

# *SourDough Notes*



**U.S. Forest Service  
Alaska Region  
Fall 2011**



## ON THE COVER:

*Peggy Burnette is "Alaska Nellie" to the many visitors at Begich, Boggs Visitor Center in Portage Valley, Chugach National Forest  
Photo by Lezlie Murray.*

## SourDough Notes

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### Fall 2011

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## INSIDE:

<a href="#">Disney Visits the Tongass</a> .....	2	<a href="#">Science at SEADC</a> .....	21
<a href="#">Alaska Nellie</a> .....	3	<a href="#">Kenai Mountains, Ice and Youth</a> ....	22
<a href="#">Interview with Ray Crowe</a> .....	4	<a href="#">Nat'l Wilderness Award</a> .....	23
<a href="#">Quiz: From the Archives</a> .....	5	<a href="#">New Forestry Sciences Lab</a> .....	23
<a href="#">Jokulhlaup!</a> .....	6	<a href="#">Beauty in the Fen</a> .....	24
<a href="#">Diane Daniels</a> .....	7	<a href="#">IYOF in Petersburg</a> .....	25
<a href="#">Keep Digging</a> .....	8	<a href="#">S&amp;PF New Talent</a> .....	26
<a href="#">Safety Engagement</a> .....	9	<a href="#">Silviculturist of the Year</a> .....	27
<a href="#">Beginnings: Forest Entomology</a> ....	10	<a href="#">SEAK Hydro Project</a> .....	28
<a href="#">LR Transportation Plan</a> .....	11	<a href="#">Nugget Falls Trail Dedication</a> .....	29
<a href="#">Federal Subsistence Program</a> .....	12	<a href="#">Trail Building/Montague Island</a> .....	30
<a href="#">Soil Mapping In Sitka</a> .....	13	<a href="#">Cabin Fever</a> .....	31
<a href="#">Couverden Culvert Removal</a> .....	14	<a href="#">Chugach Fungus Festivals</a> .....	32
<a href="#">Find Your Voice</a> .....	15	<a href="#">Harris River Restoration</a> .....	33
<a href="#">Green Page: Part I</a> .....	16	<a href="#">GNSS: New GPS</a> .....	34
<a href="#">Randy Castro, Volunteer</a> .....	18	<a href="#">Crooked Creek Info Center</a> .....	35
<a href="#">Connecting with Community</a> .....	19	<a href="#">BBVC: 25 Years</a> .....	back cover
<a href="#">Explorations: Juneau Icefield</a> .....	20		

## Disney Visits the Tongass NF



For the first time this summer, Disney cruise ship passengers made their way through Alaska's Inside Passage. They were delighted by opportunities to learn about the rich natural resources of the Tongass National Forest from onboard Forest Service interpreters and wilderness rangers.

On August 20, Forest Service employees joined USDA Under Secretary Harris Sherman (right front), Regional Forester Beth Pendleton (left front), and Minnie Mouse on the Disney Wonder in Juneau for a tour and discussion of the partnership program. Back row, left to right: Jon Martin, Marti Marshall, Nita Nettleton, Kevin McIver, Forrest Cole, Ron Marvin, and Doug Jones. Photo courtesy of Disney.

# Alaska Nellie...Alive and Well

By Lezlie Murray, Visitor Services Director, Chugach National Forest

It's a rare thing, but every now and then a Forest Service interpreter creates a history program from the inside out, and "becomes" the person they are interpreting. Such a rare person is Peggy Burnette, who has tackled the difficult assignment of living-history interpretation and succeeded. Though Alaska Nellie made a name for herself in Southcentral Alaska in the early part of the last century, her spirit and legend live on, thanks to Peggy's ability to channel Nellie's story.

Peggy first came to work at the Begich, Boggs Visitor Center with her husband Don in 2006. During that first summer, she became intrigued by the autobiography of a woman named Nellie Neal Lawson. She read the book over and over again, and did extra research at local museums to learn as much about Nellie as she could. Eventually, she felt ready to tell Nellie's story.

The oldest of 12 children, Nellie Trospen was born into a farm family in Saint Joseph, Mo., where she dreamed of coming to Alaska. As a young child she learned to trap and hunt in the countryside around her parent's farm, becoming a good shot and capable woods woman. She left home in her late twenties after she had helped to raise her brothers and sisters and could be spared. A diminutive woman barely five feet tall, Nellie began to work her way to Alaska in 1901, stair-stepping her way through the west. She spent the most time in Cripple Creek, Colo., where she worked at a variety of jobs, owned her own hotel and married a prominent assayer. Unhappy in her marriage due to abuse at home, she made the decision to divorce and moved on to



*Peggy Burnette educates and entertains visitors at Portage Valley as Alaska Nellie. Photo by Lezlie Murray.*

California, where she booked steerage to Seward, Alaska.

It took Nellie many years to reach Alaska, but she never lost sight of her goal, arriving July 3, 1915. Ever productive and capable, she soon found work with the Alaska Central Railroad until the winter snows were deep and work had to be discontinued. Then, she hitched up a dog team and headed up the trail that later became the Seward Highway to trap the winter away.

Over the years, this fearless woman trapped commercially, ran roadhouses for the railroad, managed a post office and hunted with great success. In fact, her home on Kenai Lake had a special trophy room that was a favorite stopping place for visitors traveling the railroad. Over time she became so famous that people sent her fan mail addressed quite simply to "Alaska Nellie, Alaska" and the post office always delivered.

Like Nellie, Peggy is also small in stature, but large in spirit and

ability. Though Alaska Nellie married twice, Peggy has been married to "her Donald" for over 55 years, raising four children and welcoming many grandchildren into the family.

Through the years she has held a variety of jobs from North Carolina and Tennessee to Missouri, Oregon and Alaska. Like Nellie, Peggy has an adventurous nature and loves to work with people in beautiful, wild country.

Perhaps it's because of their similarities that Peggy is able to convey Alaska Nellie's story with such passion and authenticity. Often when she finishes her presentation there are tears in the eyes of the audience and many ask for her signature, not believing that she is not the *real* Alaska Nellie.

Yes, it is a rare thing for an interpreter to succeed with living-history interpretation, but Peggy Burnette has done it. Alaska Nellie is truly alive and well at the Begich, Boggs Visitor Center.

# Interview with Ray Crowe

By Teresa Haugh, Editor



Nevada fire photo by Brandon Poe.

Although Ray Crowe is often the lone Forest Service employee at the Alaska Fire Service on Fort Wainwright, Alaska, he is not really alone. The office on Fort Wainwright is part of the Alaska Interagency Coordination Center (AICC), a cooperative effort of the Bureau of Land Management, State of Alaska Department of Natural Resources, U. S. Forest Service, National Park Service, Bureau of Indian Affairs, and U.S. Fish and Wildlife Service. In his current job, Crowe is one of three logistics coordinators, working in rotation with Lauren Hickey from BLM and Darla Tyson from the State.

AICC is the “focal point for initial attack resource coordination, logistics support, and predictive services for all state and federal agencies involved in wildland fire management and suppression in Alaska.” (<http://fire.ak.blm.gov/>). Crowe is no stranger to fire management. Although he has only worked for the Forest

Service for less than two years, he spent 20 years as a BLM employee with the Alaska Fire Service.

When I recently talked with Crowe, I asked several questions about his day-to-day activities. He explained how his office is set up with an overhead crew’s desk, an aircraft desk, and an equipment desk, with dispatchers working for each of those functional areas. As the on-duty coordinator, Crowe oversees the operation, prioritizes resources, and decides “who goes to Fire A and who goes to Fire B.”

“My job is basically moving folks around and troubleshooting,” said Crowe. “For example, we had a very busy fire season this past May in the Interior. Our job was to make sure we didn’t miss anything.”

The three logistics coordinators work in tandem like dancers on a stage to insure that the desks are covered and no one gets overly tired. Crowe explained that a seven-day rotation is necessary to prevent

coordinators from running into mandatory days off.

“We do a pretty good job between the three of us,” he said. “We break up our time to keep fresh. If you do it day in and day out and don’t get rest, you start making mistakes.”

The number of firefighters they have on hand varies quite a bit. The BLM Alaska Fire Service maintains over 300 firefighters and support positions (68 smokejumpers and two hotshot crews) and the State has about the same number. The Forest Service maintains around 70 firefighting crew members during the fire season. By national mandate, smokejumper crews must be located near an airbase, and according to Crowe, working on a military base is “pretty cheap rent.” Not only are smokejumpers based in Alaska, but the highly-respected BLM smokejumper program takes a lot of pride in being able to train smokejumpers in Alaska, including rookie training.

Crowe said that for some Forest Service employees, wildland firefighting is their primary job; for others, it is a collateral duty. Crowe works closely with Todd Camm, the Chugach National Forest Assistant Fire Management Officer (AFMO), and Seth Ross, the AFMO on the Tongass National Forest. He commended Camm and Ross for their proficiency in making sure their “militias” are available and qualified to go on fire assignments. It is incumbent on employees and the dispatch offices they work for to make sure they are listed as available. The Alaska Region was able to send one standing Type 2 initial attack (T2IA) crew to fires in Alaska and Oregon earlier this summer. Also, there were four or five single-resource crew members ordered

to Texas. After arriving, they were stationed around Texas to deal with initial attack fires, which have been going on for about a year.

“They’re not getting a break in Texas,” Crowe said. “Yesterday we had nine orders in our inbox and six today for various overhead positions, task force leaders and facility unit leaders. And it has been over 100 degrees there. You have to drink as much water as you can.”

Crowe does not go on as many fire assignments as he might like. He said when he is gone for extended periods it has a high impact on the other coordinators, as well as the Forest Service dispatchers in Sitka and on the Chugach National Forest.

Crowe participates in routine national fire conference calls. In addition, when Preparedness Level 2

(PL2) is called, the National Inter-agency Fire Center in Boise, Idaho arranges for daily 7:30 a.m. calls so that all the Geographic Area Coordination Centers can report on their current situations and available resources.

To maintain situational awareness, one task that Crowe completes is a simple check of the weather. Last summer, he was able to move an engine module from the Chugach National Forest because they still had snow on the ground there.

Crowe said, “Sometimes we call for smokejumpers, smokejumper aircraft, dispatchers, hotshot crews, and overhead to deal with the fires. And we don’t have trouble getting people—a lot of people love to come to Alaska. Because our fire season is so early, we don’t have a

lot of competition for resources in the beginning of the summer.”

Another weapon in their arsenal is an air attack plane with an aerial supervision module that came to Alaska from Oregon. The Forest Service pilot and the air tactical group supervisor on board can both talk to firefighters on the ground as well as show the retardant planes where to drop their loads. There aren’t many planes in the United States with the ability to do both.

Crowe said his most gratifying duty is “...getting a standing Forest Service T2IA crew and getting them out.” If you have the proper fire training and certification, you can help Crowe by ensuring your status is correctly listed in the resource ordering and status system. One employee can’t do it alone.

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## Quiz: From the Archives *By Teresa Haugh, Editor*



*Left to right: Paul Brewster and Steve Ambrose*

Congratulations to all of you who correctly identified Paul Brewster and Steve Ambrose in the top photo. Steve is now retired and busy working on the 2012 Retiree’s Reunion. Paul, who was amused to find himself listed as an “archive,” is now working as the Assistant Director for Program Development at the Pacific Northwest Research Station’s Juneau Forestry Sciences Laboratory.

Those with the right answer were: Wayne Ash, Julia Daws, Pamela Finney, Dan Haase, Karen Iwamoto, PJ Karpstein, Bob Latham, Paul McIntosh, Jon Martin, Gene Miller, Fran Martin, Ken Nestler and Annette Untalasco. Henry Hays gets credit for naming one of the two.

For the next quiz, I’m asking you to identify the location

of this road building project in the photo on the bottom left. While I do not know the names of the people in the photo, I do know the mile marker and the particular ranger district where the road project was located. Hint: the year was 1922. Guesses are okay! Please send to:

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# Jokulhlaup!

By Ed Grossman, Recreation Program Manager, Juneau Ranger District

I knew Thursday, July 21, 2011, was going to be an extra long day when I watched a yellowlegs (a type of wading sandpiper) land in the water of the flooded West Glacier spur road, and began feeding near the submerged center line.

It all started for me the previous afternoon when Aaron Jacobs of the National Weather Service Forecast Office stopped by the Juneau District office. I could tell by the look on his face he had a serious matter to relay. He described an unprecedented event was unfolding at the head of Juneau's Mendenhall Valley, and there was no way to predict the end result. Not exactly what you want to hear from a guy who is a forecaster by trade.

Mendenhall Lake was rising two inches an hour, and had risen several feet already. The NWS's best guess was this was the result of a jokulhlaup (pronounced yo-kul-laup), or glacier burst. Jokulhlaup is an Icelandic term that describes any large and abrupt release of water from a sub-glacial or pro-glacial lake or reservoir, a term I was happily oblivious to mere moments before Aaron's arrival. If indeed a glacial reservoir had cut loose on the Mendenhall Glacier ice field, the NWS did not know how big the reservoir was, thus they could not predict when the flows would subside.

Aaron suggested we had better prepare to evacuate the Mendenhall Lake Campground, and offered hourly updates as their gauges on the lake fed them data. I immediately asked Juneau District Recreation Technician, Steve Stoddard, to meet with the campground hosts, Lewis and Kathleen Ford, and show them the campsites most vulnerable to flooding. The trio then began warning or moving campers where water levels were threateningly close. As the evening wore on, and as lake and river levels continued to rise, campers began moving or exiting the campground in greater numbers.

