

## Padden Creek Watershed Summary Sheet

Landscape Setting	Landscape Setting	<ul style="list-style-type: none"> <li>The total size of the SMA area is 49.0 acres.</li> <li>Padden Creek lies entirely within the City of Bellingham limits. Only the southern portion of Padden Creek actually is within the SMA, however for the purposes of this study we have extended the review area to the culvert under Fairhaven Parkway.</li> <li>Padden Creek originates in Padden Lake. A control feature is located at the outlet of the lake. From Lake Padden, Padden Creek flows through a deep ravine, passes under Interstate 5 and flows through Happy Valley south of Fairhaven Parkway. A long section of the creek has been placed in a culvert that extends from 20<sup>th</sup> Street to 22<sup>nd</sup> Street.</li> <li>The creek flows through forested habitat east of I-5 and more developed areas to the west.</li> </ul> <p style="text-align: right;">(Ref# 8,13,37,47,71 for above)</p>
	Geology	<ul style="list-style-type: none"> <li>The creek flows in an incised ravine cut into sedimentary material until Fairhaven Parkway, where it enters an extended culvert. Upstream of the culvert, the stream flows within a well defined (almost ditched) culvert until it passes under I-5. Upstream I-5 the stream flows in a very deep ravine referred to as the Padden Creek Gorge.</li> </ul> <p style="text-align: right;">(Ref# 21,103 for above)</p>
	Soils	<ul style="list-style-type: none"> <li>Squalicum-Chuckanut-Nati soils are the dominant soil types, with additional areas of Whatcom-Labounty soils in Reach 1.</li> <li>The majority of the soils are moderately deep to very deep, moderately well drained (poorly drained in Labounty soils), gently sloping to very steep soils, on foothills, plateaus and landslides.</li> <li>Erosion risk in the majority of the SMA is slight, with a few small areas of severe risk.</li> </ul> <p style="text-align: right;">(Ref# 47,51,63 for above)</p>
Land Use	Current Conditions	<ul style="list-style-type: none"> <li>Land use in the areas outside of public property is densely developed in most areas of the SMA, except in the north end of Reach 1. Existing platted lots and overlaying zoning indicate residentially zoned property is mostly developed.</li> <li>The Padden Creek Watershed has urban density development along most of its length. The area in the vicinity of the Padden Creek gorge is currently underdeveloped for the overlaying zoning. Most areas are built out to near capacity, but some growth may be seen in the commercially zoned areas near the mouth. Many small "paper plats" are located in the SMA, but their development is unlikely due to steep slopes and critical area setbacks. Undeveloped platted parcels are mostly located on steep slopes of Padden Creek ravine and their development is unlikely.</li> <li>The drainage has sustained moderate to high levels of impact, including extensive culverting, rerouting the channel, and alteration of collector basins.</li> <li>Reach 3 is dominated by public property (Fairhaven Park and Greenways trails).</li> </ul> <p style="text-align: right;">(Ref# 8,16,33,34,71 for above)</p>
	Zoning	<ul style="list-style-type: none"> <li>Residential, commercial, industrial, and public within the SMA.</li> <li>Zoning outside of the city limits, upstream of the SMA is predominately residential single family mixed with pockets of residential multifamily, commercial and public areas.</li> </ul> <p style="text-align: right;">(Ref# 54,104 for above)</p>

