

Oregon Department of Fish and Wildlife
Selected Summaries of Physical Habitat Surveys
Johnson Creek Mainstem

Reach No.	Location	Ave. Unit Gradient	Dominant Habitat	Dominant Substrate	Ave. Residual Pool Depth (m)	Wood Volume (m ³ /100m)	Riparian Vegetation (Most frequent/Largest) (cm dbh)	Banks	Potential Refugia	Other
1	Confluence to Hwy. 224	0.8	Riffles/ Scour Pools	Gravel, fine sediment, bedrock	0.13	0.2	3-15/ 90+	Stabilized by rip-rap, Builders waste, WPA	Few deep pools	Intense channel modifications No backwaters No LWD
2	Hwy. 224 to Crystal Springs Trib.	0.5	Riffles/ Glides	Cobble/ Gravel	1.03	0.4	3-15/ 30-50	WPA	One large backwater	Few backwaters Shade cover moderate Few spawning areas Lacks LWD and deep pools Parking lots/warehouses close to creek
3	Crystal Springs Cr. Trib to Old Tacoma Bridge Crossing	0.4	Scour Pools/ Riffles	Cobble/ Gravel	0.71	0.4	3-15/ 30-50	Builders Waste	Few pieces of LWD and Deep Pools	Riparian Shade Moderate JC Park Restoration Apt. complexes built close to stream
4	Old Tacoma Bridge to Tideman-Johnson	0.5	Scour Pools/ Riffles	Gravel/ Cobble	0.93	0.7	3-15/ 50-90	Earth slopes with significant erosion Incision reveals conglomerate bedrock	Lack of LWD, Scour Pools numerous – one very deep along backwater pool	Good shade Possible spawning gravels Golf course/residential maintenance practices Many seeps/springs
5	Tideman-Johnson Park to Johnson Cr. Blvd.	0.6	Scour pools, Riffles, Glides	Gravel/ Cobble Significant sediment with Boulders	0.88	1.0	3-15/ 90+	Channel erosion and incision throughout lower half of reach Rock used to stabilize and protect exposed sewer pipe and WPA	Deep pools Need LWD Errol Cr. Trib. provides clear cool water	Trees provide good shade cover Numerous seeps Suitable substrate Heavily influenced by human activities

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6	Johnson Creek Blvd. to SE Linwood Ave. Br.	0.8	Riffles, Scour Pools, Glides	Cobble/Gravel	0.47	0.5	3-15/ 50-90	WPA	A few backwater pools and LWD Could benefit from more pools	Large Cottonwoods provide shade but width zone restricted by parking lots and residences Potential spawning gravels 11 culvert outfalls
7	SE Linwood Br. to SE 82 nd	0.7	Riffles, Scour Pools, Glides	Cobble, Gravel, Boulders	0.84	0.4	3-15/ 90+	Single constrained channel Incision evident throughout First half of reach -WPA	Many deep pools (0.9-1.5m) Some smaller LWD and undercut banks	Small deciduous trees Riparian zone confined Some areas of channel complexity Exposed sewer pipe
8	SE 82 nd to SE 106 th	0.5	Glides, Scour Pools	Fine sed., Cobble, Gravel	0.48	0.7	3-15/ 15-30	Single constrained channel WPA lined-secondary channel	Confined to undercut banks and woody debris	Small deciduous trees, riparian zone confined Two large culverts at 82nd Ave. S.E. Five bridge crossings including large amt. Of WPA, old bridge supports, secondary channel, some parts completely lined with concrete
9	I-205 to SE 106 th Bridge	0.1	Scour Pools, Glides	Fine sediments	0.41	0.2	15-30/ 15-30	Earth eroding and cliffs	Backwater pools Three beaver dams LWD fairly abundant No aeration	Small deciduous trees A few areas of excellent overhanging vegetation Riparian confined by Freeway Land Co. Three areas of complex channels Lot of colluvial sloughing Old wood pilings
10	Se106th to SE 110th	0.2	Scour Pools	Fine sediments	0.61	1.6	3-15/ 30-50	Earth often eroding	Many deep pools w/ no backwater Woody debris offers best potential	Evidence of incision Flood control tunnel Deep and slow

