

Reprint

2000 ODFW Aquatic Inventory Project:

Tryon Creek & Arnold Creek Habitat Report Summaries

Report prepared by:

Survey Crew:

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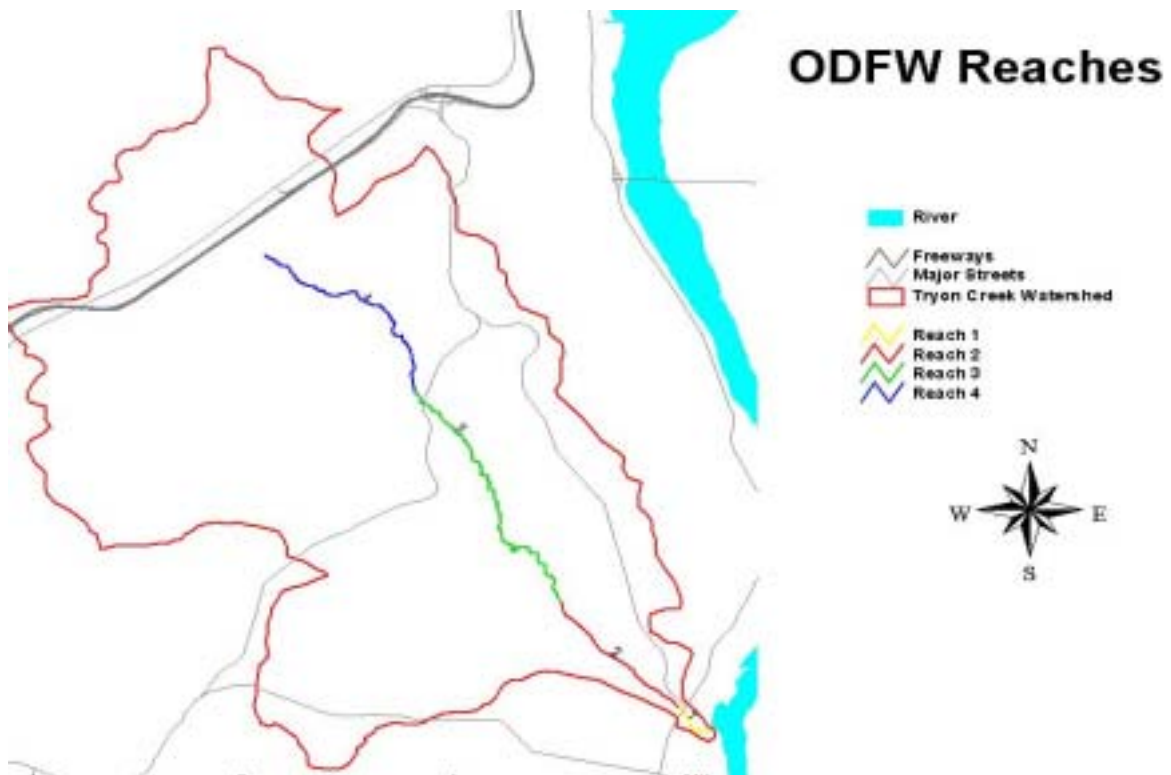
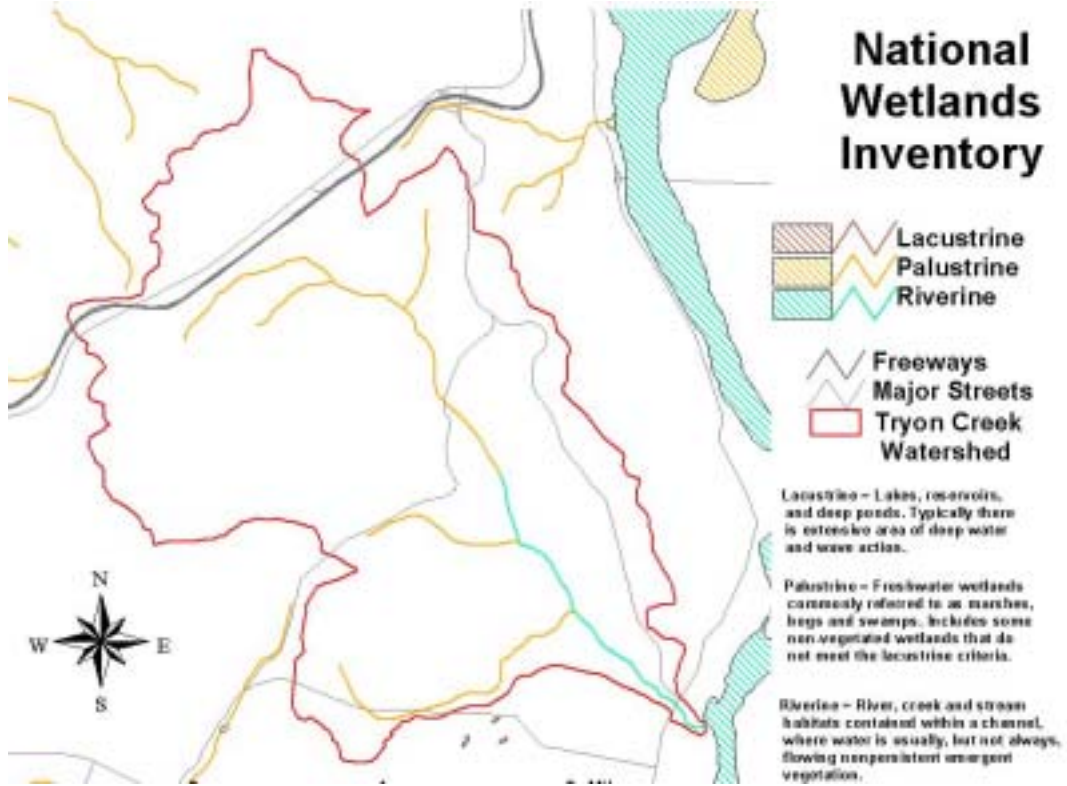
Report prepared for:

City of Portland

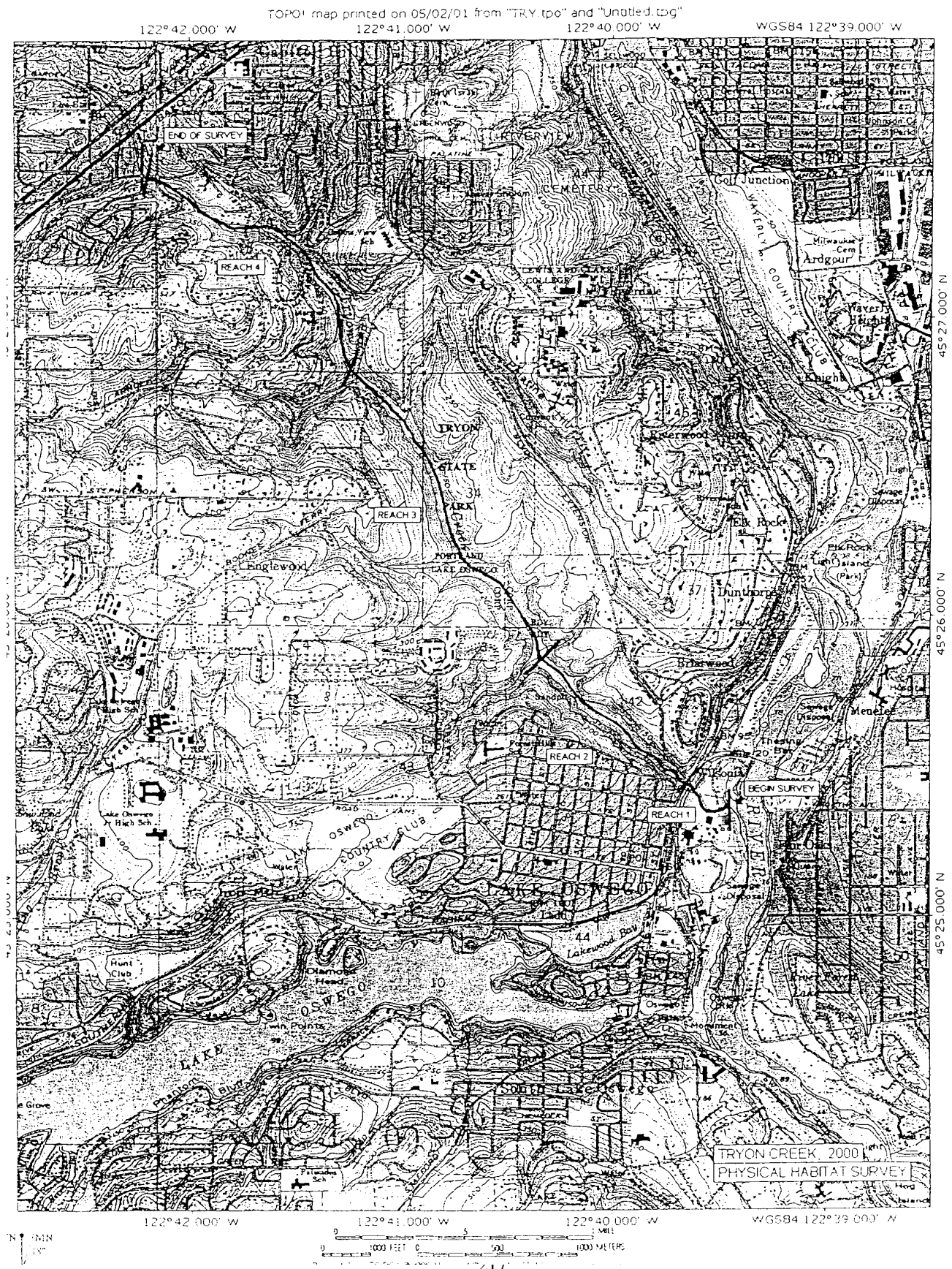
October 11- October 12, 2000

(Complete ODFW Report and Data will be available in StreamNet Columbia Basin library.)

Map Comparison of “NWI” Streams (top) and ODFW Stream Survey Reaches (lower).



Topographic map, with ODFW Tryon Creek Reaches 1-4 indicated. (The Arnold Cr. Reach Map and Report are in a separate section.)



TRYON CREEK REACH

(T2S-R1E-S42SE) The primary channel length of reach 1 is 392 meters. Reach 1 begins at the Willamette River confluence, and ends on the west side of the highway 43 culvert crossing. The channel is constrained by multiple terraces within a broad valley. The average valley width index is 20.0. Land use for the reach is industrial and rural residential. The average unit gradient is 2.3 percent. Stream habitat is dominated by scour pools (47%) and riffles (20%). Stream substrate is equally distributed among fine sediments, gravel and cobble. The average residual pool depth is 0.64 meters. Wood volume is low at 2.8 m³/100m. Based upon one riparian transect, the trees found most frequently in the riparian zone are deciduous species 15-30 cm and coniferous species 3-15 cm dbh, and the largest trees are 15-30 cm dbh hardwoods.

DESCRIPTIONS

REACH 1 DESCRIPTION

RIPARIAN — The riparian zone in reach 1 is quite poor. Adjacent to the creek on the north side is a backyard with no buffering trees. The south side of the creek is bordered by a sewage treatment plant and industrial area with a very narrow riparian buffer strip of Cedar and Arborvita hedges.

CHANNEL CHARACTERISTICS — The area is incised. Bedrock is not far below the layer of silt sand and gravel, and in areas is exposed. The channel is U-shaped and appears to handle very high flows at times. At the time of this survey there was a beaver dam and associated pool very close to the confluence.

POTENTIAL REFUGIA — The refugia for reach 1 includes deep pools and a few pieces of large wood that serve as flow disruption.

CURRENT BIOLOGICAL USE — Beaver activity is present in reach one. The landowner spoke of extensive rodents in the area. Since this is the confluence with the Willamette, it probably serves as a wildlife corridor to Tryon State Park.

OTHER INFORMATION — The culvert crossing of highway 43 has baffles in it to help fish passage. This culvert is quite steep and ;the baffles give areas for fish to rest within the culvert.