Around 9 p.m., the NWS predicted Mendenhall Lake and River would reach flood stage by midnight. I thought, "Just great! Why does this have to align with our few hours of dark?"

The hosts worked with campers during the night in a very orderly fashion. By first light, water had breached the campground roads, and flooded West Glacier spur road. As I headed into work around 6 a.m., Law Enforcement Officers Dave Zuniga and Bill Elsner closed West Glacier spur road to motorized traffic.

Bill and I then made rounds in the campground in his patrol vehicle, and as we drove through new rivers



Visitors take in the sights following the flood at Mendenhall Glacier Visitor Center. Photo by Wendy Zirngibl.

of water overflowing the roads, I began to think we may need a boat! By mid-morning, we evacuated all remaining campers except those in the RV Loop, as they were on the highest ground. About that time I was asked to update Forest Supervisor Forrest Cole (who happened to be in Washington, D.C.), and I did so from what had become an island along the main loop road of the campground. I concluded our chat by telling Forrest, "...to paint a picture, as we speak, a mallard hen and her ducklings are now swimming across the road!"

When the waters breached the campground entrance road, we decided it time to evacuate everyone left in the campground, as this effectively isolated all campers. The last to come out were our hosts, flowers and all. At lunch I went to check on my house along the lower river. Lines of cars were parked near both highway bridges that cross the Mendenhall River, and scads of onlookers were amazed by the violent flow that looked as though it might leave the channel.

Near 1 p.m., the waters continued to rise. The NWS took a helicopter up on the glacier trying to predict the size of the failed reservoir. The electric company shut off the power, and the city closed off select roads and trails, and monitored water and sewer systems. I'll admit watching the waters continue to creep up West Glacier spur road this far into the event was quite disconcerting. Before 2 p.m., the trend finally reversed. What a sigh of relief to all in the Mendenhall Valley.

The NWS reported the following impressive statistics for the amazing event. The area of the reservoir is known as Suicide Basin, which is an eastern tributary to the Mendenhall Glacier behind Mount Bullard. The area of the filled basin was estimated to be 178 acres, with water up to 200-feet deep. The volume of water released was estimated at 9.8 billion gallons. That's right, "billion" with a "b." It took 2.5 days for the lake levels to peak at six feet higher than normal, and another day for the lake to drop to normal levels. The lake and river level during this event



*A kayaker travels along the road to Mendenhall Lake Campground. Photo by Wendy Zirngibl.*

was the second highest ever recorded, a mark only exceeded in 1995, then due to numerous, large rainfall events over a longer period of time.

The NWS speculates this may become an annual event similar to the same phenomenon that floods the Taku River east of Juneau each spring when the Tulsequah ice dam breaks.

Hmmm...maybe its time to build elevated platforms for tent camping, or we might also consider a house boat loop in the campground along Mendenhall Lake.

In the interim, the next time the NWS stops by with a new Icelandic term for me, I hope it is something like "litli," which translates as little, low, or small.

## Diane Daniels Employee of the Year

Deputy Regional Forester Ruth Monahan took the opportunity during a recent trip to Ketchikan to present Diane Daniels with a crystal eagle, the traditional gift given to the recipient of the Regional Forester's Employee of the Year Award.

Diane is the support services specialist for the Ketchikan-Misty Fiords Ranger District. She has worked for the Forest Service for 20 years, and she is described by those on her district as someone who regularly goes "above and beyond" to ensure the needs of the district are met.

Diane supervises employees, oversees the fleet, and manages the budget and property. She spent many hours in a coordination role of the construction of a new warehouse. Since 2008, her coordination of the 15-member Resource Advisory Council has been critical to the council's success.



*Left to right: Deputy Regional Forester Ruth Monahan presents the Employee of the Year Award to Diane Daniels. Photo by Jeff DeFreest.*

# Keep Digging...

## Reconstructing the Legendary Alice Smith Intertie

By Dani Hess, Forestry Technician: Trails, Cordova Ranger District

As the 2011 field season winds down and the autumn winds pick up, Cordova Ranger District's trail crew dwindles from the boisterous nine to merely a few. The rigorous routine of this summer's project has come and gone, leaving only the late season loners to straighten out the aftermath of the constant gear shuffle that is always a part of trail construction. This is the time for drying out and repairing tired bodies and backs, along with the multitude of tools and gear that have endured a summer of hard use.

This summer's project, the Alice Smith Intertie, was first blazed by a courageous crew of local Forest Service employees in partnership with volunteers representing the Appalachian Mountain Club. The crew completed the trail in three seasons of battling relentless rain, mud, brush, and an overabundance of stubborn rocks and roots. The fruit of their labor is a stunning, rehabilitated 14-mile loop that connects Power Creek Trail to Crater Lake Trail, which today remains Cordova Ranger District's longest stretch of continuous trail.

Since the completion of the Alice Smith Intertie, 21 years have passed and the trail has served as a byway for bears as well as hikers, providing spectacular views of Cordova's scenery. An alpine lake welcomes the winded as they reach the top of the switchbacks that rise abruptly out of the Power Creek drainage.

From atop the ridge, hikers can scan for goats on the rugged peaks to the north or spot the Alaska State Ferry on its way into town from across Prince William Sound. After catching their breath and waiting for their heads to stop spinning from the panorama (or the disorienting fog that is common there), hikers head along the ridge for 5.5 miles, following the rock cairns that lead the way to Crater Lake. Between the top of the switchbacks and Crater Lake, a ridge shelter provides a place to spend the night or protection from nasty weather.

After over two decades of use,



*The Cordova Ranger District's trail crew pick their way up the switchbacks of the Alice Smith Intertie.*

Alice Smith Intertie was in need of some good old trail crew TLC. The project consisted of tasks such as widening tread in steep, overgrown sections of trail, and a number of "legacy projects" which are features such as log bridges and rock steps that are intended to last longer than the folks who built them.

The 2,000-ft. climb from Power Creek begins by winding up through the wet, mossy forest. Here the trail remained fairly undeveloped—narrow in many sections and riddled with puddles and off-camber twists and turns.

Rock steps and staircases provided a fix for steep, eroded sections. Harvested from the surrounding area with tools such as grip hoists (a mechanism similar to a winch or come-along) and rock bars, many rocks

weighed a hefty 300 lbs. In one stretch, about 40 of these rocks were painstakingly placed to create a large staircase. In many of the mucky sections, split log bridges were the answer, providing wet feet a reprieve from the sloppy mud.

A log bench created by previous years' crews marks the beginning of a section of trail that opens up into a steep bowl full of salmonberry bushes growing on rocky slopes. Reconstructing this section was challenging because of all the boulders and debris that had fallen from the cliffs above. Each winter, avalanches rip down the hillside, causing debris and

vegetation to encroach onto the trail, making it narrow and precarious for hikers in constantly slippery conditions. Using picks, Pulaskis and McCleods, the crew turned this nearly mile-long section of trail (which included six switchbacks) into a fresh, even, three-foot-wide trail. Our crew was glad to have the help of seven more pairs of tool-wielding hands belonging to a volunteer SAGA crew. For a little over two weeks, the volunteers from the Southeast

Alaska Guidance Association lent their labor to help accomplish this feat. They were aided by three Student Conservation Association volunteers who spent the season working with the trail crew along with the Fish and Wildlife field crews on the Cordova District.

After the 2011 Cordova Ranger District trail crew came and went, Alice Smith Intertie was transformed—but its name remains a reminder of the dedicated crew who

first constructed it. The trail was named after Alice Smith, a woman instrumental in the creation of the 14-mile-long loop. After she and her two sons returned for many seasons of trail work in Cordova to complete the Power Creek to Crater Lake project, Smith made lasting friendships and memories, admitting, “it was hard, worse than housework!” She considers the name of the Alice Smith Intertie “...the greatest honor I’ve ever had.”



Bill Moulton

## Safety Engagement Sessions

By Bill Moulton, Safety Officer, Tongass National Forest

Forest Service leadership is aware of the questions. In fact, Harv Forsgren, Regional Forester for the Intermountain Region, addressed these concerns. He admitted that, “... this ‘Safety Journey’ has started out unlike any initiative I’ve ever seen. Leaders admitting they are clueless? Looking outside the outfit for answers? Engaging every employee in a discussion to better understand why we get the unacceptable results we do? Whoa...was that a pig that just flew by?”

The Safety Engagement Sessions are designed to help us transition from a compliance-based safety program to a learning culture. As Chief Tom Tidwell said, “This is a journey, not a destination.”

At every step along this journey, we will continue to have learning opportunities for everyone involved. The sessions are designed to allow people to share freely share the hard lessons they’ve learned in a friendly atmosphere.

In each session, employees engage in a fast-paced, thought-provoking discussion about our approach to safety. Regional and forest staff and line officers lead the sessions. Chief Tidwell said the sessions are an opportunity to come together

to talk about safety with more of a focus on learning and less of a focus on conducting a compliance-based program.

In each session, employees have been encouraged to share their safety stories. In addition, each employee was invited to bring a personal “safety symbol” with them—a physical reminder of why safety is so important. One employee shared that his wedding ring symbolizes to him on a daily basis why it’s important for him to make it home safely at the end of each day.

At each session, employees re-emphasized some valuable take-home lessons, such as:

- Working alone in the woods is supposed to be the exception, not the rule. Unfortunately, we have many people working alone in the woods.
- Communication is key to identifying risk, sharing lessons learned, and identifying other options to accomplish the job.
- We must have the ability to say “no” without fearing repercussions.
- Since rules do not apply to every real-life situation, safety should focus more on the decision-making process instead of the result.

In the last two issues of *Sourdough Notes*, we talked about the Forest Service’s renewed commitment to engage in safety. By now, we have all participated in (or will soon participate in) one of the 27 Safety Engagement Sessions that have been scheduled around the region. Thorne Bay Ranger District hosted the first session in mid-September, and the last one will be held in Anchorage in early December.

For some of us, the idea of openly discussing accidents and incidents is a new way of doing business. Others may have received the agency’s new safety initiative with a bit of skepticism. They want to know, “Would management really follow through? Is this just another one of a host of initiatives we have seen fly by over the years?”

# Beginnings of Forest Entomology in Alaska

## A spruce beetle outbreak on Kosciusko Island, 1946

By Malcolm M. Furniss, Forest Service Retiree

The discovery in 1946 of extensive killing of old-growth Sitka spruce on Kosciusko Island led Regional Forester Frank Heintzleman (1888-1963) to seek entomological help. Forest entomologist Robert L. Furniss (1908-1980) of the Forest Insect Laboratory in Portland, Oreg., journeyed there from July 19 to August 3, 1946 to explore the cause. The Alaska Territory was loosely within the realm of the laboratory, although no one spent time there until Heintzleman's request.



This Grumman is one of a fleet of eight World War II surplus Grumman amphibian operated by Alaska Coastal Airlines. This aircraft is tied up in Petersburg in 1946.

### Ketchikan to Kosciusko Island

In Seattle on July 20, 1946, Furniss boarded an amphibian "Grumman Goose" operated by Coastal Alaska Airlines. He landed at Annette Island at 3:20 p.m. and was taken by launch to Ketchikan. After a day of preparation, he boarded the Forest Service boat, *Forester*, for a three-day trip to Fisherman's Harbor on Kosciusko Island. On shore, he and Ranger Ivan H. Jones examined a stand of dying spruce and determined that a serious outbreak of the Sitka spruce beetle was in progress.

Around noon on July 25, the boat headed for Petersburg and anchored at Red Bay on the north end of Prince of Wales Island. They transferred from *Forester* to *Ranger 8* on July 26 at Wrangell Narrows and proceeded to Petersburg where Furniss stayed at the Arctic Hotel. Next morning, Ranger Knox Marshall drove them to Alaska Coastal Airlines where he again boarded a Grumman Goose for the 50-minute flight to Juneau. He had dinner at the Baranof Hotel with Heintzleman.

At noon on July 31 he boarded *Ranger 6* operated by Larry (Lawrence R.) Wafer to examine reported defoliation

at Doty Cove on Admiralty Island and Bridget Cove north of Juneau. Now that Furniss had made his presence known, such a need was going to occur more frequently.

### Report of the 1946 survey

Furniss's subsequent report identified the Sitka spruce beetle as the cause of spruce mortality. This was the first such outbreak reported in Alaska. The principal area infested was on the Hardscrabble Unit in the vicinity of Fisherman's Harbor on the west side of Kosciusko Island. The infestation appeared to be working southward, away from the shoreline and into the main block of timber containing approximately 134 million board feet of the finest mature spruce in the state. Some of the dead trees were accessible for salvage from the shore but the bulk would require construction of roads.

Furniss recommended an aerial survey of dead trees, a ground survey to determine the ratio of current to previously killed trees (trend), and a detailed biological study of the beetle's relatively unknown habits.

### Follow-up

At Heintzleman's request, Furniss went to Kosciusko Island again November 9-27, 1946. He and Jones undertook the first systematic aerial survey of insect damage in Alaska November 17. They flew along section lines, sketching the location of dead and reddened spruce trees on forest type maps at a scale of four inches to the mile. The airplane was a Bellanca pontoon monoplane flying at about 90 mph.



