Objective: Summarize wetland change models currently available for Southern California wetland managers.
Wetland change models focus on predicting changes in vegetative and/ or habitat area.

Model	Agency/ organization	Appropriate scale	Spatial resolution	Temporal scale	Input parameters	Vegetation classification	Output parameters	Validation	Source
Terms Defined (i.e., column titles)	Lead agency/ organization	Scale at which the model should be used to inform decisions (i.e., project, local, regional….)	Map resolution (i.e., size of grid cells)	What scenarios are available	What data goes into the model	How the vegetation in the model is classified	What product(s) are produced by the model	How the model is validated	Where to find more details about the model
Sea Level Affecting Marshes Model (SLAMM 1–5)	Warren Pinnacle Consulting, Inc.	Local to regional (such as <1 km2 –100,000 km2)	10–100 m	Time steps of 5–25 yr can be used on the basis of sea-level rise scenario, simulation time up to 100 yr	Elevation maps (lidar preferred), wetland land cover (such as NWI), development footprint, and dike location, sea level rise projections	NWI	Maps of areas/habitats potentially vulnerable to inundation (land cover and elevation maps)	None	Park and others (1989); Galbraith and others (2002, 2003); National Wildlife Federation (2006); Craft and others (2009).
Sea Level Affecting Marshes Model (SLAMM 6)	Warren Pinnacle Consulting, Inc.	Local to regional (such as <1 km2–100,000 km2)	10–100 m	Time steps of 5–25 yr can be used on the basis of sea-level rise scenario, simulation time up to 100 yr	Elevation maps (lidar preferred), wetland land cover (such as NWI), development footprint, dike location, sea-level rise projections	NWI	Maps of areas/habitats potentially vulnerable to inundation (land cover and elevation maps)	Hindcast	Clough and others (2010); Geselbracht and others (2011).
NOAA Sea Level Rise Viewer: Marsh Migration Maps *	National Oceanic & Atmospheric Administration (NOAA)	???	???	None	Sea level rise values, Tidal surfaces (MHHW, MTL, MLLW, and MHWS) in NAVD88 values, FWUB surface in NAVD88, Digital elevation model, Accretion rates, Wetland habitat data	NOAA's Coastal Change Analysis Program (C-CAP)?	Maps of marsh migration	???	NOAA Coastal Services Center. *Detailed Method for Mapping Sea Level Rise Marsh Migration* (2012).
Wetland Accretion Response Model for Ecosystem Resilience (WARMER)*	U.S. Geological Survey	Local	3m?	Time steps of 1 yr	Projected changes in relative sea-level, subsidence, inorganic sediment, accumulation, aboveground and belowground organic matter productivity, compaction, and decay	On-the-ground vegetation surveys?	One-dimensional model of wetland accretion and elevation over time; compiled into maps over time	Hindcasting based on SET and/or dated sediment cores	Takekawa, J.Y., et al
Marsh Equilibrium Model (MEM)*	University of South Carolina/Jim Morris	Local	5m?	Time steps of 1 yr	Estimates of mean annual suspended sediment concentration (SSC), plant productivity by elevation, organic matter decay rate, root to shoot ratio of dominant vegetation, refractory fraction of carbon, root depth, trapping efficiency, and sediment settling velocity	Typically, on-the-ground vegetation surveys. Specifically, biomass by elevation curves, and plant communities (dominant species: cordgrass, pickleweed, etc..) by elevation	Predicted marsh elevation over time, compiled into vegetation maps over time	Hindcasting based on SET and/or dated sediment cores	Takekawa, J.Y., (2013). Downscaling climate change models to local site conditions: San Diego National Wildlife Refuge Complex. Unpubl. Data Summary Report. U.S. Geological Survey, Western Ecological Research Center, Vallejo, CA. 88pp.

*** To be validated by modelers**

Matrix Adapted From: Doyle, T.W., Chivoiu, Bogdan, and Enwright, N.M., 2015, Sea-level rise modeling handbook—Resource guide for coastal land managers, engineers, and scientists: U.S. Geological Survey Professional Paper 1815, 76 p.,http://dx.doi.org/10.3133/pp1815.