PLATE TECTONIC DEFORMATION OF SO. CALIFORNIA AND NO. BAJA CALIFORNIA. Model Construction Instructions.

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There are two xeroxable page-sized versions: Shaded and Paint-by-Numbers.
For each version, there are two sheets containing nine pieces (base sheet plus a second sheet with eight smaller pieces).
In each, there are six pivot points, labeled 1 - 6. You will need six small brads to connect the various pieces at these pivot points. (For best results, ***use small brads***.)

Choose a version and ***xerox*** the two sheets onto card stock or thoroughly glue paper copies onto card backings.

Model Construction:

Before cutting: If you use the Paint-by-Numbers version, first ***color*** the sheets.
Before cutting: (either version) poke or punch round holes through all the labeled pivot circles, e.g. "5a". (Some circles have squares around them.) There should be two holes in the base sheet and sixteen holes in the pieces sheet.
Now cut out the eight smaller pieces, removing all of the background.

Note: There are two "SB" (Santa Barbara) pieces. This makes it stronger and smooths the workings of pivot point 3.

Using the brads, connect the various pieces in numerical and alphabetical order.
For clarity, the final (bottom-most) hole in each sequence has a square around it.

Note: The final model may work better if you "exercise" each pivot point by gently turning the pieces around the brad after you connect the pieces.

Feeding the brads in from the front:

Attach 1a to 1b to 1c and bend the brad legs out.
Attach 2a to 2b and bend the brad legs out.
Attach 3a to 3b to 3c to 3d and bend the brad legs out.
Attach 4a to 4b to 4c and bend the brad legs out.
Check that the edge of the "Pacific Plate" piece is shelved between the "Baja California" piece and the "2b-4c"piece.
Attach 5a to 5b to 5c and bend the brad legs out.
Attach 6a to 6b to 6c and bend the brad legs out. (The upper and right-hand frames of the "North American Plate" piece should be aligned atop the frame on the base sheet.) Thread the three tabs on the left edge of the "North American Plate" piece down under the edges of the "Baja California" and "Pacific Plate" pieces.
Placing the model on a flat surface, lift the "Pacific Plate" piece and ***glue or tape the three tabs*** down onto the base sheet.

*Modified 02/09 with excellent help from teacher Kim Castagna and her sixth grade students at Carpinteria Middle School.