Furniss worked from the "Forester" shown here, anchored off-shore from spruce beetle outbreak, Kosciusko Island, July 1946.

Most of the time was spent on ground surveys. They ran two-chain-wide sample strips by pacing and compass (three percent sample of the 6,419-acre stand). They also felled 20 towering old-growth trees with a crosscut saw to determine infested length and beetle brood stages, which indicated that the beetle had a two-year life cycle. All this was completed by the head of the Portland laboratory and the district ranger during the worst weather of the year.

In his following report, Furniss recommended that salvage logging should be done immediately to utilize already dead spruce and to remove infested trees. He reiterated the need for a study of the biology of the Sitka spruce beetle.

Furniss made two more field trips to Alaska in 1948 and 1950. The first of those was back to Kosciusko to check on the spruce beetle. He reported that the infestation had subsided. The latter trip was to the Kenai Peninsula and throughout Interior Alaska roads. Clearly, the need for continuous on-the-ground entomological assistance was growing beyond what was practical to provide either by him or anyone outside the territory.

#### Permanent staffing begins: McCambridge goes to Juneau, 1952

Heintzleman came to that conclusion and exerted his influence to get the Bureau of Entomology to staff an entomologist at Juneau. Whereupon, William

F. McCambridge (1923-2007) was transferred to Portland from the Bureau's Fort Collins Laboratory and he accompanied Furniss to Juneau on Aug. 26, 1952. McCambridge was stationed at Juneau from 1952-1956. McCambridge was replaced by George R. Downing who transferred from the Berkeley Laboratory.



Robert L. Furniss

Much has changed since 1946. The fleet of boats is gone. Surveys and tree felling are conducted by personnel hired and trained to do that. Logging on national forest land, as was done in response to this outbreak, might not occur now. Staffing of entomologists has grown and such personnel are now located at Anchorage and Fairbanks as well as Juneau. Likewise, the insect species of concern have increased greatly both by the indigenous species having become known and because of accidental introductions. All of this had its beginnings when Bob Furniss disembarked from the *Forester* on Kosciusko Island July 24, 1946. Seldom has such an event been as clearly documented in the history of American forest entomology.

## Multi-Agency Long Range Transportation Plan

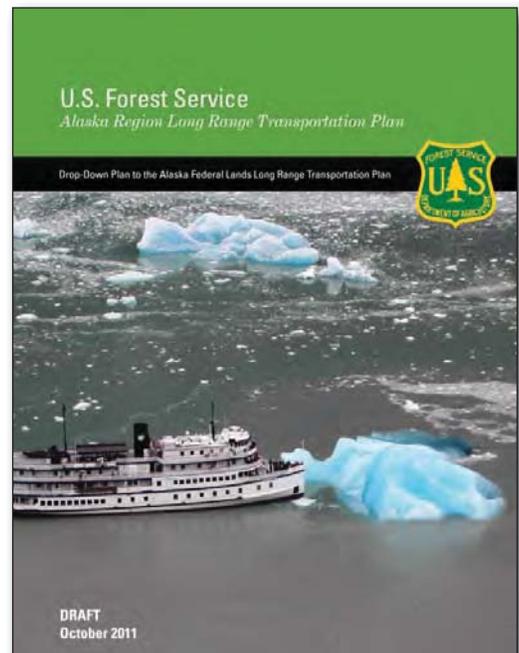
By Marie Messing, Transportation Engineer, Regional Office

The USDA Forest Service and the U.S. Department of the Interior Bureau of Land Management, National Park Service and U.S. Fish and Wildlife Service, have developed a multi-agency long range transportation plan (LRTP) for Federal lands in the state of Alaska.

The mission of the Alaska Federal Lands Management Agency LRTP is "to implement a regional long-range transportation plan that fulfills Alaska's Federal land management agency's common strategies for transportation that remains compatible with individual land management agency missions in partnership with the Alaska Department of Transportation and Public Facilities."

The U.S. Federal Highway Administration Western Federal Lands Highway Division led the multi-agency planning effort. A Federal Register notice for review and comment will be coming out in the near future.

The document is available for review at the following website: <http://www.akfedlandslrtp.org>. If you have any questions about the LRTP, please contact Marie Messing, Alaska Region Transportation Engineer, at [mmessing@fs.fed.us](mailto:mmessing@fs.fed.us) or (907) 586-8834.



# Federal Subsistence Program ∞ Part II

## Who can subsistence hunt or fish? Ugh! Why is this so confusing?

By Cal Casipit, Subsistence Fish Biologist, and Steve Kessler, Regional Subsistence Program Leader

One of the more confounding issues for rural residents in Alaska is figuring out which regulations, federal or state, applies to them when harvesting subsistence fish, shell fish or wildlife. With this issue, commonly called “dual management,” how should rural residents decide when or where it is legal to subsistence hunt and fish? The answer may at times seem complicated but the concept is simple: State of Alaska hunting and fishing regulations apply everywhere on all lands and waters in Alaska, unless superseded by federal subsistence regulations. Often the regulations are the same.

Some examples of federal regulations superseding state regulations include:

- Federal users do not have to purchase a state sport fishing license (discussed below),
- closures of federal public lands or waters to non-federally qualified users, or
- special seasons/harvest quotas.

Closures most commonly occur when fish or wildlife are insufficient to provide for all users and, consistent with ANILCA Title VIII, a priority is provided to federally-qualified rural residents. Sometimes the first week or two of a hunt on federal lands may be only open to federally-qualified users, such as deer on a portion of Prince of Wales Island or moose on the Kenai Peninsula.

In general, the first question to answer is: where is the hunting or fishing going to occur? Federal subsistence hunting regulations apply to federally-managed lands and water only. Hunting regulations apply to the actual footprint of the federal



*Subsistence users work their net at Kanaku Bay near Angoon.*

land, while fishing regulations apply to all waters flowing through or adjacent to federal lands within the exterior boundary of the conservation units and the national forests, excluding most marine waters.

The second question to answer: Is the person a rural Alaska resident? If the person is a resident of a non-rural community, as determined by the Federal Subsistence Board, that person is not a federally-qualified subsistence user. (Note: all Alaskan residents qualify for state subsistence or personal use, but that’s another topic.) The Board has found the residents of Anchorage, Fairbanks, Homer, Juneau, Kenai, Ketchikan, Prudhoe Bay, Seward, Valdez, and Wasilla/Palmer to be non-rural, and therefore not federally-qualified subsistence users.

The third question: Does the person have a positive “customary and traditional use determination”

for the particular species and in the specific area that the person wishes to hunt or fish? In most cases, the determination is based on community of residence. For example, a person residing in Barrow does not have a determination allowing them to hunt deer on Prince of Wales Island—that activity is not customary and traditional.

Confusion for users occurs when federal regulations supersede state regulations. For instance, federal subsistence fisheries regulations do not require that users have a state sport fishing license to participate in subsistence fishing, only that they have a federal or state subsistence fishing permit. It is different for hunting; federal regulations require federally-qualified subsistence users to obtain a state hunting license.

Another area of confusion for federally-qualified users is the use of rod and reel for harvesting

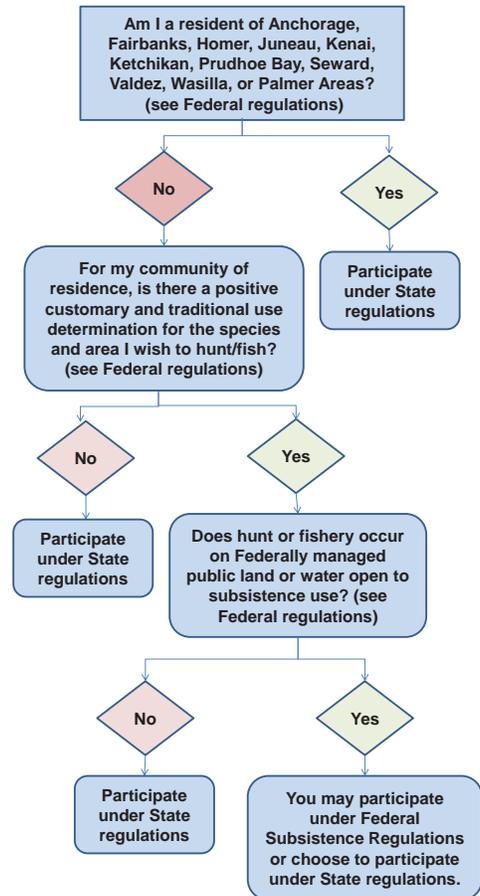
subsistence fish. Federal regulations for subsistence fishing recognize rod and reel as legal gear for taking subsistence fish. However, except for a few specific allowances, rod and reel gear is not an authorized gear type for state subsistence or personal use fisheries.

People are also confused about harvest limits. With few exceptions, users cannot “stack” state and federal harvest limits for a species. For instance, a federally-qualified subsistence user cannot obtain a state subsistence fishing permit and harvest the limit of sockeye salmon from a particular location, and then obtain a federal permit and harvest the limit of sockeye at that same location.

Another area of confusion is designated hunter or fisher regulations (federal) or proxy hunting or fishing (state). Under state regulation (proxy), one individual may harvest for another individual (beneficiary) if that individual is blind, over the age of 65, or is more than 70 percent disabled. With few exceptions, under federal subsistence regulations any individual may hunt and fish for another individual as long as both are Federally qualified for the hunt or fishery to be participated in. In general, the designated harvester may hunt or fish for any number of beneficiaries but may only have two harvest limits in his or her possession at any one time.

If you have questions contact anyone in the Federal Subsistence Program, including Cal Casipit in Juneau or Steve Kessler in Anchorage. Or explore the Federal Subsistence Program’s interagency website at: <http://alaska.fws.gov/asm/index.cfml>. To see the first in the SourDough Notes article in this series, see: [http://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5316956.pdf](http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5316956.pdf), page 18.

### Can I hunt or fish under Federal Subsistence Regulations?



## Soil Mapping in Sitka

By Jacqueline Foss, Soil Scientist, Tongass National Forest

The soil mapping arm of the Palmer-based Natural Resource Conservation Service (NRCS) visited the Sitka area this July. This is the first year in a multi-year effort to complete the soil mapping of all of the unmapped, private lands in Southeast Alaska. These areas are commonly found around cities, corporation, or state land. Sitka was one of the first cities visited. The crew also visited Haines and Juneau this past summer.



The soil mapping effort is a congressional priority and has been since 1896. Every year, money is allocated to the NRCS and other partners of the National Cooperative Soil Survey to map soil around the U.S. Working soil maps are important for land use interpretation and planning.

The NRCS has plans to map several unmapped areas on Prince of Wales, Ketchikan, Annette Island, and Glacier Bay National Park. The Tongass Soil Scientists will be working with the NRCS Soil Scientists to complete and improve the soil mapping products across Southeast Alaska.

*Dennis Mulligan, Kendall Nielsen, Nate Perry, Garrett McKee and join in an effort to complete soil mapping in Southeast Alaska. Photo by Jacqueline Foss.*

# Couverden Culvert Removal

By Ryan Kreiner, Retired Tongass National Forest Fisheries Biologist

This past July, following an eight-month, interagency permitting process, Tongass employees were finally able to orchestrate culvert removal at the Couverden log transfer facility. The LTF is situated on a remote peninsula in the Homeshore Creek drainage of Icy Strait, across from Hoonah Alaska, about 3.3 miles from the base of Forest Road 8554. The road was likely constructed during the late 1970s, and was officially closed under the Access and Travel Management process in 2009.

The road's culverts showed signs of age. Each pipe had issues commonly associated with aging culverts such as sedimentation, perched inlet or outlet, improper stream transport, and deterioration. Three of these culverts were located on fish streams, barring upstream migration. By eliminating these barriers, we on the Tongass crew hoped to increase accessible spawning and rearing habitat for Coho salmon, pink salmon, and Dolly Varden by one to two miles. Additionally, we hoped to eliminate unnatural sediment sources and increase stream flow in 2.5 to 3 miles of tributary streams.

Due to the costs and environmental concerns associated with moving heavy equipment into the area, we decided to use explosives to remove the culverts. Use of explosives would save money, eliminate the need to force heavy equipment through anadromous spawning gravels, and leave more vegetation intact on the closed road, thus reducing negative impacts on terrestrial wildlife species. However, our proposal was not unanimously accepted by all permitting agencies. In the



*Crew prepares to use explosives to remove this culvert at Road 8554.*

past, the Tongass used a silvicultural exemption for conducting similar projects. Such work was considered maintenance of a road used specifically for logging and therefore did not require a permit from the Army Corps of Engineers. However, a shift in management meant different views on the subject.

After much debate, it was decided that the project might fall under Nationwide Permit 27—Stream and Wetland Restoration Activities. This change in permitting procedures meant that we had to implement a stricter monitoring process and document measurable improvements in fish habitat. We had to maintain appropriate widths and depths of the streams, increase fish habitat utilization, monitor riparian vegetation, and reduce fine sediments in the creeks. Failure to comply would result in a violation of our permit.

Finally, on Monday, July 18, the festivities began. Tongass blaster Rob Miller arrived at the LTF with two planeloads (3,000 pounds) of explosives. We began distributing

the explosives the next day. It was an all-day affair. We had to shuttle 100-150 pounds at a time on ATVs and frame packs in order to reach the uppermost portions of the road. At the end of a long day, we had enough daylight left for one blast. The first treatment looked to be an instant success. Within minutes, clear water flowed down the center of the channel. This process was new to me and I do not think an excavator could have been more precise than we were on that initial blast.

