

Table of Contents

II.	ENVIRONMENTAL BASELINE.....	II.A-1
II.A.	Description of the Action Area.....	II.A-1
II.A.1.	Geomorphology	II.A-1
II.A.2.	Climate.....	II.A-7
II.A.3.	Vegetation.....	II.A-8
II.A.4.	Land Uses.....	II.A-26
II.A.4.a.	Forestry	II.A-26
II.A.4.b.	Grazing.....	II.A-28
II.A.4.c.	Farming.....	II.A-32
II.A.4.d.	Mining.....	II.A-33
II.A.4.e.	Residential and Urban.....	II.A-35
II.A.5.	Land Ownership.....	II.A-35
II.A.6.	Human Population and Demographics	II.A-36
II.A.7.	Socio-economic Patterns and Trends.....	II.A-36
II.A.8.	Aquatic and Riparian Conditions.....	II.A-37
II.A.8.a.	Sedimentation	II.A-38
II.A.8.b.	Slope Stability.....	II.A-47
II.A.8.c.	Streamflow	II.A-58
II.A.8.c.i.	Upland Harvest.....	II.A-58
II.A.8.c.ii.	Road and Stream Connectivity.....	II.A-61
II.A.8.c.iii.	Fire	II.A-67
II.A.8.c.iv.	Hyporheic Flows	II.A-72
II.A.8.c.v.	Fish Passage	II.A-73
II.A.8.c.vi.	Stream Classes.....	II.A-75
II.A.8.d.	Large Woody Debris.....	II.A-77
II.A.8.e.	Bank Stability.....	II.A-81
II.A.8.f.	Soil Compaction.....	II.A-84
II.A.8.g.	Water Temperature	II.A-85
II.A.8.h.	Microclimate	II.A-96
II.A.8.i.	Litter Fall	II.A-97
II.A.8.j.	Nutrients.....	II.A-98
II.A.8.k.	Dissolved Oxygen.....	II.A-99
II.A.8.l.	Habitat Conditions	II.A-100

Table of Tables

Table II.A-1	Mass failure hazard ratings	II.A-3
Table II.A-2	Surface erosion hazard ratings.....	II.A-5
Table II.A-3	IDL timber types	II.A-11
Table II.A-4	IDL timber types in the Clearwater and Salmon River basins.....	II.A-12
Table II.A-5	Timber types on IDL land within bull trout core areas with greater than 5 percent state and private forestland ownership.....	II.A-13

Table II.A-6	Timber types on IDL land within steelhead population areas with greater than 5 percent state and private forestland ownership.....	II.A-14
Table II.A-7	Timber types on IDL land within Chinook population areas with greater than 5 percent state and private forestland ownership.....	II.A-15
Table II.A-8	Land uses in the Clearwater and Salmon River basins.....	II.A-26
Table II.A-9	Annual sawtimber growth in the Clearwater and Salmon River basins (board feet per acre (bf/ac) and million board feet (mmbf)).....	II.A-28
Table II.A-10	IDL grazing leases in the Clearwater and Salmon River basins.....	II.A-30
Table II.A-11	Land ownership in the Clearwater and Salmon River basins.....	II.A-35
Table II.A-12	Forested land ownership in the Clearwater and Salmon River basins.....	II.A-36
Table II.A-13	General population and workforce trends for counties containing land in the Clearwater River basin, 1980 to 2000.....	II.A-37
Table II.A-14	General population and workforce trends for counties containing land in the Salmon River basin, 1980 to 2000.....	II.A-37
Table II.A-15	Clearwater River basin landslides reported by McClelland et al. (1997) ..	II.A-49
Table II.A-16	Comparative landslides rates reported by PWA (1998) ..	II.A-50
Table II.A-17	CWE mass failure hazard ratings in bull trout core areas.....	II.A-53
Table II.A-18	CWE mass failure hazard ratings for bull trout local populations that contain greater than 5 percent state and private timberland ..	II.A-54
Table II.A-19	Water yield increases due to timber harvest in the inland northwest ..	II.A-59
Table II.A-20	Hydrologically connected road length in FAAs ..	II.A-66
Table II.A-21	Effects of wildfire on peak streamflows ..	II.A-72
Table II.A-22	LWD delivery mechanisms in Southeast Alaska [adapted from Murphy and Koski (1989)].....	II.A-78
Table II.A-23	LWD delivery mechanisms in Oregon Coast Range [adapted from Long (1987)] ..	II.A-78
Table II.A-24	Tributary temperatures in the Clearwater River drainage on August 3, 2000 ..	II.A-91
Table II.A-25	Tributary temperatures in the Selway River drainage on August 4, 2000. ..	II.A-91
Table II.A-26	Tributary temperatures in the Lochsa River drainage on August 4, 2000. ..	II.A-92
Table II.A-27	Maximum weekly water temperatures in the Selway and Middle Fork Salmon River drainages in Summer 2001 ..	II.A-93
Table II.A-28	IDFG relative quality of occupied habitat ..	II.A-100

