

General Overview of DWR Modeling of the Delta Consumptive Use

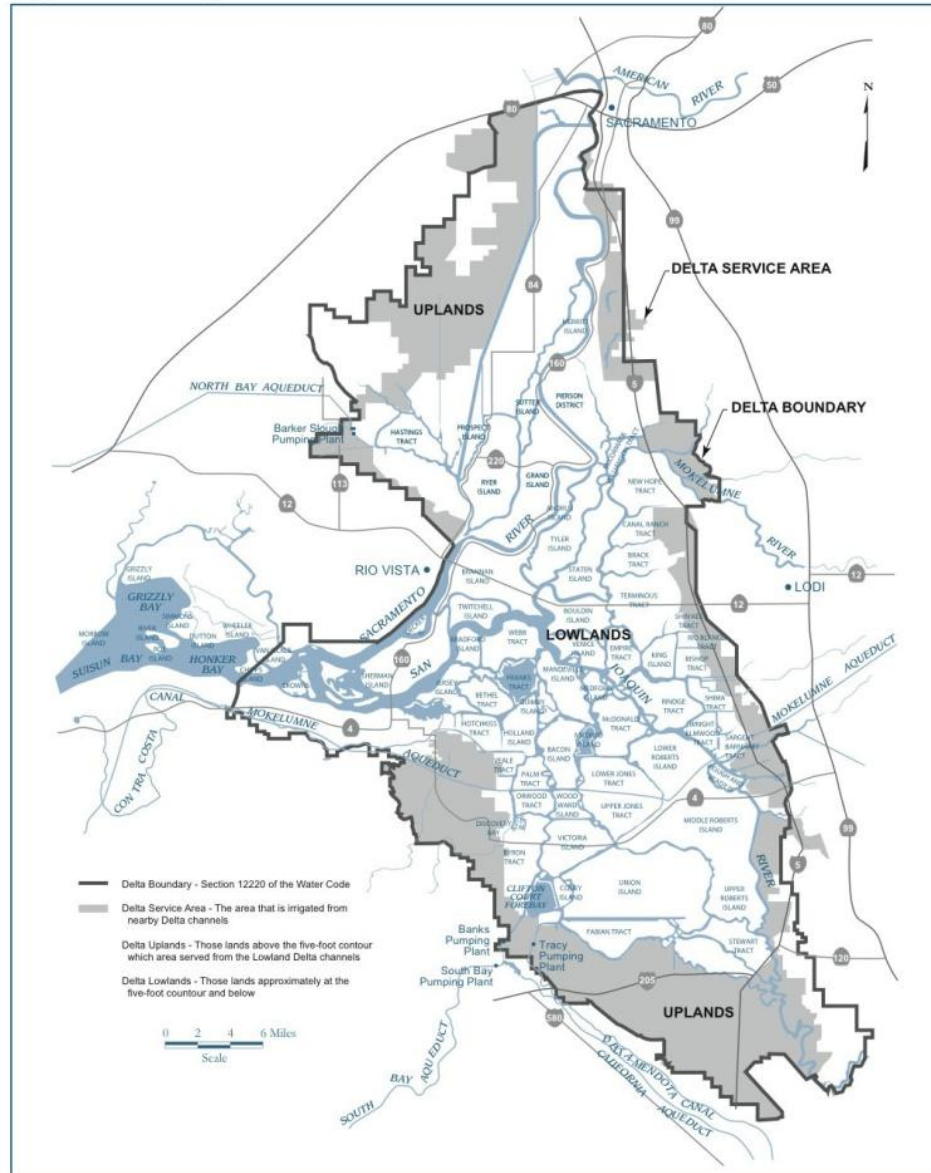
Towards Improving Modeling the Delta: Pilot Study at Fabian Tract

California Water and Environmental Modeling Forum
University of California at Davis, August 10, 2012

