SECTION V

REACH FILE DOCUMENTATION

DOCUMENTATION FOR ODFW/CIS REACH FILE

The order, name, type, width, and description of the variables used in the reach file used by ODFW Coordinated Information Services staff to describe stream locations pertinent to fisheries management are described below. This reach file is compiled from the regional Northwest Power Planning Council reach file and the Oregon Department of Fish and Wildlife (ODFW) state Oregon River Information System (ORIS) reach file. Records with reach numbers common to both files and unique to one file or the other are included in this reach file. Variables common to both files that were helpful to describe reach locations were selected for this file and standardized (widths and field types were made similar). Inconsistencies between values of variables common to both files were reconciled by Eric Tinus (ODFW, tel. 503-657-2035) with the assistance of Duane Anderson (Pacific States Marine Fisheries Commission, tel. 503-650-5400) and Brent Forsberg (ODFW, tel. 503-229-6967 ext. 465), and by reviewing Oregon Department of Water Resources watershed maps and U.S. Environmental Protection Agency hydrologic plots prepared and provided by NWPPC. Variable descriptions are based on personal communications with Duane Anderson and Brent Forsberg, the ORIS Operation Manual (B. Forsberg, April 1994), and an unpublished draft of an EPA reach file manual prepared by C.R. Horn (July 1986).

This documentation is for a file in dBase format with 14,648 records last revised in January 1995. File copies in ascii or dBase format may be obtained by calling Eric Tinus.

ODFW CIS reach file documentation.

Field Order	Name	Type	Width	Description
1	RRN	Char.	16	River reach number, XXXXXXXXXXXXX.XX. The first eight digits describe the hydrologic cataloging unit; the next three digits describe a segment number (char 9-11); the last four digits with two decimal places describe a river index or subsegment (char 12-16)
2	WRD	Char.	30	A unique number assigned by Oregon Department of Water Resources to streams in Oregon. The basin in which streams flow is encoded within the number.
3	NAME	Char.	30	The name of the stream. NOTE: All alpha characters for all character variables in this file are uppercase unless otherwise noted. Descriptions of the conventions on how and when abbreviations are used are unavailable. Abbreviations used in stream names in this file include: BR BROOK CR CREEK

Field Order	Name	Type	Width	Description
3	NAME (continued)			DR DRAW E EAST FK FORK GL GULCH HOL HOLLOW L LAKE or LEFT M MID or MIDDLE NE NORTHEAST R RIVER or RIGHT RES RESERVOIR S SOUTH SL SLOUGH TRIB TRIBUTARY W WEST
4	DLINK	Char.	16	The river reach number of the reach connecting into the downstream end of the subject reach, RRN.
5	UPLINK1	Char.	16	The river reach number of the reach connecting into the upstream end of the subject reach, RRN. If no reach exists above the subject reach, UPLINK1 is blank.
6	UPLINK2	Char.	16	The river reach number of a second reach connecting into the upstream end of the subject reach, RRN. If no reach exists above the subject reach, UPLINK2 is blank.
7	TRIB_OF	Char.	30	The name of the body of water into which the subject reach's stream flows.
8	OWNAME	Char.	30	Name ("open water name") of reservoir or lake through which subject reach's stream flows and in which subject reach resides.
9	LOBOUN	Char.	30	The name of the waterbody that defines the downstream end of the subject reach, typically a tributary of the subject reach's stream, but sometimes listed as simply "MOUTH" or the name of TRIB_OF.
10	UPBOUN1	Char.	30	The name of the waterbody that defines the upstream end of the subject reach (transport reaches), typically a tributary of the subject reach's stream. UPBOUN1 is blank for reaches that have no reaches connecting to their upstream end.

