

February 2019
Volume 2, Number 4

NISQUALLY CHAPTER OF THE
ASSOCIATION OF ENVIRONMENTAL &
ENGINEERING GEOLOGISTS

The Official

AEG Nisqually Chapter Newsletter

Meeting Details

Tuesday, February 5th

Location: Mercato Ristorante

111 Market St. SE

Olympia, WA

6:00 pm Social and Dinner

7:00 Presentation

Dinner: Pizza and Salad

\$25 (Member or Non-Member)

\$10 for students

Please RSVP by 4 pm Friday,

Feb. 1st at:

<https://aeg-nisqually.brownpapertickets.com/>

Upcoming Meetings:

Mar 20th Jahns Lecturer
April 17th Megan Anderson
May TBD Joint meeting with
Puget Sound Chapter



Bluff Recession in the Elwha and Dungeness Littoral Cells, Washington, USA

The spatial distribution and temporal variability of retreat rates of coastal bluffs composed of glacial deposits are of interest to landowners who occupy bluff-top properties as well as coastal resource managers who are responsible for protecting marine habitats such as forage fish spawning beaches that are dependent on bluff-derived sediments.

Assessment of bluff retreat and associated sediment volumes contributed to the nearshore over time is the first step toward development of a coastal sediment budget for bluff-backed beaches using data sources including aerial photography (1939, 2001), GPS-based beach profile data (2010–2013), and airborne LiDAR (2001, 2012). These data are analyzed in context to determine alongshore rates of bluff retreat and associated volume change for the Elwha and Dungeness littoral cells in Clallam County, WA. Recession rates from 2001 to 2012 range from 0 to 1.88 m/yr. in both drift cells, with mean values of 0.26 ± 0.23 m/yr. ($N = 152$) in Elwha and 0.36 ± 0.24 m/yr. ($N = 433$) in Dungeness. Armored sections show bluff recession rates reduced by 50 percent in Elwha and 80 percent in Dungeness, relative to their respective unarmored sections. Dungeness bluffs produce twice as much sediment per alongshore distance as do the Elwha bluffs (average, $7.5 \text{ m}^3/\text{m}/\text{yr.}$ vs. $4.1 \text{ m}^3/\text{m}/\text{yr.}$, respectively). Historical bluff recession rates (1939–2001) were comparable to those from 2001–2012. Rates derived from short timescales should not be used directly for predicting decadal-scale bluff recession rates for management purposes, as they tend to represent short-term localized events rather than long-term sustained bluff retreat. Recent projections of expected sea-level rise have implications for potential acceleration of bluff erosion in the future.





Bio: Dave Parks

Dave Parks is an Engineering Geologist and Hydrogeologist employed by the Washington Department of Natural Resources on the Olympic Peninsula for the last 27 years.

Dave's primary interest is in earth hazards including landslide processes and coastal hazards but also has a research interest in the role that physical processes play in creating and maintaining nearshore marine habitats. Dave has published and co-authored peer-reviewed research papers on topics such as the effects of landslide-derived sediment on kelp abundance in Puget Sound, the role of substrate composition in providing forage fish spawning habitat along the Strait of Juan de Fuca, the effects of the Elwha Dam removals on juvenile salmonid habitats on the Elwha River delta, and the rate and volume of sediment production from coastal bluffs along the Strait of Juan de Fuca in Clallam County.

Dave is a member of the Association of Environmental and Engineering Geologists (AEG) American Geophysical Union (AGU), Geological Society of America (GSA), Coastal and Estuarine Research Federation (CERF) and the Society of Wetland Scientists (SWS).

Dave received his Bachelor of Science in Geology from the California State University Stanislaus and his Masters of Science in Hydrology from the University of Washington.

Dave has been the co-chair of the AEG Coastal Hazards Technical Committee (2015-2018) and the winner of the AEG Publication of the Year award in 2015, the AEG Presidents Award in 2016, and the 2018 GSA E.B. Burwell Jr. Award for excellence in engineering geology.