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11	SE 110 th to Brookside Restoration	0.1	Scour Pools, Glides	Fine sediments	0.59	2.3	3-15/ 50-90	Grassy earth covered by retention cloth	Undercut banks, rootwads, "lake", alcove, and deep pools Secondary channel at high flows	<u>Brookside Restoration</u> site
12	Brookside Restoration to SE 132nd	0.2	Glides	Gravel/ Cobble	0.46	3.8	3-15/ 50-90	Earth eroding and vegetative stabilized charact.	LWD and only pools w/ depths > 1-m	Riparian dominated by mature trees, some > 1-m dbh Multiple channels Le
13	SE 132 nd to Kelley Cr. Trib.	0.2	Glides, Scour Pools	Boulders/ Cobble	0.64	0.7	3-15/ 90+	Earth with erosional attributes	Pools > 1-m Small amount of small woody debris	Many backyards degrade natural riparian flora Very channelized due to WPA tile Many small exposed pipes that traverse creek Numerous private driveways that are bridges USGS Sycamore gage Some areas of channel bottom composed of exotic rock boulders
14	Kelley Cr. Trib. to SE 190th	0.1	Scour Pools, Glides	Cobble/ Fine sediment	0.62	1.8	3-15/ 90+	WPA/ Others are earth and steep eroding	2 nd half of Reach has abundant small woody debris Deep pools, steps, and riffles	Riparian canopy dominated by 3-15 cm dbh Dogwood/Willow often overhanging Few multiple channels and backwaters WPA first 25% Portland Waterworks outfall at SE Circle Ave-outflow from Powell Butte Resv. Slow deep water Kelley Cr. contributing 20% of flow at time of survey

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15	SE 190 th to Main City Park	0.3	Scour Pools, Glides	Cobble/ Fine sediment	0.63	2.3	3-15/ 50-90	Eroding earth	Volume of LWD Many deep pools, but very few backwaters	Very few boulders Deep and slow Complex channels Main City Park Outfall
16	Main City Park to Palmlad Road	0.5	Scour Pools, Glides, Riffles	Cobble	0.55	2.5	3-15/ 90+	Earth eroding or stabilized	Greatest refuge of any Reach due to: LWD Backwaters Deep Pools Shade Cover	Riparian dominated by conif./decide. W/ dbh of 50-90 cm, and a few > 1-m Favorable characteristics throughout Reach Multiple channels with good complexity (Regner to Hogan Road) Hogan Rd. –very diverse w/ many LWD jams and associated deep pools Hogan Cedars Dam at time of survey Helpful Landowners
17	Palmlad Road to MacDonald Cr.	0.8	Scour Pools, Riffles	Gravel/ Cobble	0.39	3.3	3-15/ 50-90	23% of Reach actively eroding	Few areas of good off-channel habitat Boulders add to channel roughness Lacks deep pools	Riparian zone quite diverse Some sections allow livestock to graze/water on banks Little evidence of interaction between creek and floodplain Few areas of heavy erosion due to livestock and unstable banks
18	MacDonald Cr. to Hwy. 26	0.8	Scour Pools, Riffles	Silt. Organics/ Sand/ Gravel/ Cobble	0.38	0.4	30-50/ 50-90	25% of Reach actively eroding	Off-channel habitat Very few long, slow sections and very few riffle-pool sequences	Riparian zone narrow Somewhat shaded Houses built very close to creek Channel very U-shaped Very little interaction between creek and floodplain Very little channel roughness and LWD
19	U.S Hwy. 26 to SE Stone Road	0.9	Scour Pools, Riffles	Silt Organics/ Sand/ Gravel/ Cobble	0.33	1.3	3-15/ 50-90	12% of Reach length has actively eroding banks	Numerous beaver ponds Increased sediment	Riparian zone poor Some patches of narrow but decent riparian buffer of willow/alder Great deal of clearing up to creek Intensive grazing Many long back-to-back pools and beaver ponds

