

Land Use	Current Shoreline Designation	Undesignated. (Ref # 1)
	Current Land Use	Undeveloped. (Ref # 3, 7)
	Zoning	Commercial (.072 ac), residential (0.013 ac). (Ref # 2)
Potential Species Present	Wildlife species	None indicated. (Ref # 2, 12)
	Fish species	None indicated. (Ref # 13)
	PHS species/habitat	No NWI wetlands indicated. (Ref # 2)
	TSE species	None indicated. (Ref # 12, 13)
	Invasive wildlife/fish species	No data.
Physical Environment	Acres of land in reach	Total: 0.73 ac. (Ref # 1)
	Aquatic vegetation	No data.
	Slope	No slope data listed by DOE. (Ref # 6) Site class and moderate to high liquefaction hazard listed by Whatcom County (DNR 2004). (Ref # 17)
	Buildings	None. (Ref # 1)
	Culverts/stormwater utilities	Culvert under Nooksack Avenue (assumed). (Ref # 3, 7)
	Geology	Glacial outwash terrace with alluvium, undifferentiated outwash and till. (Ref # 9)
	Tributary Creeks	None observed. (Ref # 1, 3, 13)
	Impervious surface	Impervious 0.1 ac (14%) (Ref # 1)
	Roads/transportation	Nooksack Avenue at western edge; railroad at eastern edge. (Ref # 3, 7)
	Soils	Mt Vernon fine sandy loam. (Ref # 4)
	Topography	75 to 85 feet elevation. (Ref # 6)
	FEMA	100 year floodplain extends throughout most of the reach (Ref # 6). Floodplain areas along most of reach. (Ref # 2)
	Terrestrial Vegetation	The entire reach is characterized by undeveloped native deciduous trees and shrubs. Native vegetation present has the potential to provide good habitat. Small patches of Himalayan blackberry present along the outer edges. (Ref # 3)
Riparian Function	Aquatic substrate type	No data.
	Channel confinement	No data.
	Channel gradient	No data. (Ref # 13) Presumed low due to topography.
	Channel migration zone	Unknown.
	Creosote structures	None observed/ no data. (Ref # 3, 7)
	In-water structures	None observed/ no data. (Ref # 3, 7)
	Fish passage blockages	None. (Ref # 13)
	LWD presence	Unknown. Tree cover along the shoreline is moderate to high. Recruitment potential is moderate. (Ref # 3)
	Riffle/pool analysis	No data.
	Associated wetlands	No NWI wetlands indicated (Ref # 2). Slough is PFO/ PSS wetland. (Ref # 3).
	DOE 303(d)	None indicated. (Ref # 10)
	Toxic sites/land fills	None listed. (Ref # 8)
	Point source pollution	No point source known. Non-Point source: low to moderate intensity from adjacent residential use, industry/railroad. (Ref # 3, 7)
Historic c & c	Historic aerials	No significant changes observed between 1976 and 2006 other than increased residential density. (Ref # 14)
	Archeological & historic sites	None indicated. (Ref # 5)

	Parks & public access	None. (Ref # 2, 3)
Function Analysis	Reach Function <ul style="list-style-type: none"> • Hydrologic • Shoreline Vegetation • Habitat 	<p>Functioning with some impairment. Precipitation dominated; flashy winter and early spring peaks, low summer, variable spring and fall flows. Impairment in basin due to loss of wetland area, draining, filling, ditching, impervious surfaces.</p> <p>Functioning. Majority of reach is undeveloped, and contains native vegetation (trees and shrubs).</p> <p>Terrestrial: Functioning, although area is isolated for certain species due to railroad tracks and roads.</p> <p>Aquatic: Functioning.</p>
	Limiting Factors	<ul style="list-style-type: none"> ▪ Water quality ▪ Existing land use/ Zoning
	Functions <ul style="list-style-type: none"> • Sustainable • Not Sustainable 	<p>At current levels: Hydrologic, shoreline vegetation, and aquatic habitat.</p> <p>Terrestrial not be sustainable if land use changes (buffer is currently undeveloped).</p>
	Priority Actions	<ul style="list-style-type: none"> ▪ Preservation of existing riparian vegetation. ▪ Water quality improvement.
	Current Enhancement Projects	None known
	Preservation/Enhancement Opportunities	<ul style="list-style-type: none"> ▪ Preservation of terrestrial vegetation, habitat and associated riparian corridor. ▪ Remove invasive species (Himalayan blackberry).

