

# NWGS 2010 FALL FIELD TRIP

September 18-19, 2010

## Volcanic geology and hazards of the East and South Flanks of Mount Baker

Trip leaders:

**Dave Tucker\*** - Mount Baker Volcano Research Center and Western  
Washington University

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\*Coauthors of the upcoming USGS Professional Paper on Mount Baker Holocene geology

### Abstract

The glacier-clad active andesitic cone of Mount Baker is the youngest stratovolcano in the Mount Baker Volcanic Field. Edifice construction, centered at the now ice-filled Carmelo Crater on the summit plateau, was largely completed by the end of the Pleistocene. Holocene activity has largely been destructional in nature, marked by flank collapses in the vicinity of the entirely Holocene Sherman Crater, which transformed into lahars, some wide-ranging. A single Holocene magmatic eruption is documented from the cone, and the only lava was erupted from a subsidiary cinder cone low on the south flank of Mount Baker. This two-day field trip will visit a variety of Holocene volcanic deposits from Mount Baker in the Baker River valley at the eastern foot of the volcano, and in Schreiber's Meadows on the south flank. Highlights include:

- A vestige of the Boulder Creek assemblage, a large post-glacial debris fan resulting from the final constructional activity at Baker's summit crater;
- The compositionally-zoned 8850 14C years BP Sulphur Creek lava flow (basalt and basaltic andesite), including both subaerial and subaqueous depositional facies;
- Basaltic tephra set SC, which preceded eruption of the cinder cone source of the Sulphur Creek lava flow;
- The Schreiber's Meadow cinder cone itself (requires a short, flat hike in the meadows);
- A Mount Baker lahar deposit post-dating eruption of the cinder cone;
- BA tephra, product of the only documented Holocene magmatic eruption at Mount Baker proper;
- The 1845-47 Morovitz Creek lahars from collapse of Sherman Crater's

east rim;

- A large landslide (debris avalanche) dating to 1890 (**requires a nearly flat 2-mile trail hike**); and
- Baker Lake reservoir, the focus of heightened eruption concerns in 1975, and certainly in the future.

The field trip includes presentations about recent volcanologic research at Mount Baker, carried out by researchers at Western Washington University and USGS, and presents scenarios for likely future activity and the potential scope of volcanic hazards.

A field trip guide will be provided. A list of online and published references will be sent to all registrants. For more information about Mount Baker, see the Mount Baker Volcano Research Center website: [www.mbrvc.wvu.edu](http://www.mbrvc.wvu.edu)

### **TRANSPORTATION**

7:00 AM - Saturday September 18 (vans leave at 7:00 AM sharp!) **BE ON TIME!!**  
Meet at the Seattle Park n Ride at I-5 and 65<sup>th</sup> Street NE (underneath I-5). **Park in the lot NORTH of 65<sup>th</sup>.** Directions to the Seattle PnR are:

**Traveling north on I-5**, take the 65<sup>th</sup> Street exit. Go through the stop sign, then cross Ravenna Avenue, veering left (north) onto 8<sup>th</sup> Ave NE. Go through the stop light at 65<sup>th</sup> and the Park n Ride (north lot) is on your left.

**Traveling south on I-5**, take the 70<sup>th</sup> Street exit. Turn right at the stop sign. Turn left on 5<sup>th</sup> Avenue NE (5<sup>th</sup> Ave then turns into Weedin Place and then 8<sup>th</sup> Ave NE), the Park n Ride is ~1/8-mile down on the right, before you get to 65<sup>th</sup>.

Individual vehicles are not allowed on the field trip.  
Anticipate return to the Park n Ride ~6PM on Sunday.

### **LODGING**

**Hotel** of choice is the **3 Rivers Inn** in Sedro Wooley (210 Ball Street) – I have reserved 4 doubles (\$69) and 4 singles (\$69). **You must call (360) 855-2626** and reference ‘**Northwest Geological Society**’ when you make your reservation. You must **make your reservation by September 10** or the rooms may be lost and you may not have a room to stay in.

The hotel is a 45 to 60 minute drive from our last stop on Saturday and our first stop on Sunday – please keep this in mind when deciding whether to stay in the hotel or camp. We will provide a van for travel to and from the hotel for those choosing the hotel option.

**Camping** is at **Horseshoe Cove Campground** near Baker Lake. We have reserved Group Site A - all campers will pay Greg (~\$10) for the camping fee at the time of the trip. The campground is very near the last stop Saturday and first stop Sunday.

## **MEALS**

You are responsible for bringing your own lunch on Saturday. If you plan on staying in the hotel, you will need to purchase your dinner Saturday night and breakfast Sunday morning. Campers will be on their own for Saturday dinner and Sunday breakfast, but we may organize a group dinner and breakfast (stay tuned for details). A Sunday sack lunch is included in the trip (see registration form for sack lunch preference). Make sure to bring enough water to last you throughout each day (I will have extra, but be prepared just in case).