## Padden Creek Watershed Summary Sheet

	Transportation and Utilities	<ul style="list-style-type: none"> <li>Major roads include Harris Street, 12<sup>th</sup> Street, and Fairhaven Parkway.</li> <li>Harris Street crosses Padden Creek at the interface between Padden Lagoon and Padden Creek. Twelfth Street crosses over Padden Creek via a tall bridge in Reach 2. Fairhaven Parkway is the eastern extent of this review.</li> <li>Smaller residential roads access the surrounding neighborhoods and business districts.</li> <li>A variety of utility service are present, however stormwater features are lacking within the SMA.</li> </ul> <p>(Ref# 14,35,36,39,40,41,42,44,45,46 for above)</p>
	Public Access	<ul style="list-style-type: none"> <li>Public access is provided along most the length of Padden Creek via a well developed series of Greenways trails maintained by the City of Bellingham.</li> <li>Greenways Trails: Parallels the stream for the entire SMA, and connects to other trails and to adjacent neighborhoods and business districts.</li> <li>Fairhaven Park: provides the other primary access to the Padden Creek SMA and connects to the Greenways trails.</li> </ul> <p>(Ref# 33,34,36,48,54 for above)</p>
	Shoreline Modifications	<ul style="list-style-type: none"> <li>Very few modifications were identified along Padden Creek within the SMA.</li> <li>No bulkheads or shoreline armoring are identified within the SMA area, except where associated with culvert or bridge crossing.</li> <li>Three fish passage structures (fish ladders) are located within the SMA.</li> <li>An extended culvert under Fairhaven Parkway is a significant fish passage barrier.</li> <li>Footbridges cross the creek in Fairhaven Park.</li> </ul> <p>(Ref# 8,12,15,18,43,71,94 for above)</p>
Critical Areas	Wetlands	<ul style="list-style-type: none"> <li>Wetlands are present adjacent to Padden Creek at the ravine bottom and on side slopes draining into Padden Creek. Identified wetlands include palustrine forested, scrub-shrub and emergent wetlands.</li> <li>The NWI indicates wetlands associated with Connelly Creek and a large system near 30<sup>th</sup> Street.</li> </ul> <p>(Ref# 11,52 for above)</p>
	Streams	<p>Two primary tributary streams are mapped feeding into Chuckanut Creek; Connelly Creek, and a stream off 30<sup>th</sup> Street. Others are present, but unmapped.</p> <p>(Ref# 8,38,57,59,71 for above)</p>
	Frequently Flooded Areas	<p>Portions of Padden Creek SMA are indicated on the FEMA floodplain and floodway maps.</p> <p>(Ref# 19 for above)</p>
	Steep Slopes	<ul style="list-style-type: none"> <li>Ravine sides range from 20% to 100% within the SMA and erosion is evident in a number of areas. Steep slopes in these reaches are not indicated on the WC Geohazard Maps. The narrow nature of the ravine bottom is not conducive to channel migration to any significant extent.</li> <li>Ravine sides range from 20% to 100% within the Padden Gorge and are mapped as "Landslide Hazard" areas on WC Geohazard maps.</li> </ul> <p>(Ref# 21,103 for above)</p>