CITY OF NOOKSACK, WA



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PROJECTION:
State Plane Washington North NAD 83
DATA SOURCES:
City of Nooksack, Whatcom County
Planning/Assessor's, & 2008 Pictometry

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Shoreline Jurisdiction Reaches 6 & 7

Land Use	Current Shoreline Designation	Undesignated. (Ref # 1)
	Current Land Use	Undeveloped, residential (Ref # 3, 7)
	Zoning	Residential (2.6 ac). (Ref # 2)
Potential Species Present	Wildlife species	None indicated. (Ref # 2, 12)
	Fish species	None indicated. (Ref # 13)
	PHS species/habitat	No NWI wetlands indicated. (Ref # 2)
	TSE species	None indicated. (Ref # 12, 13)
	Invasive wildlife/fish species	No data.
Physical Environment	Acres of land in reach	Total: 2.6 ac. (Ref # 1)
	Aquatic vegetation	No data.
	Slope	No slope data listed by DOE. (Ref # 6) Site class and moderate to high liquefaction hazard listed by Whatcom County (DNR 2004). (Ref # 17)
	Buildings	One (1) partial – residential. (Ref # 1)
	Culverts/stormwater utilities	Culvert under Jackson Street (assumed). (Ref # 3, 7)
	Geology	Glacial outwash terrace with alluvium, undifferentiated outwash and till. (Ref # 9)
	Tributary Creeks	None observed. (Ref # 1, 3, 13)
	Impervious surface	Impervious 0.1 ac (4%) (Ref # 1)
	Roads/transportation	Jackson St at northern extent of reach. (Ref # 3, 7)
	Soils	Mt Vernon fine sandy loam. (Ref # 4)
	Topography	75 to 85 feet elevation. (Ref # 6)
	FEMA	100 year floodplain extends throughout most of the reach (Ref # 6). Not mapped as floodway or floodplain. (Ref # 2)
	Terrestrial Vegetation	The majority of the reach is characterized by undeveloped native deciduous trees and shrubs. Native vegetation provides cover and has the potential to provide good habitat. A few patches of invasive species were observed (Himalayan blackberry and field bind weed). In a few small areas adjacent residential lawns encroach into the reach. (Ref # 3)
Riparian Function	Aquatic substrate type	No data.
	Channel confinement	No data.
	Channel gradient	No data. (Ref # 13) Presumed low due to topography.
	Channel migration zone	Unknown.
	Creosote structures	None observed/ no data. (Ref # 3, 7)
	In-water structures	None observed/ no data. (Ref # 3, 7)
	Fish passage blockages	None. (Ref # 13)
	LWD presence	Unknown. Tree cover along the shoreline is moderate. Recruitment potential is moderate. (Ref # 3, 7)
	Riffle/pool analysis	No data.
	Associated wetlands	No NWI wetlands indicated (Ref # 2). Slough is a PFO/ PSS wetland. (Ref # 3)
	DOE 303(d)	None indicated. (Ref # 10)
	Toxic sites/land fills	None listed. (Ref # 8)
	Point source pollution	No point source known. Non-Point source: low intensity from adjacent residential use. (Ref # 3, 7)
Historic	Historic aerials	No significant changes observed between 1976 and 2006 other than increased residential density. (Ref # 14)

	Archeological & historic sites	Bible Camp Tabernacle (WH00206). (Ref # 5)
	Parks & public access	None. (Ref # 2, 3)
Function Analysis	Reach Function <ul style="list-style-type: none"> • Hydrologic • Shoreline Vegetation • Habitat 	<p>Functioning with some impairment. Precipitation dominated; flashy winter and early spring peaks, low summer, variable spring and fall flows. Impairment in basin due to loss of wetland area, draining, filling, and ditching.</p> <p>Functioning overall, but some very small areas are present that are impaired. Majority of reach is undeveloped, and contains native vegetation (trees and shrubs). Small areas impaired where vegetation is lawn from adjacent residences or invasive species occur; these areas cover a very small percentage of the reach.</p> <p>Terrestrial: Functioning in areas dominated by native vegetation, impaired in others due to loss of habitat, non-native or invasive vegetation, and human influence.</p> <p>Aquatic: Functioning, but likely impaired to some extent due from adjacent residential uses.</p>
	Limiting Factors	<ul style="list-style-type: none"> ▪ Water quality ▪ Existing land use/ Zoning
	Functions <ul style="list-style-type: none"> • Sustainable • Not Sustainable 	<p>All but terrestrial are sustainable at current levels, however, residential ownership may reduce sustainability.</p> <p>Terrestrial habitat (due to residential development).</p>
	Priority Actions	<ul style="list-style-type: none"> ▪ Preservation of existing riparian vegetation. ▪ Water quality improvement.
	Current Enhancement Projects	None known
	Preservation/Enhancement Opportunities	<ul style="list-style-type: none"> ▪ Preservation of terrestrial vegetation, habitat and associated riparian corridor. ▪ Enhance riparian buffer: increase width of native shoreline vegetation in areas that area currently lawn; add evergreen trees for species diversity. ▪ Removal of invasive species (Himalayan blackberry, field bind weed).