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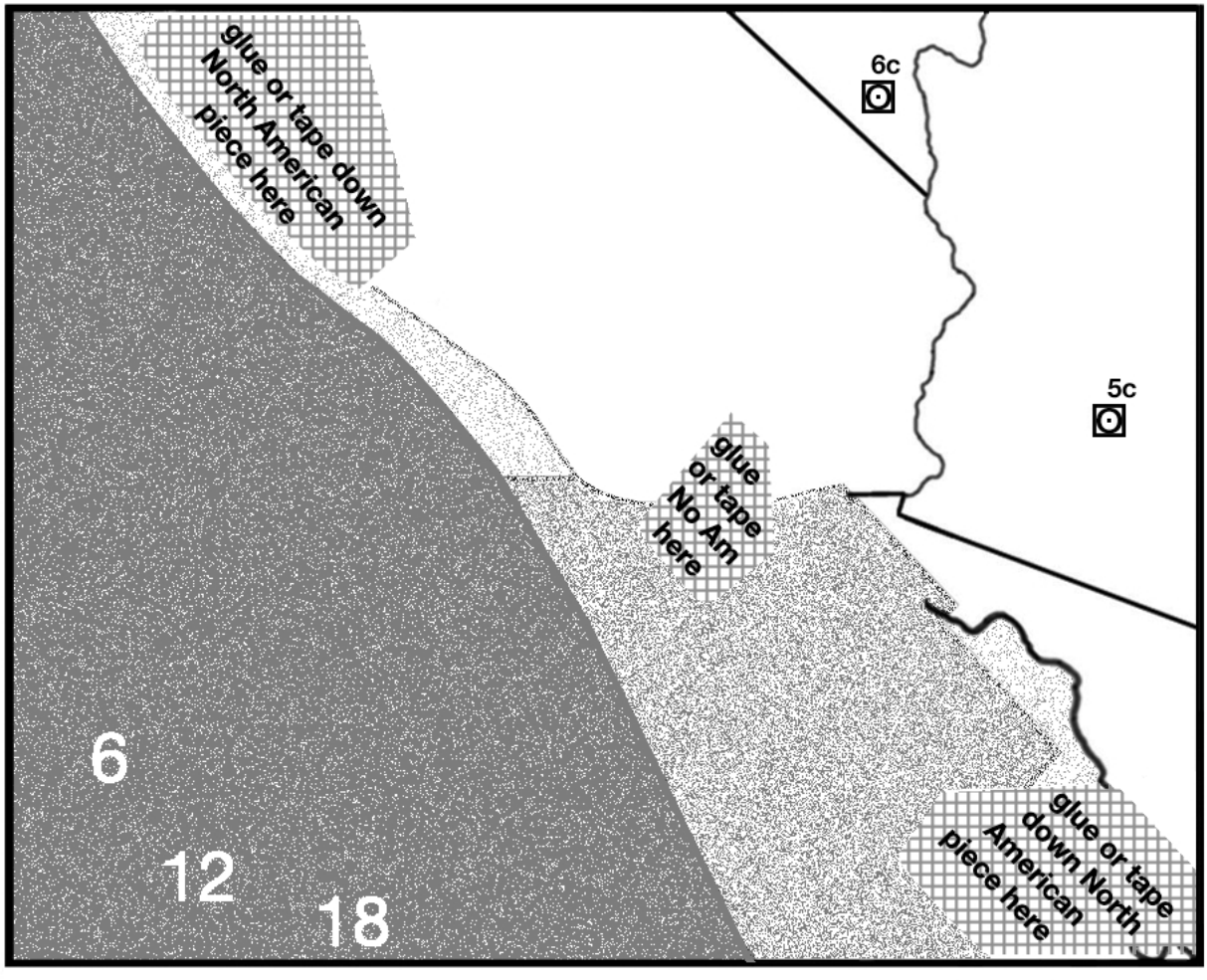
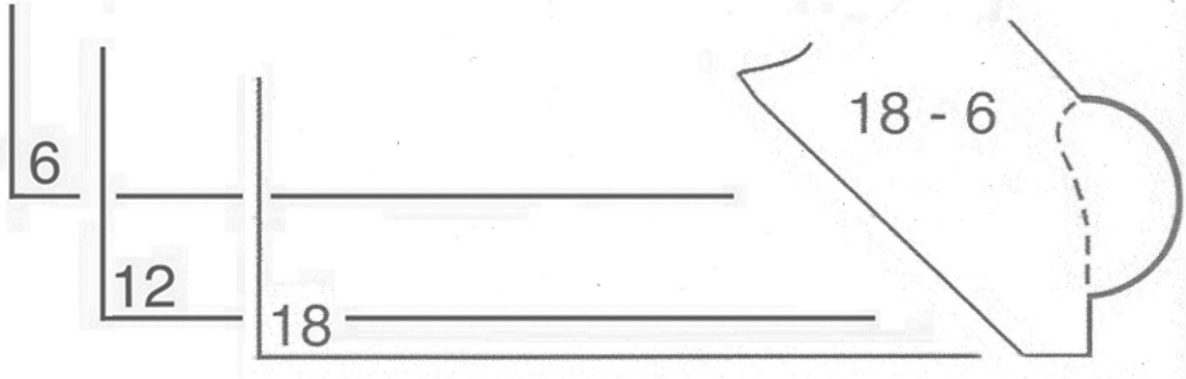
NORTH AMERICAN PLATE
California
Arizona
6a
5a
Gulf of Calif.
3b
LA
SD
4a
Baja California
SB
1a
3a
SB
Copy
1b
3d
2b
4c
3c
4b
5b
6b
1c
2a
Continental Borderland
PACIFIC PLATE
Million Years Ago
pull me
hold me still until 6 Ma

