Interpretive Summary of Tectonic Evolution, Blue Mts and PNW Region  
(B. Dorsey, 2/26/2007)

Post-15 Ma: Cascade arc volcanism, CW rotation, N-S shortening in Yakima etc fold belts.

~ 15-?? Ma: Uplift of Wallowa Mts, delamination of dense pluton root (Hales et al., 2005).
~ 17-15 Ma: Voluminous CRB flows followed by paired migration of YS and NB hotspots.  
Models for the CRBs include mantle plume (e.g. Camp and Ross, 2004),  
back-arc extension, and upper mantle convection (Humphreys et al., 2000).

~ 38-16 Ma: John Day Formation distal backarc basin, east of Cascade arc.

~ 40 Ma: Initiation of Cascadia subduction zone and magmatic arc.
~ 45 Ma: Accretion of Siletzia oceanic lithosphere (green patch in figure).
~ 60-38 Ma: Clarno and Challis arc magmatism, possible shallowing of subduction.

Late Cretaceous to Early Tertiary (~ 90-55 Ma):
Eastward migration of Idaho Batholith, Laramide Orogeny,  
Possible continuation of dextral transpression in the WISZ (?)

Giorgis et al. (2005)

Cretaceous Sevier Orogeny  
(east of here): Large thrust belt and foreland basin migrate eastward onto North American craton.

~ 110-90 Ma: WISZ dextral transpressive shear zone.

~ 135-110 Ma: Andean-type subduction and magmatism.

~ 150-140 Ma: Strong shortening, basin inversion, metamorphism, and mountain building.  Initial accretion of terranes to North America.


Dorsey and LaMaskin (in review)


~ 235-220 Ma: Wallowa volcanic arc in west, Olds Ferry / Black Rock (now in NW Nevada) arc in east.  Large Sea-of-Japan-type backarc basin east of there.

Modified from 1999 DNAG Geologic Time Scale (GSA)