Southeast Alaska

Cloudburst Chronicle

National Weather Service
Juneau, Alaska

Volume 4, Issue 2
Fall/Winter 2004

In this issue:

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This Winter Be An Active Weather Spotter

By Tom Ainsworth

"Hello, Mr. Ainsworth. This is Dan from KNWS Radio and we are doing a story on the snowstorm. Do you have time to answer a few questions, live on our next news break?"

"Snowstorm?" I thought. It was true snow fell over a large part of the panhandle last night. The printout of overnight snow totals I was carrying in my hand showed all routine weather observing stations reported between one and three inches of new snow. Not exactly what I consider a storm.

This winter please take an active role in keeping the forecast staff informed – contact us by phone or e-mail, and submit a Weather Spotter report.

"Sure, Dan." I said into the phone. "I have time for an interview. To tell you the truth, not much new snow fell."

"We didn't have much snow fall here at the radio station either. But how do you explain the twelve inches they received out the road? They need to get the avalanche cleared and the road open again so the ambulances can get back into town." Dan said.

Wham! A foot of snow and an avalanche? This new information came as a complete surprise and left me speechless for a moment. Then I became the reporter and started asking Dan all the questions. Where out the road? How did you hear about it? How big of an avalanche are you talking about? What were ambulances doing out there?

Sometimes the people at your National Weather Service (NWS) Forecast Office are caught in an uncomfortable paradox. People think that, because of whom we are and what we do, we must already know the details of every weather event, and therefore there is no need to pass information onto the weather office. The truth is we only know for sure what happened in those places that actually report to us what happened. This winter please take an active role in keeping our forecast staff informed – contact us by phone or e-mail, and submit a Weather Spotter report.

It's understandable why people are misled into believing we must already know the details about weather events. NWS is one of the most technically advanced civilian agencies in the world. We have access to weather information

from around the globe. Several times each hour we receive images from an array of satellites orbiting the earth. We have radars that not only see storms, but also slice through and measure the wind within them. Large solar powered buoys can measure ocean wave heights and a host of other environmental parameters and deliver the data by ricocheting signals off satellites and down to ground stations. Lasers measure snow depth. Wind speeds and directions are calculated using acoustics. This information pours into our office 24 hours a day. The forecast staff assembles individual clues into a cohesive picture and, with the help of some of the fastest computers on the planet, predicts how our fluid-like atmosphere will evolve and change for tomorrow and beyond.

But even with all the high tech equipment at our disposal, we can't possible know everything that happened unless we are told about it. Sometimes good ol' word of mouth information is as good as, or better than, high tech. We cannot detect what we cannot observe. Satellite imagery displays the tops of storm clouds, but does not explicitly show what is occurring under the clouds. The only weather radar in Southeast Alaska (on Biorka Island, southwest of Sitka) is useful for analyzing the skies offshore, but the beam is blocked by mountains that prevent it from ever sweeping over the communities of the inner channels. Spacing between anchored weather buoys in the Gulf of Alaska is sufficient enough for packets of high waves or high wind to pass through undetected. Ground-based weather sensors at airports and lighthouses are also spaced far enough apart that long stretches of localized wind and precipitation characteristics are unknown. There are also very few locations that measure and report snow depth.

The volunteer Weather Spotter program helps our forecasters fill the data-void gaps with simple ground truth weather information from people already in the area. Over 100 Weather Spotters in Southeast Alaska have been trained by the staff of the Juneau Forecast Office.

Perhaps you know one: they are teachers, utility workers, emergency responders, Customs Agents on the Haines and Klondike Highways, and crews aboard the state ferries. These volunteers are simply great citizens that care about their community. Reports from Weather Spotters, when integrated with information from other NWS resources, may prove to be the compelling piece of data needed for prompting the issuance of weather warnings and advisories. Ultimately, information from spotters can save lives and protect property, which is the main mission of the NWS.

This winter become an active weather spotter. Southeast Alaska Weather Spotters report flooding, snowfalls exceeding four inches, freezing rain, and high winds during the winter season. During the summer season Spotters contact the weather office when they observe lightning, hail, high winds, tornadoes, and waterspouts. If you are not a registered weather spotter already and are interested becoming one, call us at 907-790-6803. Making a spotter report to the weather office takes only a few minutes. To reach the Juneau Forecast office, call the toll-free Weather Spotter line (877) 807-8943) or e-mail us using the Spotter link on our web site (pajk.arh.noaa.gov). Tell us briefly (1) who you are and where you are calling from, (2) what you saw or are seeing, (3) where you saw it, and (4) when you saw it.

