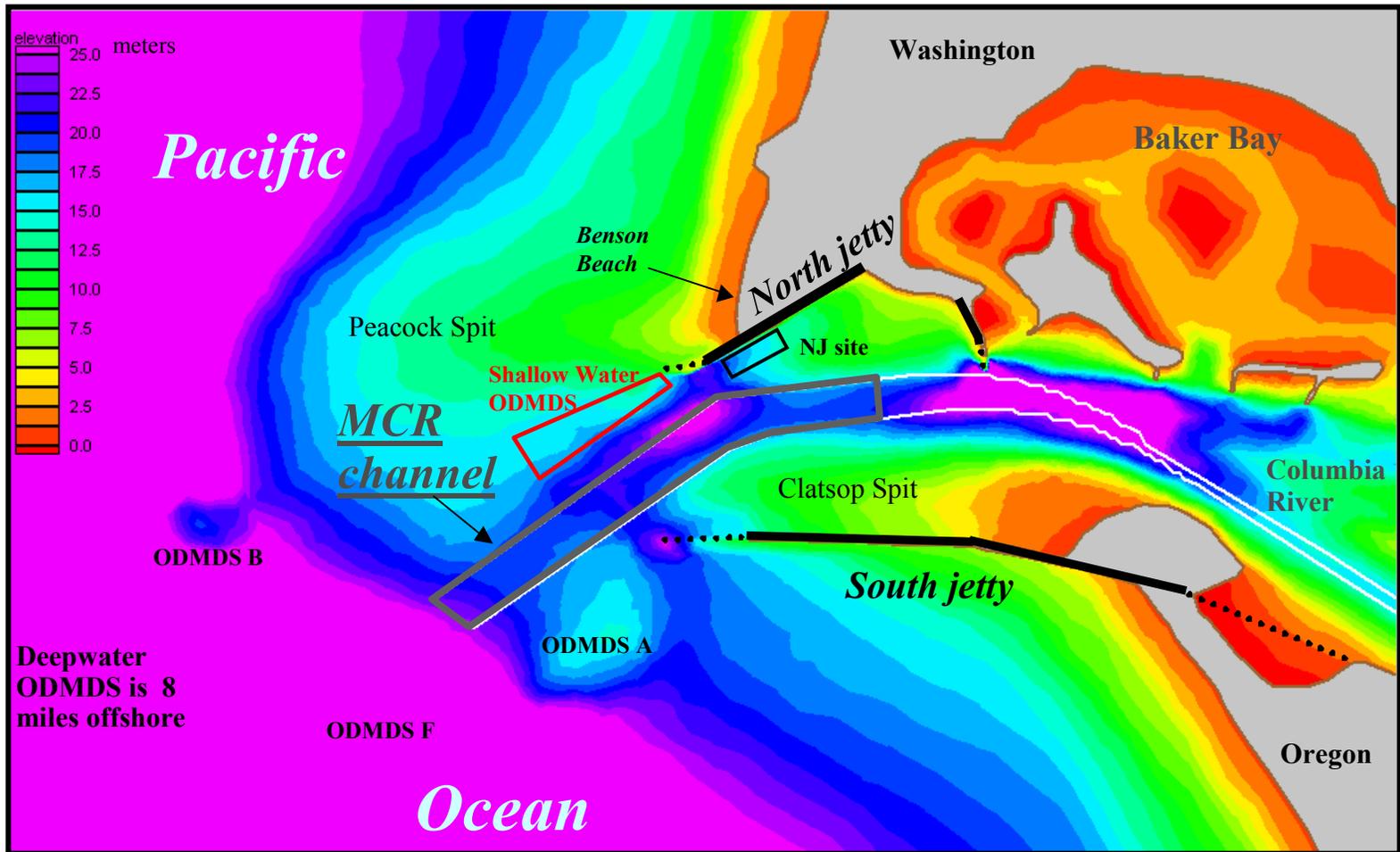


Figure 1. Coastal region of the mouth of the Columbia River showing the location of the Shallow Water ocean dredged material disposal site (ODMDS).



ODMDS = ocean dredged material disposal site

3-5 mcy/yr of sand dredged at MCR dredged sand is placed in ODMDS

2 miles

Figure 2 . Mouth of the Columbia River (MCR) project features and present nearshore bathymetry. Note the location of the SW ODMDS with respect to Peacock Spit.