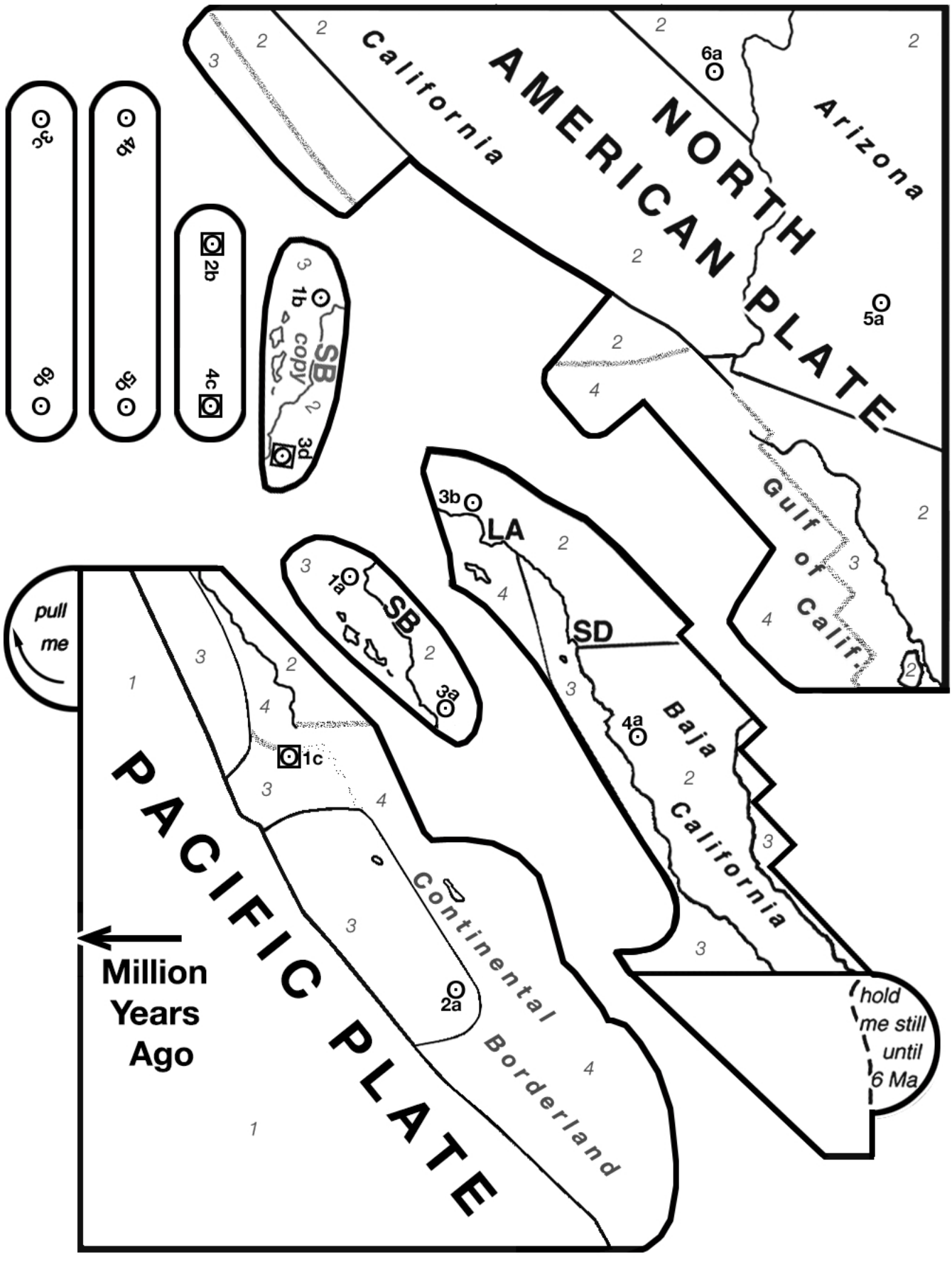




Simulation of Plate Tectonic deformations in Southern California and Northern Baja California from 18 million years ago to the present