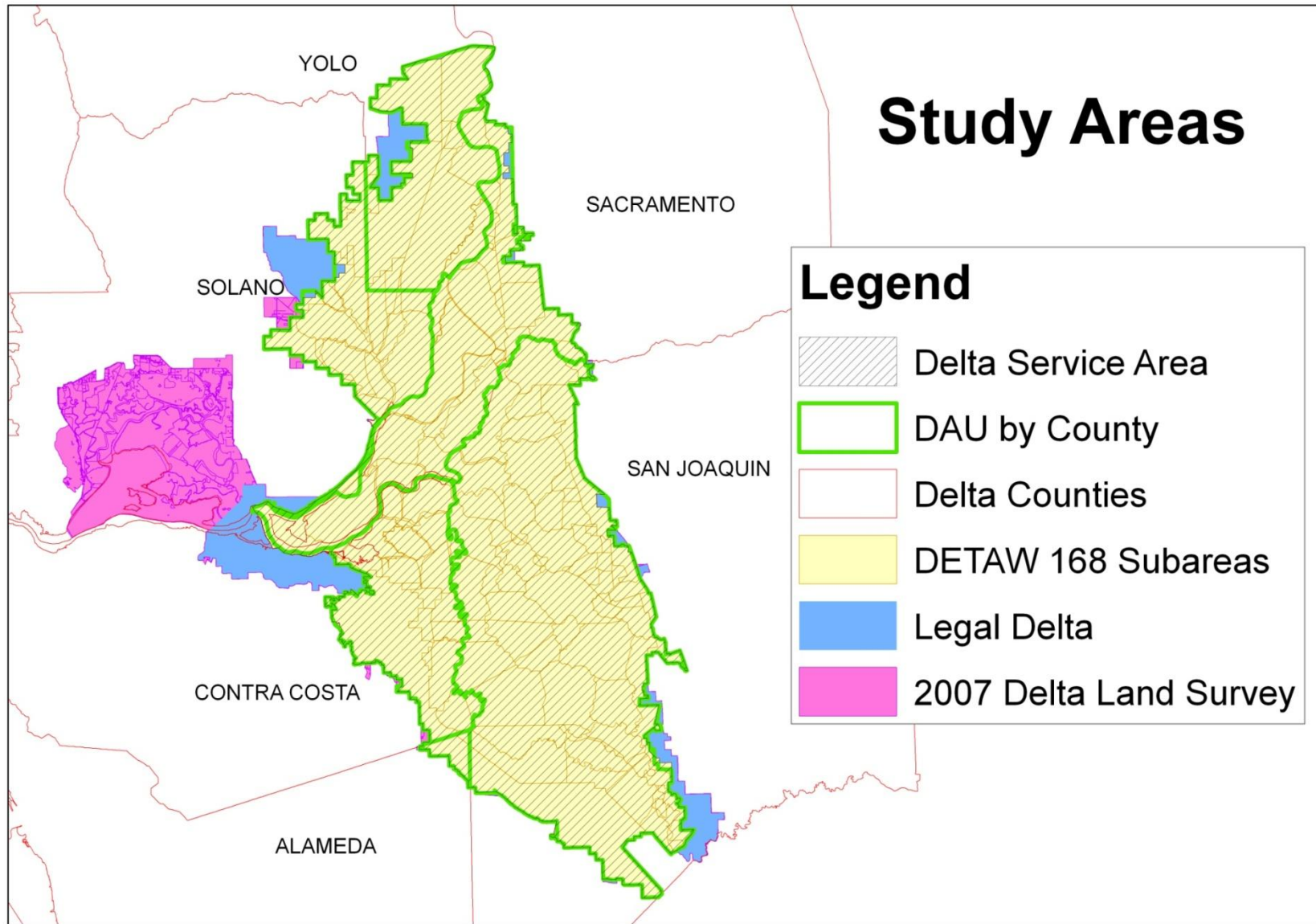
Tariq Kadir (CA DWR)