CITY OF NOOKSACK, WA



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Shoreline Jurisdiction Reaches 6 & 7

Land Use	Current Shoreline Designation	Undesignated. (Ref # 1)
	Current Land Use	Undeveloped, residential. (Ref # 3, 7)
	Zoning	Residential (3.2 ac). (Ref # 2)
Potential Species Present	Wildlife species	None indicated. (Ref # 2, 12)
	Fish species	None indicated. (Ref # 13)
	PHS species/habitat	No NWI wetlands indicated. (Ref # 2)
	TSE species	None indicated. (Ref # 12, 13)
	Invasive wildlife/fish species	No data.
Physical Environment	Acres of land in reach	Total: 3.2 ac. (Ref # 1)
	Aquatic vegetation	No data.
	Slope	No slope data listed by DOE (Ref # 6). Site class and moderate to high liquefaction hazard listed by Whatcom County (DNR 2004). (Ref # 17)
	Buildings	Two (2) – residential. (Ref # 1)
	Culverts/stormwater utilities	Culvert under W Madison St (assumed). (Ref # 3, 7)
	Geology	Glacial outwash terrace with alluvium, undifferentiated outwash and till. (Ref # 9)
	Tributary Creeks	None observed. (Ref # 1, 3, 13)
	Impervious surface	Impervious 0.3 ac (9%) (Ref # 1)
	Roads/transportation	All or part of three residential driveways; W Madison Street bisects the reach; W 2 nd Street along western edge. (Ref # 3, 7)
	Soils	Mt Vernon fine sandy loam. (Ref # 4)
	Topography	75 to 85 feet elevation. (Ref # 6)
	FEMA	100 year floodplain extends throughout most of the reach (Ref # 6). Not mapped as floodway or floodplain. (Ref # 2)
	Terrestrial Vegetation	The majority of the reach is characterized by deciduous trees and shrubs, mostly native but some non-native. Vegetation provides shading to the slough, and native vegetation present has the potential to provide good habitat. Patches of invasive species (Himalayan blackberry, field bind weed) are present. Residential lawns encroach in a number of areas. (Ref # 3)
Riparian Function	Aquatic substrate type	No data.
	Channel confinement	No data.
	Channel gradient	No data. (Ref # 13) Presumed low due to topography.
	Channel migration zone	Unknown.
	Creosote structures	None observed/ no data. (Ref # 3, 7)
	In-water structures	None observed/ no data. (Ref # 3, 7)
	Fish passage blockages	None. (Ref # 13)
	LWD presence	Unknown. Tree cover along the shoreline is moderate to high. Recruitment potential is moderate to high. (Ref # 3)
	Riffle/pool analysis	No data.
	Associated wetlands	No NWI wetlands indicated (Ref # 2). Slough is a PFO/ PSS wetland. (Ref # 3)
	DOE 303(d)	None indicated. (Ref # 10)
	Toxic sites/land fills	None listed. (Ref # 8)
	Point source pollution	No point source known. Non-Point source: low intensity from adjacent residential use. (Ref # 3, 7)

Historic & Cultural	Historic aerials	No significant changes observed between 1976 and 2006 other than increased residential density. (Ref # 14)
	Archeological & historic sites	None indicated. (Ref # 5)
	Parks & public access	None. (Ref # 2, 3)
Function Analysis	Reach Function <ul style="list-style-type: none"> • Hydrologic • Shoreline Vegetation • Habitat 	<p>Functioning with some impairment. Precipitation dominated; flashy winter and early spring peaks, low summer, variable spring and fall flows. Impairment in basin due to loss of wetland area, draining, filling, and ditching.</p> <p>Functioning overall, but some areas present that are impaired. Majority of reach is undeveloped, and contains native vegetation (trees and shrubs). Impaired where invasive species occur or lawns are present.</p> <p>Terrestrial: Functioning in areas dominated by native vegetation, impaired in others due to development, loss of habitat, non-native or invasive vegetation, and human influence.</p> <p>Aquatic: Functioning, but likely impaired to some extent due from adjacent residential uses.</p>
	Limiting Factors	<ul style="list-style-type: none"> ▪ Water quality ▪ Existing land use/ Zoning
	Functions <ul style="list-style-type: none"> • Sustainable • Not Sustainable 	<p>All but terrestrial are sustainable at current levels, however, residential ownership may reduce sustainability.</p> <p>Terrestrial habitat (due to residential development).</p>
	Priority Actions	<ul style="list-style-type: none"> ▪ Preservation of existing riparian vegetation. ▪ Water quality improvement.
	Current Enhancement Projects	None known
	Preservation/Enhancement Opportunities	<ul style="list-style-type: none"> ▪ Preservation of terrestrial vegetation, habitat and associated riparian corridor. ▪ Enhance riparian buffer: increase width of native shoreline vegetation in lawn areas; add evergreen species to increase diversity. ▪ Remove invasive species (Himalayan blackberry, field bind weed).