Just don't assume we already know all that occurred. At worst, you are confirming what we suspect is occurring and giving credence to similar reports already received. At best, you are the first to report extreme weather and are giving other citizens advanced notice of things to come. The bottom line is the NWS is in the information sharing business. Please help us help others by conveying accurate information, particularly information about potentially hazardous weather. Your report might be passed on in a news interview and aired over the radio, or even printed in the newspaper. The NWS works with others to save lives. Please don't underestimate the value of reporting your local weather conditions. *This winter be an active weather spotter!* You might make all the difference.

Cloudscapes: Stamps That Are Hip!

By Chris Maier

The Elvis Presley commemorative stamp was debuted on January 8, 1993 by the U.S. Postal Service. The 29-cent stamp showed the likeness of the 1950's era Elvis.

Did you know that October was National Stamp Collecting Month? The U.S. Postal Service (USPS) made this designation in 1981 to introduce children to this popular and educational hobby. (It can actually be fun for adults as well:) The USPS traditionally kicks off National Stamp Collecting Month by issuing new commemorative stamps. This year, Cloudscapes were the featured stamps! What a great idea! (No bias there.)

Stamp collecting, also known as philately (pronounced fill-AT-ely), is considered the most popular hobby in the world. Collectors specialize in new and used stamps, stamps issued by different countries, or even stamps featuring a specific theme (also known as topical collecting). The most popular modern U.S. commemorative was the Elvis stamp, issued in 1993. At least until now...

One could argue that the Altocumulus lenticularis or the Altostratus translucidus are the most awe inspiring in this great collection. My personal favorite, however, is the Cumulonimbus mammatus. I reckon it won't be long before stamp collectors everywhere are saying "Elvis who?"

The new Cloudscapes commemorative stamps launched National Stamp Collecting Month in October.

Southeast Alaska Climate Summary

By Mike Mitchell

The summer of 2004 became the summer that all future summers will be compared. Memories of cloud free skies, persistent 80°F and, sometimes, 90°F heat, echoing thunder, blazing red sunsets, torrential downpours, or pictures of a Great White Shark snacking on a fisherman's catch; will linger in minds of Southeast Alaska residents for years to come.

A split jet stream, with the northern branch running up the west coast of Alaska and the southern branch staying south of the Gulf of Alaska prevailed during this summer. This allowed an unrelenting dome of high pressure to stay parked across the Southern Alaska Interior and Northwest Canada, keeping a prevailing down slope easterly wind over Southeast Alaska. The cool and moist Gulf of Alaska air was suppressed into the far southern Gulf of Alaska and North Pacific for nearly the entire summer. As a result, sea surface temperatures along the Eastern Gulf Coast reached an unprecedented 65°F!

The summer of 2004 will go down as the warmest summer in the past half century. Haines, Juneau, Sitka, and Annette all recorded their warmest summer on record while many others had their second warmest. Average temperatures were around 4°F above normal for the four month, May through August, period with daily high temperatures reaching 20°F above normal on numerous occasions. June 18th to the 26th was probably the hottest week in Southeast history with 65 temperature records set including an all time high of 93°F in Annette and a somewhat plausible unofficial 103°F reading at the Thorne River RAWS. Two months later this feat would be repeated when temperatures reached an all time high of 89°F in Sitka, and 88°F in Yakutat. Juneau logged 42 days when the high temperature exceeded 70°F and a record twelve days of 80°F heat.

With the abundant sunshine, precipitation totals fell well short of normal values and even reached drought status across the Northern Inner Channels during late June through early August. Both Haines Customs and Juneau had their driest summer on record. The 1.91 inches of rain that fell at the Haines Customs station between May and August totaled only 30 percent of the normal and included only one day when more than one quarter of an inch fell. Most other locations received 40 to 70 percent of their normal rainfall. Even Ketchikan, typically the wettest Southeast location, was relatively dry with its May through August rainfall totaling 19.82 inches or 56 percent of the 35.52 inches expected in a normal summer.