Dave enjoys diving, snorkeling, surfing, underwater photography and flying UAVs. He has film credits with National Geographic, recently had a photograph published in Tom Quinn's Second Edition of *The Behavior and Ecology of Pacific Salmon and Trout*, and will have photographs of Elwha beavers featured in *Hakai Magazine* in 2019



Message from the Chair

Happy 2019 everyone!

If you haven't renewed your AEG membership for this year, don't forget to do so! Our chapter depends on the dues paid by members.

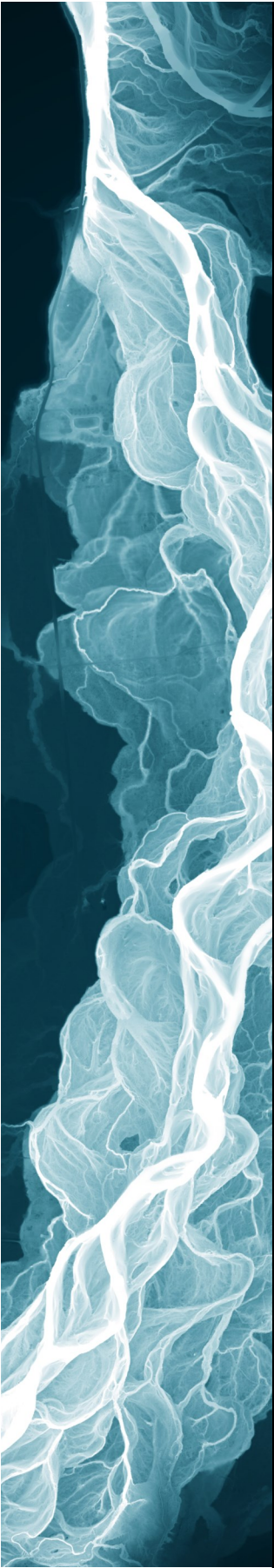
We're kicking off 2019 with a talk by Dave Parks. In March, we're being treated to a presentation by Deb Green, this year's Jahn's lecturer.

We're moving to a new venue again – we've had such excellent attendance at our meetings that we've outgrown the space at 3 Magnets. Our February and March meetings will be held at Mercato, where **your ticket will now include dinner!** Mercato is offering us a pizza and salad buffet. In April, we'll be meeting at Pellegrino's Event Center in Tumwater for our joint meeting with ASCE. This meeting will also include an Italian-style dinner with your ticket purchase. May's meeting will be a joint meeting with AEG Puget Sound Chapter, held at their usual venue in Seattle. Please consider carpooling up to Seattle to support their students! We hope to have more information about carpool options as time gets closer.

Please let us know what you think of our new venue choices. We are planning some exciting summer events for the chapter, so stay tuned!

Kara Jacobacci

Nisqually Chapter Chair



Section Officers & Committee Chairs



Chair:
Kara Jacobacci
Washington Geological Survey
Kara.Jacobacci@dnr.wa.gov



Treasurer:
Trevor Contreras
Washington Geological Survey
Trevor.Contreras@dnr.wa.gov



Student Membership and Speaker
Chair:
Marc Fish
WSDOT
FishM@wsdot.wa.gov



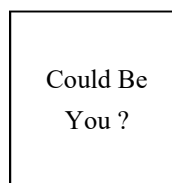
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JHay@robinson-noble.com



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Kate Mickelson
Washington Geological Survey
Kate.Mickelson@dnr.wa.gov



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The AEG Nisqually Chapter Newsletter

The Association of Engineering Geologists (AEG) contributes to its members' professional success and the public welfare by providing leadership, advocacy, and applied research in environmental and engineering geology. AEG's values are based on the belief that its members have a responsibility to assume stewardship over their fields of expertise. AEG is the acknowledged international leader in environmental and engineering geology, and is greatly respected for its stewardship of the profession.

AEG NISQUALLY CHAPTER NEWSLETTER is published monthly from September through April. Subscriptions are for members of AEG affiliated with the Nisqually Chapter or other Chapters, and other interested people. E-mail subscriptions are free.

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