The next two days were filled with blasting. Because pipe diameter and other site conditions varied, we had to adjust the placement and the amount of explosives used at each pipe. Most often, 150 pounds of explosives were enough to take care of a single culvert, but in some cases three to four times that amount was used. After each blast, we performed a significant amount of rehabilitative work. Commonly, the explosion left a small berm on the downstream end of the culvert. We removed those with shovels and

Pulaskis. We added large rocks to each stream channel to provide stability. Finally, we treated the areas with a 10-20-10 (10 percent nitrogen, 20 percent phosphorus, 10 percent potassium) fertilizer and seeded with annual rye grass. We concluded all the rehab work by Friday afternoon.

When we left Couverden, all streams were flowing clear, and it appeared that we had restored fish passage. However, the sites were bare from the disturbance and the riparian zones resembled a sort of lunar landscape. So, when we returned August 15, less than four weeks after the completion of the project, we were surprised to find thick mats of grass covering the banks and adult pink salmon making use of the newly exposed habitat. Apparently, the copious amounts of summer rain had benefitted our rehabilitation efforts. The banks no longer looked like wastelands—they had color and stability. We even observed moose and bear tracks at old culvert sites. As time progresses, stream



*A happy technician seeds the banks post-treatment.*

sediment, flow, and vegetation will more closely resemble natural conditions. Once fully restored, the benefits of this technique will be obvious to all.

## Finding Your Voice

*By Begich, Boggs Visitor Center Interpretive Staff*

“What does it take to be a good interpreter?” “How does one get this job?” Interpreters at Begich, Boggs Visitor Center have been asked those questions many times by visitors, friends and family. The answer is simple: passion! A mentor can teach one the skills to be a confident public speaker, such as how to research, prepare and present a sculpted, cohesive, thematic interpretative program. We can know our audience, immerse ourselves in the resources, and experiment with different creative techniques and methods. We can go to a university for a comprehensive degree, take on-line certification courses, and continually learn on the job. Yet, we cannot teach passion. But we strive to coach people to find their passionate voice.

Passion is what lifts us up, it is what pulls us through, and it is what propels us forward. Passion is what gives us purpose. Who will care about something, if you don't? When you think of a topic, what emotions hit you in the gut? What spurs your imagination? Consider a plastic water bottle. Does it quench your thirst on a hot day, revitalizing your body with the pure elixir of life? Or, does it fill you with rage, the burning of fossil fuels, harmful pollution and hazardous waste? Either way, a passion is there to build upon and to coax out the potential



*Begich, Boggs Visitor Center photo by Tom Iraci.*

of powerful thematic energy. Whether pondering the purities or pollutants of plastic water bottles, considering the flora and fauna of our majestic natural world or contemplating the quests of humanity, perhaps you are ready to share. If you feel a fire in your belly and stoke your imagination, if you fuel those flames higher and radiate with a wealth of warmth, and if you invite others to huddle around you and share in the energy of the amber glow, perhaps you have the pizzazz for interpretation.

So for all those who ask, from the young to the young at heart, this is how we answer. It takes passion. And sometimes, a little spark. Can you find your own voice?



# Green Page—Part I

*Editor's note: The Green Page will be a recurring series in SourDough Notes to share what dedicated employees in the Alaska Region are doing to address Climate Change and Sustainability.*

## Tongass Utility Cleanup and Greenhouse Gas Studies

*By Michelle Parker, Environmental Engineer, Tongass National Forest*

In the last few years there has been an increased emphasis on reducing energy and water consumption in federal facilities.<sup>1</sup> All agencies are required to show:

- A 2% annual reduction through 2015, or,
- A 16% total reduction between 2007 and 2015 for water use; and a 3% annual reduction through 2015, or
- A 30% total reduction between 2003 and 2015 for all other utilities used by the agency.

On October 12, 2010, the deputy chief of business operations signed a memo that asks each unit “to review its current utility bill setup and verify the accuracy of its utility bills and account information.” Similar reviews have resulted in significant consumption and cost savings in other regions.

To meet these goals, the Tongass National Forest began a multi-year study which will help us to better understand our use of energy. In addition to properly identifying all the utility accounts held on a unit, this will help build a baseline of use that will assist decision making and provide a benchmark against which future progress can be measured. The Tongass will use these data for the Utility Cleanup Project managed by James Kase and the Greenhouse Gas Inventory Project managed by Michele Parker.

As stewards of the environment, the Forest Service is committed to efficiently using energy and reducing consumption of resources in our daily operations. The Tongass uses three main sources of energy in our facilities: electricity, diesel oil and gasoline. Energy use has two components: consumption and carbon dioxide (CO<sub>2</sub>) emissions. Nationally, the Forest Service was recently generating an estimated 186,000 tons of CO<sub>2</sub> annually, so our efforts to decrease energy usage and decrease our dependence on fossil fuels could significantly reduce our CO<sub>2</sub> production.

The Agency's goal for energy efficiency is to become 25 percent energy neutral by 2012, 50 percent by

2016 and totally energy neutral by 2020. This would mean that by 2020, the amount of energy the Agency consumes will be equal to the amount of energy it produces whether by solar and hydroelectric generators and/or by making use of the new energy technologies for wind, tidal, geothermal and wave generators. Coordinated actions are required to accomplish agency-wide reductions in energy consumption and increased use of renewable power sources, increased green purchasing and increased recycling efforts.

Our facilities are found in urban settings, remote locations and everywhere in between, so we have numerous electric, water, natural gas, propane and solid waste providers. Since our facility managers do not pay the utility bills themselves, awareness of the usage, the associated costs and the ability to track usage can be a challenge. The first goal of the Greenhouse Gas Inventory and Utility Cleanup Projects has been to consolidate information from a variety of sources and present the data in a consistent and reproducible format. Most of the utility bills are paid by National Finance Center but in some cases the bills are paid by individual districts. Until now, there has not been a system to track this usage. Even the bills that are paid by NFC frequently are accompanied by statements without enough detail to allow accurate tracking of utility usage. We are in the process of obtaining the necessary detailed information about utility usage at those sites by reviewing local utility company records. As the data is being collected and reported in a standardized format, we are accomplishing our first goal.

### **The benefits of the Utilities Cleanup/Greenhouse Gas Projects beyond cost savings include:**

- Promoting energy use awareness for facilities managers and occupants.

<sup>1</sup>Executive Orders 13423 and 13514, the Energy Policy Act of 2005, and the Energy Independence and Security Act (EISA) of 2007.

# Climate Change & Sustainability

- Measuring, verifying, and optimizing performance, including diagnosing equipment and systems operations.
- Establishing benchmark utility use.
- Monitoring, diagnosing, and communicating power quality problems.
- Managing utility use, including monitoring existing utility usage and utility budgeting support.
- Improving energy billing and procurement, including measuring energy use, verifying utility bills, identifying best utility rate tariffs, and participating in demand response programs.
- Reporting energy use/savings to leadership.

## What we look for in utility bills:

These questions are considered for every single utility account because the savings potential can be significant.

- Do we own the facility?
- Do we need the services being provided?
- Is this bill the responsibility of a concessionaire or special use permittee?
- Is the rate structure correct?
- Are the bills accurate?
- Are seasonal buildings getting closed down properly?
- Are we eligible for rebates?
- Are there anomalies in utility use?
- By inspecting each bill and comparing the history of each site we expect to zero in on areas that will provide considerable cost-saving opportunities.



Ron Marvin, director of Mendenhall Glacier Visitor Center, drives the center's new zero emissions electric truck. Photo by Ray Massey.

## What we have found so far:

- The Forest Service was being charged for utilities at a site that had been transferred to another agency.
- The Forest Service is being charged sales tax on some utility invoices.
- Maintaining empty or low usage properties comes at a high cost.
- Budget projections can be better informed and therefore more accurate.
- The payment process can be slow and so it is common to incur late fees.
- The utility company has an incorrect address associated with the account number.
- One ranger district had an account number that is also used by a facility in Watersmeet, Mo.
- Accounts get set up/entered inaccurately causing confusion in data

entry and incomplete data from search activity.

- Some utility companies use the same customer account number for all the customer's facilities.

## Conclusion

After we have completed this process, we will have significant opportunities to reduce our environmental footprint. The sustainability goals set forth in the *Strategic Framework for Responding to Climate Change* set by the Chief and the latest executive order that focuses on federal leadership in environmental, energy, and economic performance give guidance for making reductions in energy and water consumption. However, to truly make needed changes, they have to happen on the ground with champions and leaders like you and me taking initiatives and making a difference.

# Randy Castro...Dad, Volunteer

By Eric Castro, Biological Technician, Petersburg Ranger District

**O**n August 3, 2011, I took my father out to the field with me. We began our adventure in the office with the necessities first, such as signing job hazard analyses (JHAs), watching the boating passenger training, and gearing up with proper personal protection equipment. As thrilling as this was, Dad knew it was only going to get better.

As we boated from Petersburg Harbor down to the Tonka Log Transfer Facility, I discussed with Dad the intricacies of field work in Southeast Alaska. I have been working on a more succinct and specific JHA that details the finer aspects of working in this environment such as where to and where not to step on rocks and logs, and using the terrain to one's advantage to minimize danger as much as possible.

After making our way six miles down to the float dock on Kupreanof Island, we jumped into the Suburban parked there and drove out the main line road to our work site. I tried to take Dad to a timber unit that would give him a breadth of experience with a variety of different streams. We began by hiking down this gorgeous fish stream with a decent gradient and plenty of large wood, which we had to snake through. As we hiked down, I showed him how to operate our Trimble GPS unit and where to hang the appropriate flagging along the stream course.

This fish stream emptied into a beautiful, anadromous flood plain stream approximately 10 meters wide. We took a 15-minute break and explored upstream around the bend to see if we could see any beaver activity, but to no avail.

Following our break, we got back



*Eric Castro shows the ropes to a Forest Service volunteer, his dad, Randy Castro.*

to flagging and stream walking, only for Dad to discover that bigger streams mean larger logs to contend with. After walking for a few hundred meters, we had to swing inland to follow the unit's boundary. We crossed a small muskeg into the fringe of the forested area. Here we found game trails we could follow that took us to the third border, which would take us back up to the road.

This third stream was small, exceedingly shrubby and overgrown with loads of Devil's club—definitely not the ideal stream. But I figured sharing such a full, well-rounded experience with Dad would help him understand the handful of the trials that someone in my line of work has to deal with!

After making our way back up to the road, Dad looked at me and said, "I am only volunteering here, and I think that I've had enough fun for today. I have the utmost respect for people like yourself that have to do this day in and day out."

After enjoying lunch in a sunny patch along the road, and of course, being swarmed by bugs, we drove back to the LTF and performed a post-tailgate session. Dad commented that while the JHAs and my initial briefing had been very thorough, we did not discuss the importance of communication well enough. When Dad served as fire captain with Cal Fire, and worked fire seasonally with the Forest Service, he learned that good communication is of paramount importance. While we had completed all the required check-ins with dispatch, I realized we could do more to explain in the JHAs the true value of personal safety and the safety of the crew.

It was great to have been able to share this experience with my father, especially after having worked with him as a volunteer with Cal Fire for a couple weeks over the last few years. I was able to show him what his boy has become and what good, quality work is being completed on the Tongass National Forest.

# Connecting With a Community

By Corree Seward, Wrangell Ranger District Visitor Services Information Assistant

“Break down!” “I see break down!” “I see break down!” This is the catchphrase that Interpreter Maddie Smith and I taught to local children during Forest Explorers, a biweekly program at a day camp run by Wrangell Parks & Recreation. The phrase was used to call attention to fungus on the trail during a hike that introduced the idea of decomposition.

Sitting through classes on interpretation, I was taught to strive toward making connections. I heard, “you need to connect to your audience,” and “you need to make a connection to the resource.” But, how do you know if you are actually reaching this goal? How can you tell if your audience of 100 is connecting to the resource as you talk to them in the dark in front of a screen, knowing you may never see them again? I spent years in large national parks delivering interpretive programs, and I hoped that something I said would be remembered, but I never really knew. To find my answer, I had to step away from the visitor center and out into the community.

Community is central to the interpretation and conservation education program in Wrangell. While we talk to visitors and cruise ship passengers at the James and Elsie Nolan Center, the majority of our programs are directed at the community. This has been a tradition in Wrangell, and over the years, interpreters have been building the program to reach more and more locals. Now, in 2011, interpretive programs include a weekly outdoor exploration program for toddlers, a weekly reading program in cooperation with the public library, a weekly campfire program, and the Forest Explorers program. The Forest Explorers programs were so well attended this year, we even created



*Interpreters Maddie Smith and Corree Seward join Smokey Bear in demonstrating proper camping etiquette.*

a new program that targeted those same kids for the month of August after the Parks & Recreation day camp had ended. In addition, interpreters also assisted in special events throughout the summer, including the Stikine River Birding Festival, Wrangell Bear Fest, and the Fourth of July parade.

Working with the community also allows the interpretive program to expand beyond the summer. There has been a tradition of working with the local school district during their longstanding spring field trips that explore a beach on Wrangell Island and a trip up the Stikine River.

