



## GeoPRISMS...?

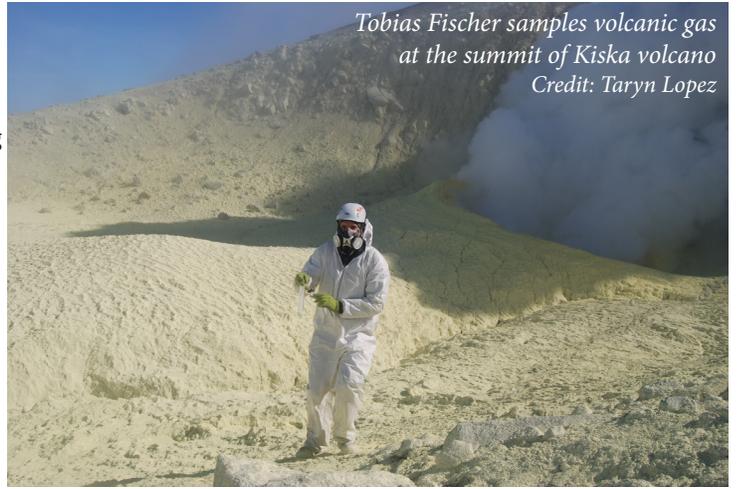
Many people have asked about the little helicopter buzzing around Adak in September. It was here with the R/V *Maritime Maid* conducting GeoPRISMS (Geodynamic Processes at Rifting and Subducting Margins) research. For a comprehensive description of the program, please visit [geoprisms.org](http://geoprisms.org). A team of researchers worked on volcanoes in the eastern Aleutians in August, then switched out at Adak for a second group, who worked to the west of us in September. Here's a quick look at what this second group was doing, courtesy of one of the lead researchers, Elizabeth Cottrell (Curator, Research Geologist, and Director of the Global Volcanism Program, National Museum of Natural History, Smithsonian Institution):

### Scientists Visit Remote Volcanoes by Boat and Helicopter

On Friday September 4th, 2015, 10 scientists, 4 crew, 1 helicopter pilot, and 1 helicopter mechanic embarked to the volcanic islands of the Western Aleutians aboard the *Maritime Maid* equipped with a Bell 407 helicopter, N312MH. Our ambitious mission was to visit 7 active volcanoes in 19 days: Buldir, Kiska, Segula, Semisopochnoi, Gareloi, Tanaga, and Kanaga.

The mission was originally conceived several years ago by a team of geologists and funded by the National Science Foundation (NSF). The mission then blossomed to include a geologist and geophysicists from the United States Geological Survey (USGS) and scientists who study volcano gas chemistry funded by the Deep Carbon Observatory. All of us relied on the expertise of the *Maid's* crew and our pilot to get us onto and off of the volcanoes safely – none of us wanted to sleep on a volcano summit! Our voyage is a great example of how multiple teams can work together to achieve great things.

As geologists, we want to understand why planet Earth has continents. You may be surprised to learn that other planets don't have continents (that we know of anyway!), and the dual nature of Earth's surface -- with its continents and oceans -- makes Earth a special place for life to thrive.



*Tobias Fischer samples volcanic gas at the summit of Kiska volcano*  
Credit: Taryn Lopez

The Western Aleutians may hold the key to understanding the origin of continents. The volcanoes are so remote and difficult to sample that some of them, like Segula, have not been visited by geologists in over 60 years! The rocks we collected are also useful for understanding the history of these volcanoes. How frequently do they erupt? How large have the eruptions been? How far could the rock and ash they emit travel? The information we will get from these rocks is directly relevant to the residents of Adak. The mission of the geophysicists was to service seismic stations on the islands installed 10 years ago and never visited since. Seismometers "listen" to Earth's rumblings and are essential for warning residents and air traffic about impending volcanic eruptions. The gas chemists conducted some of the most dangerous work because they needed to visit volcano summits and sample the toxic gases pouring out. The gas team made some of the first measurements of these gases known to science!

We returned to Adak on September 23rd. Blessed with great weather, a fantastic crew, and a super-star pilot, we were able to achieve all of our goals while staying safe. Scientists will be studying the samples we collected, and making discoveries, for years to come. We would like to thank the community of Adak for welcoming us – we hope to return one day.