Project Baseline Bathymetry for ODMDS E

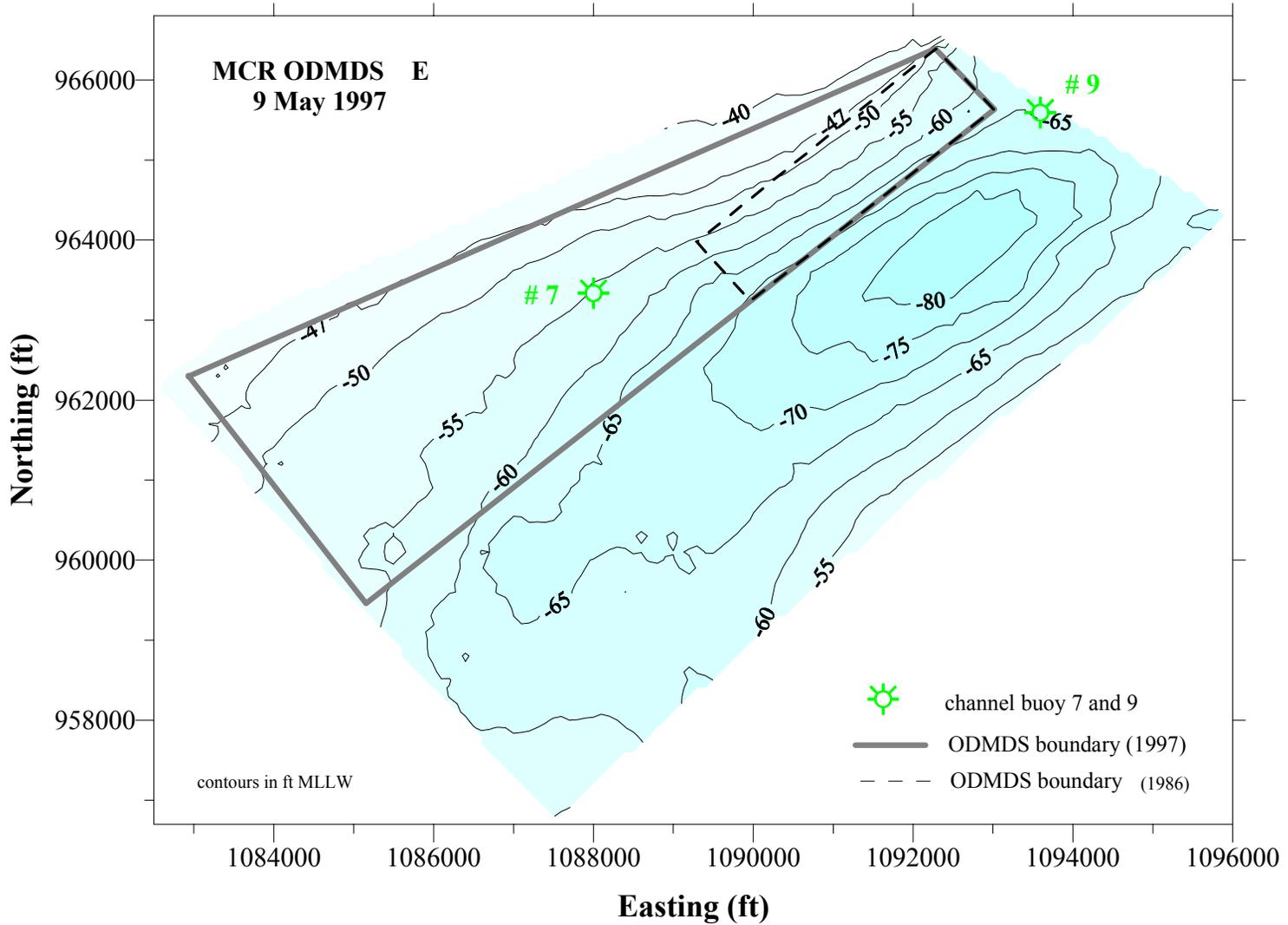


Figure 3. Baseline bathymetry condition of the Shallow Water ODMDS (ODMDS E). Assessment of potential impacts arising from the use of the SW ODMDS is performed with respect to the 1997 baseline condition.