Table of Figures

Figure II.A-1	CWE mass failure hazard ratings in the Clearwater and Salmon River basins ..	II.A-4
Figure II.A-2	CWE surface erosion hazard ratings in the Clearwater and Salmon River basins ..	II.A-6
Figure II.A-3	Average annual precipitation from 1961 to 1990 in Idaho ..	II.A-8
Figure II.A-4	Forested lands in the Clearwater and Salmon River basins.....	II.A-10
Figure II.A-5	Large fires in the Clearwater River basin occurring between 1870 and 1925.....	II.A-17

Figure II.A-6	Large fires occurring in the Clearwater River basin between 1926 and 1950.....	II.A-18
Figure II.A-7	Large fires occurring in the Clearwater River basin between 1951 and 2003.....	II.A-19
Figure II.A-8	Point occurrence of fires in IDL Fire Protection Districts in the Clearwater River basin between 1984 and 2004	II.A-20
Figure II.A-9	Historic fire regimes in the Clearwater River basin (DRAFT).....	II.A-21
Figure II.A-10	Ecosystems at risk for the Clearwater River basin (DRAFT).....	II.A-22
Figure II.A-11	Locations of large (greater than five hectares) fires in the Salmon River basin, Idaho, between 1908 and 2003 (NPPC 2004).....	II.A-23
Figure II.A-12	Historic fire regimes in the Salmon River basin (DRAFT)	II.A-24
Figure II.A-13	Ecosystems at risk for the Salmon River basin (DRAFT).....	II.A-25
Figure II.A-14	Estimated timber harvest in the Clearwater River basin.....	II.A-27
Figure II.A-15	Estimated timber harvest in the Salmon River basin	II.A-28
Figure II.A-16	IDL grazing leases in the Clearwater and Salmon River basins.....	II.A-31
Figure II.A-17	Mineral leases and mining permits in the Clearwater and Salmon River basins	II.A-34
Figure II.A-18	Sediment impaired streams in the Clearwater and Salmon River basins... (303(d) listed for sediment)	II.A-40
Figure II.A-19	Sediment filtration effectiveness of buffer zones	II.A-42
Figure II.A-20	Water and sediment delivery paths from roads.....	II.A-45
Figure II.A-21	Road-related landslides as a function of hillslope gradient from McClelland et al. (1997).....	II.A-51
Figure II.A-22	CWE mass failure hazard ratings for the North Fork Clearwater bull trout core area.....	II.A-54
Figure II.A-23	CWE mass failure hazard ratings for the South Fork Clearwater bull trout core area.....	II.A-55
Figure II.A-24	CWE mass failure hazard ratings for the Middle-Lower Clearwater bull trout core area.....	II.A-56
Figure II.A-25	CWE mass failure hazard ratings for the Little-Lower Salmon bull trout core area.....	II.A-57
Figure II.A-26	1934 Aerial photo from North Fork Clearwater River showing landslides and channel impacts to Beaver Creek (T40N R7E) and surrounding area.....	II.A-68
Figure II.A-27	2004 Orthoimage of same area displayed in Figure II.A-26 for 1934.....	II.A-69
Figure II.A-28	1934 Aerial photo in North Fork Clearwater River showing landslides and channel impacts to Thompson Creek (T41N R6E) and surrounding area.	II.A-70
Figure II.A-29	2004 Orthoimage of same area displayed in Figure II.A-28 for 1934.....	II.A-71
Figure II.A-30	Drainage area at point of last fish occurrence.....	II.A-76
Figure II.A-31	Illustration of uppermost fish presence.....	II.A-77
Figure II.A-32	LWD recruitment effectiveness	II.A-79
Figure II.A-33	CWE hydrologic risk ratings for watersheds in the Clearwater and Salmon River basins.....	II.A-83
Figure II.A-34	Riparian shade effectiveness.....	II.A-86
Figure II.A-35	Clearwater River drainage FLIR observations by IRZ Consulting	II.A-87
Figure II.A-36	Clearwater River mainstem water temperatures August 3, 2000	II.A-88

Figure II.A-37 Middle Fork Clearwater River water temperatures August 3, 2000..... II.A-88
Figure II.A-38 South Fork Clearwater River water temperatures August 3, 2000 II.A-89
Figure II.A-39 Selway River water temperatures August 4, 2000..... II.A-89
Figure II.A-40 Lochsa River water temperatures August 4, 2000 II.A-90
Figure II.A-41 Maximum weekly water temperatures in the Clearwater and Salmon River
basins in Summer 2000 II.A-94
Figure II.A-42 Temperature impaired streams in the Clearwater and Salmon River basins
(303(d) listed for temperature)..... II.A-95
Figure II.A-43 Habitat ratings for the Clearwater River basin II.A-101
Figure II.A-44 Habitat ratings for the Salmon River basin..... II.A-102