

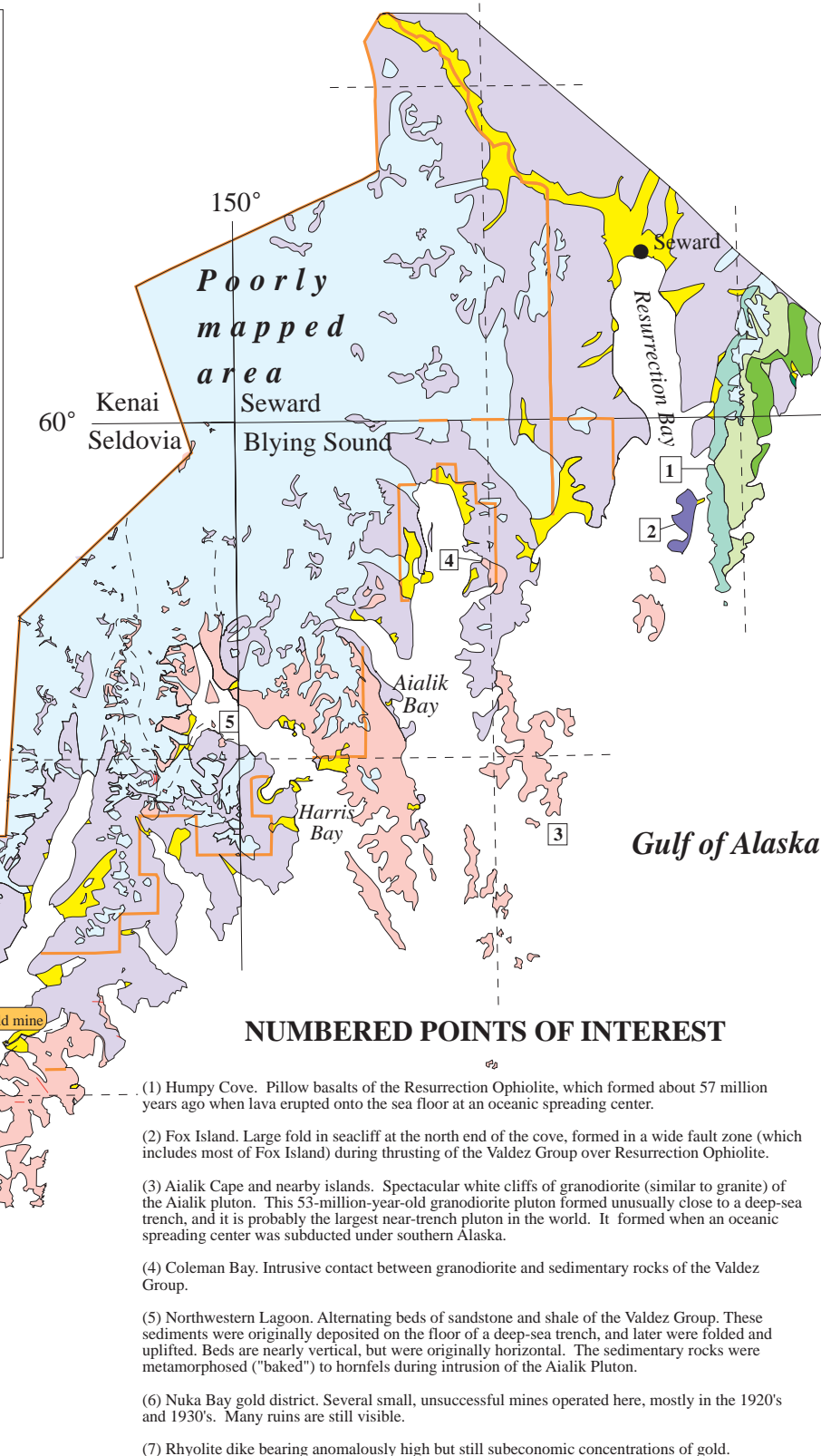
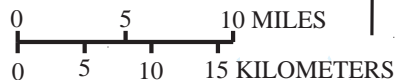
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Compiled May 1995 by Dwight Bradley and Tom Donley, U.S. Geological Survey.  
This map is preliminary and has not been reviewed for accuracy  
or for conformity with USGS standards

# GEOLOGIC MAP OF KENAI FIORDS NATIONAL PARK AND VICINITY

- National Park boundary
- Surficial deposits (Quaternary)
- Dikes (Tertiary)
- Granodiorite (Tertiary)
- Valdez Group (Cretaceous)
- McHugh Complex (Triassic to Cretaceous)
- Pillow basalt (Tertiary, about 57 Ma)
- Basalt sheeted dikes (Tertiary, about 57 Ma)
- Gabbro (Tertiary, about 57 Ma)
- Ultramafic rocks (Tertiary, about 57 Ma)
- Metamorphic rocks of Fox Island (Cretaceous?)
- Gold Deposit



## NUMBERED POINTS OF INTEREST

- (1) Humpy Cove. Pillow basalts of the Resurrection Ophiolite, which formed about 57 million years ago when lava erupted onto the sea floor at an oceanic spreading center.
- (2) Fox Island. Large fold in seacliff at the north end of the cove, formed in a wide fault zone (which includes most of Fox Island) during thrusting of the Valdez Group over Resurrection Ophiolite.
- (3) Aialik Cape and nearby islands. Spectacular white cliffs of granodiorite (similar to granite) of the Aialik pluton. This 53-million-year-old granodiorite pluton formed unusually close to a deep-sea trench, and it is probably the largest near-trench pluton in the world. It formed when an oceanic spreading center was subducted under southern Alaska.
- (4) Coleman Bay. Intrusive contact between granodiorite and sedimentary rocks of the Valdez Group.
- (5) Northwestern Lagoon. Alternating beds of sandstone and shale of the Valdez Group. These sediments were originally deposited on the floor of a deep-sea trench, and later were folded and uplifted. Beds are nearly vertical, but were originally horizontal. The sedimentary rocks were metamorphosed ("baked") to hornfels during intrusion of the Aialik Pluton.
- (6) Nuka Bay gold district. Several small, unsuccessful mines operated here, mostly in the 1920's and 1930's. Many ruins are still visible.
- (7) Rhyolite dike bearing anomalously high but still subeconomic concentrations of gold.
- (8) McHugh Complex. A "tectonic melange" formed by scraping off rocks such as chert and basalt from the sea floor at an ancient subduction zone. The McHugh Complex is exposed along the west side of Nuka Passage, but the most spectacular exposures are along the east wall of Petrof Glacier, where exotic blocks of white limestone are found. The limestone contains fossils only found in Afghanistan and China, revealing the magnitude of plate motions that formed the McHugh Complex.

59°30'

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