CITY OF NOOKSACK, WA



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Shoreline Jurisdiction Reach 8

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SHORELINE AREA: Nooksack Slough, lying west of west terminus of W. Lincoln Street; two segments, currently in AG use.

REACH NUMBER: # 9

Land Use	Current Shoreline Designation	Undesignated. (Ref # 1)
	Current Land Use	Agriculture (pasture, hay), grazing cattle. (Ref # 3, 7)
	Zoning	Agriculture (0.5 ac), residential (4.8 ac). (Ref # 2)
Potential Species Present	Wildlife species	None indicated. (Ref # 2, 12)
	Fish species	None indicated. (Ref # 13)
	PHS species/habitat	Priority wetlands (Ref # 12). NWI wetlands associated with slough. (Ref # 2)
	TSE species	None indicated. (Ref # 12, 13)
	Invasive wildlife/fish species	No data.
Physical Environment	Acres of land in reach	Total: 5.3 ac. (Ref # 1)
	Aquatic vegetation	No data.
	Slope	No slope data listed by DOE (Ref # 6). Site class and moderate to high liquefaction hazard listed by Whatcom County (DNR 2004). (Ref # 17)
	Buildings	One (1) partial – agricultural. (Ref # 1)
	Culverts/stormwater utilities	Unknown. Two crossings in 9A, at least one appears to be a culvert. (Ref # 7)
	Geology	Glacial outwash terrace with alluvium, undifferentiated outwash and till. (Ref # 9)
	Tributary Creeks	None observed. (Ref # 1, 3, 13)
	Impervious surface	Impervious 0.02 ac (<1 %) (Ref # 1)
	Roads/transportation	Private access roads appear to cross the river in two places (9A). (Ref # 7)
	Soils	Mt Vernon fine sandy loam. (Ref # 4)
	Topography	75 to 85 feet elevation. (Ref # 6)
	FEMA	100 year floodplain extends throughout most of the reach (Ref # 6). Not mapped as floodway or floodplain. (Ref # 2)
	Terrestrial Vegetation	The majority of the reach (9A and 9B) is characterized by pasture/agricultural land – these areas are vegetated with native and non-native herbaceous species. A very limited number of shrubs are present along the reach. (Ref # 3)
	Riparian Function	Aquatic substrate type
Channel confinement		No data.
Channel gradient		No data. (Ref # 13) Presumed low due to topography.
Channel migration zone		Unknown.
Creosote structures		None observed/ no data. (Ref # 3, 7)
In-water structures		A culvert or some other kind of crossing observed (in aerial photos) in reach 9A. (Ref # 3, 7)
Fish passage blockages		None. (Ref # 13)
LWD presence		Unknown, but likely none. Tree cover along the shoreline is low. Recruitment potential is low. (Ref # 3, 7)
Riffle/pool analysis		No data.
Associated wetlands		NWI wetlands associated with slough (Ref # 2). PEM wetlands. (Ref # 3, 7)
DOE 303(d)		None indicated. (Ref # 10)
Toxic sites/land fills		None listed. (Ref # 8)
Point source pollution		No point source known. Non-Point source: low to moderate intensity from agricultural use (cattle) within the reach. (Ref # 3, 7)
Historic	Historic aerials	No significant changes observed between 1976 and 2006 other than increased residential density. (Ref # 14)

SHORELINE AREA: Nooksack Slough, lying west of west terminus of W. Lincoln Street; two segments, currently in AG use.

REACH NUMBER: # 9

	Archeological & historic sites	None indicated. (Ref # 5)
	Parks & public access	None. (Ref # 2, 3)
Function Analysis	Reach Function <ul style="list-style-type: none"> • Hydrologic • Shoreline Vegetation • Habitat 	<p>Functioning with some impairment. Precipitation dominated; flashy winter and early spring peaks, low summer, variable spring and fall flows. Impairment in basin due to loss of wetland area, draining, filling, and ditching.</p> <p>Impaired. Majority of reach is undeveloped, but lacks native vegetation (trees and shrubs). Majority of the reach is pasture and grazing cattle.</p> <p>Terrestrial: Impaired due to loss of habitat, and non-native or invasive vegetation.</p> <p>Aquatic: Impaired because reach lacks vegetation cover which results in higher water temperature, water quality may be impaired due to livestock.</p>
	Limiting Factors	<ul style="list-style-type: none"> ▪ Water quality ▪ Existing land use/ Zoning
	Functions <ul style="list-style-type: none"> • Sustainable • Not Sustainable 	<p>At current levels: Hydrologic, shoreline vegetation, and aquatic habitat.</p> <p>Terrestrial habitat impaired due to adjacent land uses and not stainable, may be improved with a change in use.</p>
	Priority Actions	<ul style="list-style-type: none"> ▪ Establish riparian vegetation. ▪ Water quality improvement.
	Current Enhancement Projects	None known
	Preservation/Enhancement Opportunities	<ul style="list-style-type: none"> ▪ Enhance riparian buffer: plant native trees and shrubs in pasture areas.