Legal Delta Boundary

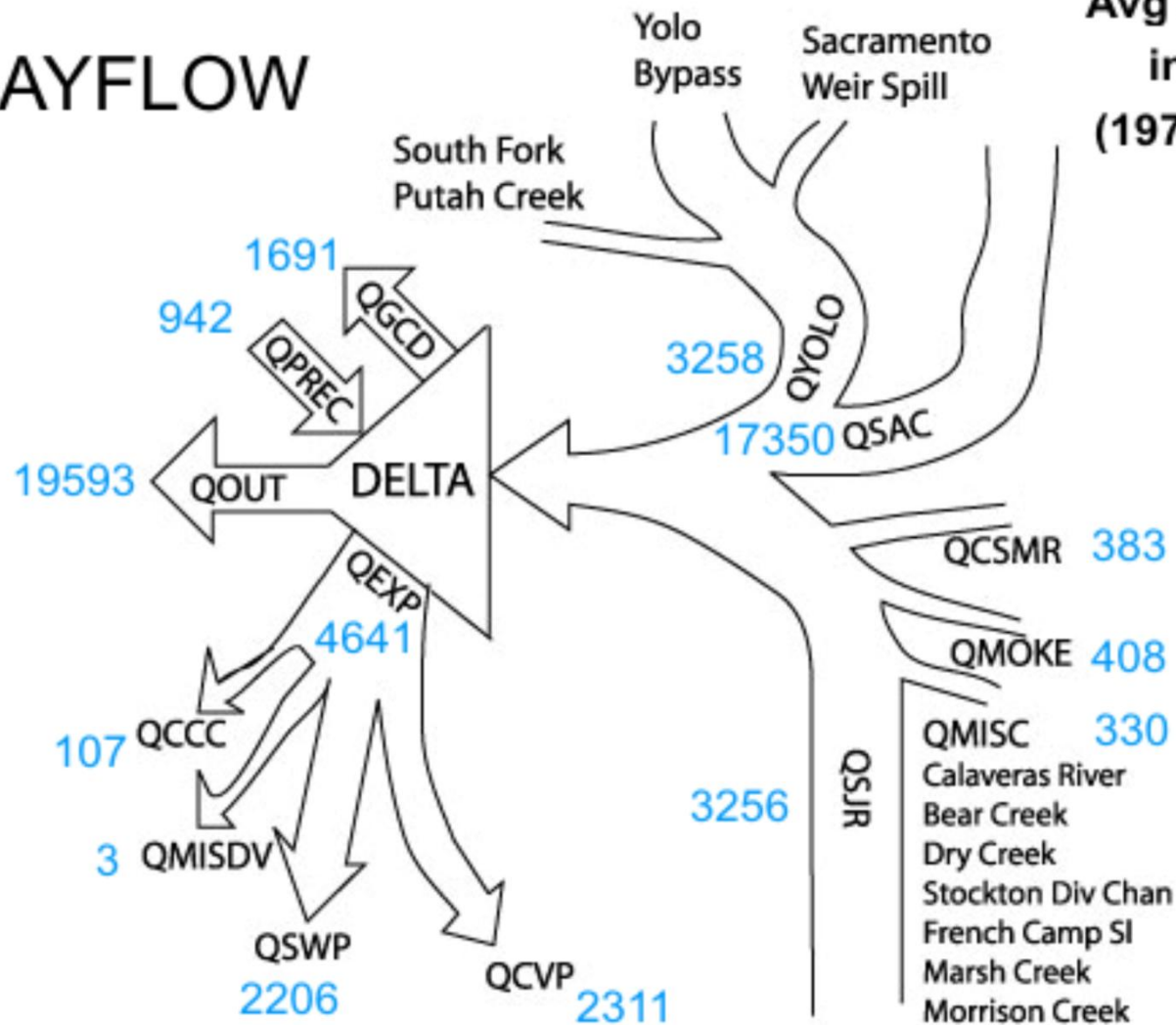


Study Areas



DAYFLOW

**Avg Annual
in TAF
(1970-2003)**



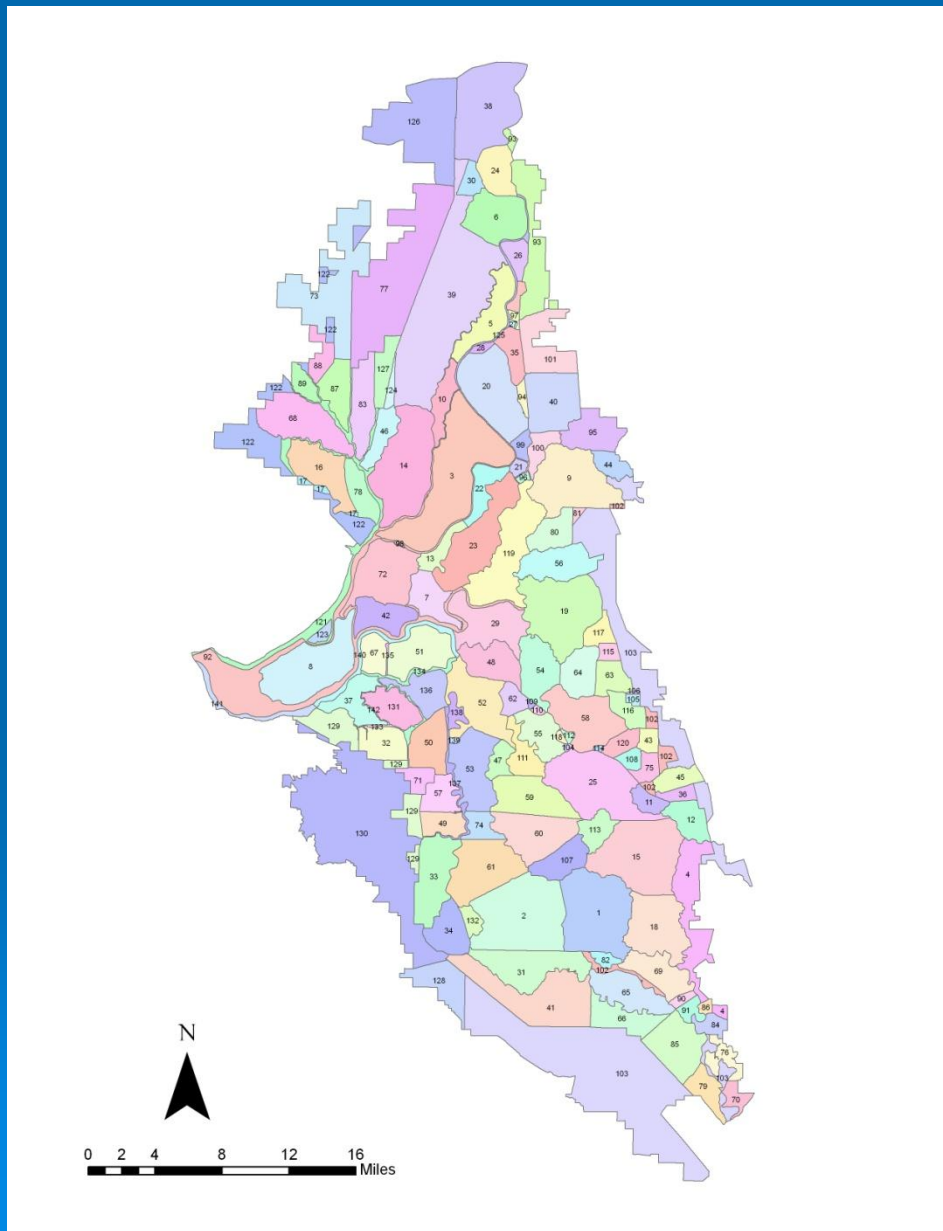
Delta Consumptive Use Models Developed by DWR

	Consumptive Use model	Delta Island Consumptive Use model	Dayflow	Delta Evapotranspiration of Applied Water
Acronym	CU	DICU	DAYFLOW	DETAW
Developed	1970's	1990's	1978	2005-2007
Computer code	FORTRAN	FORTRAN	spreadsheet	Python version and C++ version
Purpose	land use based demands	land use based demands	Delta Balance	land use based demands
Land Use Types	Ag (12), Ur, NV, RV, WS	Ag (16), Ur, NV, RV, WS	Fixed Gross Channel Depletions (*)	Ag (12), Ur, NV, RV, WS
Time Step	monthly	monthly	daily	daily
Simulation Period	WY1922-WY2009	WY1922-WY2009	WY1956-WY2011	WY1922-WY2009
Spatial Resolution	uplands and lowlands	142 subareas	Delta	168 subareas
Historical Simulation	land use varies annually	critical/non-critical	not applicable	land use varies annually
Projected Simulation	land use fixed	none	not applicable	critical/non-critical
Precipitation Trace	historical (7-stations)	historical (7-stations)	historical (Stockton)	historical (7-stations)
Used in	Calsim hydrology	DSM2 model	varies	DSM2 and Calsim
Documentation	yes	yes	yes	yes

