

MEMORANDUM

To: ESPAM2 Model Files
Fr: Bryce Contor
Date: 22 October 2009

Re: Mapping of diversions to Surface Water Entities

This memo identifies the data sources and diversions associated with each surface-water entity in ESPAM2 data. It accompanies spreadsheet file "Hist_all_Snake_Index_ESPAM2_DIVS_20091021_4.xls" and memos "MEMO_IESW059_Divs_Retrn_20091022.pdf" and "MEMO_Willow_Creek_Contor20090903_edited_20091022.pdf."

The spreadsheet is an index of the file names that appear in data for the IDWR Reach Gain and Loss Program, in files that generally include terms similar to "histupsnak" and "histlosnak" along with date qualifiers. The diversions and returns spreadsheet for ESPAM2 contains blocks of data from these RGLP spreadsheets, copied and pasted in a manner that allows automated calculation of diversions and returns with user-input stress period definitions. Those data identify many individual ditches by name. For other entities, the entity name and "Comments" in this memo describe the general area or water source for which diversions are represented.

Table 1 identifies summarizes the data sources and diversions for entities.

Table 1
Data Sources, Ditches and Canals
Assigned to Surface-water Irrigation Entities
for ESPAM2

ENTITY	Data source	Comment
IESW000 (Null Idaho)	GIS analysis of irrigated lands	This is a "catch-all" entity to provide an irrigation depth for stray irrigated parcels that happen to not lie within any defined entity. Diversion volumes are based on an assumed diversion depth of 6 feet, using GIS acreage from each irrigated lands data set.
IESW001 (A&B 1) ¹	RGLP	

¹ At one time the numeric suffix indicated the number of companies or service areas that were combined into a single entity, with the name of the entity coming from the company that was first alphabetically. Even during ESPAM1.1 data refinement, however, we did not change entity names nor adhere to this convention as we continued to adjust entities and diversion assignments.

ENTITY	Data source	Comment
IESW002 (Aberdeen Springfield 1)	RGLP	
IESW005 (Big Lost River 3)	Watermaster records, USGS gage records	Includes all SW irrigation in the Big Lost River basin. Prior to 1997 data are from watermaster reports. From then on, watermaster reports include groundwater as well as surface water (but not distinguished by source), so after 1996, diversions are based on (upstream gages - downstream gage - calculated perched seepage)
IESW008 (Blaine 1)	Watermaster records	Blaine County Canal Company (Little Lost River, Basin 33). This entity was treated differently from other Little Lost River irrigation because it has inferior water rights, with different delivery patterns and more supplemental GW irrigation. See IESW053
IESW009 (Burgess 5)	RGLP	
IESW010 (Burley 1)	RGLP	
IESW011 (Butte and Market 1)	RGLP	
IESW012 (Canyon Creek 3)	RGLP	
IESW014 (Corbett 4)	RGLP	
IESW015 (Dewey 1)	RGLP	At some time during the study period this entity was converted from irrigation to a wildlife refuge, but diversion records continue so we have retained it as part of the irrigated-lands data set.
IESW016 (Egin 2)	RGLP	
IESW018 (Falls 3)	RGLP	
IESW019 (Fort Hall 1)	RGLP	
IESW020 (Harrison 6)	RGLP	Please see accompanying Willow Creek memo.
IESW022 (Idaho 2)	RGLP	Please see accompanying Willow Creek memo.
IESW025 (Little Wood 2)	IDWR	Carey tract. The only data we have located are constant-rate estimates which we applied to all model years.

ENTITY	Data source	Comment
IESW027 (Milner 1)	RGLP	
IESW028 (Minidoka 1)	RGLP	
IESW029 (Mud Lake 4)	Watermaster records	All SW irrigation directly from Mud Lake. Subset of WD31 diversions. See IESW051
IESW030 (New Sweden 7)	RGLP	Combines entities IESW030 and IESW033 from ESPAM1.1.
IESW031 (North Fremont 2)	GIS analysis of irrigated lands	Only a small part of the service areas lie within the study area. In ESPAM1.1 we partitioned the total diversion volume, but we have poor data on irrigated lands outside the study area. For ESPAM2 we applied a uniform depth of 6 feet to acreage indicated by GIS for various irrigation data sets.
IESW032 (Northside 7)	RGLP	RGLP data files contain many redundant entries; some are input files or intermediate files for calculations. Assignment of files is carried over from ESPAM1.1, which incorporated careful and extensive review with IDWR personnel. See note at IESW007 about realignment of boundaries and change in status of one data file.
IESW034 (Peoples 8)	RGLP	
IESW035 (Progressive 5)	RGLP	Please see accompanying Willow Creek memo.
IESW037 (Reno 1)	Birch Creek; watermaster and power-plant records	Serves lands under Reno Ditch Company
IESW038 (Rexburg 1)	RGLP	
IESW039 (Silkey 2)	RGLP	
IESW040 (Southwest 2)	USGS gage and canal-company data	Oakley Fan
IESW041 (Twin Falls 1)	GIS analysis of irrigated lands	Only a small part of the service areas lie within the study area. In ESPAM1.1 we partitioned the total diversion volume, but we have poor data on irrigated lands outside the study area. For ESPAM2 we applied a uniform depth of 6 feet to

ENTITY	Data source	Comment
		acreage indicated by GIS for various irrigation data sets.
IESW044 (Jefferson 3)	(none)	Producers and Montevieu Canal Companies and Jefferson Irrigation District, all in the Montevieu/Mud Lake area. No surface-water diversions. This entity needed to be included to allow operation of Offsite Pumping routine, which adds offsite GW volumes to SW volumes to calculate canal loss and net impact of irrigation. Data tables are populated with values of zero SW diversion and return.
IESW051 (Private Basin 31)	Watermaster records	Camas and Beaver Creek above Mud Lake. Diversions from WD31 watermaster records, less diversions attributed to IESW029.
IESW032 (Private Basin 32)	Watermaster records	Medicine Lodge Creek. Diversions from WD32-C watermaster records, reduced for estimated portion of irrigated lands lying outside model boundary.
IESW053 (Private Basin 33)	Watermaster records	Little Lost River SW irrigation outside of Blaine County Canal Company. Diversions from WD33 watermaster records, subtracting canal co. (IESW008) and users whose place of use is outside the model boundary.
IESW055 (Independent 6)	RGLP	
IESW056 (Henry's Fork)	RGLP	This entity has so many canals that there are two sub-worksheets in the diversion spreadsheet file.
IESW057 (Blackfoot River)	Watermaster and BIA records	Irrigation from Blackfoot River plus Reservation Canal. We used watermaster and BIA records in preference to RGLP data.
IESW058 (Milner Gooding)	RGLP	Lands irrigated from Milner Gooding Canal between Milner Dam and the start of IESW059. This is a new entity for ESPAM2; it was split off of ESPAM1.1 entity IESW007.

ENTITY	Data source	Comment
IESW059 (Wood Rivers)	RGLP, USGS, Watermaster	Lands irrigated from the Big Wood River below Magic Reservoir, the Little Wood River below Carey, the Milner Gooding Canal below IESW058, and Thorn Creek and Dry Creek. Because of ambiguity in the RGLP data and unmeasured fluxes between Big Wood and Little Wood delivery systems, we combined all the irrigated lands from ESPAM1.1 entities IESW007 (less IESW058) and IESW054, and did an in-and-out mass balance of all surface-water fluxes crossing the entity boundary. These we partitioned into perched seepage and the net of (diversions minus returns). This is the same approach that was used in IESW005 after 1996.