CITY OF NOOKSACK, WA



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Shoreline Jurisdiction Reach 9A & 9B

Land Use	Current Shoreline Designation	Undesignated. (Ref # 1)
	Current Land Use	Undeveloped parcels, urban and rural residential, light agriculture (pasture, hay). (Ref # 3, 7)
	Zoning	Residential (4.2 ac), agriculture (0.022 ac), central market (0.144 ac). (Ref # 2)
Potential Species Present	Wildlife species	None indicated. (Ref # 2, 12)
	Fish species	None indicated. (Ref # 13)
	PHS species/habitat	Priority wetlands. (Ref # 12) NWI wetlands associated with slough. (Ref # 2)
	TSE species	None indicated. (Ref # 12, 13)
	Invasive wildlife/fish species	No data.
Physical Environment	Acres of land in reach	Total: 4.4 ac. (Ref # 1)
	Aquatic vegetation	No data.
	Slope	No slope data listed by DOE (Ref # 6). Site class and moderate to high liquefaction hazard listed by Whatcom County (DNR 2004). (Ref # 17)
	Buildings	None. (Ref # 1)
	Culverts/stormwater utilities	None observed in aerial photos. (Ref # 7)
	Geology	Glacial outwash terrace with alluvium, undifferentiated outwash and till. (Ref # 9)
	Tributary Creeks	None observed. (Ref # 1, 3, 13)
	Impervious surface	Impervious 0.1 ac (2%) (Ref # 1)
	Roads/transportation	Portions of two residential driveways. (Ref # 7)
	Soils	Mt Vernon fine sandy loam; Oridia silt loam. (Ref # 4)
	Topography	75 to 85 feet elevation. (Ref # 6)
	FEMA	100 year floodplain extends throughout most of the reach (Ref # 6). Not mapped as floodway or floodplain. (Ref # 2)
	Terrestrial Vegetation	The majority of the reach is characterized by native deciduous shrubs mixed with patches of emergent vegetation. Emergent areas dominated by reed canarygrass, an invasive species. Patches of Himalayan blackberry are also present. Residential lawns or landscaped areas encroach slightly in a number of locations. (Ref # 3)
Riparian Function	Aquatic substrate type	No data.
	Channel confinement	No data.
	Channel gradient	No data. (Ref # 13)
	Channel migration zone	Unknown.
	Creosote structures	None observed/ no data. (Ref # 3, 7)
	In-water structures	None observed/ no data. (Ref # 3, 7)
	Fish passage blockages	Non-barrier mapped under Nooksack Avenue. (Ref # 13)
	LWD presence	Unknown. Tree cover along the shoreline is low. Recruitment potential is low. (Ref # 3, 7)
	Riffle/pool analysis	No data.
	Associated wetlands	NWI wetlands associated with slough (Ref # 2). Slough is a PSS/ PEM wetland. (Ref # 3)
	DOE 303(d)	None indicated. (Ref # 10)
	Toxic sites/land fills	None listed. (Ref # 8)
	Point source pollution	No point source known. Non-Point source: low intensity from adjacent residential use. (Ref # 3, 7)
H -	Historic aerials	No significant changes observed between 1976 and 2006 other than increased

		residential density. (Ref # 14)
	Archeological and historic sites	None indicated. (Ref # 5)
	Parks & public access	None. (Ref # 2, 3)
Function Analysis	Reach Function <ul style="list-style-type: none"> • Hydrologic • Shoreline Vegetation • Habitat 	<p>Functioning with some impairment. Precipitation dominated; flashy winter and early spring peaks, low summer, variable spring and fall flows. Impairment in basin due to loss of wetland area, draining, filling, and ditching.</p> <p>Functioning in approximately half the reach, areas which contains native vegetation (trees and shrubs). Impaired in the other half, areas generally dominated by invasive grasses, other non-native or invasive vegetation, or lawn.</p> <p>Terrestrial: Functioning in areas dominated by native vegetation, impaired in others due to loss of habitat, and non-native or invasive vegetation.</p> <p>Aquatic: Functioning with some impairment due to areas which lack vegetation cover and likely result in higher water temperature.</p>
	Limiting Factors	<ul style="list-style-type: none"> ▪ Water quality ▪ Existing land use/ Zoning
	Functions <ul style="list-style-type: none"> • Sustainable • Not Sustainable 	<p>At current levels: Hydrologic, shoreline vegetation, terrestrial and aquatic habitat.</p> <p>Terrestrial habitat impaired due to adjacent land uses and may not be sustainable or improved without a change in use.</p>
	Priority Actions	<ul style="list-style-type: none"> ▪ Preservation of existing riparian vegetation. ▪ Water quality improvement.
	Current Enhancement Projects	None known
	Preservation/Enhancement Opportunities	<ul style="list-style-type: none"> ▪ Preservation of terrestrial vegetation, habitat and associated riparian corridor. ▪ Enhance riparian buffer: increase width of native shoreline vegetation and species diversity of existing vegetation. ▪ Remove invasive species (Himalayan blackberry, reed canarygrass).