This year, we further expanded our presence in the schools by visiting elementary school classrooms to present indoor and outdoor education programs. As the days get colder and shorter, activities are also appreciated by the general public. We help provide speakers for the Wrangell Chautauqua winter lecture series, utilized International Year of the Forest films for a mini-festival, and put on Family Fun Night, an evening of crafts and activities to celebrate fall.

Most of our programs are open to visitors, yet our main audience continues to be the people who call Wrangell home. Since we see many of the same faces over and over—most of whom have lived in Southeast Alaska a lot longer than we have—we look to the community for assistance. We invited locals with different areas of expertise to be guest presenters and share their knowledge and skills. With our children’s programs, seeing many of the same kids every week means constantly creating new programs, but it also affords us the opportunity to build upon things we have talked about in the past.

Overall, there are so many benefits to being an interpreter working within a community. Children come up to us to tell us about animals they see. Parents stop us around town to tell us how much they appreciate our programs. We meet new people constantly. We learn from the community. And whenever we hear a child point to a mushroom and yell “break down!” we know that we have made that much sought after connection.

# Botanical and Geological Explorations on the Juneau Icefield

Karen Dillman, Ecologist Tongass National Forest and Polly Bass, Matanuska Susitna College of UAA

The Juneau Icefield, North America's fifth-largest at 5,000 square miles, is more than the obvious rock and ice. Rocky islands surrounded by ice called *nunataks* contain well-adapted and often unique vegetation within the icefield boundary. Some localities are considered *paleonunataks*, which are present day localities previously isolated by glacier ice, but are now less isolated due to ice free terrain between the landmass of the mainland and contiguous ice free land within the icefield. One possible *paleonunatak*, Paradise Valley (33 miles NW of Juneau at 58.798 N and -134.502W) is of interest to researchers with the Juneau Icefield Research Program (JIRP) who have studied the icefield since 1946 (<http://www.juneauicefield.com/>).

This year, the Tongass National Forest Botany Program and the JIRP collaborated in scientific explorations of Paradise Valley. Approximately 800 years ago, the majority of the Juneau Icefield is presumed to have been completely ice covered during the Little Ice Age. The work of this year's reconnaissance expedition was aimed at deciphering in greater detail the evidence for the valley being ice free during the Little Ice Age. This evidence may be present in the substrate record, the geomorphological record, and in the vegetation present today. Beyond this objective, the aim was to also obtain botanical knowledge from a previously unexplored area with a unique geologic history, with the hopes of finding rare plant populations. Greater knowledge of rare plant species and their habitats allows the Tongass National Forest to monitor, regulate



Paul McDaniel and Gary Linder examine soil development for clues.

and protect habitats within similar subalpine and alpine areas in review of special use permits and other development projects.

The valley lies at about 2,500-ft. elevation and is 1.5 miles long. The Bucher Glacier borders the north entrance of the valley and is now more than 400 ft. below the first moraine. The Gilkey Glacier borders the valley's southern end, where a stream exits the valley into a steep waterfall. While the geologists looked for clues of glacial history, we conducted botanical surveys. We surveyed



Tiny *Botrychium neolunaria* fern from Paradise Valley.

the rocky moraines of the Bucher Glacier, the east and central portions of the valley about halfway down to the Gilkey Glacier, and along the western slope and a lateral moraine of an unnamed hanging glacier to about 3,400-foot elevation.

Although initially no sensitive or rare plants were found during the surveys, we documented the presence of over 150 plant species in the valley and collected over 90 plant samples that are receiving closer examination at the University of Alaska Fairbanks. We also collected over 100 lichen species that are also being further examined.



Diverse lichen communities were present throughout the valley.

Much of the vegetation was familiar to us, yet the plant assemblages were different than other alpine valleys in the region. For example, mountain ash (*Sorbus sitchensis*) and beaverd spirea (*Spiraea stevenii*) were two abundant shrubs in the valley aside from the willows (*Salix* spp.). These thickets are heavily used as protective cover and browsed by the resident mountain goats. Chest-height lady ferns (*Athyrium filix-femina*), false hellebore (*Veratrum viridis*) and myriad blooming wildflowers carpeted the rocky slopes of the valley between the talus slides. Patches of mountain hemlock forest

(*Tsuga mertensiana*) in the center of the valley and at the southern end may be the remnants of a glacier/ice surface forest. The ice is now absent, but the leaning trees remain. Great excitement only displayed by botanists followed the discovery of moonwort (*Botrychium neolunaria*) on a moraine on the western slope of the valley. We hope to continue this partnership with JIRP in the future to help discover the glacial history and botanical treasures from Paradise Valley.

*Botanist Polly Bass processes plants, an essential task at the end of each day.*



### Survey Team

- **Scott McGee**, JIRP Field Director and Cartographer, U.S. Fish & Wildlife Service
- **Paul McDaniel**, JIRP soil scientist, Professor, University of Idaho
- **Gary Linder**, Geologist, Senior Advisor for JIRP
- **Polly Bass**, JIRP botanist, Associate Professor, Matanuska Susitna Community College
- **Karen Dillman**, Ecologist, Tongass National Forest
- Helicopter logistics by Coastal Helicopter
- **Justin Vernon** and **Alicia Stearns**, Tongass National Forest flight managers

## Signs of Science at the Southeast Alaska Discovery Center

*By Leslie Swada, Program and Events Coordinator, Southeast Alaska Discovery Center*

The 2011 Science Institute was sponsored by the City of Ketchikan and the State Science Consortium. The Consortium provided science credits to teachers through a series of meetings with colleagues and vendors in the sciences. Thirty educators from around the state explored learning opportunities provided by the Southeast Alaska Discovery Center including the expertise of Forest Service resource specialists.



*Leslie Swada prepares to lead Alaskan teachers at the 2011 Science Consortium in exploring the exhibits of the Southeast Alaska Discovery Center. Photo by Sandi Schultz.*

The Forest Service kicked off its first day of the Consortium with an overview of Alaska's public lands as well as more specific information about the connection between the cultural and natural resources of the Tongass National Forest. Teachers became engaged students as they discovered the exhibits and completed exhibit worksheets designed especially for them.

The Learning Center's upgraded theater and recently installed biomass boiler were

also visited and discussed. Teachers examined over 25 conservation education boxes and appreciated that Forest Service employees are available to visit with students in the classroom or forest.

During the final day, resource specialists from the Ketchikan Supervisor's Office and the Ketchikan Misty Fiords Ranger District gave presentations on silviculture, forestry, plant associations, botany, fisheries, wildlife and archeology. Throughout the presentations teachers asked questions about field data collection and reporting.

Closing the final chapter of the 2011 Science Consortium, and in celebration of the United Nations International Year of Forests, the Southeast Alaska Discovery Center featured Amy Gulick and her presentation and art opening, "Salmon in the Trees." Gulick's inspirational words and images, taken from her book of the same name, showcased the relationship between the people and the forests of Southeast Alaska.

# Kenai Mountains, Ice Patches, and Youth

By Karen Kromrey, Public Service Staff Officer, Seward Ranger District, Chugach National Forest

What is it about rugged mountains, severe Alaskan weather, and challenging tasks that can show us who we are and what we can achieve? Add youth and adult leaders from local native tribes and urban settings, Forest Service archeologists enthusiastic about ice patch archaeology, and supportive partners, and you have the creation of this summer's Chugach National Forest's Ice Patch Expedition.

Sherry Nelson and I, in partnership with Alaska Geographic and Alaska Teen Media Institute, worked with nine high school-age youth from the Kenaitze Indian Tribe, Qutekcak Native Tribe, and Anchorage area July 25-August 12, 2011, to provide educational and employment opportunities in the fields of archeology, vegetation management, wildlife habitat management, and botany. This program also included a high school media intern and a college-age outdoor leadership intern, effectively engaging a total of eleven youth. With the assistance of Region 10 diversity grant funding, the Forest Service was able to pay seven high school youth for their work for the three-week period and provide a life-changing experience for all nine youth during the ice patch expedition portion of the program.

During the first week, seven youth planted two acres of birch seedlings, conducted wildlife habitat surveys, and worked with botanists on an invasive plant survey/weed pull at the Forest Service Kenai Lake Work Center. The youth camped overnight with Forest Service employees in the Palmer Creek drainage near Hope. After learning how climate change is melting Kenai Mountain ice patches, and



*Ice Patch Survey participants, left to right: Sherry Nelson, SRD Archeologist; Adrienne Miller, Qutekcak Native Tribe; Raven Williams, Kenaitze Indian Tribe; Mike Briseno, AK Geographic Youth Leader; James Andrew, Kenaitze Indian Tribe; Michael Bernard, Kenaitze Indian Tribe Yaghanen Coordinator; Robert Bearheart, Kenaitze Indian Tribe; Sebastian Kratz, Qutekcak Native Tribe*

of the limited opportunity to find any cultural artifacts left by prehistoric hunters of caribou, the youth hiked to an elevation of 4,200 feet to survey an ice patch with district employees and the Alaska Geographic youth leader. In addition, all nine youth participated in a climate change discussion with a National Park Service intern at Exit Glacier in Kenai Fjords National Park.

During the second week, the youth participated in an ice patch expedition in remote backcountry on the Seward Ranger District. This expedition was part of the annual Kenaitze Indian Tribe Archeology Susten Camp. The youth, adult tribal leaders, Forest Service employees, and Alaska Geographic youth leaders traveled on horse back for a day to the survey area. They participated in three days of ice patch sur-

veys, and on the fifth day, they traveled by horseback to the trailhead. The weather was severe at times, with rain and high winds, but the group persevered. When weather permitted, the youth learned alpine archeology survey protocol and conducted 16 ice patch surveys in two high alpine cirques.



This is the best day of my life!"  
Adrienne - Qutekcak Youth



Youth and adults shared their cultural heritage and demonstrated knowledge of ancient hunting techniques including the atl-atl (ancient hunting weapons for larger game) and youth-led demonstrations of the use of bola and sling for small game hunting. The Kenaitze youth realized with great pride that they were

walking in the footsteps of their ancestors in ancestral hunting grounds. Adults and youth also shared knowledge about cultural foods, traditional uses of plants, and participated in drumming, dancing, and singing of Dena'ina songs

The group practiced Leave No Trace principles and learned how to stay dry and warm in inclement Alaska weather. Most importantly, the youth learned about themselves,

their own capabilities, working as a team to accomplish objectives, and how to live simply in a remote back-country setting. The week saw many firsts for both youth and adults: riding horses, camping in a remote alpine area, practicing ancient hunting techniques, and climbing mountains.

The Alaska Teen Media Institute and Alaska Geographic worked with the youth to provide training and support with media equipment. The

youth used this training to document findings and experiences during the entire program. The youth developed five videos that are posted on the YouTube Chugach Children's Forest site at <http://www.youtube.com/watch?v=oCLMCogIqTA>.

We closed with a lunch hosted by the Kenaitze Indian Tribe. The youth were recognized for their efforts and were able to share their experiences with family and tribal elders.

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## National Wilderness Award Winners



Employees were invited to the regional office this past September to congratulate the Juneau-Admiralty Wilderness Rangers, recipients of the National Wilderness Education Leadership Award. Regional Forester Beth Pendleton presented the award at a “bring your own gorp” party. Award winner Tim Lydon gave an excellent presentation highlighting the innovative wilderness stewardship and education program this team developed for the Tracy Arm-Fords Terror Wilderness.

*Left to right: John Horn, Kristin Horn, Sean Rielly, Barbara Lydon, Solan Jensen, Tim Lydon and Beth Pendleton.*

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## Breaking Ground: New Forestry Sciences Lab

A ceremonial ground breaking was held in August for the Forest Service's new Pacific Northwest Research Station laboratory in Juneau. The 11,000-square-foot building will house four laboratories downstairs and office and conference areas upstairs. In addition to PNW staff, the building will also be used by the Alaska Region State & Private Forestry staff and the Alaska Coastal Rain Forest Center. The location adjacent to the University of Alaska campus will provide increased opportunities for Forest Service researchers to work collaboratively with UAS faculty and staff.

*Left to right: Juneau Mayor Bruce Botelho, Asst. Director for Program Development, PNW, Paul Brewster, and University of Alaska Southeast Chancellor John Pugh. Photo by Teresa Haugh.*



# Beauty in the Fen

By Shauna Hee, Botanist, and Jacqueline de Montigny, Soil Scientist, Wrangell Ranger District

In the scientific realm, mountain lady's slipper orchid is known as *Cypripedium montanum* (Douglas ex. Lindl.). The word part *Cypri* is Latin for Venus and Greek for Aphrodite, and *-pedi* is Latin for foot, thus Venus' foot or Aphrodite's slipper. Aphrodite is the Greek goddess of beauty. Her Roman counterpart, Venus, shares that reputation which for centuries has been immortalized in both art and literature. Aphrodite's legendary birthplace is Cyprus and she was known as the Lady of Cyprus.

slipper's inflated flower resembles the shape of a shoe. The lower pouch-shaped modified petal attracts pollinators and is characteristic of all lady's slipper orchids.

Seventeen different orchid species have been recorded in Southeast Alaska, some of which are more abundant than others. To date, mountain lady's slipper is documented at one location in the Alaska Region: Etolin Island on the Wrangell Ranger District of the Tongass National Forest.



Pollinators on the mountain lady's slipper flower



Fen soil samples are shown in the top two slots, and adjacent muskeg soil show in the lower two.