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20	SE Stone Road to SE Orient Dr.	0.9	Riffles, Scour Pools, Dammed Pools	Silt/Organics/Sand/Gravel/Cobble	0.32	0.8	15-30/ 50-90	33% of Reach length has actively eroding banks	Couple of intermittent tribs. that can provide off-channel habitat	Active grazing Beaver activity continues Channel is U-shaped Extensive erosion Fine particulates prevalent in substrate
21	SE Orient Dr. to SE Altman Road	0.8	Riffles, Dammed Pools, Scour Pools	Silt/Organics/Sand	0.35	2.2	3-15/ 50-90	23% of Reach length has actively eroding banks	Boulders LWD including two log jams	Riparian zone best since Reach 17 Livestock fenced from creek Floodplain interaction Some areas where creek has been resectioned due to redirect, damming, or armoring FW mussels "Crystal Springs Resv." used by Nursery as a settling pond Large estate has two wooden dams (0.5 -m) high could be made "fish-friendly" passages with minimal work
22	SE Altman Road to last marked trib. junction on USGS map	0.8	Dammed Pools, Glides	Silt/Organics	0.45	0.7	3-15/ 30-50	5% of Reach length has actively eroding banks	Some snags left standing in riparian area will eventually be recruited to creek Some interaction with floodplain	Grazing/Nurseries have resulted in impacts to riparian (shade and decreased bank stability) Several small patches of very nice riparian left alone Lots of beaver actv. Couple areas where creek disappears into bog areas Good habitat for birds Unit #1645 rearranged and rerouted (including dammed pool, road, and tributary)
23	Last tributary marked on USGS map to headwaters	1.4	Dammed Pools, Glides	Silt/Organics	0.36	1.2	3-15/ 90+	8% of Reach length has actively eroding banks	Not much. Little wood, undercut, or off-channel habitat	Large bog areas and nurseries Channel is U-shaped with some erosion and unstable banks Groundwater/nursery runoff

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Crystal Springs 1	Confluence to SE Lambert Bridge	0.3	Scour Pools Glides	Fine sediment Gravel	0.24	0.3	3-15/ 30-50 90+	Channelized Reinforced	Temp. ok Off-channel	Apt., houses on top of creek Very little wood or channel roughness Many bridges Flow swift even during dry conditions
2	SE Lambert Bridge to SE Glenwood Bridge	0.1	Scour Pools Dammed Pools	Fine sediment Gravel	0.32	0.1	30-50	Armored	Not much shade, wood, undercuts, or off-channel habitat	Westmoreland Park Concrete banks Large Duck Pond Rectangular Casting Pond
3	Se Glenwood Bridge to "South Spring" trib. junction in Golf Course	0.1	Dammed Pools Glides	Fine sediment Gravel	0.38	1.0	No trees but GC does provide some riparian	GC grass Stream allowed to interact with floodplain	Some shade, undercuts, and pieces of large wood	Golf Course and Retirement Center S. Spring dam is fish barrier
4	South Spring Trib. to above Reed College Lake	1.2	Dammed Pools/ Scour Pools	Fine sediment Gravel	0.36	5.9	3-15/ 90+	Earth slopes with significant erosion Incision reveals conglomerate bedrock	Shade provided by 50-90 trees Temp. -good Some off-channel and undercuts and few deep pools	Riparian zone quite good (Reed College left it alone) Structure built over creek at college Lake outlet is passage barrier for fish Two springs
Errol Creek 1	J.C. Confluence to wall of blackberry where hillslope begins (private property)	1.6	Riffles, Glides	Sand Gravel	0.22	None	30-50/ 30-50	Very little erosion or incision Some retaining walls in backyards	Not much No boulders, undercuts Water quality good with steady flows and low temps. Home structures provide shade (?)	No wood Extremely narrow riparian Runs through many backyards 5 culvert crossings all passable
2	Wall of Blackberry to last and most northern large pool in Amphitheater	1.4	Dammed Pools Glides	Fine sediment Gravel	0.71	1.8	30-50/ same		Shade is low due to width of large dammed pools Large ponds may be impassable at beginning	Restoration area/plantings Lot of blackberry Riparian somewhat degraded Five large dammed pools serve as R/D