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Shoreline Jurisdiction Reach 10

Land Use	Current Shoreline Designation	Undesignated. (Ref # 1)
	Current Land Use	Undeveloped parcels, urban and rural residential, light agriculture. (pasture, hay) (Ref # 3, 7)
	Zoning	Residential (3.9 ac). (Ref # 2)
Potential Species Present	Wildlife species	None indicated. (Ref # 2, 12)
	Fish species	None indicated. (Ref # 13)
	PHS species/habitat	Priority wetlands. (Ref # 12) NWI wetlands associated with slough. (Ref # 2)
	TSE species	None indicated. (Ref # 12 ,13)
	Invasive wildlife/fish species	No data.
Physical Environment	Acres of land in reach	Total: 3.9 ac. (Ref # 1)
	Aquatic vegetation	No data.
	Slope	No slope data listed by DOE (Ref # 6). Site class and moderate to high liquefaction hazard listed by Whatcom County (DNR 2004). (Ref # 17)
	Buildings	One (1) partial – residential, one bridge. (Ref # 1)
	Culverts/stormwater utilities	None observed. Culvert under Nooksack Avenue and railroad crossing (assumed). (Ref # 3, 7)
	Geology	Glacial outwash terrace with alluvium, undifferentiated outwash and till. (Ref # 9)
	Tributary Creeks	None observed. (Ref # 1, 3, 13)
	Impervious surface	Impervious 0.3 ac (8%) (Ref # 1)
	Roads/transportation	Nooksack Avenue at western extent; E 3 rd Street at eastern extent; Railroad bisects the reach. (Ref # 3, 7)
	Soils	Mt Vernon fine sandy loam; Oridia silt loam. (Ref # 4)
	Topography	75 to 85 feet elevation. (Ref # 6)
	FEMA	100 year floodplain extends throughout most of the reach (Ref # 6). Not mapped as floodway or floodplain. (Ref # 2)
	Terrestrial Vegetation	The majority of the reach is characterized by palustrine emergent wetland/ slough dominated by reed canarygrass, an invasive species. Patches of native shrubs are also present, mainly at the northern and southern most ends. Overall vegetation provides little shading to the slough. Himalayan blackberry also observed in patches along the slough. (Ref # 3)
Riparian Function	Aquatic substrate type	No data.
	Channel confinement	No data.
	Channel gradient	No data. (Ref # 13)
	Channel migration zone	Unknown.
	Creosote structures	None observed/ no data. (Ref # 3, 7)
	In-water structures	None observed/ no data. (Ref # 3, 7)
	Fish passage blockages	None. (Ref # 13)
	LWD presence	Unknown/ none observed or likely. Tree cover along the shoreline is low. Recruitment potential is low. (Ref # 3, 7)
	Riffle/pool analysis	No data.
	Associated wetlands	NWI wetlands associated with slough. (Ref # 2) Slough is PSS/ PEM wetland. (Ref # 3)
	DOE 303(d)	None indicated. (Ref # 10)
	Toxic sites/land fills	None listed. (Ref # 8)

	Point source pollution	No point source known. Non-Point source: low intensity from adjacent residential use. (Ref # 3, 7)
Historic & Cultural	Historic aerials	No significant changes observed between 1976 and 2006 other than increased residential density. (Ref # 14)
	Archeological and historic sites	None indicated. (Ref # 5)
	Parks & public access	None. (Ref # 2, 3)
Function Analysis	Reach Function <ul style="list-style-type: none"> • Hydrologic • Shoreline Vegetation • Habitat 	<p>Functioning with some impairment. Precipitation dominated; flashy winter and early spring peaks, low summer, variable spring and fall flows. Impairment in basin due to loss of wetland area, draining, filling, and ditching.</p> <p>Impaired overall, but some areas present that are functioning. Majority of reach is undeveloped, but lacks native vegetation (trees and shrubs) and is dominated by an invasive grass species.</p> <p>Terrestrial: Functioning in smaller areas dominated by native vegetation, impaired in others due to loss of habitat, and non-native or invasive vegetation.</p> <p>Aquatic: Impaired due to lack of vegetation cover which results in higher water temperature.</p>
	Limiting Factors	<ul style="list-style-type: none"> ▪ Water quality ▪ Existing land use/ Zoning
	Functions <ul style="list-style-type: none"> • Sustainable • Not Sustainable 	<p>Sustainable at current levels: Hydrologic, shoreline vegetation, terrestrial and aquatic habitat.</p> <p>Terrestrial habitat impaired due to adjacent land uses and may not be sustainable or improved without a change in use.</p>
	Priority Actions	<ul style="list-style-type: none"> ▪ Water quality improvement.
	Current Enhancement Projects	None known
	Preservation/Enhancement Opportunities	<ul style="list-style-type: none"> ▪ Enhance wetlands/ slough and riparian buffer: increase width and species diversity of native vegetation. ▪ Remove invasive species (reed canarygrass, Himalayan blackberry).