Mountain lady's slipper is a rhizomatous perennial herb. Each spring new vegetative growth arises from the rhizome, and dies back at the end of the growing season. The rhizome can produce multiple aboveground stems that can be up to three feet high. One stem can produce multiple flowers. The

Due to its disjunct, isolated distribution and suspected downward population trend, the regional forester designated this species as Sensitive in 2009. The Alaska Natural Heritage Program ranks the species as critically imperiled.

The Etolin Island mountain lady's slipper population was first discovered in 2006, and revisited in 2007. Minimal documentation on site and habitat conditions was collected during these visits. Each visit noted visible signs of herbivory to the population, possibly from native deer or non-native elk introduced to Etolin Island in 1987.

During the wet summer of 2011, intrepid "ologists" revisited the population with the purpose of characterizing existing habitat conditions and documenting potential or historic disturbance agents. The first visit occurred when plants were at the initial stages of flowering. General site information was collected,

in addition to location information, soil characteristics, population abundance, associated species, plant community classification, and visible impact or disturbance agents. The second visit occurred when plants had grown older. Further site classification information was collected, the population extent mapped, visible impact or disturbance agents assessed, and the stream headwaters located.

The mountain lady's slipper population occurs in a calcareous fen (lime impregnated soil) fed by the overland surface flow of a small stream emanating from a limestone cliff upslope from the site. The fen is drastically different from the adjacent muskeg. Within the population, soil pH measured 7.5 and water electrical conductivity measured 90-110 micro Siemens. The muskeg soil pH measured 4.5 and water electrical conductivity 8-20 micro Siemens. Vegetation within the fen

is dominated by pale sedge (*Carex livida*) and tufted clubrush (*Trichophorum cespitosum*), in addition to an ironically uncommon presence of common yarrow (*Achillea millefolium*), red columbine (*Aquilegia formosa*), and leathery grapefern (*Sceptridium multifidum* syn *Botrychium multifidum*). Various species of peat moss (*Sphagnum* spp.) and Ericaceous shrubs and subshrubs dominate the vegetation in the adjacent muskeg. There is also a strong presence of carnivorous plants including greater bladderwort (*Utricularia vulgaris*), two sundews (*Drosera rotundifolia* and *D. anglica*), and common butterwort (*Pinguicula vulgaris*).

Potential threats to the habitat include changes in

hydrology and/or water chemistry, and invasion by non-native species along the nearby roadside. With subsequent visits and monitoring, changes in population size, habitat quality, and disturbances can be tracked and a determination of population trend can be inferred.

Novelist Margaret Wolfe Hungerford is credited with the saying “Beauty is in the eye of the beholder.” Is it any wonder such an alluring plant would be named for Aphrodite?

Mountain lady’s slipper has also been reported along the Stikine River. Any information about additional population locations would be greatly appreciated. Please contact Shauna Hee, 907-228-4118.

## International Year of Forests Films in Petersburg

By Cynthia McDonell, Information Receptionist, Petersburg Ranger District

A recent autumn weekend in Petersburg offered more than the usual diversions: film lovers were treated to a trip around the world without having to pack a bag or catch a flight. Thirteen different films—all winners or finalists of the Jackson Hole Wildlife Film Festival’s International Year of Forests Film competition—were presented free to the public during a three-day festival. The audience was enthused about the variety and quality of the films shown, and appreciated the wide range of film techniques, international themes, and educational value.

Several films inspired viewers with their positive messages about forest use, while others enlightened and entertained. The audience was transported to the Amazon to learn about its biodiversity as well as some of the creative efforts to secure the health of this region in the future. *Hope in a Changing Climate* illustrated a community-based restoration project in China that has transformed a barren terrain into a healthy ecosystem, while *Good Wood* uplifted viewers by highlighting communities in Honduras and Mexico that have found ways to selectively harvest wood and avoid deforestation.

The story of dedicated wildlife biologist George Schaller was also featured. During the course of his career, Schaller, who began his career in Alaska, pioneered efforts in wildlife research and conservation. Another, *Satoyama*, artistically portrayed how a mountain forest in Japan is managed in sustainable and harmonious ways. During *Conflict Tiger* suspense kept everyone on the edge of their seats, witnessing the confrontations between a tiger and the people who shared its territory in the Russian Far East.

Last, the film, *The Queen of Trees*, was awarded “Best of Festival” in the competition. The film mesmerized the



Sheri Nicholson and Cindy McDonell welcome community members to the Petersburg Film Festival.

audience with a stunning documentation of the codependent relationship between the sycamore fig tree and the tiny fig wasp in the grandeur of Africa.

Petersburg’s International Year of Forests Committee, presented these films to the public as part of the year-long series of IYOF events. These events are intended to increase awareness of our forests on a global scale, and to encourage efforts promoting sustainable management, conservation and development of forests worldwide. Committee members Carin Christensen, Karen Dillman, Cindy McDonell, Sheri Nicholson, Kelly O’Soup, and Linda Slaght are now busy planning their next project: a bird feeder workshop in December to coincide with the Christmas Bird Count.

# State and Private Forestry's New Talent

By Tricia Wurtz, Forest Health Protection, State & Private Forestry

**D**id you know that not all Forest Service employees work for the National Forest System? Our agency is actually made up of three parts: the NFS, Research, and a little-understood group called "State and Private Forestry." S&PF reaches across the boundaries of national forests to states, tribes, communities and non-industrial private landowners. S&PF provides forestland managers with assistance on insect and disease issues, community fire protection, invasive species management, urban and community forestry, forest stewardship on private lands, and biomass utilization. In general, S&PF employees are either technical specialists, grant program managers, or serve as directors.

Here is an introduction to our new employees.

**Peg Polichio** has been Director of State and Private Forestry for both Regions 6 and 10 since April. She is delighted about her new leadership role in Alaska, saying, "It's a fascinating place with remarkable people."

Peg brings a lot of experience to her new job. She began her seasonal career with the Forest Service in 1975 on the Toiyabe National Forest in Nevada and received a permanent appointment in 1980. She held a variety of natural resource positions on five national forests and has enjoyed many professional details, including one as the Acting Director for Cooperative Forestry at the national office. Elected by her peers, she was awarded the National Forest Fire Management Officer of the Year in 1999. She served as the shared state and federal National Fire Plan Coordinator for the State of Idaho during the escalation of the



*S&PF Director Peg Polichio*

national fire plan from 2003-2006. Every one of Idaho's 44 counties completed their Community Wild-fire Protection Plans during this effort. Most recently, she was Deputy Director for S&PF for the Northern and Intermountain Regions.

Peg's favorite family activities include traveling, fishing, rafting, and biking.

**Robin Mulvey** joined the Forest Health Protection staff in July as the plant pathologist for Southeast Alaska. She received her Master's degree in Botany & Plant Pathology at Oregon State University in 2010. She had a faculty research position, and investigated newly-recognized hosts for white pine blister rust in whitebark pine ecosystems. Robin has also worked on forest health issues in Michigan and New Zealand.



*Plant Pathologist Robin Mulvey and Banjo.*

This summer, Robin took part in FHP's annual aerial survey and participated in projects on yellow-cedar decline and alder canker on Chichagof Island, Prince of Wales Island and the Kenai Peninsula. Her responsibilities include monitoring forest pathogens through aerial and ground surveys, and providing technical assistance and disease management options to land managers.

Robin said she and her husband "... had a fantastic summer exploring Juneau's hiking trails, including Mt. McGinnis, Mt. Jumbo and Mt. Juneau."



*Dan Parrent*

**Dan Parrent** came to S&PF in March, following a 12-year stint as Program Director of the Wood Products Development Service with the Juneau Economic Development Council. In that role, Dan worked on projects related to value-added wood products and biomass energy. Previously, Dan worked 17 years for the New York State Department of Environmental Conservation as a utilization & marketing forester. Dan is a graduate of the SUNY College of Environmental Science & Forestry and Syracuse University, with a major in silvics and silviculture and a minor in entomology.

In his current position, Dan coordinates the R10 Biomass Utilization and Forest Stewardship Programs. The Forest Stewardship Program funds “service forester” positions at the State of Alaska, and delivers technical assistance to private, non-industrial forest landowners. The Biomass Utilization program explores ways to use wood as a source of energy or in innovative applications as structural elements in bridges and buildings. Dan has been instrumental in re-energizing the Alaska Wood Energy



Development Task Group, providing biomass energy technical assistance statewide.

Dan and his family moved to Anchorage in May. If you see our new employees in the office or in the field, please introduce yourself. We all work for the Forest Service.

## Alaska Region’s 2010 Silviculturist of the Year

By Carol McKenzie, Regional Silviculturist



*Petersburg District Ranger Chris Savage presents award to Chuck Ressler.*

Charles (Chuck) Ressler, silvicultural forestry technician, at the Petersburg Ranger District, Tongass National Forest, was recently recognized as the 2010 Alaska Region Silviculturist of the Year. This annual award provides recognition to silviculturists, foresters, forestry technicians, researchers, or anyone who is recognized by his or her peers as providing outstanding leadership or innovation in the field of silviculture.

Ressler was recognized by his colleagues for his very high standards in data management and his outstanding management of the Petersburg’s timber stand improvement

program. He manages approximately one third of the entire forest’s timber stand improvement program and is consistently ready to take on additional target when called upon.

Ressler’s coworker, RD Parks, said, “Chuck is a very detail-oriented employee who excels in database management. I would bet a paycheck we have one of the most complete silviculture databases of any district in the National Forest System”

Ressler has worked for the Forest Service for 36 years, including seasonal and permanent time. He received his permanent appointment 22 years ago on the Petersburg Ranger District in the silviculture

### Silviculturist of the Year

- 1993 Jim Russell
- 1994 Bill Farr
- 1995 Rich Jennings
- 1996 Dick Zaborske
- 1997 Colleen Grundy
- 1998 Gary Lawton
- 1999 Rick Hauver
- 2000 Mike McClellan
- 2001 Bob Deal
- 2002 Mike Sheets
- 2003 no awardee
- 2004 Pat Tierney
- 2005 Christal Rose
- 2006 Sheila Spores
- 2007 Pat Heuer
- 2008 Billy Steele
- 2009 Paul Hennon
- 2010 Chuck Ressler

program area. Ressler really enjoys all aspects of the timber stand improvement program and recognizes the benefits of having an accurate database for managing the program.

Outside of work, Ressler’s favorite hobby is fishing. He also enjoys gardening and playing a good game of poker. He joins a long list of outstanding Forest Service employees who have significantly contributed to the Alaska Region’s silviculture program.

# One Out of 100,000: SEAK Hydro Project

By Erik Johnson, Geographic & Resource Information Systems Group Leader, Alaska Regional Office

The Southeast Alaska Hydrography Database project received a Special Achievement in GIS Award at the 2011 Esri<sup>1</sup> International User Conference in San Diego in July. The award is given annually to recognize outstanding work with geographic information systems technology. The project, called SEAK Hydro, stood out from more than 100,000 others.

Hydrography is defined as the study of earth's surface waters. SEAK Hydro is a joint effort of the Forest Service, Alaska Department of Fish and Game, U.S. Geological Survey, and the University of Alaska Southeast to manage fish, stream, coastline, and water body data across Southeast Alaska and beyond. The project was initiated in early 2010 to address a long recognized data management issue in Alaska. Each agency had been independently mapping and maintaining its own set of hydrography information that were incompatible and, at times, inconsistent with one another.

The solution was SEAK Hydro, a collaboratively designed, shared, and maintained GIS database containing hydrography data residing at the University of Alaska Southeast. SEAK Hydro<sup>2</sup> provides a rich suite of bio-geographical information including:

- Aquatic organism and habitat data including fish observations collected during field samples, locations of potential barriers to fish passage (i.e., bedrock waterfalls),



Mike Plivelich (left) and Erik Johnson (right) receive the Special Achievement in GIS award from Esri CEO and President Jack Dangermond (center).

locations of engineered fish passes, and locations of suitable anadromous fish habitat;

- Physical features such as rivers, streams, glaciers, lakes, dams, intertidal areas, estuaries, salt chucks, and minimum low- and maximum high-tide shorelines;
- Stream geomorphology information including fluvial process groups, stream channel gradient, stream pattern, stream bank incision, and stream containment;
- Regulatory fishing information integrated from the state's Anadromous Waters Catalog;
- Stream networks; which allow upstream or downstream tracing from dams, gauges, fish barriers, and contaminants.

By working together and sharing knowledge, the Forest Service and its partners are able to better manage the public's resources and provide richer information for scientific investigation. The university is providing leadership and the delivery of services to partnering agencies as well as availing educational opportunities to its students so they can work on real world issues instead of classroom exercises.

The university plays another key role in serving as an intermediary between the local hydrography attributes discussed above and the National Hydrography Dataset. NHD is the surface water component of the National Map, which is a cooperative effort among U.S. Geological

<sup>1</sup>Esri is a software development and services company providing GIS software and geodatabase management applications.

<sup>2</sup>At the time of this writing, the Chugach National Forest is preparing their hydrography data for accommodation at UAS with the tentative name: South Central Alaska Hydrography Database.

<sup>3</sup>Natural Resource Manager (NRM) has project management and development responsibility for many Forest Service national applications, including FACTS, Infra, NRIS, and TIM.