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Veterans Creek 1	Johnson Cr. confluence to second private driveway crossing creek	2.7	Dammed pools Riffles Scour pools	Equal amounts of Silt Sand Gravel Cobble	0.29	1.4	30-50/ 90+	Stream channelized Excessive alterations to create "fountain-like" atmosphere	Very LWD Little undercuts, few boulders, and no off-channel	Riparian zone significantly altered Culverts, concrete, Mt. Scott Blvd., and large buildings all impacting creek Channel altered by I-205 Exotic fish (Koi) Potential artificial barrier at confluence
2	Private driveway crossing to eastern end of Lincoln Memorial Cemetery Reservoir	9.2	Dammed Pools Cascades	Cobble Gravel	0.33	8.2	3-15/ 90+		Many boulders and some LWD	Decent riparian zone Cemetery Resv. irrigation and cycling is complex Very deep pools Very little off-channel habitat High water temps
Wahoo Creek 1	Johnson Cr. confluence to SE Flavel	7.2	Cascades Dry Units Riffles	Equal amounts of Silt Sand Gravel Cobble	0.12	1.7	30-50/ 90+		Some off-channel Moderate LWD and Large Boulders	Riparian buffer good Lot of blackberry
McDonald or Sunshine Creek 1	J.C. Confluence to hillslope encroaches prior to private drive	0.5	Scour Pools Dammed/ Backwater Pools	Gravel Cobble	0.42	1.4	3-15/ 90+	Some erosion and incision	Deep pools Riffle/pool Sequences Meandering Few areas of multiple channels and Some LWD	Riparian decent in some areas and non-existent in others. Rural residential influences riparian with houses, backyards, and pastures
2	Private drive to southern most crossing of SE Hide-a-way Court	0.3	Scour Pools Dammed Pools	Fine sediment Gravel	0.60	1.1	3-15/ 90+		LWD Beaver Dams	Wide Riparian Channel is straight, deep, and U-shaped Very little wood and off-channel Some accounts of trout
3	Hide-a-way Court to southern most trib on USGS map	0.6	Scour Pools Dammed Pools	Sediment Gravel	0.43	1.5	3-15/ 50-90		Large Beaver Ponds only	Riparian is poor Pasture up to Creek Small pocket of good riparian at end of reach Channel is long, straight, deep, and U-shaped.

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4	Trib. marked on USGS map to private drive on Gentry Nuresry (north of Tillstrom Rd.)	1.6	Scour Pools Riffles	Gravel Sand	0.33	1.4	15-30/50-90		LWD Riffle-pool	Riparian is decent up to SE Tillstrom Rd. Decent riffle-pool sequences Gentry and Dillard Nurseries impacts
5	Gentry Nursery to small cedar grove in Dillard Nursery	3.0	Riffles Scour Pools	Fine sediment Gravel	0.36	0.5	3-15/90+	Silt from banks Heavy incision with deep channels	None	No riparian zone Only shade is blackberry Incision and erosion U-shape channel Nursery plants in pots covering the area up to and far away from Creek GW erupts
Butler Creek 1	J.C. Confluence to south side of Binford Reservoir	2.5	Dammed Pools of Resv. Riffles Scour Pools	Fine sediment Gravel	31 cm	3.4	3-15/90+	Moderate amount of erosion and incision	Pools Woody Debris	Good quality riparian Dense blackberry Sewer manhole w/i main channel of Creek Binford Resv. Overflow channel with two 1.5 m outfalls (manually operated) Signs of intense discharges with heavy incision, and land slides. Fish barriers.
2	Binford Resv. To southside of Butler Resv.	2.2	Dammed Pools of Resv. Riffles	Gravel Cobble	35 cm	1.7	3-15/90+	Quite a bit of erosion	Pools LWD	Riparian zone better quality than Reach 1 with less blackberry Secondary channel with wetland just upstream of Resv. Very little bank undercuts Needs boulders and meanders Resv. drained by impassable culvert Narrow stream corridor
Hogan Creek 1	J.C. Confluence to south side of Cedar Lake Resv.	2.6	Dammed Pools of Resv. Riffles Scour Pools	Fine sediment Gravel Cobble	48 cm	4.2	3-15/90+	Eroding	Small pools Some LWD	Riparian zone is natural up to Cedar Lake Culvert crossing assoc. with Cedar Lake is a fish barrier Good habitat abover Lake with another impassable culvert at G.C.