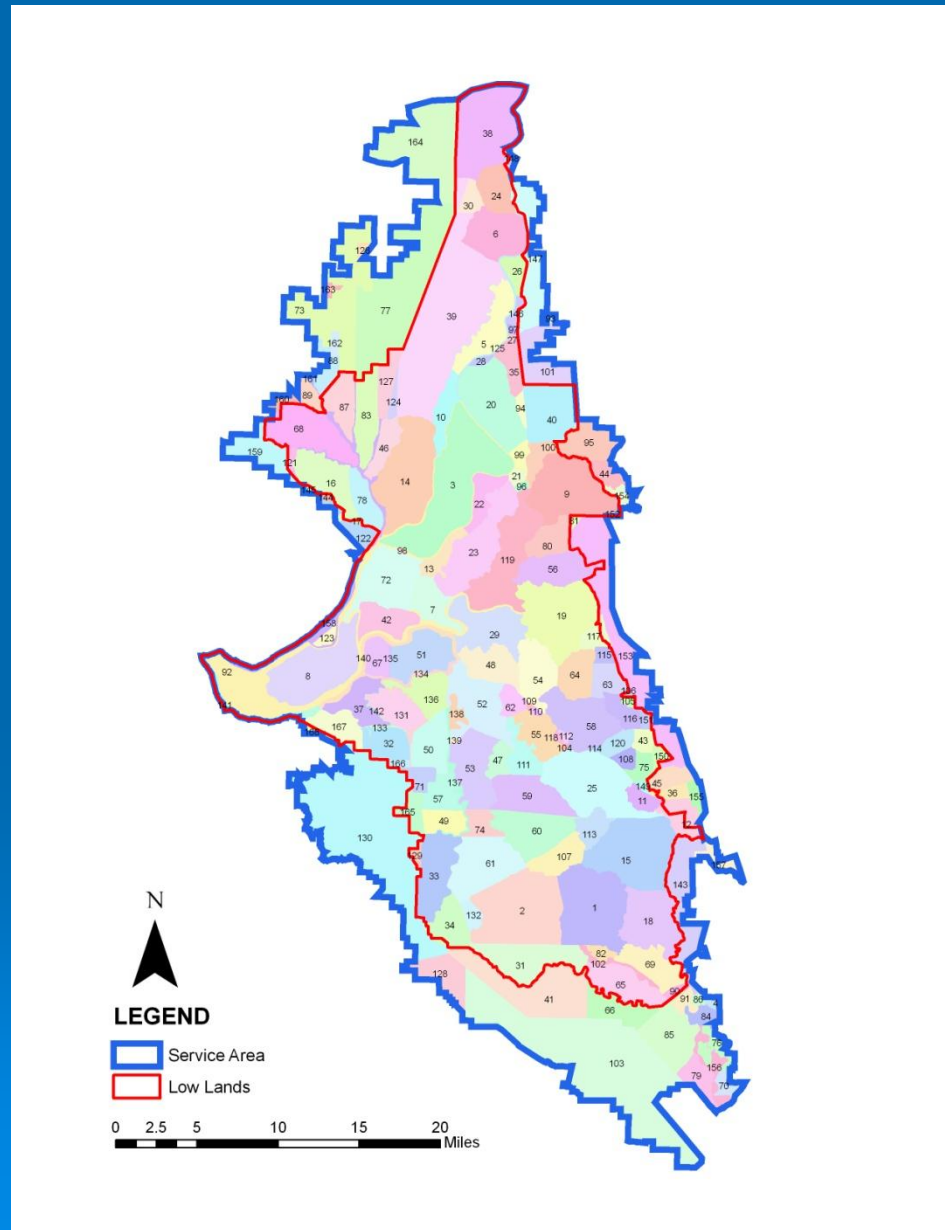
(*) Fixed daily pattern for all year types