CITY OF NOOKSACK, WA



*Disclaimer: These maps are for planning purposes only.
Property lines are approximate.*

Shoreline Jurisdiction Reach 11

1 inch = 200 feet

PROJECTION:
State Plane Washington North NAD 83
DATA SOURCES:
City of Nooksack, Whatcom County
Planning/Assessor's, & 2008 Pictometry

Sehome Planning & Development

Wilson
SURVEY/ENGINEERING

city of
Nooksack

INCORPORATED IN 1912
P.O. Box 4265 • 103 W. Madison Street
Whatcom County • Nooksack, Washington 98276
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SHORELINE AREA: Nooksack Slough, north of north terminus of E Third Street to city boundary at Gillies Road.

REACH NUMBER: # 12

Land Use	Current Shoreline Designation	Undesignated. (Ref # 1)
	Current Land Use	Agriculture (corn). (Ref # 3, 7)
	Zoning	Residential (4.7 ac). (Ref # 2)
Potential Species Present	Wildlife species	None indicated. (Ref # 2, 12)
	Fish species	None indicated. (Ref # 13)
	PHS species/habitat	Priority wetlands. (Ref # 12) NWI wetlands associated with slough. (Ref # 2)
	TSE species	None indicated. (Ref # 12, 13)
	Invasive wildlife/fish species	No data.
Physical Environment	Acres of land in reach	Total: 4.7 ac. (Ref # 1)
	Aquatic vegetation	No data.
	Slope	No slope data listed by DOE. (Ref # 6) Site class and moderate to high liquefaction hazard listed by Whatcom County (DNR 2004). (Ref # 17).
	Buildings	None – one bridge. (Ref # 1)
	Culverts/stormwater utilities	Culvert at access road. (Ref # 3)
	Geology	Glacial outwash terrace with alluvium, undifferentiated outwash and till. (Ref # 9)
	Tributary Creeks	None observed. (Ref # 1, 3, 13)
	Impervious surface	Impervious 0.04 ac (1%) (Ref # 1)
	Roads/transportation	Private access road crosses river at northern end. (Ref # 3, 7)
	Soils	Mt Vernon fine sandy loam. (Ref # 4)
	Topography	75 to 85 feet elevation. (Ref # 6)
	FEMA	100 year floodplain extends throughout most of the reach (Ref # 6). Floodplain areas mapped in most of reach. (Ref # 2)
	Terrestrial Vegetation	The majority of the reach is farmed (corn crops) or pasture (reed canarygrass). Native deciduous trees and shrubs are present, but are patchy or in a very narrow band just along creek banks, with the exception of the very southern extent. Himalayan blackberry dominated banks in other areas. Vegetation provides little shade along the majority of the slough. (Ref # 3)
Riparian Function	Aquatic substrate type	No data.
	Channel confinement	No data.
	Channel gradient	No data. (Ref # 13)
	Channel migration zone	Unknown.
	Creosote structures	None observed/ no data. (Ref # 3, 7)
	In-water structures	Culvert crossing near north extent. (Ref # 3, 7)
	Fish passage blockages	None. (Ref # 13)
	LWD presence	Unknown. Tree cover along the shoreline is low to moderate. Recruitment potential is low. (Ref # 3, 7)
	Riffle/pool analysis	No data.
	Associated wetlands	NWI wetlands associated with slough (Ref # 2). Slough is PSS/ PEM (farmed) wetland (Ref # 3, 7). PEM wetlands observed adjacent that appears to drain and/or connect to the slough and shoreline jurisdiction should extend to include adjacent wetland. (Ref # 3)
	DOE 303(d)	None indicated. (Ref # 10)
	Toxic sites/land fills	None listed. (Ref # 8)

SHORELINE AREA: Nooksack Slough, north of north terminus of E Third Street to city boundary at Gillies Road.

