Magnetic Exploration of the Crescent Formation, Washington: The search for a hidden fault near Dusk Point

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**INVESTIGATION**

- This study uses ground-based sampling and magnetic surveys along forest roads in the Olympic National Forest near Lake Wynoochee to locate a previously unmapped thrust fault, herein called the Dusk Point Fault (DPF).
- By determining anomalies in magnetic intensity and trace-element analysis in basalts, I hope to locate a boundary, representing the DPF, between the Crescent Thrust sheet and the Lower Crescent Unit.

**METHODOLOGY**

- Using a Geometrics G-856 proton precession magnetometer, several traverses were completed along forest roads in search of magnetic intensity anomalies. Magnetic intensity data was recorded at stations every 10-25 feet. Two readings were recorded at each station for consistency. Readings were recorded at a base station at the start and end of each survey to allow for the correction of diurnal variation.
- Rock samples were collected to identify changes in trace-element compositions in the basalts that correspond to magnetic anomaly locations similar to or different from those identified by Ken Clark, who found that the Y/Nb ratios of the UC and CT were more enriched than the Y/Nb ratio of the LC.
- Anomalies in the magnetic data were mapped and matched across separate traverses, tracing the path of the DPF.

**LOCATION MAP**

![Figure 1](location_map.jpg)

**OBJECTIVES**

- Create magnetic profiles west of Dusk Point in order to locate the DPF.
- Determine geochemical boundaries between the Lower Crescent and Crescent Thrust sheet.
- Seek supporting evidence for the existence of a Dusk Point Fault and incorporate into the geologic history of the peninsula.

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**REFERENCES**


Ken Clark, unpublished Abstract.