Thunderstorms, normally quite rare across Southeast Alaska, flourished in the unusual heat, and occurred on at least fourteen days. Thunderstorms moving across the Juneau area on the morning of July 24th dumped 1.85 inches in one hour, an unofficial state record, on an automated rain gauge near Tee Harbor. Hours later, another downpour of 0.80 inches in less than one hour over downtown Juneau, produced a gully washer that flooded parking lots and buried a hiking trail with ten feet of rock. Lightning from this same thunderstorm

For WFO Juneau's lightning awareness page go to http://pajk.arh.noaa.gov/lightning.php

struck the State Office Building and knocked out the phone system for a couple days.

In spite of the dry conditions, glacial rivers spent most of the summer at well above normal levels due to extensive snow and glacier melt. Moderate flooding, resulting from the annual release of a glacial damned lake on the Tulsequah River in Western British Columbia, occurred on Southeast Alaska's Taku River between June 23rd and June 26th. During this period the Taku River rose seven feet from an unusually high base flow of 38 feet to its all time highest crest of 44.96 feet. This produced damage to many of the homes and cabins along the river. Not only was this the largest glacial outburst flood on record, it occurred one to two months earlier than normal. At the same time, rain and snow melt fed streams, like Jordan Creek (in Juneau) and Staney Creek (near Klawock), ran dry leaving fish fry to wallow in 75°F puddles. By mid August, Tyee Reservoir near Wrangell had shrunk to a one months supply of water for the community.

Hot Off the Press

By Brian Tassia

Southeast Alaska this year received the warmest summer ever seen in this region. A large persistent upper level high pressure area was positioned over most of the panhandle and Yukon Territory deflecting most of the low pressure storms more South or North of the area. Most of us appreciated this wonderful summer season by getting out and enjoying the weather. From swimming in the ocean to afternoon hikes, the weather seemed to be extraordinarily special. Here are some of the amazing statistics that occurred:

- The highest temperature, unofficially, was 103°F at a remote weather station on Prince of Whales Island. This exceeds the official statewide temperature of 100°F at Fort Yukon in 1915.

- Annette Island recorded the all time temperature of 93°F on June 19th. This beats the all time record of 90°F of August 8, 1960. The following day on the 20th Annette reached 91°F.

- Juneau had 42 days of 70°F weather, which beat the old record of 32 days in 1948. In addition, Juneau had a record of twelve days of 80°F degree days. The pervious record was seven set in 1951.

- Yakutat had an all time record high of 88°F on August 15th. This beats the all time record of 87°F of August 8, 1960.

- 9 of the 13 hottest days ever, occurred in Juneau.

- Seven days in a row of record temperatures in the mid 80s were set at the Juneau airport starting on June 18th.

- Annette….Sitka….Haines….Juneau…. Yakutat….and many other towns beat their all time summer average temperatures, generally, by between 1 and 3 degrees.

- Temperatures during the night time hours also remained extraordinarily high. Throughout the panhandle nightly temperatures broke their record high minimums. Klawock had 44 record breaking occurrences and Sitka had 27.

My First Fire

By Julia Ruthford

The Central Complex was not really my first fire but it was my first fire working solo as a fully trained Incident Meteorologist. Incident Meteorologists (usually shortened to IMETs) are weather forecasters dispatched to large fires to provide on site forecasting to support the fire fighters and the Incident Management Team. IMETs can also be dispatched to other types of incidents requiring a high level of meteorological support, but fires are the most common. To become an IMET, National Weather Service forecasters take a number of classes specializing in fire weather forecasting. IMET trainees also go out on several fire assignments with an experienced IMET to learn the field aspects of the job. Last summer I completed my field training by going to the Fawn Peak Complex, located in the northeast Cascade Mountains of Washington state, and at the Hidden Lake Fire in southwest Montana.

At 8 a.m. on Monday, August 16th I received a call asking if I was available to go to a fire. By that evening I was on a plane heading to Fairbanks en-route to the Central Complex in Interior Alaska. Before heading out to the fire, I stopped at the Alaska Fire Service (AFS). AFS is the Alaska Interagency Coordination Center for fires throughout the state, is located on Fort Wainwright in Fairbanks.