Field Order	Name	Type	Width	Description
11	UPBOUN2	Char.	30	The name of a second waterbody (if any) that defines the upstream end of the subject reach (transport reaches), typically one of two tributaries flowing into the upstream end of the subject reach. NOTE: for reaches with both UPBOUN1 and UPBOUN2 names, the determination of which is UPBOUN1 and which is UPBOUN2 has been made arbitrarily.
12	BASIN_NUM	Num.	3	A numeric code assigned by NWPPC to Pacific Northwest river basins to describe the basin in which transport reaches exist: 3 Fifteenmile 9 Deschutes 12 Grande Ronde 16 Hood 17 Imnaha 18 John Day 20 Klamath 31 Malheur 36 Mid Snake Boise 37 Mid Snake Powder 41 North Oregon Coast 43 Oregon closed basin 44 Owyhee 51 Sandy 54 South Oregon Coast 57 Umatilla 61 Upper Quinn 65 Walla Walla 78 Columbia R from Bonneville to Priest Rapids 80 Snake R, mainstem 81 Columbia R below Bonneville 82 Clackamas 83 Santiam 84 Willamette, Mid Fk 85 Willamette, Coast Fk 86 McKenzie 87 Tualatin 88 Molalla 89 Yamhill 90 Willamette, mainstem 91 Willamette, lower 92 Calapooia 100 Mill CK, Willamette 101 Willamette, Coast Range

Field Order	Name	Type	Width	Description
13	ORBAS_NUM	Num.	2	A numeric code assigned by ODWR to identify Oregon watersheds, and used in this file to identify the watershed in which the subject reach exists: 1 NORTH COAST 2 WILLAMETTE 3 SANDY 4 HOOD 5 DESCHUTES 6 JOHN DAY 7 UMATILLA 8 GRANDE RONDE 9 POWDER 10 MALHEUR 11 OWYHEE 12 MALHEUR LAKE 13 GOOSE & SUMMER 14 KLAMATH 15 ROGUE 16 UMPQUA 17 SOUTH COAST 18 MID COAST
14	MAP_NUM	Num.	3	USGS 1:100,000 scale map that depicts stream of subject reach: 104 ILWACO 105 ASTORIA 106 MOUNT ST HELENS 109 RICHLAND 110 WALLA WALLA 111 CLARKSTON 112 OROFINO 125 NEHALEM RIVER 126 VANCOUVER 127 HOOD RIVER 128 GOLDENDALE 129 HERMISTON 130 PENDLETON 131 WALLOWA 132 GRANGEVILLE 145 YAMHILL RIVER 146 OREGON CITY 147 MOUNT HOOD 148 CONDON 149 HEPPNER 150 LA GRANDE 151 ENTERPRISE 152 RIGGINS 165 NEWPORT 166 CORVALLIS

Field Order	Name	Type	Width	Description
14	MAP_NUM (continued)			167 NORTH SANTIAM RIVER 168 MADRAS 169 STEPHENSON MOUNTAIN 170 MONUMENT 171 BATES 172 BAKER(OR) 173 MCCALL 179 WALDPORT 180 EUGENE 181 MCKENZIE RIVER 182 BEND 183 PRINEVILLE 184 DAYVILLE 185 JOHN DAY 186 BROGAN 187 WEISER 193 REEDSPORT 194 COTTAGE GROVE 195 OAKRIDGE 196 LAPINE 197 BROTHERS 198 BURNS 199 STINKINGWATER MOUNTAIN 200 VALE 201 BOISE 207 COOS BAY 208 ROSEBURG 209 DIAMOND LAKE 210 CRESCENT 211 CHRISTMAS VALLEY 212 HARNEY LAKE 213 MALHEUR LAKE 214 MAHOGANY MOUNTAIN 221 PORT ORFORD 222 CANYONVILLE 223 CRATER LAKE 224 WILLIAMSON RIVER 225 LAKE ABERT 226 BLUEJOINT LAKE 227 STEENS MOUNTAIN 228 JORDAN VALLEY 235 GOLD BEACH 236 GRANTS PASS 237 MEDFORD 238 KLAMATH FALLS 239 LAKEVIEW 240 ADEL 241 ALVORD LAKE 242 LOUSE CANYON (LAROSA CANYON) 243 RIDDLE 250 UNKNOWN