## Padden Creek Watershed Summary Sheet

		<p>Wildlife</p> <ul style="list-style-type: none"> <li>No priority wildlife species have been specifically identified for this SMA, but could be present. The SMA includes potential habitat for Bull trout (FT) and Puget Sound Coho (FCo).</li> <li>Anadromous chinook, coho, chum, bull trout, steelhead, and sea-run cutthroat use the creek for spawning, migration and rearing. The drainage has a particularly strong population of chum salmon.</li> </ul> <p>(Ref# 24,61,69,70,92,93,105 for above)</p>
		<p>Overall Function</p> <ul style="list-style-type: none"> <li>Padden Creek is providing ecological functions at a range of levels, and several limitations to ecological function have been identified for the Padden Creek SMA. Overall, this SMA is functioning at moderate levels for most ecological parameters.</li> <li>Instream habitat function ranges from moderate to high throughout the drainage. Upstream land use and stream condition have had deleterious affects on the SMA area.</li> <li>The natural topography and public land holdings have resulted in a broad forested corridor extending from the marine system and connects the riparian corridor with other terrestrial and wetland habitats.</li> </ul> <p>(Ref# 71 for above)</p>
		<p>Hydrology/ Water Quality</p> <ul style="list-style-type: none"> <li>The system is slightly impaired to impaired by flashy hydrology within the system.</li> </ul> <p>(Ref# 71 for above)</p>
		<p>Shoreline Vegetation</p> <ul style="list-style-type: none"> <li>Shoreline vegetation within the SMA is slightly impaired by invasive plant species, but functions at moderate level.</li> <li>Shoreline vegetation along the middle portions of the drainage (20<sup>th</sup> Street to 1-5) are impaired by reduced riparian buffer widths, reduced structure and species complexity and invasive plants.</li> <li>Shoreline vegetation upstream of 1-5 is unimpaired.</li> </ul> <p>(Ref# 8,20,71,100 for above)</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Ecological Functions</p>		<p>Habitat</p> <ul style="list-style-type: none"> <li>Terrestrial <ul style="list-style-type: none"> <li>Terrestrial habitat along the SMA is slightly impaired by buffer widths in some locations and invasive plant species. The corridor provides an important wildlife corridor. <ul style="list-style-type: none"> <li>Riparian vegetation is dominated by a mixed deciduous forest in a narrow range of age classes averaging about 30 to 40 years of age.</li> <li>The understory generally lacks complexity and is dominated by a mix of native and non-native shrub species.</li> <li>Invasive plants have become well established throughout this SMA and have decreased the riparian community structure and species diversity.</li> <li>Non-native, invasive Eastern grey squirrel are well established in this corridor.</li> </ul> </li> <li>Upstream (20<sup>th</sup> – 1-5) impaired by reduced buffer widths.</li> <li>Upstream of 1-5 unimpaired. Excellent wildlife corridor connecting to other high quality habitats.</li> </ul> </li> </ul>

## Padden Creek Watershed Summary Sheet

<ul style="list-style-type: none"> <li>• Instream</li> </ul>	<ul style="list-style-type: none"> <li>• Within the SMA instream habitat is slightly impaired by flashy hydrology and water quality. <ul style="list-style-type: none"> <li>○ Water quality standards are not being met for a variety of parameters.</li> <li>○ Padden Creek has been listed by the WA DOE as: Category 5 “Polluted Water” for fecal coliform, temperature and dissolved oxygen; Category 4 “Impaired Water” for bio-assessment and fish passage.</li> <li>○ Biological degradation of aquatic life based on in-stream invertebrates was found at sample stations within the SMA.</li> </ul> </li> <li>• Instream habitat between 20<sup>th</sup> Street and I-5 is impaired by flashy hydrology, fish passage blockages (Fairhaven, 30<sup>th</sup> Street and I-5 culverts) and reduced instream habitat features.</li> <li>• Instream habitat upstream of I-5 unimpaired, but access limited by downstream culvert blockages and gradient reduces some function to some fish life stages.</li> </ul> <p style="text-align: right;">(Ref# 20,24,22,23,61,71,89 for above)</p>
<p>Limiting Functions</p>	<ul style="list-style-type: none"> <li>• Water quality (Fecal coliform, temperature and dissolved oxygen) (Ref# 89)</li> <li>• Invasive plant cover. (Ref# 71)</li> <li>• Long culvert under Fairhaven Parkway blocks access to upstream fish habitat.</li> <li>• Flashy hydrology (Ref# 71)</li> <li>• Reduced riparian width and diversity in localized areas. (Ref# 71)</li> </ul>
<p>Priority Actions</p>	<ul style="list-style-type: none"> <li>• Redesign of culvert under Fairhaven Parkway.</li> <li>• Invasive plant species control.</li> <li>• Additional stormwater retention and treatment in watershed.</li> </ul>
<p>Current Enhancement Actions</p>	<ul style="list-style-type: none"> <li>• Invasive plant species control by City Greenways and NSEA.</li> <li>• Planting native plants in upstream riparian areas (Happy Valley Park) by Greenways and NSEA.</li> <li>• Some engineering work has been done to address Fairhaven Parkway culvert.</li> </ul>
<p>Preservation/Enhancement</p>	<ul style="list-style-type: none"> <li>• Maintain buffers around all riparian areas in Watershed.</li> <li>• Preserve wetlands in Watershed.</li> <li>• Continued plantings of native shrubs and trees in riparian areas.</li> </ul>