I arrived at AFS around midnight and spent the night camping on Fort Wainwright at the staging area where the arriving fire crews go before being sent to the various fires around the state. The staging area, which was next to the helicopter landing strip, was a rather noisy place to sleep but made up for that by providing excellent coffee in the morning. I attended several briefings that morning at AFS about the current fire,

Far North School in Central

fuel (vegetation), and weather situation across the state of Alaska. Before starting the three hour drive out to the fire I stopped by the Fairbanks National Weather Service Office to get a detailed weather briefing for the area around the Central Complex.

I arrived at the town of Central, Alaska late on the afternoon of August 17th. Fire camp and the Incident Command Post (ICP) were located in Circle Hot Springs which is about eight miles south of Central. The ICP was the base of operations for the nearly 600 people assigned to the fire. Usually the IMET is also based at ICP, but in this case, the need for a good Internet connection to get weather data quickly meant that 'fire weather headquarters' was the Far North School in Central. Mike Richmond, an IMET from Fairbanks, had been working out of this location for over a week by the time I arrived. Driving back and forth between the school and the ICP all the time was a bit inconvenient, but otherwise the empty school was a great location to work from.

A significant northeast wind event was expected on Thursday, August 19th, so Mike stayed at the fire through Friday morning. This gave us two full days working together, which smoothed the transition between forecasters and allowed plenty of time for

Porta Tank

Mike to pass local forecasting knowledge on to me. With the major changes coming in the weather, Wednesday and Thursday were quite busy. Having two forecasters at the fire for those two days made things much more manageable.

Being an IMET on a large fire can be very intense but also quite rewarding. Working with Steve Frye's Northern Rockies based National Type 1 Team, which was managing the fire, was a superb experience I hope to repeat in future fire seasons. The meteorologist's purpose on the fire team is to provide on site, detailed weather forecasting support specifically for the fire area to help plan operations and make sure everyone stays safe. Work days on a fire are generally sixteen hours long and start *early* in the morning. Things begin with checking the latest weather observations, model data, satellite and radar images, forecasts, and weather discussions to get ready for the morning briefing. Each morning and evening the Incident Management Team gives a briefing to the firefighters before they start their shift. The IMET presents the weather section of these briefings, describing the expected weather conditions and any potential weather hazards. Throughout the day, the meteorologist watches and analyzes the weather, issuing updates and alerts as necessary for changing conditions. They are also responsible for writing spot forecasts as requested to support burnouts and other operations. Coordination concerning the current and anticipated weather conditions occurs frequently between the IMET, the local National Weather Service office, and any other IMETs working at nearby fires in the area, to make sure everyone's forecasts are in agreement. It is also the IMET's job to provide weather briefings at the numerous planning meetings, and answer any weather questions that come up. The forecast for the next day is typically composed during the afternoon or evening, in time to get in the Incident Action Plan at the start of the next shift. This document is distributed to the crew.

The Central Complex was made up of a group of large fires in the vicinity of the towns of Central, Circle, and Circle Hot Springs. During the time I spent on the fire, the Central Complex included the Wolf Creek, Bolgen Creek, Takoma Bluff, Big Bluff, Crazy, Rock Creek, Preacher Creek, and Middle Birch Fires. It was approximately 80 miles from the northern most extent of the Preacher Creek Fire to the southern tip of the Wolf Creek Fire. From east to west the fires were spread over about 70 miles. This 560 square mile rectangle was the area I was responsible for forecasting for. The fires in the complex had burned about 324,000 acres by August

18th, and grew to 458,600 acres by August 26th. By Wednesday, August 18th, my first day forecasting as an IMET, the total acreage across the state of Alaska burned this year was 5.05 million acres breaking the previous record for the most acres burned in a year set in 1957. By the end of the summer the old record was shattered with nearly 6.5 million acres burned.

The Far North School in Central, Alaska, made a very unique base of operations for me. The opening of the Central School had been delayed due to concerns about the fires reaching the town, so for the first week I had the school pretty much to myself. The school was a marvelous location to work. It had numerous luxuries not normally available in fire camps such as extra computers with Internet connection, a kitchen, indoor plumbing (including a shower!) and, of course, the playground. My tent, set up in between the school buildings, made a cozy home for the duration of the fire. A day or two after arriving, fire structure protection, which included a portable water tank, pump, hoses, and a bunch of sprinkles, was set up around the school in case the fire reached the town. Although this was all really for the benefit of the school, I thought it was pretty neat because it was the first time my tent had ever had structure protection.