REACH NUMBER: # 12

	Point source pollution	No point source known. Non-Point source: low intensity from agriculture (corn) use. (Ref # 3, 7)
Historic & Cultural	Historic aerials	No significant changes observed between 1976 and 2006 other than increased residential density. (Ref # 14)
	Archeological and historic sites	None indicated. (Ref # 5)
	Parks & public access	None. (Ref # 2, 3)
Function Analysis	Reach Function <ul style="list-style-type: none"> Hydrologic Shoreline Vegetation Habitat 	<p>Functioning with some impairment. Precipitation dominated; flashy winter and early spring peaks, low summer, variable spring and fall flows. Impairment in basin due to loss of wetland area, draining, filling, and ditching.</p> <p>Impaired overall, but some areas present that are functioning. Majority of reach is undeveloped, but lacks native vegetation (trees and shrubs). Majority of the reach is generally pasture or agriculture with exception of a small band along the slough and localized areas at the southern extent of the reach.</p> <p>Terrestrial: Functioning in areas dominated by native vegetation, impaired in others due to loss of habitat, and non-native or invasive vegetation.</p> <p>Aquatic: Impaired because overall lacks vegetation cover which results in higher water temperature.</p>
	Limiting Factors	<ul style="list-style-type: none"> Water quality Existing land use/ Zoning
	Functions <ul style="list-style-type: none"> Sustainable Not Sustainable 	<p>Sustainable at current levels: Hydrologic, shoreline vegetation, terrestrial and aquatic habitat.</p> <p>Terrestrial habitat impaired due to adjacent land uses and may not be sustainable or improved without a change in use.</p>
	Priority Actions	<ul style="list-style-type: none"> Restoration of adjacent wetland. Water quality improvement.
	Current Enhancement Projects	None known
	Preservation/Enhancement Opportunities	<ul style="list-style-type: none"> Restoration of adjacent wetland. Preservation of existing terrestrial vegetation and habitat. Enhance wetland/ slough and riparian buffer: increase width and species diversity of native vegetation. Remove invasive species (Himalayan blackberry, reed canarygrass).

CITY OF NOOKSACK, WA



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Shoreline Jurisdiction Reach 12

NOOKSACK SMP UPDATE – LIST OF INVENTORY DATA SOURCES

References

1.	City of Nooksack Planning Department. 2010. Data compiled from GIS data including: zoning, area (acres), impervious surface, structure, and aerial maps.	Calculations derived from GIS data by Wilson Engineering.
2.	City of Nooksack Comprehensive Plan. 2004.	Maps for NWI wetlands, FEMA, fish habitat, wildlife habitat, current and future zoning
3.	Field observations. July 8, 2010.	
4.	United States Department of Agriculture. National Resources Conservation Services (NRCS). Soil Survey of Whatcom County. http://ice.or.nrcs.usda.gov/website/whatcom/viewer.htm	Interactive soil survey map.
5.	Washington State Department of Archaeology & Historic Preservation. 2006. The Washington Information System for Architectural and Archaeological Records Data (WISAARD). www.dahp.wa.gov/pages/wisaardIntro.htm	Interactive mapping site of historical historic and archaeological sites.
6.	Washington State Department of Ecology. 2010. Digital Coastal Atlas. Website: www.ecy.wa.gov/programs/sea/SMA/atlas_home	Interactive mapping site of various marine features, wetlands, and streams
7.	Whatcom County Planning. 2008. Pictometry/ Aerial Photos.	
8.	Washington State Department of Ecology. 2010. Confirmed and Suspected Contaminated Sites Report. Website: www.ecy.wa.gov/programs/tcp/cscs/CSCS	Comprehensive list of toxic sites, with contaminants identified
9.	Whatcom County. June 2006. Shoreline Master Program Update. Shoreline Inventory and Characterization.	
10.	Washington State Department of Ecology. 2010. Washington State Water Quality Assessment 303(d) Listed Water for 1998. Website: www.ecy.wa.gov/programs/wq/303d	Interactive mapping system for 303 (d) listed waters.
11.	Washington State Department of Fish and Wildlife. 2010. Priority Habitats and Species. Website: www.wdfw.wa.gov/hab/phsvert	Priority habitat and species of Washington State
12.	Washington State Department of Fish and Wildlife. May 24, 2010. Priority Habitats and Species Data Maps.	Hard copy maps and supporting documentation listing State and Federal listed species and habitats.
13.	Washington State Department of Fish and Wildlife. 2010.	Interactive mapping site for salmonid species

	SalmonScape. Website: www.wdfw.wa.gov/mapping/salmscape	
14.	Historic aerial photographs. www.historicaerials.com	1976 and 2006 aerial photos
15.	US Environmental Protection Agency Region 10. 2009. Soil, Sediment, and Surface Water Sampling Sumas Mountain Naturally-Occurring Asbestos Site.	Swift Creek asbestos contamination summary
16.	Whatcom County Planning Department and Development Services. 2008. Shoreline Management Program.	Shoreline designations map.
17.	Whatcom County Planning and Development Services. 2005. Critical Areas Maps.	PDF maps of county wide critical areas.
18.	David Evans and Associates. 1992. Wetlands Inventory for the City of Nooksack. Nooksack, Washington.	Wetlands inventory