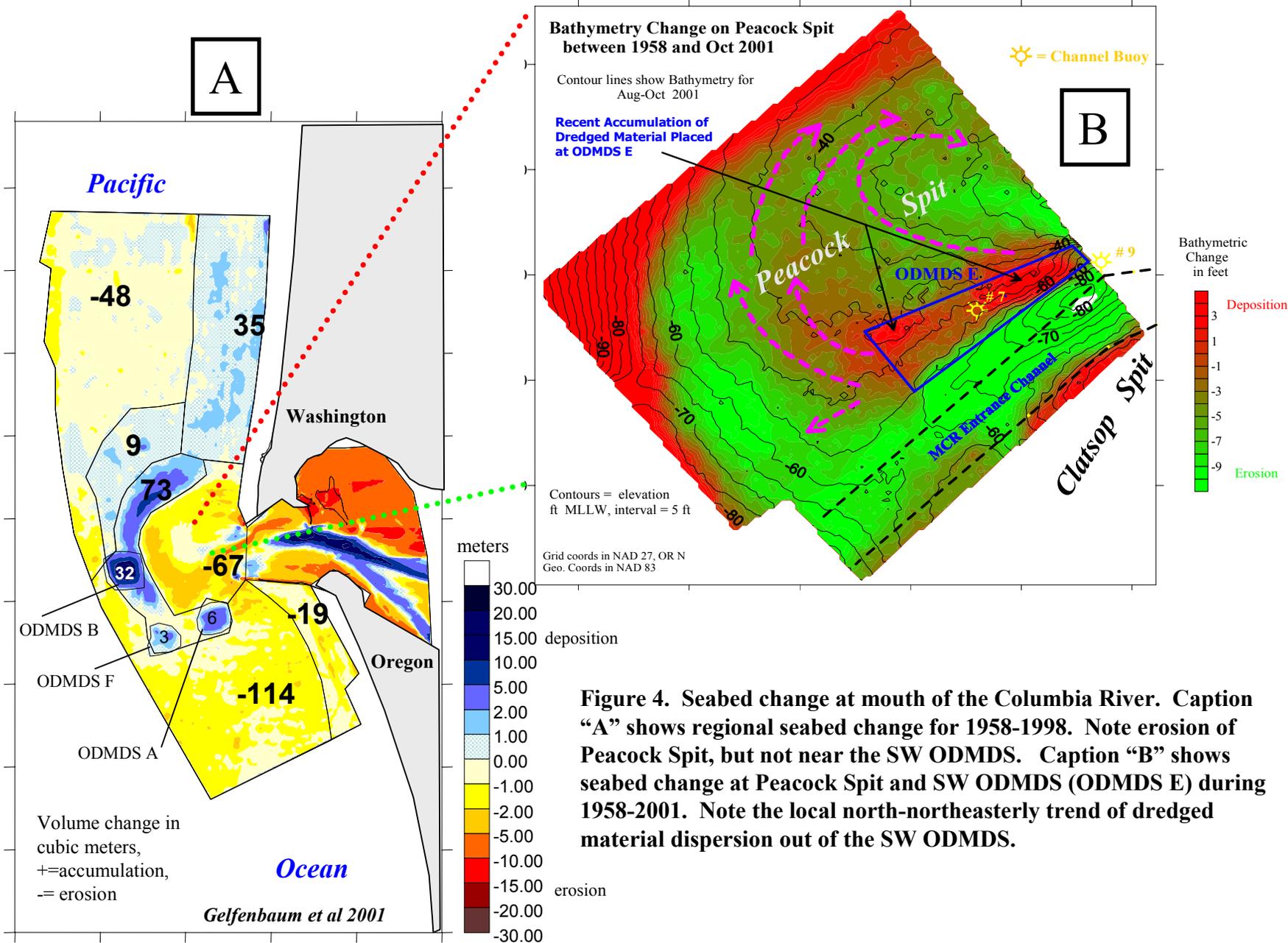


Figure 4. Seabed change at mouth of the Columbia River. Caption "A" shows regional seabed change for 1958-1998. Note erosion of Peacock Spit, but not near the SW ODMDS. Caption "B" shows seabed change at Peacock Spit and SW ODMDS (ODMDS E) during 1958-2001. Note the local north-northeasterly trend of dredged material dispersion out of the SW ODMDS.