Tanya Atwater http://emvc.geol.ucsb.edu

Rev. 10/10


NORTH AMERICAN PLATE
California
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PACIFIC PLATE
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pull me
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SB
SB copy
LA
SD
1a
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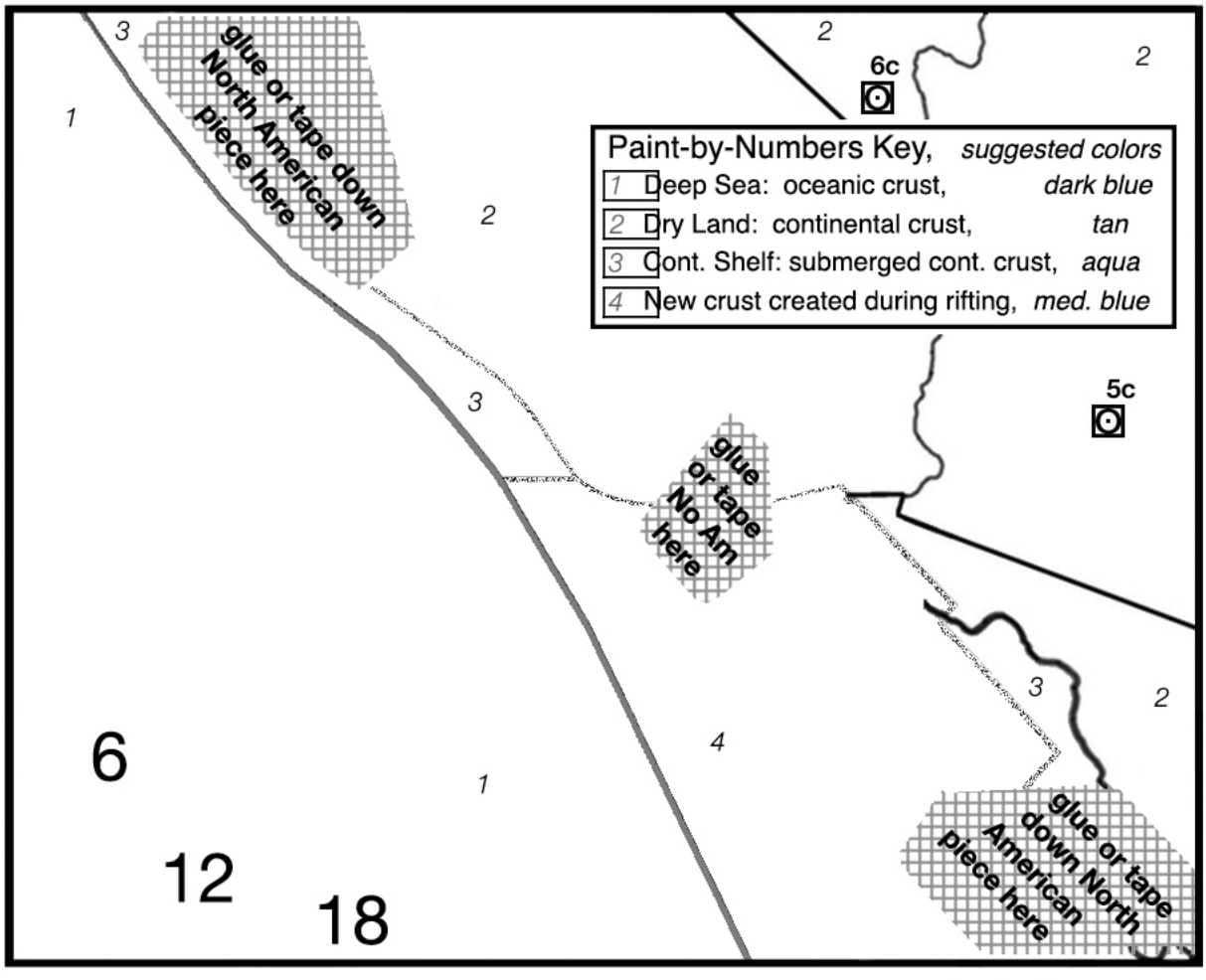
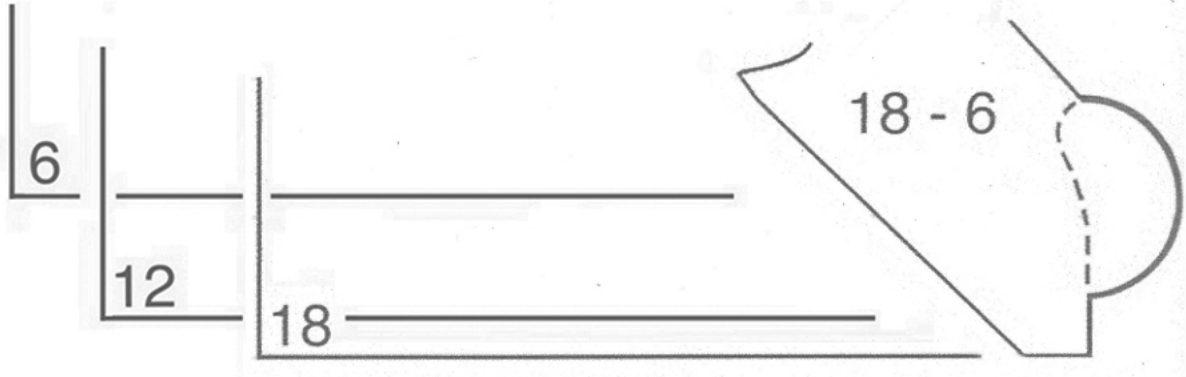
1c
2a
2b
3a
3b
3d
4a
4c
5a
6a
6b
6c