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Kelley Creek 1	J.C. Confluence to SE Foster Road	1.1	Dammed and backwater pools	Equal amounts of various particle sizes	0.6	1.3	3-15/90+	Lined with blackberry WPA Channel incision where WPA not present	Deep pools created by steps	Riparian zone narrow due to houses Concrete steps and deep pools downstream of Foster Rd. culvert crossing Concrete diversion with metal floodgate supplies water to pond at Lakeside Gardens Outflow is potential fish barrier Reach needs large boulders and LWD for channel surface roughness
2	SE Foster Road to clearing of north end of Kelley Cr. Farms	1.8	Riffles	Cobble Gravel	0.3	1.0	3-15/90+		Pools Large Boulders and Wood	Riparian zone = 200 m wide Riffle-pool Upper section heavily affected by 96 flood Multiple channels Cutthroat Recent slides
3	Kelley Cr. Farms to Mitchell Cr. Trib. junction	1.1	Dammed Pools Scour Pools	Cobble Gravel	0.57	0.4	30-50/50-90		Large Pools but little refugia	First half is grassy ditch Second half is a wide riparian zone 1.7 m steel dam on Kelley Cr. Farm is a fish barrier.
4	Mitchell Cr. Trib. to trib. junction just before the Richey Road crossing	0.6	Scour Pools Riffles Glides	Fine sediment Gravel	0.40	0.20	3-15/50-90	Lots of erosion	Many pools and some riffle-pool sequences	Poor riparian zone Narrow buffer Channel is ditch that transects many farms and backyards Very little off-channel, LWD, or undercuts.
5	Richey Road crossing to SE 190th	0.8	Dammed Pools Scour Pools	Sediment Gravel	0.42	0.3	3-15/90+		Undercut banks but no off-channel or LWD Very narrow and immature riparian with low quality fish habitat	Small pocket of good riparian buffer Christmas tree farms Channel ditch-like Multiple terraces from human and natural influences Two dams creating large ponds and 1 culvert - all are impassable.
6	SE 190 th to middle of grazing field	2.5	Riffles Glides	Gravel Sand	0.28	0.4	3-15/50-90		Limited	Riparian zone is poor Blackberry Grazing on Creek Grass edging up to shrubs Fencing needed

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7	Middle of grazed field to 125 m past the first private drive off of Rodlun Rd.	3.1	Riffles Scour Pools	Gravel Cobble	0.23	0.4	3-15/ 90+	Some areas of significant erosion	A few large pools	Blackberry but grazing is less Channel is U-shaped Cutthroat trout
8	Private drive off of Rodlun Rd. to first trib. junction past Alder Ridge Road	3.6	Riffles Cascades	Gravel Cobble	0.20	1.5	30-50/ 50-90		LWD Riffle-pool sequences	Riparian is excellent Southern side is pristine, northern side has good buffer Natural wetland marshes Trout in every pool Closeness to paralleling road
9	Alder Ridge Road to where creek dries up	4.1	Riffles Glides	Fine sediment Gravel	0.20	0.20	30-50/ 30-50		Poor area for refuge	Northern side close to Rodlun Road Constricted by grade No off-channel and very little LWD and few pools Restoration area
Mitchell Creek 1	Kelley Cr. Confluence to 140 m upstream of SE Baxter Road crossing	1.7	Dammed Pools Riffles Scour Pools	Fine sediment Gravel	0.29	0.90	3-15/ 90+	Erosion and incision Hard pan substrate which seems quite soft and easily eroded	Few pieces of wood but no pools or undercuts 2 nd half provides cover by overhanging blackberries and willows.	Nice wide mature, functioning riparian buffer 2 nd half of reach is poor, narrow zone with blackberry and completely cleared areas Very little off-channel Landowners heavily impacting creek with dammed pools, gray water outfalls, bank armoring, and clearing activities.
2	140 m upstream of the SE Baxter Road crossing to trib. junction where WWTP is located	1.1	Scour Pools Riffles	Fine sediment gravel	0.29	7.3	15-30/50-90 90+	Erosion and evidence of high flows	Deep pools and LWD	Cedar forest Riparian zone is wide and mature Some backyard owners have cleared up to creek No boulders, few off-channel, and little undercuts Trout in pools Culvert at SE 162 nd is a potential artificial barrier that is causing severe erosion Landowner annually stocks Rainbow trout Large concrete structure in creek bed. Maintenance and water quality issues with WWTP
3	WWTP to spring found adjacent to SE Sagar Road	12.3	Cascades Riffles	Equal amounts of all substrate types	0.14	6.0	50-90/ 90+		LWD Undercuts Cool temps. Boulders	Riparian zone is good, wide, and mature Clean water source One of the most pristine subwatershed reaches within the JC watershed

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Clatsop Creek 1	Kelley Cr. Confluence to Barbara Welch Rd. crossing	3.1	Scour Pools Riffles	Fine sediment Gravel	0.18	2.0	30-50/90+	Erosion and increased sediment	LWD Many pools	Development with 30-40 m of riparian No undercut or off-channel habitat Erosion and sedimentation Drain maintenance needed
Church Creek 1	Kelley Cr. Confluence to just past the Pleasant Valley Church	0.7	Dammed Pools Glides	Fine sediment Gravel	0.18	0.2	3-15/50-90	Some erosion	Off-channel	Riparian is poor Blackberry Mowed lawns Road grade Pasture Grassy ditch No LWD, undercut, or large boulders.