ANALYTICAL ARTIFACTS — None

TRYON CREEK REACH DESCRIPTIONS

REACH 2 DESCRIPTION

(T2S-R1 E-S42SE) The primary channel length of reach 2 is 1,309 meters. Reach 2 begins at the west side of the highway 43 culvert crossing, and ends at the first tributary shown on the USGS topo map. The channel is constrained by alternating terraces and hillslopes within a broad valley. The average valley width index is 43, and ranges between 1.5 and 7.5. Land use for the reach is designated green space (Tryon Creek State Park). The average unit gradient is 1.3 percent. Stream habitat is dominated by scour pools (51%), dammed pools (25%), and riffles (17%). Stream substrate is equally distributed among fine sediments, gravel, and cobble. The average residual pool depth is 0.59 meters. Wood volume is low at 2.8 m³/100m. Based upon two riparian transects, the trees found most frequently in the riparian zone are deciduous species 15-30 cm, and the largest trees are 50-90 cm dbh conifers.

RIPARIAN — Very good. This reach is in Tryon Creek State Park, and the riparian buffer is wide and relatively undisturbed. There are areas where the hiking trail is very close to the creek which encourages lots of contact between the creek, people and animals (dogs) which can be detrimental to water quality, bank stabilization, and induce substrate disturbance.

CHANNEL CHARACTERISTICS — There are many seeps and springs throughout this reach. The channel is quite variable in this area. There are areas of beaver activity, steep banks, wide areas for water storage, and everything in between. This indicates that the creek is allowed to interact with its floodplain much more than a typical urban creek.

POTENTIAL REFUGIA — Despite the interaction with the floodplain there is very little off channel habitat. This reach has some large wood that will act as areas of refuge for fish.

CURRENT BIOLOGICAL USE — Beaver activity, and the presence of numerous beaver ponds were noted.

OTHER INFORMATION — In the lower section of reach 2, there is a fully exposed sewer pipe that is supported by large concrete pillars. This runs for approximately the first quarter of the reach, and then disappears into the hillslope.

ANALYTICAL ARTIFACTS - none

TRYON CREEK REACH DESCRIPTIONS

REACH 3 DESCRIPTION

(T2S-R1E-S42NW) The primary channel length of reach 3 is 2,621 meters. Reach 3 begins at the first tributary shown on the USGS topo map, and ends at the Arnold Creek tributary junction, near the SW Boones Ferry culvert crossing. The channel is constrained by terraces within a broad valley. The average valley width index is 9.2, and ranges between 4.0 and 16.0. Land use for the reach is designated green space (Tryon Creek State Park). The average unit gradient is 0.6 percent. Stream habitat is dominated by scour pools (57%) and riffles (29%). Stream substrate is equally distributed among fine sediments, gravel, and cobble. The average residual pool depth is 0.62 meters. Wood volume is low at 3.2 m³/100m. Based upon four riparian transects, the trees found most frequently in the riparian zone are deciduous species 3-15 cm, and the largest trees are 90+ cm dbh hardwoods and conifers.

RIPARIAN — The riparian zone for reach 3 is very similar to reach 2, since it is also within the Tryon State Park.

CHANNEL CHARACTERISTICS — Channel characteristics are also like those of reach 2, but there is evidence of more erosion in reach 3.

POTENTIAL REFUGIA— There are many small tributaries that will serve as good off channel habitat in periods of high flow.

CURRENT BIOLOGICAL USE — There was lots of evidence of rodent activity (beaver, mink, and muskrat nutria), and fish were noted in reach 3. •

OTHER INFORMATION — The SW Boones Ferry Rd. crossing is not particularly fish friendly. The culvert is long and quite steep. It was not listed in the report as a passage barrier, but it is not encouraging connectedness between reach 3 and reach 4.

ANALYTICAL ARTIFACTS - none

TRYON CREEK REACH DESCRIPTIONS

REACH 4 DESCRIPTION

(T1S-R1E-S28SE) The primary channel length of reach 4 is 2,157 meters. Reach 4 begins at the Arnold Creek tributary junction, near the SW Boones Ferry culvert crossing, and ends at the tributary junction just upstream of SW Lancaster. The channel is constrained by terraces within a broad valley. The average valley width index is 6.3, and ranges between 2.0 and 14.0. Land use for the reach is green space (Marshall City Park) and rural residential. The average unit gradient is 2.9 percent. Stream habitat is dominated by rapids (37%) and scour pools (30%). Stream substrate is equally distributed among fine sediments, gravel, and cobble. The average residual pool depth is 0.46 meters. Wood volume is low at 2.1 m³/100m. Based upon five riparian transects, the trees found most frequently in the riparian zone are deciduous species 30-50 cm, and the largest trees are 50-90 cm' dbh hardwoods and conifers.