<sup>4</sup>FSTopo is a database-driven web application that enables the creation and downloading of large scale topographic maps.

Survey other federal, state, and local partners to improve and deliver topographic information for the nation. NHD data is most commonly recognized as “blue lines” depicting streams on USGS topographic maps. The university provides NHD editing and updating services to partnering agencies as changes are made in SEAK Hydro. This allows the Alaska Region to meet agency goals, including using NHD in *Natural Resource Manager*<sup>3</sup> applications and in national map products such as *FS-Topo*,<sup>4</sup> while meeting local business requirements such as modeling anadromous fish habitat and supplying intertidal stream information.

SEAK Hydro also saves taxpayer

dollars. Maintaining and editing NHD requires a multifarious technical skill-set practiced on a regular basis. By centralizing NHD maintenance services at the university, the Forest Service and its partners will no longer have to wrestle with performing complex editing tasks on an irregular basis, thereby freeing up resources for other work such as NEPA analyses and forest plan revision.

While current partners include the Forest Service and the Alaska Department of Fish & Game, collaboration with additional partners is encouraged and desired. The Alaska Department of Natural Resources and the Alaska Department of Environmental Conservation are two

agencies that are expressing interest in utilizing the SEAK Hydro approach to data maintenance. In fact, the Department of Natural Resources is leading an effort to develop a geospatial data business plan for the State of Alaska which recommends the establishment of collaborative data maintenance models like SEAK Hydro throughout Alaska. Thus, SEAK Hydro serves as an exemplar for data management that can be applied to other business areas including transportation, recreation, and terrestrial ecology.

For information on SEAK Hydro, see <http://seakgis.alaska.edu/>. For Esri Special Achievement in GIS awards, visit: <http://www.esri.com/sag/>.

**Congratulations to these people who devoted time, effort and resources to ensure SEAK Hydro’s success:**

- **Jim Schramek**, GIS Specialist, Tongass National Forest
- **Nida Crumley**, Data Management Specialist, Tongass National Forest
- **Dan Kelliher**, Hydrologist, Tongass National Forest
- **Mike Plivelich**, GIS Coordinator, Southeast Alaska GIS Library, UAS
- **Jeff Nichols**, Habitat Biologist, Sport Fish Division of ADF&G
- **Hank Nelson**, NHD Point of Contact for the State of Alaska, National Geospatial Technical Operations Center, USGS
- **Wendy Kallio**, GIS Database Specialist, Professional Services, Esri

## If You Build It, They Will Come



**O**n National Public Lands Day in September, the Juneau Ranger District proudly sponsored a ribbon cutting ceremony for the Tongass National Forest’s newest pedestrian attraction, the Nugget Falls Trail at Mendenhall Glacier Visitor Center. Construction of the elevated walkway section of this trail was featured in the Summer issue of *Sourdough Notes*. Many of the nearly one-half million visitors to the center each year repeatedly requested an improved access to Nugget Falls.

*Left to right: Matt Adams, JRD Recreation; Steve Neel, Alaska Parks and Outdoor Recreation; Regional Forester Beth Pendleton; Mayor Bruce Botelho; Mendenhall Visitor Center Director Ron Marvin; and Juneau District Ranger Marti Marshall. Photo by Wendy Zirngibl.*

# Stuck On Montague Island? Build Some Trail!

By Jeff Jackson, PWS Zone Fisheries Biologist, Chugach National Forest

This summer, the Prince William Sound fisheries crew had the unique opportunity to work on a structure to maintain lake levels in Stump Lake on Montague Island and complete some much needed trail work at the Stump Lake Cabin. The opportunity to work on the Stump Lake trail to the beach came about when weather conditions forced a delay in helicopter operations, temporarily halting the Stump Lake control structure project. So what are five fish crew members, two Student Conservation Association workers and two helicopter ground crew supposed to do? You guessed it: build some trail.

But before we talk about all the fantastic trail work and “facilities” maintenance, let’s talk about the fisheries project that brought our eager fish/trail crew to Montague.

## Stump Lake Control Structure

Although the Good Friday Earthquake of 1964 is a distant memory to many, impacts to fish habitat on Montague Island are still apparent. Parts of the island were uplifted, in some spots up to 35 feet, isolating freshwater habitat used by sockeye, chum, pink and coho salmon. The outlet of Stump Lake cut down into the stream bed, with potential to make the lake much smaller and more shallow. The result would be the loss of some of the best fish habitat on Montague Island. To remedy this, in 1991, Forest Service employees installed wire gabion baskets filled with rock to keep Stump Lake water levels higher—structures which need periodic maintenance



*Student employee Andrew Doyle removes old gabion wire in preparation for boulder placement. Photo by Chelsea Malstrom.*

and replacement. Engineers determined that boulders could be used to keep lake levels up and maintain fish habitat. With a plan in place, the fish crew removed old wire gabions and prepped the site to increase site visibility from the air. Large boulders, some weighing over 1,000 lbs., were selected from a nearby beach and moved into bulk-lift bags using pry bars. Bagged boulders were then lifted and set in place by helicopter. After water levels rise this fall, spaces between boulders will be filled by silt and gravel, sealing the structure and maintaining lake levels.

## Benefits To Salmon

Salmon and the wildlife that depend on them directly benefit from the Stump Lake water control structure conducted on Montague Island this summer. By maintaining and possibly expanding available fish

habitat, more and healthier juvenile salmon can be produced, which translates into more and healthier adult salmon returning to Prince William Sound. Larger salmon runs returning to Prince William Sound means more fish available for commercial, subsistence and sport fisheries; and greater economic benefits to our region. But what may be the biggest benefit of these projects will hopefully never be needed: insurance.

Projects such as these help to insulate salmon runs from the unpredictability of the future. Climate change, poor ocean conditions, impacts of harvest and food source availability are just some of the challenges salmon will face in the coming decades.

By accomplishing projects that preserve and add to fish habitat, we are giving salmon in Alaska a boost.

## Move That Rock, Dig That Hole!

As anyone who has spent time on Montague Island can tell you, the weather can be bad. And as our hybrid crew prepared to finish off the lake control structure, fog and rain made it impossible for helicopter operations to continue. Fortunately, District Recreation Planner Dave Zastrow and District Trails Coordinator Bobby Scribner were with the crew overseeing helicopter operations. Dave and Bobby knew that even though the planned project had to wait, the trail leading from the Stump Lake cabin to the beach needed some maintenance.

Over the course of three days, the stranded crew brushed the entire trail, placed and secured two-foot bridges, installed a rock staircase

around a dangerous spot in the trail, and moved countless buckets of gravel. And last, but certainly not least, was perhaps the most-needed maintenance project of all: a new pit toilet was dug by fish crew seasonal

employees Chelsea Malstrom and Andrew Doyle.

### **Play The Hand You're Dealt**

In my 12 years of working with federal and state agencies, this is

the finest example of “taking lemons and making lemonade” that I have ever witnessed. Instead of waiting out the weather, this crew looked for opportunities to stay busy and do meaningful work.

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## **Cabin Fever at Peterson Lake**

*By Ed Grossman, Recreation Program Manager, Juneau Ranger District*

**C**abin fever is a term for a claustrophobic reaction that takes place when a person or group is isolated and/or shut in a small space, with nothing to do, for an extended period. The phrase is also used humorously to indicate simple boredom from being home alone. I'll add another definition: An accelerated renovation of a structure and its associated recreation facilities by a skilled and motivated seasonal crew.

Peterson Lake Cabin was built on the west shore of Peterson Lake in 1985. In a truly cooperative manner, the Taku Conservation Society, Territorial Sportsman, Forest Service, and others donated materials, time, and labor to construct what was then the third walk-in cabin along Juneau's road system (there are now five).

The site was selected for its scenic beauty, recreation opportunities, and year-round accessibility. The 4.5 mile trail to the cabin transits through forest and muskeg, and the first half overlaps with a historic horse drawn tramway that was built to the Peterson Mine a century ago. The trail to the cabin gains about 800 feet in elevation. The lake is also accessed by float plane.

Peterson Lake Cabin is a Panabode style 14x16-foot structure that can sleep six. The recreation site includes a dock and boat, outhouse, woodshed, and associated trails. The cabin is rented more than 150 nights a year, half of which are in winter. The primary heat source is propane, which the Forest Service provides.



*New tongue and groove paneling and furniture brightens up Peterson Lake Cabin. Photo by Rob Morgenthaller.*

After 25 years of heavy use combined with the annual assaults of our salubrious rain forest climate, Peterson Lake Cabin was ready for a remodel.

Thanks to Recreation Site Improvement dollars, the Peterson Lake Cabin and site were renovated this summer. The cabin interior was remodeled with 1x6-inch tongue and groove paneling and new furniture, a vault toilet was installed and a new outhouse built atop, the dock was repaired and extended, and the connecting trails were hardened. The transformation of the site has been amazing.

Juneau Ranger District's Rob "Cabin Boy" Morgenthaller led this summer's efforts. He was assisted by Taylor Murph, Max Stanley, Steve Stoddard, Bert Gilbert, Justin Spurrier, Seth Stransky, Matthew Thompson, and the Southeast Alaska Guidance Association.

I realize it might seem a bit ironic that I suggest you shake your "cabin fever" by visiting Peterson Lake Cabin, but that is exactly what I recommend. Here are a few reasons. The Peterson Creek watershed is popular for fishing, skiing, and snowshoeing. You can expect some company between the hours of

10 a.m. to 5 p.m. as day hikers enjoy the cabin as a warming shelter. More adventurous winter visitors can now more safely enjoy a ski loop trip between John Muir and Peterson Lake cabins. The latter is thanks to Forest Service volunteers who re-established winter markers this past March between the two destinations. One can also explore the ruins of the Peterson mining operations, but as always, you should leave in place anything you discover. Finally, trail improvements begun last year will continue next year, making summer travel all the easier.

See? With so many recreational opportunities in the area, it is unlikely you'll be afflicted with a claustrophobic reaction or find yourself bored. Thus, please take my advice. This coming year, consider shaking your "cabin fever" by staying at Peterson Lake Cabin. I am guessing you'll wonder where the time went.

# Expanding Fungus Events Across the Chugach

By Kate Mohatt and Erin Cooper, Wildlife Staff, Cordova Ranger District

Starting in 2007, the Cordova Ranger District has hosted the annual Cordova Fungus Festival. In 2008, the Glacier Ranger District followed suit with the Girdwood Fungus Fair. Both events have attracted mycophiles (mushroom lovers) from across the region and even from other states. They take in the many mushroom-themed activities and presentations by visiting and local mushroom

experts on a variety of topics, forays (mushroom walks) with experts in the woods to collect and identify mushroom species, workshops on using mushrooms to dye fabrics and cultivating edible species, mushroom movie night, kids' education and activities, cooking demos, and gourmet mushroom feasts.

Both of these events have been wildly successful and public participation has continued to grow. Through partnerships with local groups including the Copper River Watershed Project, Prince William Sound Science Center, Cordova Chamber of Commerce, Girdwood Parks and Recreation, the South Central Alaska Mycological Society, and Alyeska Resort, funds have been raised for both of these events to sponsor out-of-state experts to present on their mushroom-related specialties as well as lead forays.

For the first time in 2011, the stars aligned for both events to coordinate to bring up new and returning



Todd Osmundson leads a foray into the woods near Cordova. Photo by Brian Korth.

speakers. This combining of resources allowed us to sponsor a larger variety of experts this year, including:

- Dr. Todd Osmundson, UC Berkeley, who presented on Morel taxonomy and ecology.
- Daniel Winkler, consultant and founder of *Mushrooming* ecotours, who talked about fungi from around the world and his hot off the press *Edible Mushrooms of the Pacific Northwest* brochure.
- Dr. Ryane Snow, Biochemist and Chinese herbalist, who presented on medicinal mushrooms.
- Connie Green, author of *The Wild Table*, and owner of Wineforest mushrooms, who presented on a variety of culinary uses of foraged wild foods.
- “Myco-chef” Patrick Hamilton, who returned for the third year to Cordova and first time to Girdwood to concoct five-course fungal feasts for both events.

In addition to first timers, returning Pacific Northwest Mushroom

Master Dr. Steve Trudell, affiliate professor at the University of Washington and coauthor of *Mushrooms of the Pacific Northwest* field guide, provided his expertise. Dr. Trudell has participated in one or both events since 2008, and has accumulated a wealth of photos and collections from the Chugach.

These specimens are housed at the University of Washington herbarium, and

Trudell's species lists have greatly expanded our knowledge of South-central Alaskan species as well as providing insight into species distributions. Including records from Petersburg, Alaska, over 300 species of mushroom producing fungi have been documented by Trudell across the Alaska Region, and this list expands annually. Some of his photos of specimens were presented at the 2011 Mycological Society of America conference in Fairbanks in a poster titled, *Some interesting macrofungi from southern Alaska's Chugach and Tongass National Forests*. These photos and species lists will also be used to produce an Alaska Region mushroom brochure.

To get in the spirit of the event, several local businesses in both Girdwood and Cordova offered wild mushroom dishes and in the case of Cordova, sponsored a “wine and mushrooms” night to meet the speakers. Planning for next year's events is already underway, and the list of

interested presenters from out of state continues to grow. Combining two weekends of fungus-themed events, guaranteed fruiting of wild mushrooms, and a beautiful cruise through Prince William Sound provides mushroom lovers the ultimate Southcentral Alaskan “Myco-ation.”