Field Order	Name	Type	Width	Description
14	MAP_NUM (continued)			251 VYA (NEVADA) 252 TULE LAKE (CALIFORNIA)
15	LEVEL	Num.	1	EPA stream level, 1-8. LEVEL describes the heirarchical relation between rivers and their tributaries. The Columbia River is a level-one stream; the Deschutes River (tributary of the Columbia River) is a level-two stream; the Warm Springs River (tributary of the Deschutes River) is a level-three stream. Missing values are coded as "0" or blank.
16	TYPE	Char.	1	An EPA code used to characterize the following reach attributes: A An artificial lake reach (a transport reach) within a lake or reservoir inserted in the reach file to provide connection between input and output reaches of the open water. C A non-transport reach that describes a segment of "continental" shorelines. I A non-transport reach that describes a segment of island shorelines. L A non-transport reach that describes a segment of lake shorelines. M An artificial transport reach within any open water other than lakes or reservoirs to provide connection between input and output reaches of the open water. N An isolated reach that is not connected to any other reaches, or not connected to any downstream reaches (the majority of Type "T" reaches in Oregon exist in the landlocked basin of south central Oregon). R A regular transport reach. S A starting headwater reach (transport reach) that has no reaches connecting to its upstream end, and one or two reaches connected to its downstream end.

Field Order	Name	Type	Width	Description
16	TYPE			T A terminal transport reach that has no reaches connecting to its downstream end, and one or two reaches connected to its upstream end. Type "T" reaches in Oregon flow into the Pacific Ocean or its bays (one reach in this file flows into Guano Lake in S.E. Oregon). W A non-transport reach that describes a segment of the shoreline of a "wide" river ("wide" rivers in Oregon include the Columbia and Willamette rivers and Youngs Bay). X A terminal start reach (type "X" reaches in Oregon exist in single reach streams only).
17	REACH_KEY	Char.	1	A code used to document changes to the original EPA reach file. The present utility of REACH_KEY is unknown. A A new reach that flows into an existing reach that has been added into the reach file. B The downstream end of an original reach that has been split (this reach retains all of the original attributes of the reach before it was split including length latitude, longitude, and pathmile). C An added reach that flows into an "A" reach. D A reach with a dam site. F A reach with a water falls. O An original unchanged EPA reach. S A reach created by splitting an original reach with one or more added reaches. Z A reach that is both a terminal and entry reach.
18	STREAM_KEY	Char.	1	A code that characterizes a transport reach based on its position relative to other reaches within the subject reach's stream. H The headwaters reach of a multi-reach stream. R A "regular" reach; a reach that resides between a headwaters reach and terminal reach in a multi-reach stream.

Field Order	Name	Type	Width	Description
18	STREAM_KEY			T A terminal reach; a reach that resides at the mouth of a multi-reach stream. X The reach of a single-reach stream; the reach includes both headwaters and mouth.
19	REACH_FLAG	Char.	1	A code to distinguish between "transport" reaches and "non-transport" reaches. A transport reach describes a path along which water flows. A non-transport reach describes shorelines. F Non-transport T Transport
20	OW_FLAG	Char.	1	A code to identify reaches that exist in the "open water" of reservoirs or lakes. F Reach is not in "open water" T Reach is in "open water"
21	LENGTH	Num.	4	The length of a reach measured in miles (XX.X). NOTE: documentation of methods or sources to determine lengths is unavailable.
22	CUM_LEN	Num.	5	The distance of a subject reach from its stream's mouth in miles (XXX.X). NOTE: the method for determining this value is unknown, and for some records changes in LENGTH may have changed what the correct value of CUM_LEN should be.
23	WIDTH	Num.	4	Width of the reach during low summer flow measured in feet. NOTE: documentation of methods or sources to determine widths is unavailable.
24	STREAM_NO	Num.	5	A number unique to all the reaches comprising a single stream assigned by NWPPC.
25	SEQ_NO	Num.	8	A number assigned to a reach to define its sequential order within its stream relative to other reaches within the stream.