142 Subareas - Digitized



DETAW 168 Subareas and Uplands/Lowlands

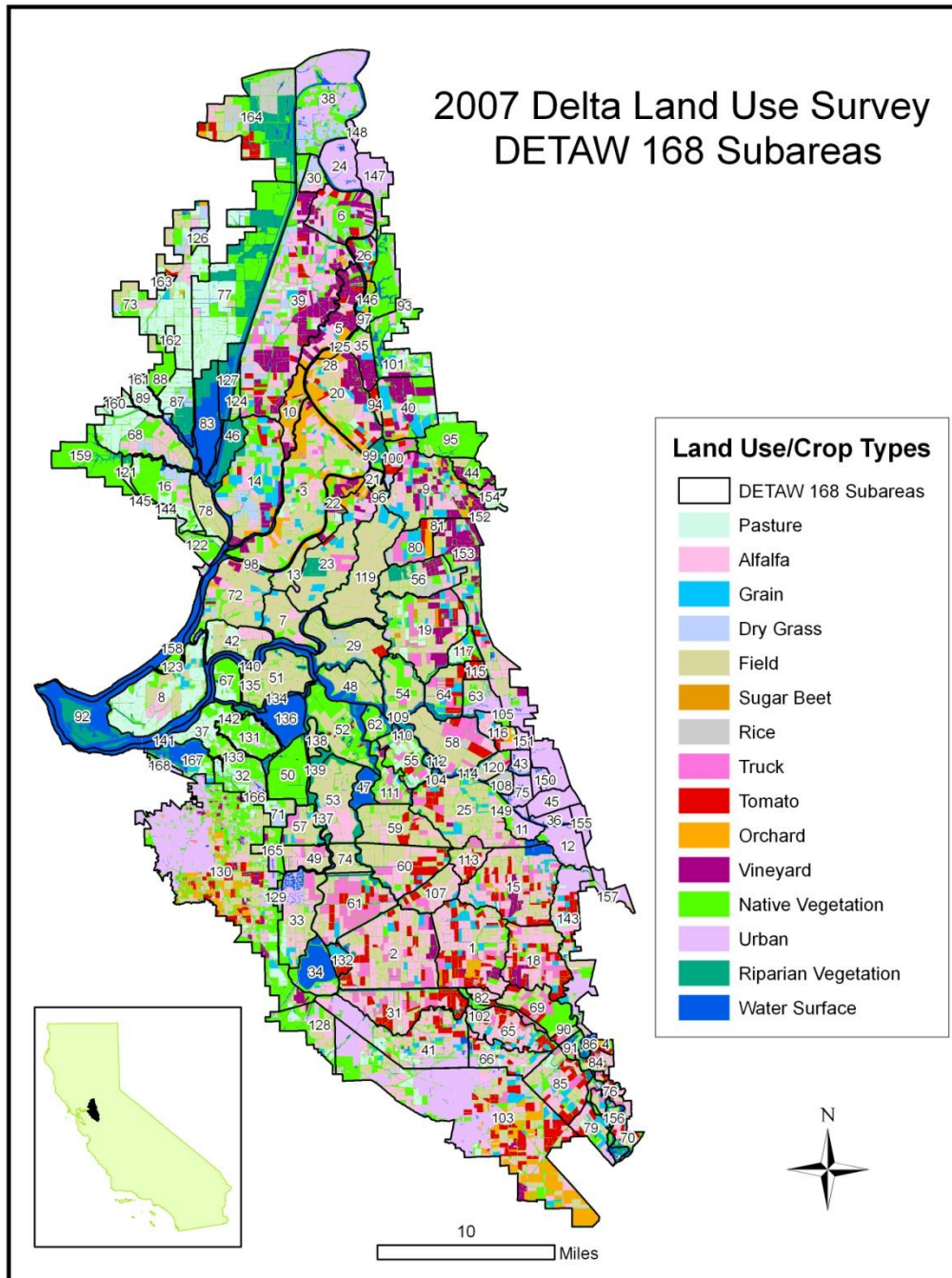


Model Resolution

DETAW

168 Subareas

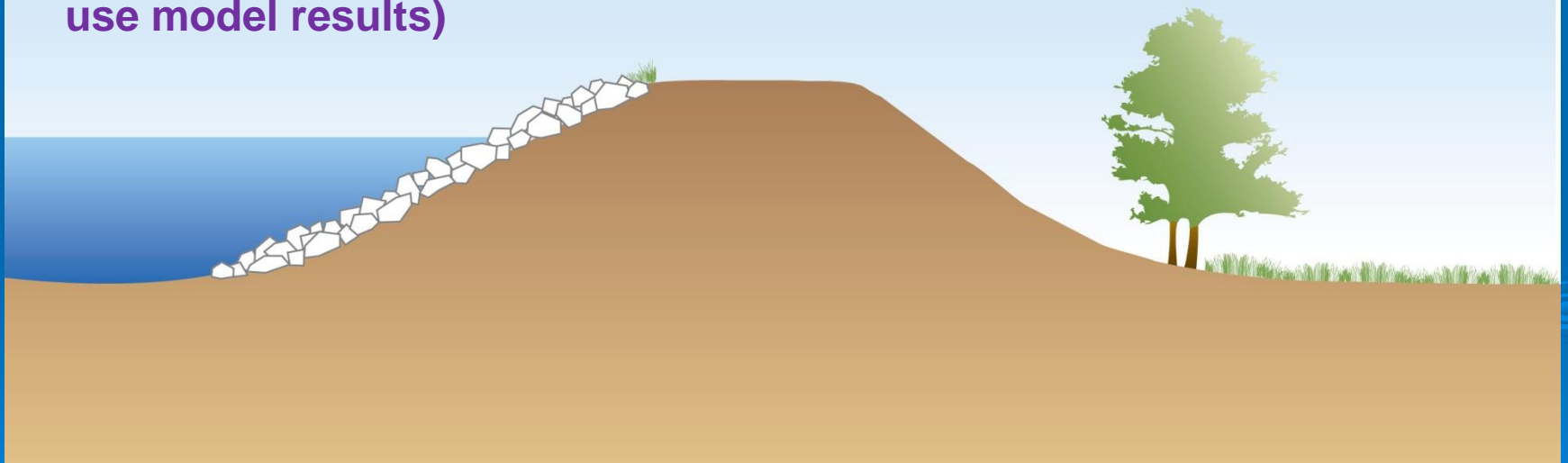
