comment / Recommendations                                 | Reason for Recommendation                            |
|--------------|---------------------------------------|--|--|
| 17.38.1000   | Nonconforming activities              | Consider code language more inclusive of other development types | Provide consistency in code among development types. |
| 17.38.1000   | Reasonable use and variances          | No changes required.   |  |
| 17.38.1020   | Land division                         | Consider requiring fences and signage.                           | Consistency with BAS.                                |
| 17.38.1030   | Building setbacks                     | No changes required.   |  |
| 17.38.1040   | Notice of proximity to critical areas | No changes required.   |  |

### 8.1 Nonconforming activities (LCC 17.38.1000)

The code recognizes nonconforming uses and structures but does not address other development types that could be covered by this section. Non-structural developments such as roads and trails, utilities, or other infrastructure may be covered in the umbrella of nonconforming activities.

### 8.2 Land division (LCC 17.38.1020)

We recommend that the edge of critical area buffers for wetlands and streams be fenced and signed to minimize further disturbance and intrusion,

## 9. Definitions

This section addresses code sections that are applicable to the definitions of critical areas as located in LCC 17.10. A summary of recommended updates is provided in Table 8. No comments follow the review summary provided in the table.

**Table 8.** Definitions review summary.

| <b>Definition</b>                            | <b>Review Comment / Recommendations</b>   | <b>Reason for Recommendation</b> |
|--|---|----------------------------------|
| Wetlands                                     | Wetland definitions match WAC 365-190-030(24).  |                                  |
| Fish and wildlife habitat conservation areas | No definition is provided, update definitions section.  | Consistency with GMA.            |
| Geologically hazardous areas                 | No definition is provided, update definitions section.  | Consistency with GMA.            |
| Frequently flooded areas                     | A definition is provided in LCC 17.38.910, that does not match WAC 365-190-030(8), we recommend that this is updated for consistency and provided in the definitions section. | Consistency with GMA.            |
| Critical aquifer recharge areas              | No definition is provided, update definitions section.  | Consistency with GMA.            |

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