***Important information to accompany* *the movie:***

***Southern California Breakup and Transverse Ranges Rotation,   
20 Ma to Present***

This movie shows a model for the tectonic evolution of southern California and northern Baja California, from twenty million years ago to present, approximately depicting the rotation of the Transverse Ranges block and the breakup of the continental shelf to form the California borderland. The download package includes the animation and supporting map images of the present day Transverse Ranges physiography, the proposed rotation trajectory, and the California borderlands and offshore islands.

This movie was created by Tanya Atwater in Photoshop and Morph.

Physiographic maps are from K. Edwards and R.M.Batson, U.S.G.S., 1990, “Experimental Digital Shaded-Relief Maps of Southwestern United States." Rotation trajectory follows suggestions by Crouch and Suppe, 1993, *Geol. Soc. Amer. Bull., v 105*, pp. 1415-1434. Borderland maps were constructed by combining and modifying various images from Google maps. The work was partially supportedby a National Science Foundation Director's Award for Distinguished Teaching Scholars, and by grants and services from the U.C.S.B. Office of Instructional Development.

The animation clips on this site are free works. You may download, copy, distribute, and modify them as suits your purposes. Acknowledgement of authorship and reference to this website is appreciated. Note that many were constructed in the early 2000s when computer files were much more restricted in size and delivery rate. Hopefully some are still useful.

Complaints, corrections, comments and, especially, suggestions for how to make these materials more useful are always welcomed: [atwater@geol.ucsb.edu](mailto:atwater@geol.ucsb.edu)