Figure 5. Dominant tidal current patterns for the mouth of the Columbia River. Caption “A” shows typical ebb and flood current patterns. Flood currents (green) concentrate around the ends of jetties. Ebb currents (white) concentrate near the center of the entrance. Caption “B” shows detail of flood current carrying sand into the entrance, between the north jetty and the SW ODMDS.

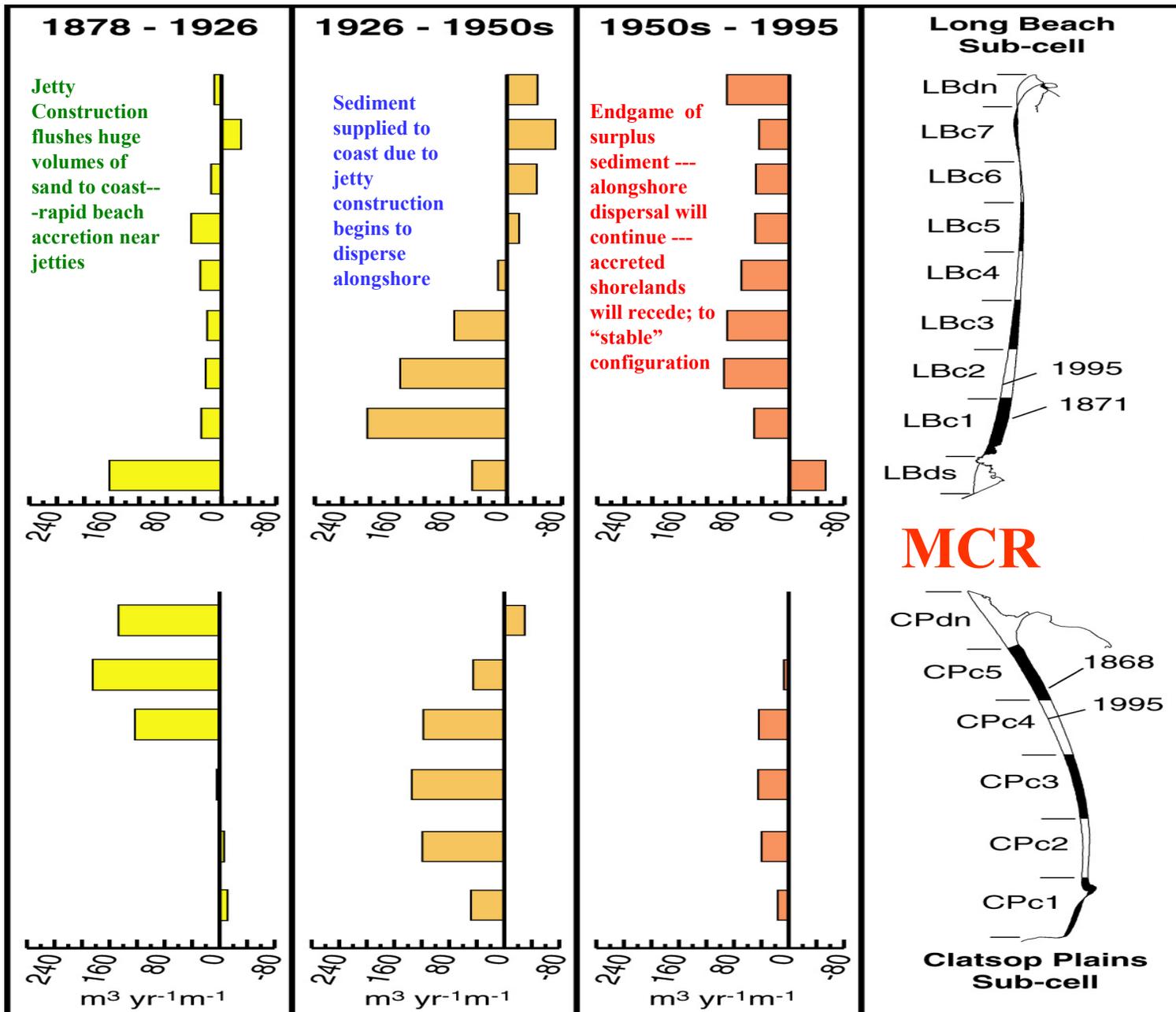


Figure 6

Graphs show unit volumetric rate of sediment deposition (+) or erosion (-) within the active beach profile; for 3 time periods at MCR