As public participation grows, so does the press and response from local businesses. The Alaska Region produced a podcast featuring the two events, available for listening at: [www.fs.usda.gov/goto/r10/podcast](http://www.fs.usda.gov/goto/r10/podcast). In addition, Alaska public radio affiliate KCHU in Valdez send a reporter to Cordova to cover the event and produced a piece that aired statewide during the Alaska news hour. Species lists, pictures, and other information from these events can be found at [www.fun-gusfair.com](http://www.fun-gusfair.com)

*Steve Trudell presents his poster on Alaskan mushrooms at the 2011 Mycological Society of America Conference. Photo by Kate Mohatt.*



## Harris River Watershed Restoration Celebration

*By Carla Petersen from Prince of Wales Island and Sheila Jacobson, Tongass Fisheries Biologist*

A day-long celebration began on Prince of Wales Island the morning of August 25 when long-term participants in the Harris River Restoration Project gathered together. The crowd of 90 included members from the Forest Service, The Nature Conservancy, the Alaska Dept. of Fish and Game, the community of Hollis, the National Forest Foundation, Trout Unlimited, and Alaska Tribes, as well as contractors who worked on the project.

Special guests included USDA Under Secretary Harris Sherman and Regional Forester Beth Pendleton. Sherman said, regarding the watershed restoration efforts, that the impressive work speaks for itself. He sees a new vision for conservation in America, focused on forests as a repository of our water resources.

The Harris River Watershed encompasses over 19,000 acres, and has historically supported high-quality spawning and rearing grounds for Pacific salmon, Dolly Varden char, cutthroat, rainbow and steelhead trout. In the early 1960s, 25 percent of the Harris River watershed was



*Left to right: Tribal Council member Viola Burgess, Craig District Ranger Franciso Sanchez, and USDA Under Secretary Harris Sherman visit during the Harris River Celebration. Photo by Jennifer Kane.*

clearcut, including nearly half of the riparian areas. There are 44 miles of roads in the watershed including the Klawock-Hollis and Hydaburg Highways which bisect the watershed and connect the communities throughout the island to the Inter-island Ferry. Large woody debris was subsequently removed from the river system and the road system was a constant source of stream choking sediment. Landslides and other mass wasting events blocked or degraded salmon and trout habitat.

Conditions in the watershed had deteriorated to the extent that large-scale restoration efforts were deemed necessary. The Craig Ranger District began a restoration plan for Harris River in the early 2000s.

After a decade of work, the Harris River watershed is a triumph for restoration and partnerships on the Tongass.

To learn more, please read our full article on the web in the Fall issue of *SourDough Notes* at [www.fs.usda.gov/goto/r10/sdn](http://www.fs.usda.gov/goto/r10/sdn).

# GNSS: the New GPS

## Merging of Precision and Productivity in Densely Forested Environments

By Dustin Wittwer, IM GeoSpatial Services Specialist

If you are a “GPS” user you may have noticed a shift in terminology from GPS (Global Positioning System) to GNSS (Global Navigation Satellite System). That’s because the U.S.-based NAVSTAR GPS is part of a larger family called GNSS, as is the Russian’s version called GLONASS. Other countries also have a GNSS in development and/or partially deployed such as China’s COMPASS and the European Union’s Galileo. Some of the newer equipment, particularly the mapping and survey grade hardware, are GNSS receivers and can utilize signals from both GPS and GLONASS.

This is good news, particularly for those that work in difficult environments, such as the high latitude, heavily canopied forests and steep terrain of the Tongass and Chugach national forests. Those that have any history with trying to utilize the precision, resource grade systems in our difficult environment know that productivity can be a real challenge, especially when trying to acquire precise positioning. The mode of operation usually includes wait, wait, reposition and wait some more. This is followed by dialing back the signal quality masks in hopes of getting any position at all; or, by switching to a high sensitivity recreational grade receiver that produces positions but with unknown accuracy and quality.

With GLONASS we now have twice the constellation available and double the chance of receiving an adequate signal. In fact with availability of GNSS (GLONASS + GPS) and recent advances in both hardware and software, both precise and efficient data collection is now an option in Alaska’s national forests.

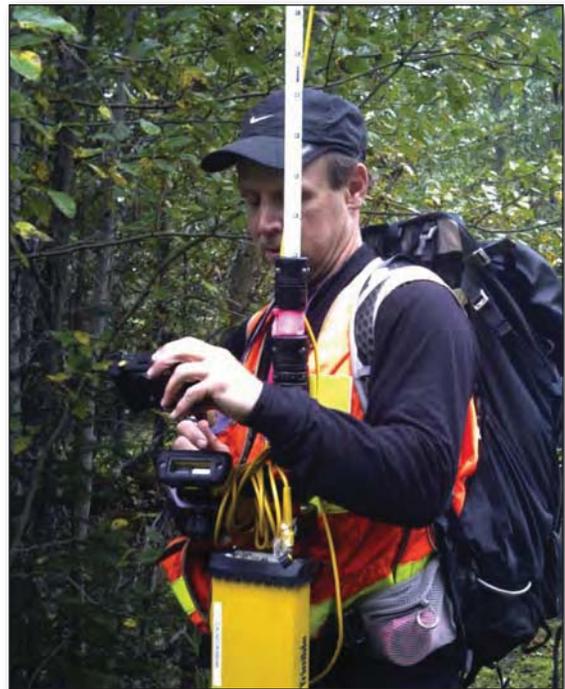
Recently I had the opportunity

to spend some time with Chugach Land Surveyor-Randy Schrank as he performed resource grade trail mapping and INFRA data collection on the Kenai Peninsula in the Chugach National Forest.

For most people, being within a meter or two in location accuracy is great, especially when mapping forest resources. But for Randy, given his foundation in surveying and attention to detail, even sub meter accuracy still leaves a lot of uncomfortable gray area. He will use the best, yet appropriate, tool at his disposal to increase accuracy and productivity.

When accuracy within 1 cm counts, Randy utilizes survey grade equipment and techniques which requires a greater investment in both time and equipment. For resource grade mapping, Randy has been utilizing both GLONASS and GPS and collecting his own base station data for differential correction.

Currently, Whitehorse, Yukon Territory, has the only full-time publicly available GNSS base that is within range of Alaska, but its distance from most of Alaska marginalizes correction parameters. However the availability and proximity of purely GPS base station data has vastly improved in recent years. Between continuously operating reference station sites and newly available University NAVstar Consortium reference stations, Juneau now has 29 base provider sites available within a 250 mile radius. I would suspect that in a short time we’ll begin to



*Randy Schrank associates an image and attributes a feature collected with his XRT GNSS receiver.*

see those upgraded to include other GNSS data.

We performed several field trials comparing new GNSS resource grade mapping equipment, newly recommended collection parameters and data post processing options that are designed to increase mapping productivity while still maintaining sub meter accuracy. I was encouraged by the results but while the newly recommended best practices seem to provide good accuracy and productivity there is a little more “black box trust” required of the software and less control over the filtering parameters.

The greater precision and productivity results from the combination of mapping grade GNSS equipment such as: H-Star technology, Everest multipath rejection, Delta Phase post processing and Floodlight technology. The door has been opened for

productive yet precise data collection in our difficult forest environments.

In a recent trail mapping exercise in Juneau, I compared two high end mapping grade H-star capable Trimble XH units (ProXH and GeoExplorerXH 6000) in a mix of canopy conditions that included open bog, but mostly old growth and dense second growth. Both units are capable and I have achieved 10 cm accuracy in an open environment using static data collection techniques. I focused on kinematic mapping. I walked and mapped the trail without stopping,

regardless of position fix and quality. The difference was that one unit only used GPS while the other unit utilized GNSS (both GPS and GLONASS) and a new position filtering technology called “floodlight.” After post processing, the GNSS unit produced superior results; the average HRMS (horizontal root mean square) accuracy for all positions was 1.3 m (which simply means that 65 percent of the collected points for a feature will fall within 1.3 meters of its true location) while for the non GNSS unit the average HRMS was

4.1 m. When evaluating only those positions collected under canopy, the GNSS unit produced three times more positions under 1m in accuracy.

The Information Management Staff has three mapping grade receiver options, a ProXT (GPS), a ProXH (GPS) and a GeoExplorerXH 6000 (GNSS) available for evaluation and limited project use. If you would like to borrow one of these receivers or are thinking about buying a new GPS device for your unit and have questions, feel free to contact me at (907) 586-8764 or [dwittwer@fs.fed.us](mailto:dwittwer@fs.fed.us).

## New Home for Crooked Creek Information Site

*By Lezlie Murray, Visitor Services Director, Chugach National Forest*

This summer, the Crooked Creek Information Site in Valdez realized a long-term dream when it moved into a brand new facility on the banks of Crooked Creek. Since its inception over 20 years ago, Chugach National Forest interpreters have provided the public with visitor information and interpretive programs from a green trailer through a unique partnership with the City of Valdez. For most of its life, the mobile center was moved to another location during the off season. The famous Valdez winter weather took a heavy toll.

As a result, the City asked a local Valdez contractor to remove the old trailer and build a new log cabin-style structure using grant funding received from the Federal government. The new facility was completed in December 2010 and the remaining landscaping was done this spring. Facility Manager Jeanie Kirkland and her assistants, Bonnie Thiel and Julie Roetman, refurbished the old exhibits and installed them, as well as the office equipment and furniture. They were grateful for help from the Cordova Ranger District. They also arranged the sales stock for the Alaska Geographic Book Store housed at the center and set up the information desk. Then they planted flowers, tested the porta-potties, and prepared to greet the public. As a result of all the hard work, the new facility opened its doors in late May.



*Left to right: Ken Kirkland, Larry Weaver, Unknown, Meg Weaver, Josei Murphy, Katey Salo, Tye Kreitinger, Barb Bryson, Bonnie Thiel, Jeannie Kirkland, Nancy O'Brien, Julie Roetman, Bob Behrend, Kim Kiml and Teresa Benson.*

A festive ribbon cutting ceremony was held in May. Cordova Ranger District Recreation Staff Officer Bob Behrends shared a thorough history of the center and thanked everyone who made the partnership so successful. He gave special recognition to City Manager Lisa Von Barga for her tireless support. Cordova District Ranger Teresa Benson spoke about the importance of the site to our visitors and of the close ties between the City of Valdez and the Chugach National Forest. She recognized contractors Jack McKay and Jerry O'Brien and Mayor Dave Cobb.

We have long considered Valdez as the “Gateway to the Chugach National Forest” and look forward to what the future holds.

# Begich, Boggs Visitor Center Celebrates 25 Years

By Lezlie Murray, Visitor Services Director, Chugach National Forest

From gale force winds and torrential rains, to 37.5 feet of snow in one winter alone, the Begich, Boggs Visitor Center has experienced some of the worst kinds of weather. So it's a tribute to the designers, builders and maintenance crew that the building still stands more than a quarter century after it first opened its doors to the public.

Over the years the 7,020 square-foot facility has been flooded, had portions of its roof blown off repeatedly, and has been buried to the eaves in snow. Its 50-foot flag poles, rated for 150-mph winds, snapped like twigs after years of wild weather. And one year when the boiler room's air intakes were blocked completely by a rock-hard snow pack, the boilers burned themselves out after they had exhausted all the air in the furnace room. And yet, through it all, the visitor center has survived and thrived.

On Sunday, July 17, we honored the heritage of the Begich, Boggs Visitor Center and all of the people who worked on, or in, the building over the years, by hosting a special 25<sup>th</sup> Anniversary celebration. On that day, the public was invited to visit the center for coffee, tea, punch and cake and the normal recreation use fee that is charged for adults was waived. Our long-time partner, Alaska Geographic Association, provided the refreshments. In the evening we hosted a potluck reunion in the center's Portage Glacier Learning Center which was added to the facility in 2005. Many people came to share their special stories and it was a delight to meet some who had worked at the center



*Senator Ted Stevens, Catherine Stevens, Elizabeth Dole and Senator Bob Dole pose for the camera during the 1986 Begich, Boggs Visitor Center dedication.*

back in the first few years of its life.

Over the years, hundreds of thousands of people have visited the center to learn about the Chugach National Forest and to enjoy the beauty of the surrounding landscape. Today, the Forest is working on a new film that will focus on retreat and renewal, telling stories from across Alaska's Chugach National Forest. The new film is scheduled for completion in time for next summer's visitor season and will be offered 9 times a day in the 200-seat theater, staggered between showings of *Voices From the Ice*. In addition, the center is nearing the completion of a parking lot survey and design that will greatly improve the wayfinding, safety and ambiance of the site. One of the components of the new design is an amphitheater located between the center and the lake, which will provide superb opportunities for interpretive presentations

as well as a place for the public to relax and contemplate nature.

Thanks to special Economic Recovery Act funding, the outside of the facility received a protective coating last year and it is about to be re-caulked. These facility maintenance projects are critical to the well being of this building and are making sure that when the next sea spout, or gale force wind hits, it will stand its ground and be there to serve the public for years to come.

As the Begich, Boggs Visitor Center begins the next 25 years we continue to search for ways to adapt to the changing needs of the public while providing them with hands on educational experiences that help to engage and inspire them about their public lands. If it's been a while since you've seen the center, next summer might be a good time to schedule a visit and reconnect with a truly special experience.