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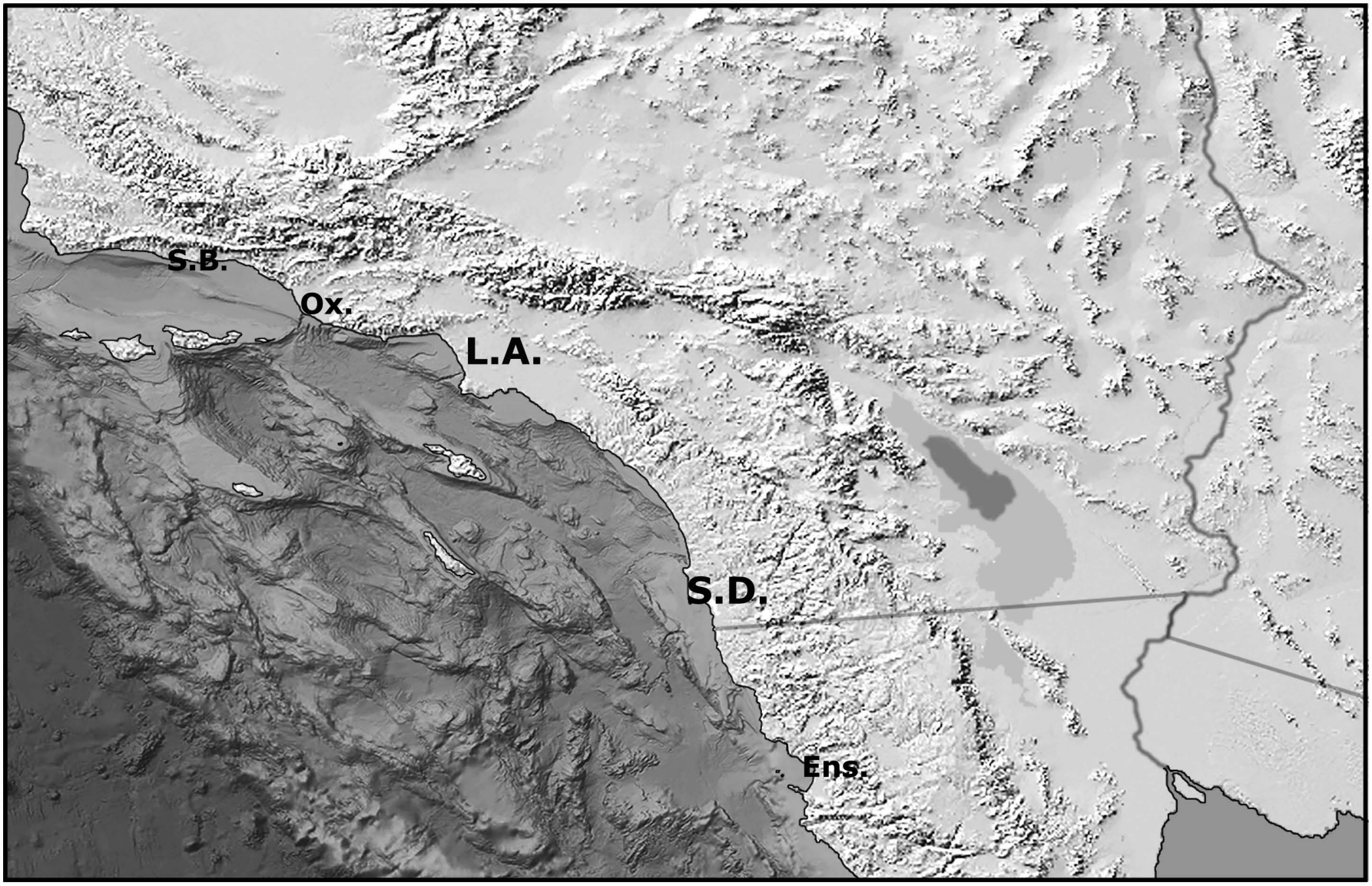

Figure 1A. Topographic relief in southern California, northern Baja California, and in the offshore continental borderland.