Shoreline position north and south of MCR is shown for 1868 and 1995

Gelfenbaum et al 2001

SWCES

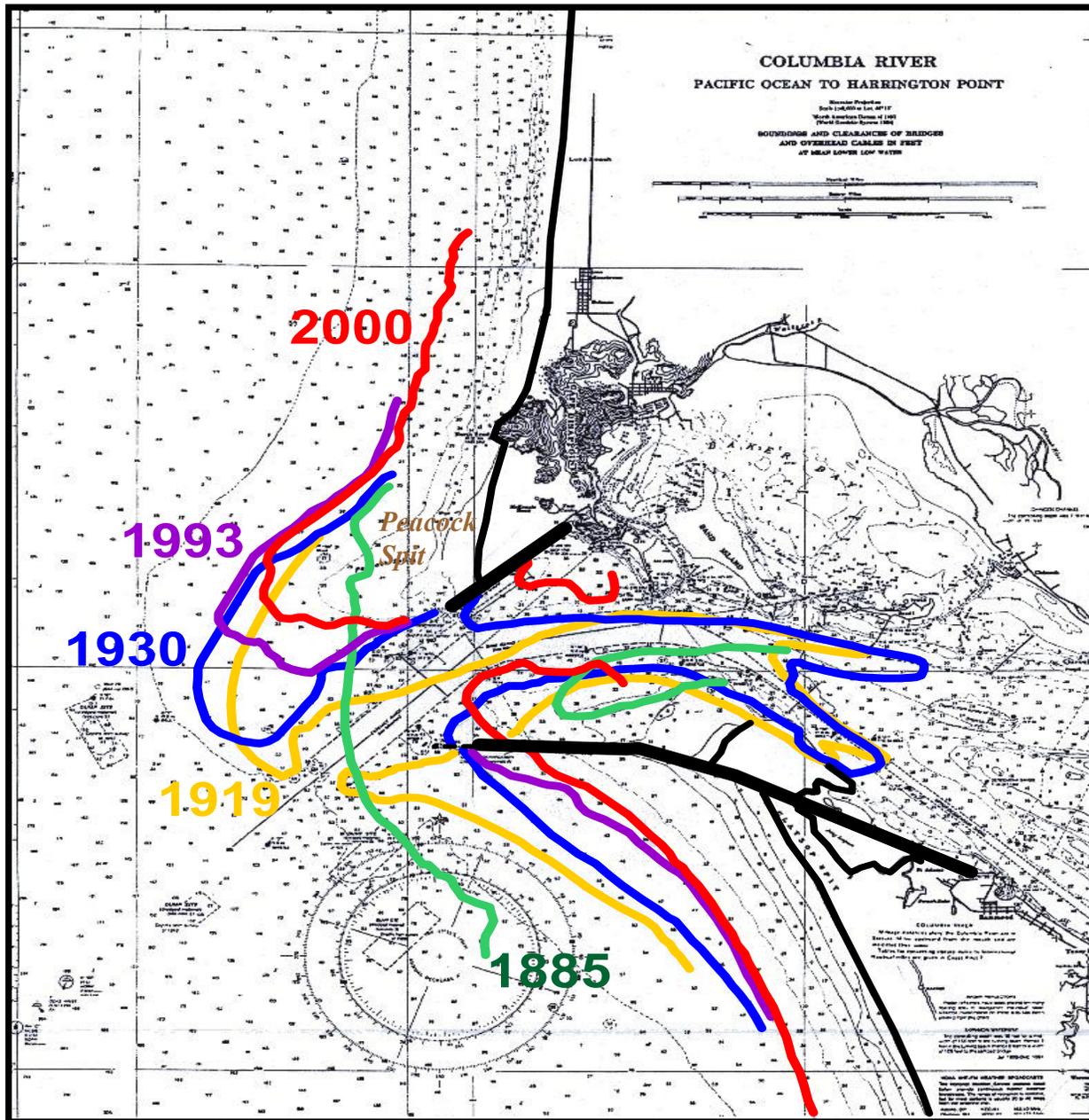


Figure 7. Map of -40 ft depth contour at MCR for 5 time periods

During 1993 to 2000, the 40 ft contour on Peacock Spit receded landward at a rate 7x faster than during 1930 to 1993. As the offshore shoals recede, the wave climate at will change. MCR jetties were built on tidal shoals 1885-1917 that are now eroding. Stability of jetties is compromised due to scour-based failure.