



Extension of model calibration through 2014, ESPAM2.2

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Extension of model calibration

- ▶ ESPAM1.1 calibration - May 1980 to April 2002 (22 years)
- ▶ ESPAM2.1 calibration - May 1980 to October 2008 (28.5 years)
- ▶ ESPAM2.1 validation - November 2009 to October 2010 (2 years)
- ▶ ESPAM2.2 proposed calibration - May 1980 to October 2014 (34.5 years)

Status of updates to water budget files

- ▶ Stacey Taylor (IWRRI) submitted updated files for some water budget components on 12/29/2016
 - ▶ Surface water diversions updated through 2014
 - ▶ Need to investigate further for missing data for a few of the irrigation entities
 - ▶ Sprinkler percentages for entities updated through 2014
 - ▶ Exchange well and fixed point well data updated through 2014
 - ▶ Perched river seepage updated through 2014
 - ▶ Tributary underflow updated through 2014
 - ▶ PRISM precipitation data are available from OSU through 2014
 - ▶ Updated ET Idaho data (expected from U of I soon) are needed to update wetlands ET
 - ▶ Offsite pumping data for 2011-2014 needs to be calculated using updated ET Idaho data or METRIC ET data
 - ▶ Non-irrigated recharge was only updated through 2010

Status of updates to irrigated lands files

▶ Irrigated lands

- ▶ 1980: RASA80LC (IDWR, 1980), same as ESPAM2.1
- ▶ 1986: IDWR GIS analyst classification (2014), replaces ESPAM2.1 file
- ▶ 1992: SNKLC92 (IDWR, 1997), same as ESPAM2.1
- ▶ 1996: IDWR GIS analyst classification (2015), this year not represented in ESPAM2.1
- ▶ 2000: IDWR GIS analyst classification, replaces ESPAM2.1 file
- ▶ 2002: IDWR GIS analyst classification (2015), minor linework updates to ESPAM2.1 file
- ▶ 2006: IDWR GIS analyst classification (2015), minor linework updates to ESPAM2.1 file
- ▶ 2008: IDWR GIS analyst classification (2014), this year not represented in ESPAM2.1
- ▶ 2009: IDWR GIS analyst classification (2014), after ESPAM2.1 calibration period
- ▶ 2010: IDWR GIS analyst classification (2014), after ESPAM2.1 calibration period
- ▶ 2011: IDWR GIS analyst classification (2016), after ESPAM2.1 calibration period
- ▶ 2012: IDWR GIS analyst classification (planned, 2018)
- ▶ 2013: IDWR GIS analyst classification (pending, summer 2017)
- ▶ 2014: IDWR GIS analyst classification (planned, 2018)

Status of updates to evapotranspiration files

▶ ET data

- ▶ ESPAM2.1 ET data for 1980-2010 developed using ET Idaho and NASS crop mix reports, ET adjustment factors calibrated using METRIC ET (2000 and 2006) and PEST
- ▶ METRIC ET now available for 1986, 1992, 1996, 2000, 2002, 2006, 2008, 2009, 2010, 2011, 2013
- ▶ NDVI ET available for 2014
- ▶ Need to address details of implementing direct use of METRIC ET
- ▶ Need to decide how ET will be calculated for non-METRIC years

Action items for updating model files through 2014

- ▶ Complete updates to IWRRI water budget data (DIV, FPT, NIR, OFF)
- ▶ Add any managed recharge and aquifer enhancement project data not accounted for by IWRRI
- ▶ Update river stage
- ▶ Update water level targets
- ▶ Update reach gain and spring discharge targets
- ▶ Decide how to implement direct use of METRIC ET
- ▶ Decide how ET will be calculated for non-METRIC years
- ▶ Decide if PEST will be allowed to adjust ET during calibration
- ▶ Revise ESPAM2 Recharge Tool (ETI tool) as needed to accommodate new methods for calculating ET
- ▶ Revise MKMOD? Will ET inputs still consist of irrigated ET depth by model cell and ET adjustment factor by irrigation entity?