School started on Monday, August 23rd, a week after I left Juneau to go to the fire. This year twelve students from kindergarten through high school were attending the Central school. The area where I was working was a computer lab, classroom, and library. The teacher was quite gracious and let me keep working even when class was going on. It had been some time since I had been to the first day of school and I found that I missed it a bit. It is not often that you get to have recess while on a fire. The students were a great bunch of kids and a joy to be around. The atmosphere of the school was amazingly friendly and welcoming to a misplaced meteorologist.

Several people from the fire team came in and taught lessons or talked about what their job was. Joe Anderson, one of the medics from the fire and a retired teacher, taught a wonderful lesson that was a combination of how to write a five paragraph essay and how to juggle (I am still practicing). I gave a presentation to the students about what IMETs do on a fire and showed them some pictures of the burnout operation that I got to watch several days earlier. I also talked about what weather forecasters do when they are working in the office and how I became a meteorologist.

Throughout the time I was in interior Alaska the days were shortening rapidly and temperatures dropping substantially. With the lowering sun angle, strong temperature

inversions were able to form most nights and trapped very dense smoke in the valleys. The last couple of days on the fire provided a very nice taste of what fall was suppose to be like. Brisk northeast winds brought crisp, cold nights and sunny blue skies during the day. On Thursday, August 26th the fire management team transitioned to a much smaller organization. I drove with the team back to Fairbanks on Thursday afternoon and flew back to Juneau on Friday. After ten days of camping with no rain fly on my tent, I was greeted at the Juneau airport by a torrential downpour as a reminder of what fall was going to really be like.

ARE YOU REALLY PREPARED FOR THE COLD AND THE WIND?

By Ursula Jones

Did you know that if the temperature outside were -20°F and there was a wind speed of 60 mph, the wind chill equivalent temperature would be -62°F outside! Juneau has had gusts up to and above 60 mph and temperatures as low as -22°F, so we could hit that wind chill temperature. One thing to remember while outside during cold weather is if you do have a steady breeze (15+ mph) and cold temperatures, any thing that occurs below -20°F guarantees that frostbite will occur in 10 minutes or less on exposed areas of the body. Keep in mind that the 15 minutes could happen sooner if the temperatures were to drop even lower than -20°F.

Frostbite occurs when skin tissue and blood vessels are damaged from exposure to freezing temperatures and most often affects toes, fingers, earlobes, chin, cheeks, and nose. What actually happens when you get frostbite is the liquids within your body literally freezes. One of the first warning signs that you are on your way to getting frostbite is the feeling of pins and needles; this stage is often referred to as frostnip. If this occurs soak the body part in some warm water and you should be fine in no time. The next step is superficial frostbite and includes such symptoms as blistering, the skin feels numb, waxy, and frozen. At this point ice crystals are forming in the skin cells and the rest of the skin remains flexible. The last, and final stage, is full-blown frostbite. The liquids within the skin and blood vessels have frozen and crystallize, cutting off the blood supply to the tissue. Once this happens the tissue may die from oxygen deprivation. Severe cases of frostbite have led to amputation of the affected limb, while extreme cases have even caused death. If you think that you have frostbite, see your physician as soon as possible. It could mean the difference between keeping an appendage or not.

To keep frostbite from occurring, you should: wear several layers of clothing; wear protective clothing such as scarves, earmuffs, and gloves; and wearing waterproof skin moisturizer can help protect exposed areas. Listening to the forecast before heading outdoors for a long period of time is advisable.

Here is some help deciphering what it means when you hear wind chill information during the weather forecast.

Wind Chill Advisory: -30°F with 15 mph sustained winds for 3 hours or more; time-to-frostbite is approximately 30 minutes

Wind Chill Warning: -55°F with 15 mph sustained winds for 3 hours or more, the time-to-frostbite is approximately 10 minutes

Extreme Cold Warning: Shelter temperatures of at least -50°F and air temperatures remaining below -40°F up to the 700mb level for at least 3 days.

Don't let this deter you from enjoying what winter has to offer. Enjoy the cooler days and be sure to dress for the weather!

Cloudburst Classroom

by Kimberly Vaughan

A CLEAR LOOK AT FOG

Fog, what is it? Fog can be beautiful as it drifts across a lake at sunrise, and it can be dangerous as it blankets an airport for hours, sometimes days. Fog comes in five varieties: advection, radiation, evaporation, upslope, and ice. Let's look at these types of fog and how and where they form.