RIPARIAN — The riparian buffer in reach 4 becomes narrower. Marshall Park only encompasses 113 of this reach, the rest is in a rural residential area. In this rural residential area there are some larger trees left standing, however the houses are encroaching on the stream channel.

CHANNEL CHARACTERISTICS — There is more bedrock exposed in reach 4. Marshall City Park has some waterfalls and rapids that were considered to be natural fish passage barriers. There is lots of erosion and many areas that have been stabilized by landowners with retaining walls.

POTENTIAL REFUGIA — There is very little refugia in this reach.

CURRENT BIOLOGICAL USE — None noted.

OTHER INFORMATION — This reach has quite a bit of human influence and backyard “adjustments” to the channel.

ANALYTICAL ARTIFACTS - none

TOPOI map printed on 05/09/01 from "ARN.tpo" and "united.tpg"

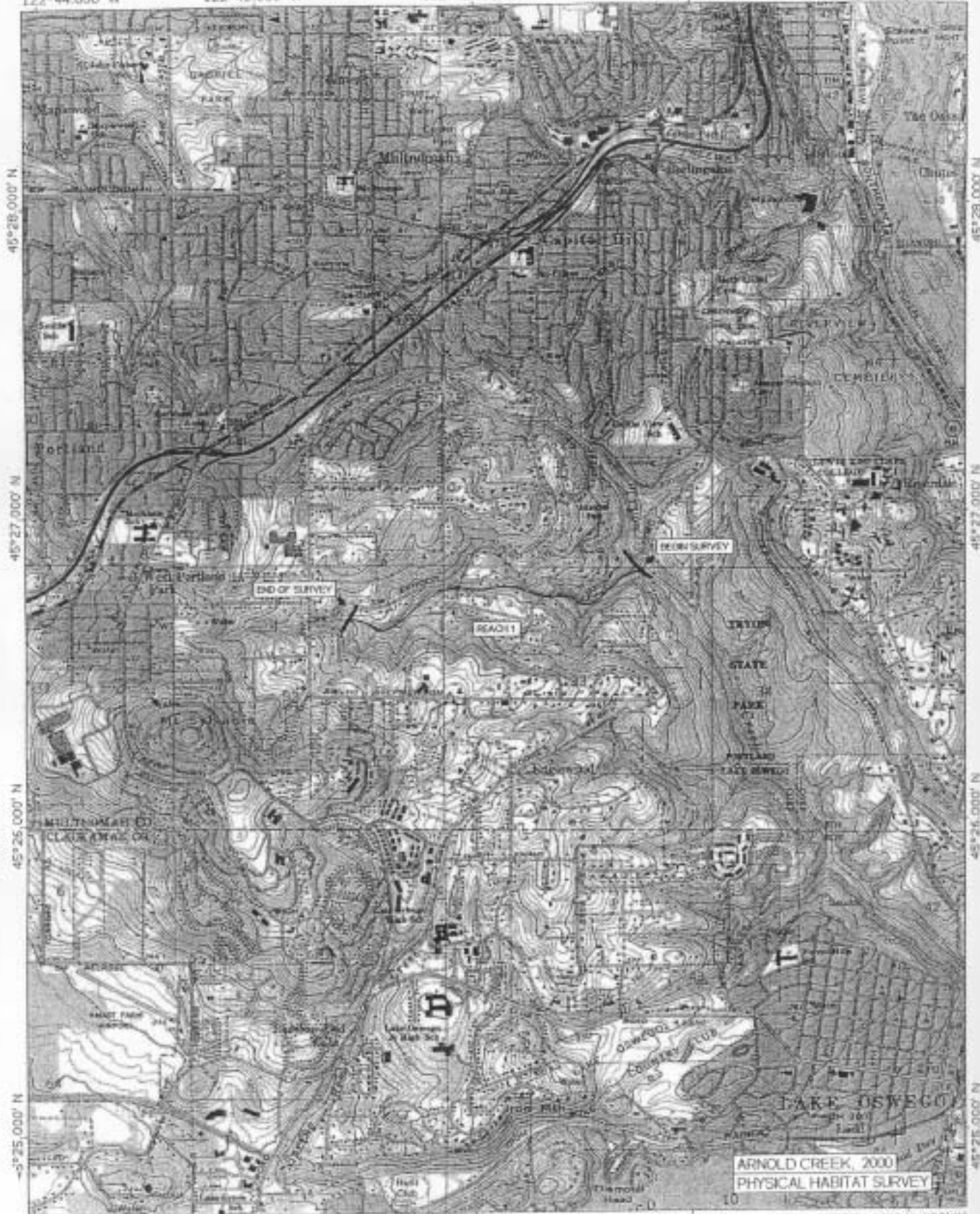
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WGS84 122°40.000' W