Field Order	Name	Type	Width	Description
26	DOWNLAT	Num.	7	The latitude in degrees (XX.XXXX) of the downstream end of a reach. NOTE: although the number suggests a precision of 0.0001 degrees (approximately 32 ft), the DOWNLAT values in this reach file are not sufficiently accurate for GIS applications. Documentation of methods or sources to determine latitude is unavailable. For some reason the same latitude is assigned to multiple reaches within streams even though those reaches obviously exist at different latitudes.
27	DOWNLON	Num.	8	The longitude in degrees (XXX.XXXX) of the downstream end of a reach. NOTE: although the number suggests a precision of 0.0001 degrees (approximately 22 to 23 ft in Oregon), the DOWNLON values in this reach file are not sufficiently accurate for GIS applications. Documentation of methods or sources to determine longitude is unavailable. For some reason the same longitude is assigned to multiple reaches within streams even though those reaches obviously exist at different longitudes.
28	ST1	Char.	2	The Federal Information Processing Standard (FIPS) code of the last U.S. state the reach flows through (conversely, as you trace the reach from downstream end to upstream end, ST1 is the first state the upstream trace crosses). NOTE: this is the convention used to correct inconsistencies in this file; documentation of the convention used to assign ST1 to reaches in previous reach files is unavailable. 6 California 16 Idaho 32 Nevada 41 Oregon 53 Washington
29	CO1	Char.	2	The FIPS code of the last U.S. county the reach flows through (conversely, as you trace the reach from downstream end to upstream end, CO1 is the first county the upstream trace crosses). NOTE: this is the convention used to correct inconsistencies in this file; documentation of the convention used to assign CO1 to reaches in previous reach files is unavailable. FIPS county codes are only unique within states.

Field Order	Name	Type	Width	Description
29	CO1 (continued)			California (ST1 = 6): 15 DEL NORTE 49 MODOC 93 UNKNOWN Idaho (ST1 = 16): 3 ADAMS 27 CANYON 49 IDAHO 69 NEZ PERCE 73 OWYHEE 75 PAYETTE 87 WASHINGTON Nevada (ST1 = 32): 31 WASHOE Oregon (ST1 = 41): 1 BAKER 3 BENTON 5 CLACKAMAS 7 CLATSOP 9 COLUMBIA 11 COOS 13 CROOK 15 CURRY 17 DESCHUTES 19 DOUGLAS 21 GILLIAM 23 GRANT 25 HARNEY 27 HOOD RIVER 29 JACKSON 31 JEFFERSON 33 JOSEPHINE 35 KLAMATH 37 LAKE 39 LANE 41 LINCOLN 43 LINN 45 MALHEUR 47 MARION 49 MORROW 51 MULTNOMAH 53 POLK 55 SHERMAN

Field Order	Name	Type	Width	Description
29	CO1 (continued)			57 TILLAMOOK 59 UMATILLA 61 UNION 63 WALLOWA 65 WASCO 67 WASHINGTON 69 WHEELER 71 YAMHILL Washington (ST1 = 53): 3 ASOTIN 5 BENTON 11 CLARK 13 COLUMBIA 15 COWLITZ 21 FRANKLIN 23 GARFIELD 39 KLICKITAT 49 PACIFIC 59 SKAMANIA 69 WAHKIAKUM 71 WALLA WALLA
30	ST2	Char.	2	The FIPS code of another state (if any) the reach flows through before ST1. See ST1 for allowable values for ST2.
31	CO2	Char.	2	The FIPS code of another county (if any) the reach flows through before CO1. See CO1 for allowable values for CO2.
32	ST3	Char.	2	The FIPS code of another state (if any) the reach flows through before ST2. See ST1 for allowable values for ST3.
33	CO3	Char.	2	The FIPS code of another county (if any) the reach flows through before CO2. See CO1 for allowable values for CO3.
34	ST4	Char.	2	The FIPS code of another state (if any) the reach flows through before ST3. See ST1 for allowable values for ST4.
35	CO4	Char.	2	The FIPS code of another county (if any) the reach flows through before CO3. See CO1 for allowable values for CO4.
36	TOWNSHIP	Char.	4	Public Land Survey (PLS) township number (XX.X).

Field Order	Name	Type	Width	Description
37	TOWNSH_NS	Char.	1	Position of township relative to the Willamette Baseline. N = North S = South
38	RANGE	Char.	5	PLS range number (XX.XX).
39	RANGE_EW	Char.	1	Position of township relative to the Willamette Meridian. E = East W = West
40	REV_DATE	Char.	8	The most recent date (if known) a record was created or revised, MO/DY/YR.
41	EDITOR	Char.	15	The last name (or first 15 letters) in uppercase of the person who edited, created, or provided the record on REV_DATE.
42	AGENCY	Char.	10	Affiliation of EDITOR. ODFW, FISH = Oregon Dept. of Fish and Wildlife, Fish Division ODFW, HCD = ODFW, Habitat and Conservation Div. PSMFC = Pacific States Marine Fisheries Commission