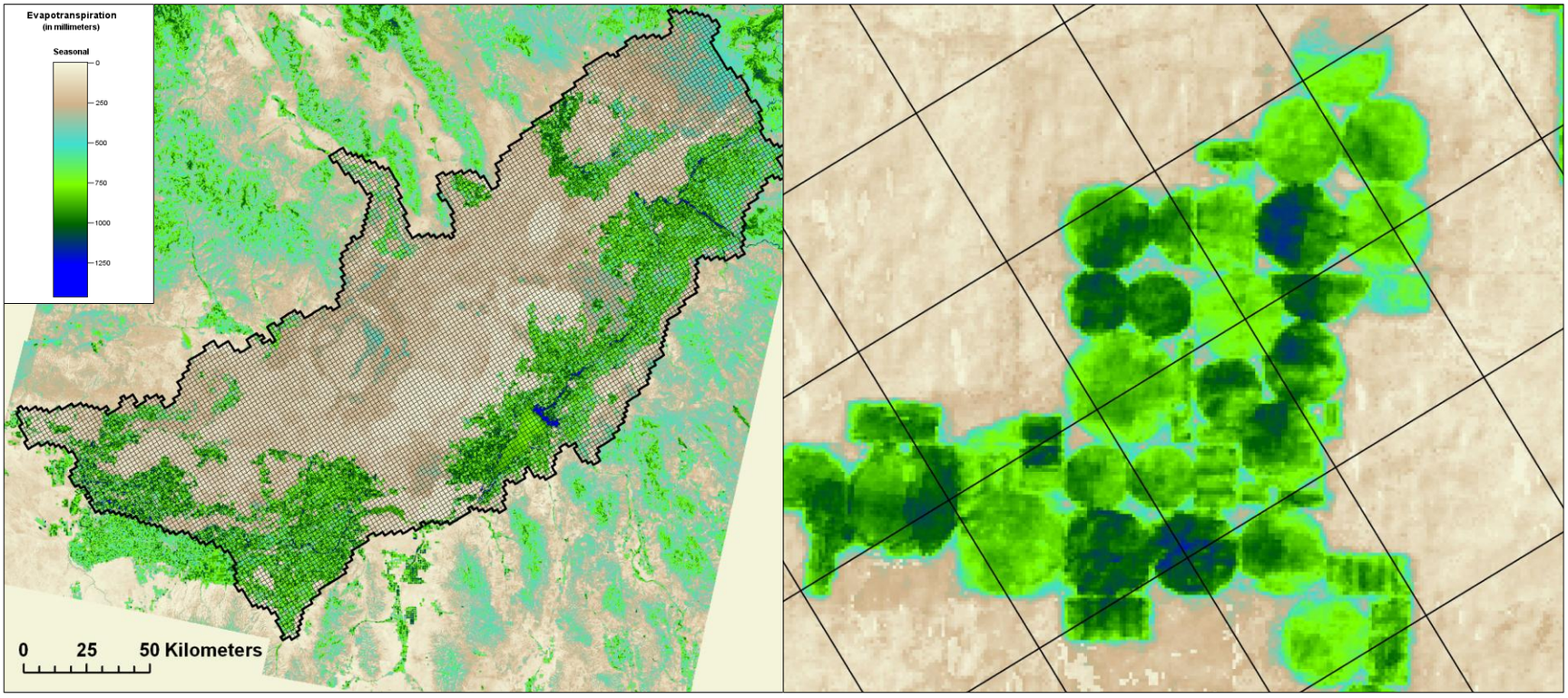
Hydrologic Modeling



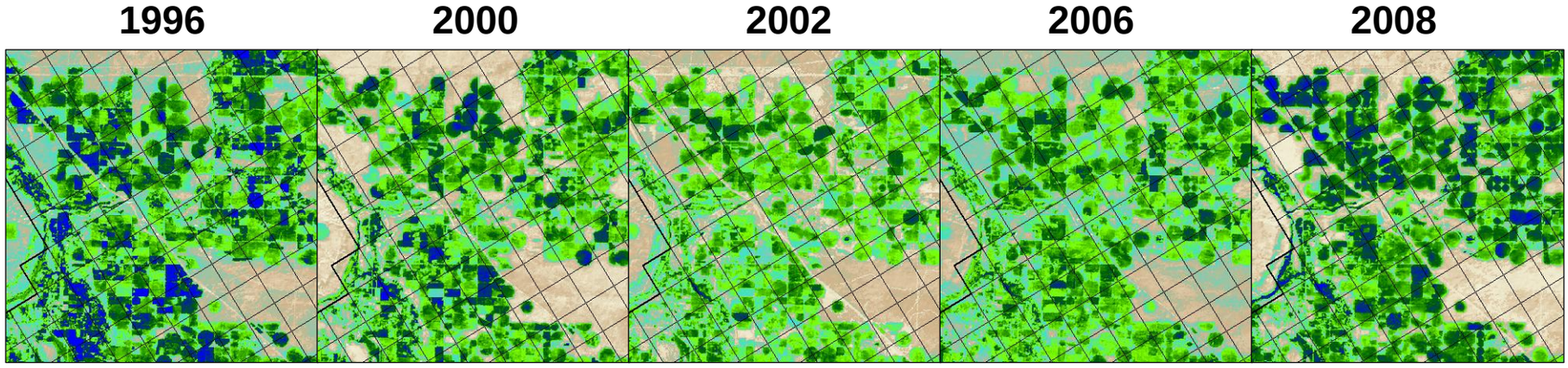
Seasonal 2000 METRIC ET with the ESPA model cells (close up on the right). Each model grid cell is one square mile.

			Mean ET (mm)		
Cell ID	Source	Acres	2000	2002	2006
SP022011	Surface water	105	574	601	782
SP022013	Surface water	59	593	568	552
SP022111	Mixed	122	741	632	791
SP022112	Mixed	388	727	736	704
SP022113	Mixed	350	619	715	739
SP022114	Mixed	73	646	814	738
SP022163	Mixed	369	785	749	867
SP022164	Ground water	12	755	765	840
SP022165	Ground water	227	942	757	782
SP022170	Mixed	81	529	671	879
SP022171	Surface water	69	508	700	714
SP022172	Surface water	45	560	657	771
SP022196	Surface water	320	460	512	567
SP022197	Mixed	51	309	538	465
SP022197	Surface water	505	413	548	581
SP022198	Surface water	546	515	637	654
SP022199	Surface water	632	647	673	713
SP022200	Surface water	428	465	555	592

Hydrologists used monthly and seasonal METRIC ET to calibrate MODFLOW ground water models of the Eastern Snake Plain Aquifer (ESPA) and the Boise Valley aquifer. This improves the accuracy of estimated distribution and quantities of depletions from the aquifers caused by pumping, as well as improving estimates of incidental recharge to the aquifers stemming from irrigation diversions. These more accurately calibrated ground water models are being used in litigation involving conjunctive use of ground water and surface water resources.

For the ESPA model, METRIC ET data has been processed for years: 1996, 2000, 2002, 2006, and 2008. Monthly and seasonal METRIC ET data are being developed for all years having sufficient cloud-free imagery from the mid 1980s to the present. This will allow analysis of long term trends in ET over the ESPA and the resulting impact on the aquifer.

The table shows trends in ET from irrigated land for years 2000, 2002, and 2006 by model cell and source. The sources are surface water, ground water, and mixed (both surface water and ground water).



Trends in ET on the ESPA from 1996 to 2008.