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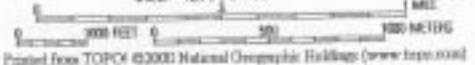
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ARNOLD CREEK, 2000
PHYSICAL HABITAT SURVEY

ARNOLD CREEK

STREAM ORDER: 2

BASIN AREA: 3.0 km²

FIRST ORDER TRIBUTARIES: 1

USGS MAPS: Lake Oswego

ECOREGION: Willamette Valley Plains - Foothills

HUC NUMBER: 17090012

LLID: 1226877454471

ARNOLD CREEK GENERAL DESCRIPTION:

The 2000 Arnold Creek survey began at the confluence with Tryon Creek, and ended just upstream of the first tributary junction on the USGS topo map. This survey was comprised of one reach that stretched almost 2 km, and was subdivided into 113 habitat units based upon instream fish habitat variables.

This area is similar to Tryon Creek, and traverses similar topography. There are steep water-falls, and areas of decent riffle-pool sequences. Creek side property is currently being developed, and there are areas of houses very close to the channel. The riparian buffer is great in a few areas, and in others Arnold Rd. is very close, as well as houses and backyards.

ARNOLD CREEK REACH DESCRIPTION

(TI S-RI E-S28SE) The primary channel length of reach I is 1,982 meters. Reach I begins at the Tryon Creek confluence, and ends just upstream of the first tributary junction on the USGS topo map. The channel is constrained by alternating terraces and hillslopes within a broad valley. The average valley width index is 6.7, and ranges between 1.0 and 15.0. Land use for the reach is rural residential. The average unit gradient is 3.6 percent. Stream habitat is dominated by riffles (50%) and scour pools (25%). Stream substrate is equally distributed among fine sediments, gravel, and cobble. The average residual pool depth is 0.38 meters. Wood volume is low at 1.5 $m^3/100m$. Based upon four riparian transects, the trees found most frequently in the riparian zone are deciduous species 3-15 cm, and the largest trees are 90+ cm dbh conifers.

RIPARIAN — The riparian buffer through the surveyed section of Arnold Creek is decent. There are some areas where the buffer is very narrow due to the close proximity of SW Arnold Rd., and there are a few instances of houses very close to the channel.

CHANNEL CHARACTERISTICS — The geomorphology is very similar to Tryon Creek. Arnold has the same large bedrock waterfalls, which pose a natural fish passage barrier. These falls are near SW 18th Dr., in a backyard setting.

POTENTIAL REFUGIA — Arnold Creek has excellent riffle-pool sequences. It provides excellent off channel habitat for Tryon Creek. There is some channel roughness due to boulders, but otherwise, there is little large wood, off channel habitat, and undercut.

CURRENT BIOLOGICAL USE — Fish were spotted near the Tryon Creek confluence.

OTHER INFORMATION — New developments are both directly and indirectly impacting this small body of water. Culverts crossing Arnold Creek are in ill repair and could use attention. Erosion is quite extensive throughout Arnold Creek.

ANALYTICAL ARTIFACTS – none