16 Land Use Categories



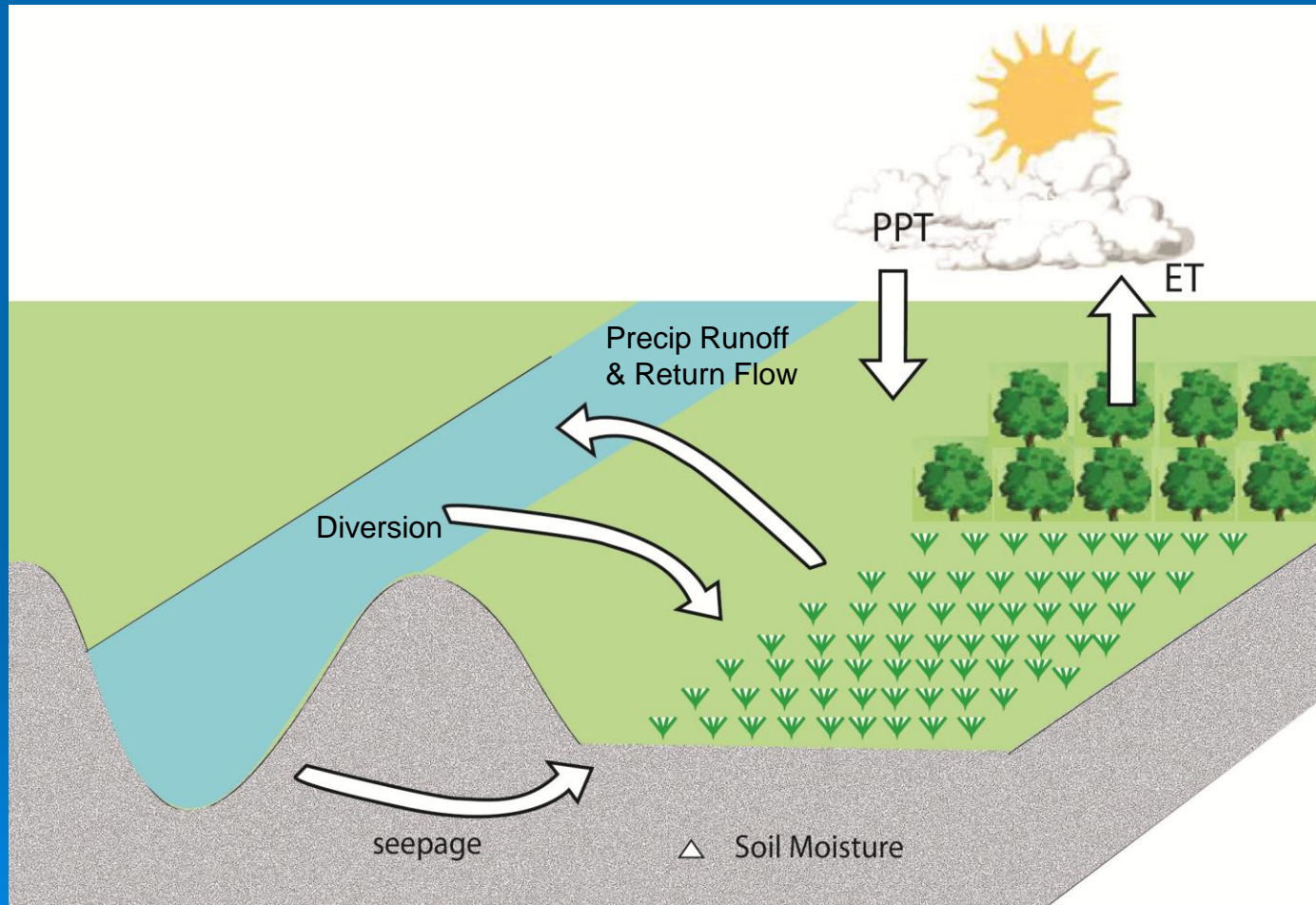
Two Separate Perspectives

DSM2 and CalSim models are from the channels perspective (post-processing consumptive use model results)