S.B. = Santa Barbara, Ox. = Oxnard, L.A. = LosAngeles, S.D. = San Diego, Ens. = Ensenada

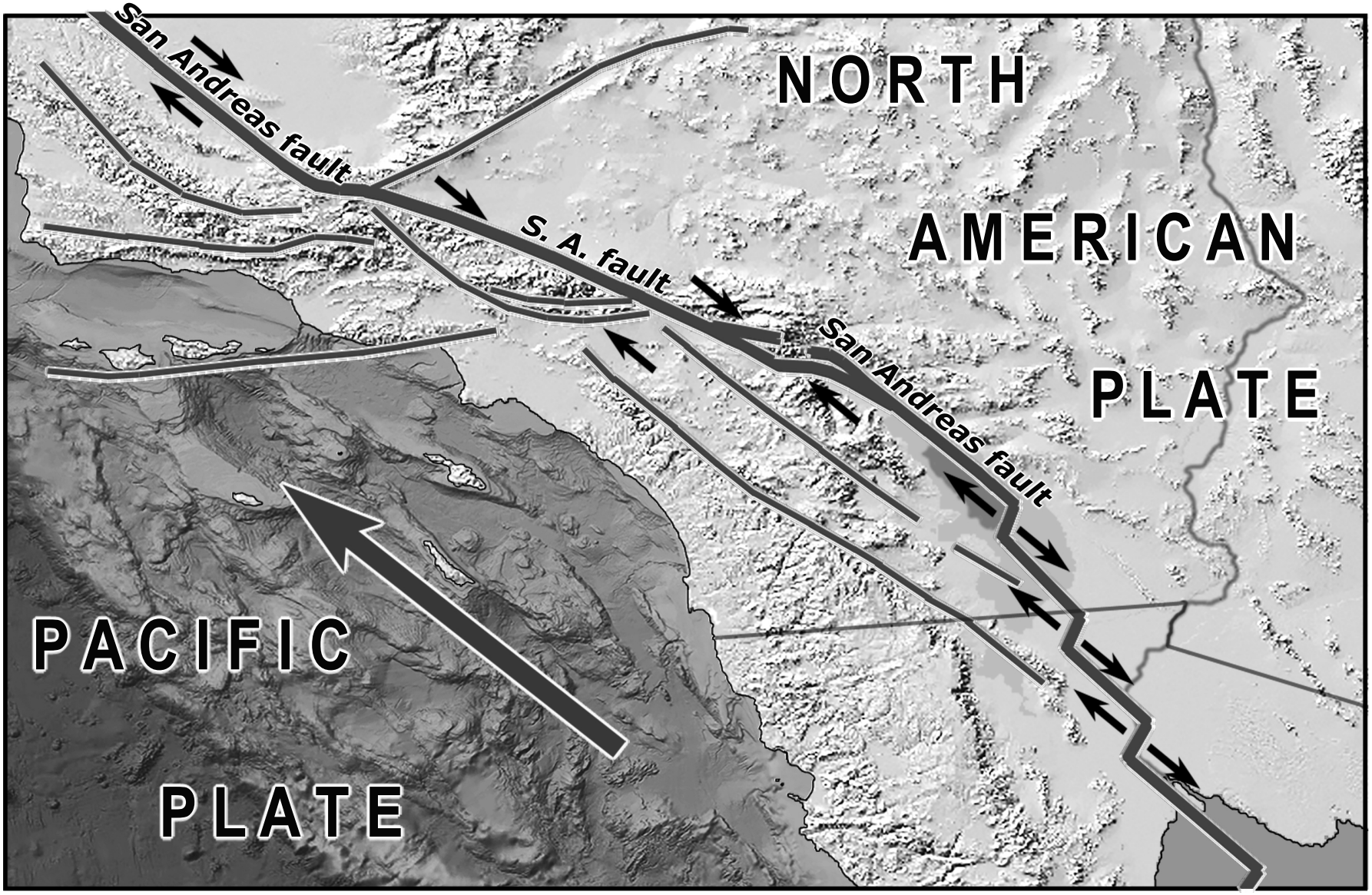

Figure 1B. Some major faults in the San Andreas Fault System.
This is the Pacific - North American plate boundary zone.
Large arrow = motion of the Pacific plate past the North American plate.
Small arrows = relative motions across fault segments within the system.