*Pilot Dan Leary delivers geologists to the flanks of Tanaga volcano to collect rocks.*  
Credit: Elizabeth Cottrell

## More caribou on Kagalaska

While the *Maid's* helicopter was in Adak, the Alaska Volcano Observatory graciously allowed the Refuge to use some of their charter time for a two-hour aerial survey of Kagalaska Island. Vince Tutiakoff Jr. once again loaned us his eagle-eyes and was, as usual, first to spot the only caribou observed during a very thorough survey with great visibility. We saw a single group of eight small animals (no big bulls) on the ridgeline just south of the Upper Arm of Cabin Cove (red dot on image at right). We also noted caribou trails developing in several areas (squiggly red lines). It may be these animals were missed during the *Tiglax's* visit in May, or perhaps they were recent invaders. Either way, knowing exactly how many caribou are there now will help us interpret future observations as we learn more about the frequency and extent of movement from Adak to Kagalaska. Why didn't we count the caribou on Adak while we were at it? To do a complete survey takes a full day comprising several sorties, a hugely expensive endeavor. Maybe someday...



Credit: NPS

## ATVs on Adak

Our long and unusually dry summer is over, and with the fall comes wetter weather and an increase in the number of caribou hunters. This combination tends to result in damage to Adak's tundra, as hunters rent ATVs and forge ahead despite conditions, expanding the destruction as they try to avoid deep ruts and mud holes on deteriorating trails or venture off the trails entirely. If you drive or provide ATVs to others who drive beyond Adak's road system, here are some things to keep in mind:

- ATV access results in greater damage to Alaska wildlands than any other human use. Even low levels of ATV use cause extensive damage to fish and wildlife habitat. Vegetation is compressed and sheared, fertile topsoils eroded, streams and wetlands muddied and smothered. When crossing wet areas, ATVs churn the surface creating a viscous mixture of mud, shredded vegetation and stagnant water. Where ATV trails cross streams they wear away banks and widen the streambed; these shallow spots can impede the passage of anadromous fish, and freeze faster than deeper waters creating ice dams that further modify aquatic ecosystems.

- Cold, wet tundra plants and soils recover slowly. Once damaged, recovery to an original state may require the span of several human lifetimes. The single passage of an ATV over dry lichens will virtually eliminate them.

- No motorized vehicles are allowed within the Alaska Maritime National Wildlife Refuge on Adak Island, yet illegal trails have been created on Refuge lands. The Refuge boundary is not signed everywhere; it is your responsibility to know where ATVs are allowed and how to avoid trespassing. Detailed maps and coordinates can be found in the *Know Where You Are* pamphlet, available at the Refuge office (146B).

- It is not always easier to drive. Adak's wet climate and fragile tundra are not compatible with ATVs, and trails quickly become impassable in poorly drained areas. It is now almost impossible to remain within the 25' designated easements on trails where the use of ATVs is legal. When trails are slick or boggy, be prepared to park your ATV and continue on foot. People who continue to drive them may widen and cause further damage to trails, and are likely to get stuck, spending more time recovering a mired vehicle than hunting.

- Adak's Refuge land belongs to all of us. Please help protect it and the wildlife depending on it: explore and enjoy the Refuge on foot. Consider doing the same for the rest of the island as well. At the very least, do not stray from established trails, and if conditions are slick or boggy, park your ATV and walk.



## Not those RATS again!!!

It's that time of year again, when the rats that have been merrily raising families and getting fat all summer start moving back into our warm houses. Remember, it is far easier to keep rats out in the first place than to try to remove them once they've set up house in your walls and crawlspaces, so plan now to protect your home. The best way to discourage rats is to ensure they don't have access to food or shelter. That means never leaving food or garbage where rats can get at it, keeping the grounds around your house clear of vegetation and objects that might provide cover for an industrious rat as it burrows under your foundation, and screening or blocking all openings and vents—pay particular attention to the gap under your garage door. Setting up and regularly checking a defensive trapline is a good idea, both inside and around the exterior of your house. Be sure to place traps inside protective stations anywhere there is a danger of injury to children, pets or small birds. If rats do manage to sneak past your defenses, and you would like some advice about the most effective ways to get rid of them, please review the rat article in the Nov 2014 issue of *The Eagle's Call* (available on the City of Adak's website), or call the Refuge office (592-2406).

## And now CATS???

Feral cats have been observed on Adak for the last ten years or so, but they are extremely wary and active mostly at night. In the past you were far more likely to see their tracks in fresh snow, patrolling beaches and fields, than to catch a glimpse of an actual cat, but recently there have been complaints about cats in town. What should you do if you encounter a hissing, snarling, panicked cat? The State Veterinarian recommends euthanizing and sending in for testing any animal that appears to be diseased, but otherwise provides no guidelines. Anchorage's Animal Care and Control office has no advice for those of us living in a town without a management plan for feral animals, animal control officers or veterinarians.

Luckily, help is at hand. USDA-APHIS Wildlife Services Biologist Luke Barto will be on Adak the week of 5 October, and has kindly offered to provide training in feral cat trapping and safe handling techniques, as well as information about diseases and related issues. If you're interested in learning more, call 592-2406.