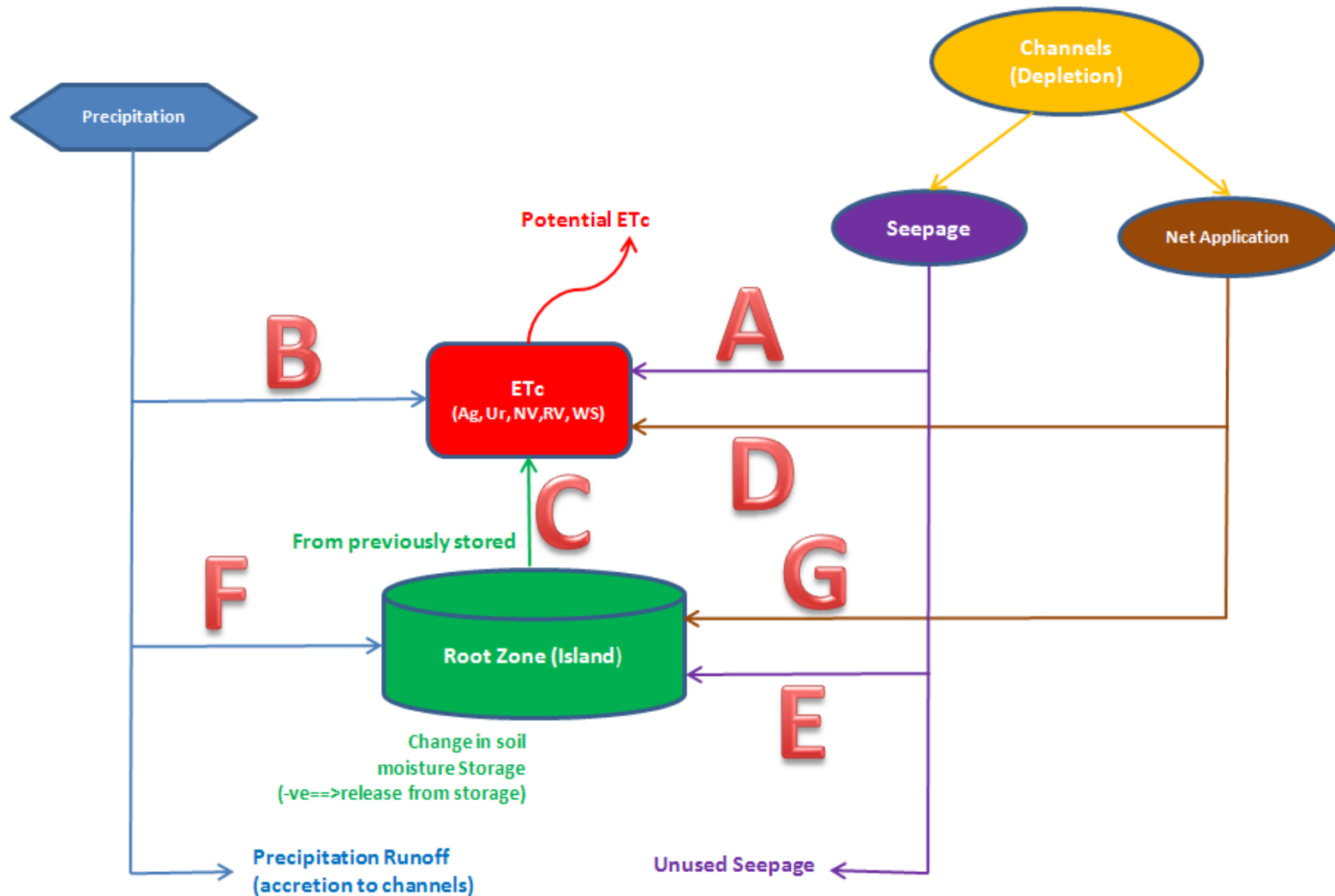
All consumptive use models are from the subarea or island perspective



Key Hydrological Components



Priorities for Meeting Consumptive Use (ETc)



Thank You