## **FIELD TRIP FEES**

\$120 (you must be a member of NWGS)

Please send check made **payable to NWGS** to: Greg Ferris, 533 NE 126<sup>th</sup> Street, Seattle, WA 98125. Please send payment to be received by August 31, 2010.

Trip is limited to the first 22 paying members, so get your registration in ASAP if you plan to go.

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## **REGISTRATION**

Please complete the following and submit with your payment:

**Name:**

**Address:**

**Cell Phone #:**

**E-Mail:**

**Any medical conditions of concern?**

**Lodging:**            **Hotel**            **or**            **Camping**

**Sack lunch:**        **Meat**            **or**            **Vegetarian**

**Are you willing to assist with driving a van?    Yes    or    No**

## **ATTACHMENTS**

Please review the attached field trip waiver and NWGS alcohol policy and submit the signed waiver form with your registration.

If you have any questions regarding the trip details, please email Greg Ferris at [gfmonkey@gmail.com](mailto:gfmonkey@gmail.com).

**AGREEMENT FOR RELEASE AND WAIVER OF LIABILITY,  
COVENANT NOT TO SUE AND INDEMNITY AGREEMENT**  
*-- NWGS Fall 2010 Field Trip Sept. 18-19, 2010 --*

1. In consideration of my being permitted. to participate in any Northwest Geological Society (NWGS) activity involving field trips or other activities in any mines, mining or exploration sites or elsewhere, I, my legal representative(s), assigns, heirs, guardian(s), spouse and next of kin, hereby release, waive, and agree not to sue, assign, subrogate or bring any claim of any kind against, the NWGS or any director, officer, partner, member, employee or guest of the NWGS or any Landowner. "Landowner" shall include the owner of any land on which. such field trips or other activities may be conducted. "Landowner" shall further include the shareholders, partners, officers, employees, agents, spouses, heirs, lessee, tenants or permittees of any Landowner, as herein defined.
2. I fully understand that any involvement with such field trips or activities can be hazardous and that participating in any such activities may involve the risk of serious injury and/or death and/or property damage. I VOLUNTARILY ACCEPT AND EXPRESSLY ASSUME ALL RISK OF INJURY AND DANGERS OF SUCH INVOLVEMENT, INCLUDING PHYSICAL INJURY TO MYSELF AND MY PROPERTY.
3. This Agreement for Release and Waiver of Liability, Covenant Not to Sue and Indemnity Agreement, are intended to be as broad and inclusive as is permitted by the laws of the applicable state or country and include, but are not limited to, any claims of negligence, breach of contract, strict liability and claims for bodily injury, death, property damage, or other loss.
4. I also agree that if anyone makes any claim(s) because of any injury to me (including death), or for any damage to my property, I will indemnify, defend, and hold harmless all those released by this Agreement from any expenses, damages or judgments, including legal expenses and attorney's fees, resulting from those claims.
5. I also acknowledge and agree that I have, or it is my responsibility to obtain and keep in force, sufficient insurance coverage (including; but not limited to liability, health, disability and life) to protect me from any expense, liability claims or damages mentioned or included in this Agreement and that whether or not I obtain such insurance and whether. or not such insurance is sufficient, the above provisions shall be fully effective and enforceable and I will be bound and liable thereunder.

I HAVE READ AND VOLUNTARILY SIGN THIS RELEASE AND AGREEMENT NOT TO SUE AND IT IS FURTHER UNDERSTOOD AND AGREED THAT THIS RELEASE AND ASSUMPTION OF THE RISK IS TO BE BINDING UPON MY HEIRS, ASSIGNS, LEGAL (PERSONAL) REPRESENTATIVES, SPOUSE AND NEXT OF KIN.

SIGNATURE: \_\_\_\_\_

PRINTED NAME / DATE SIGNED: \_\_\_\_\_

## **NORTHWEST GEOLOGICAL SOCIETY**

### ***FIELD TRIP STANDARDS OF BEHAVIOR AND ALCOHOL CONSUMPTION POLICY***

1. The primary & essential purposes of field trips are education & the sharing of scientific information. As such, participants should conduct themselves at all times in a manner that is safe and conducive to the academic nature of the field trips. Participants should represent themselves and NWGS to the public in a positive manner at all times.
2. Unlawful conduct will not be tolerated, including any misdemeanor or felony acts, including the consumption of alcohol in the field (such as along roadsides), in vehicles, and by minors.
3. Consumption of alcohol by any participant or leader during field trip hours is prohibited. The field trip is not officially ended until members have arrived at their respective campground or motel accommodations.
4. Alcohol abuse by any person at any time is prohibited. Abuse will have occurred if a person acts in a manner that is considered rude, lewd, offensive, or disruptive by public standards, or disturbs the peace, as a direct or indirect result of alcohol consumption.
5. No person shall operate a motor vehicle on an NWGS field trip at any time while impaired in any way, including by alcohol consumption, medication, illness, or fatigue.
6. Field trip participants are expected to know and follow the regulations of the campgrounds where we stay. NWGS quiet hours will be from 9:00 PM to 7:00 AM.