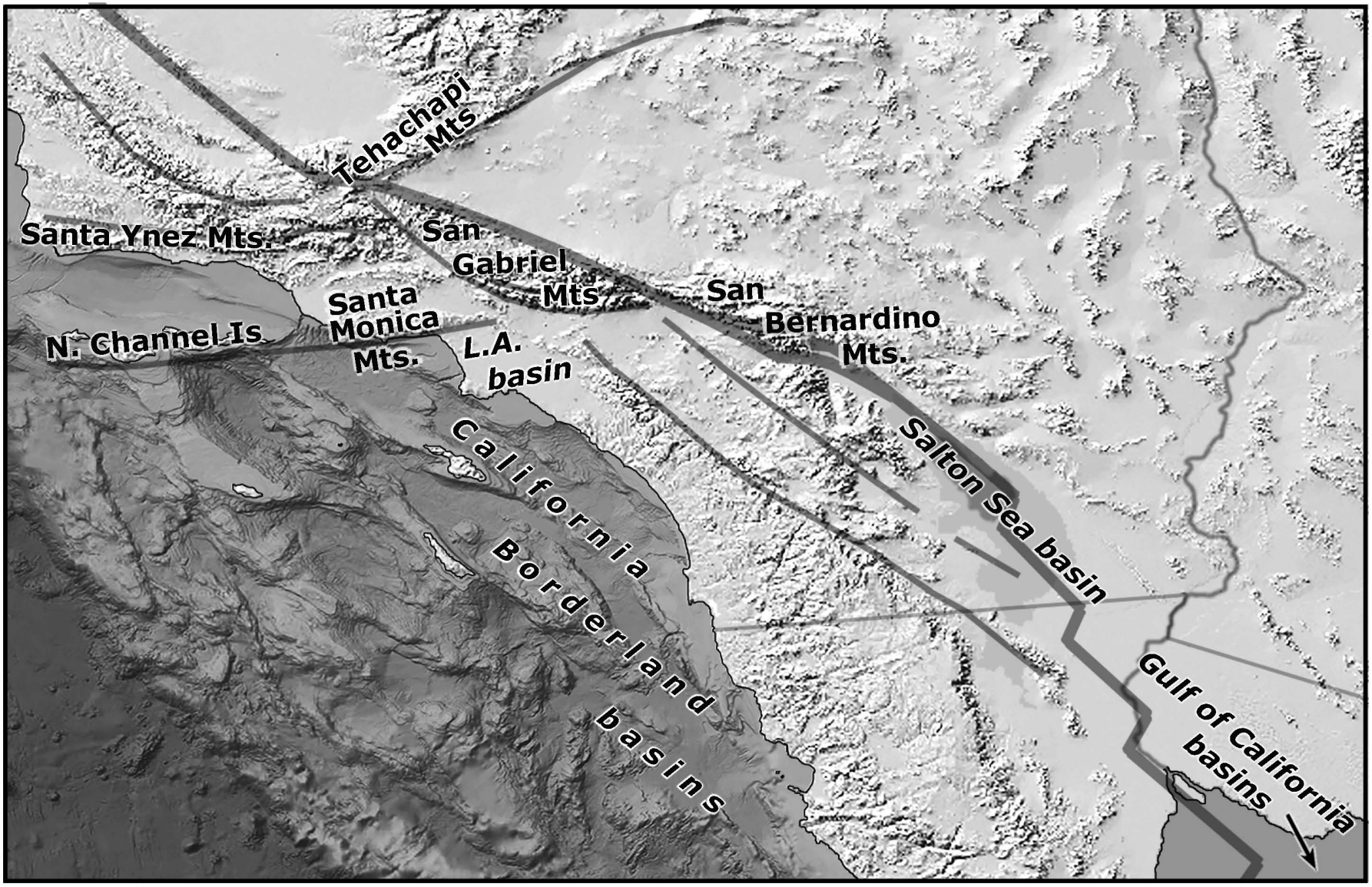

Figure 1C. Some mountain ranges and basins that have formed in response to collisions and pull-aparts along the San Andreas fault system.