Advection fog forms when warm, moist air moves over a colder surface. Fall into early winter is a great time for advection fog. The ocean is warm and the earth's surface is cooling with the shorter days and lowering daily temperatures. As the warm moist air from over the ocean moves over the colder land areas, the fog forms. The greater the moisture amount and temperature difference, the more dense the fog. Why does this happen? Let's talk physics. Before your eyes roll back in your head, I'm talking about very simple physics. Warmer air holds more moisture than colder air. It's like a sponge that shrinks as it gets colder; it still has the same amount of water to hold but with less ability. When the sponge has gotten too small to hold all the water, we get fog. It can also be called sea fog. Sitka and other coastal areas are very familiar with sea fog. It can also occur along our inside waters, as well. Sea fog is usually wide spread, but doesn't have to be.

Evaporation fog is actually a type of advection fog, but forms in the opposite manner. It forms as cold dry air moves over a warm moist surface. There are two kinds of fog formed by evaporation: steam and precipitation. Steam fog or sea smoke forms as cold dry air from the land moves out over warmer water. Steam fog is not really "steam" or "smoke", it's just named for its appearance. The other is precipitation fog and it forms when there is a dry layer at the surface and it rains or snows. As the rain or snow falls it evaporates and can form fog. Precipitation fog has yet another alias, frontal fog.

Radiation fog occurs as the earth cools and reaches the dew point. What's dew point? That's a great question! Dew point is the lowest the temperature can be and still hold the moisture in the air. When the dew point temperature is met (or near)...you guessed it, dew happens. It can also form frost (dew at freezing or below temperatures) and fog. Most times when radiation fog forms it does at night with clear skies, and as the sun rises the fog lifts. Unfortunately, that doesn't always happen. In the fall and spring around Southeast Alaska an inversion will form. What's an inversion? Excellent question! An inversion is when you get cold air trapped under a warm layer. Surface temperatures may be down near freezing, while the temperature at 3,000 feet is 50°F. The fog can not be burned off until the inversion is broken. How do you break an inversion? I'm glad you asked. The air trapped below the inversion must reach the inversion layer's temperature, allowing for mixing of the layers. Another way is to have the area of high pressure move away. Radiation fog can wreak havoc on airports and other visibility sensitive activities as the fog forms and can get denser day by day, until the weather pattern changes.

Upslope fog forms as warm moist air moves up a slope and cools. The air is moved by the wind up the side of a mountain or hillside and the air is cooled adiabatically. I'll save you the trouble of asking about that last word.

Adiabatic is the process of the air either expanding and cooling, or compressing and warming. Since we all know that the pressure decreases with height, allowing the air to expand, and hence it cools. WOW! More physics. The fog forms at the height that the temperature reaches at or near saturation. As we've called it earlier, the dew point.

Moving on to something even "cooler" - ice fog. Ice fog forms when water droplets form into ice particles and are light enough to be suspended in the air. This process occurs when temperatures are well below the freezing point. In the northern hemisphere, ice fog is most common near the Arctic region.

Fog varies in how it is formed to the density of its layers. Fog is fickle, it forms when the criteria barely meets requirements and doesn't form when it should. As with all weather elements, there is no exact way it will always happen.

Foggy Facts

The foggiest place on the west coast is Cape Disappointment on the southern Washington coast. It averages 2,552 hours of heavy fog or the equivalent of 106 days.

True or False

Fog always forms when the air temperature reaches the dew point?

False, fog can form when the air temperature is near the dew point, usually no more than 4°F above.

If it's windy, there can't be fog.

False, although uncommon, thick marine fog can occur with winds over 20 mph.

Terms

Fog bank: An institution where Forecasters go to deposit water droplets.

Fogbow: A fancy piece of fabric tied in a Meteorologist's hair for decoration.

Burning off: When fog has some extra girth, it goes to the gym to burn it off.

Okay, you've probably figured out that these might not be the real definitions for these terms. Here are the real ones:

Fog bank: An area of fog, some distance from where you are.

Fogbow: Just like their rainbow cousins, you must have sun behind you with the moisture in front of you. A fogbow is a semi-circle, usually colorless.

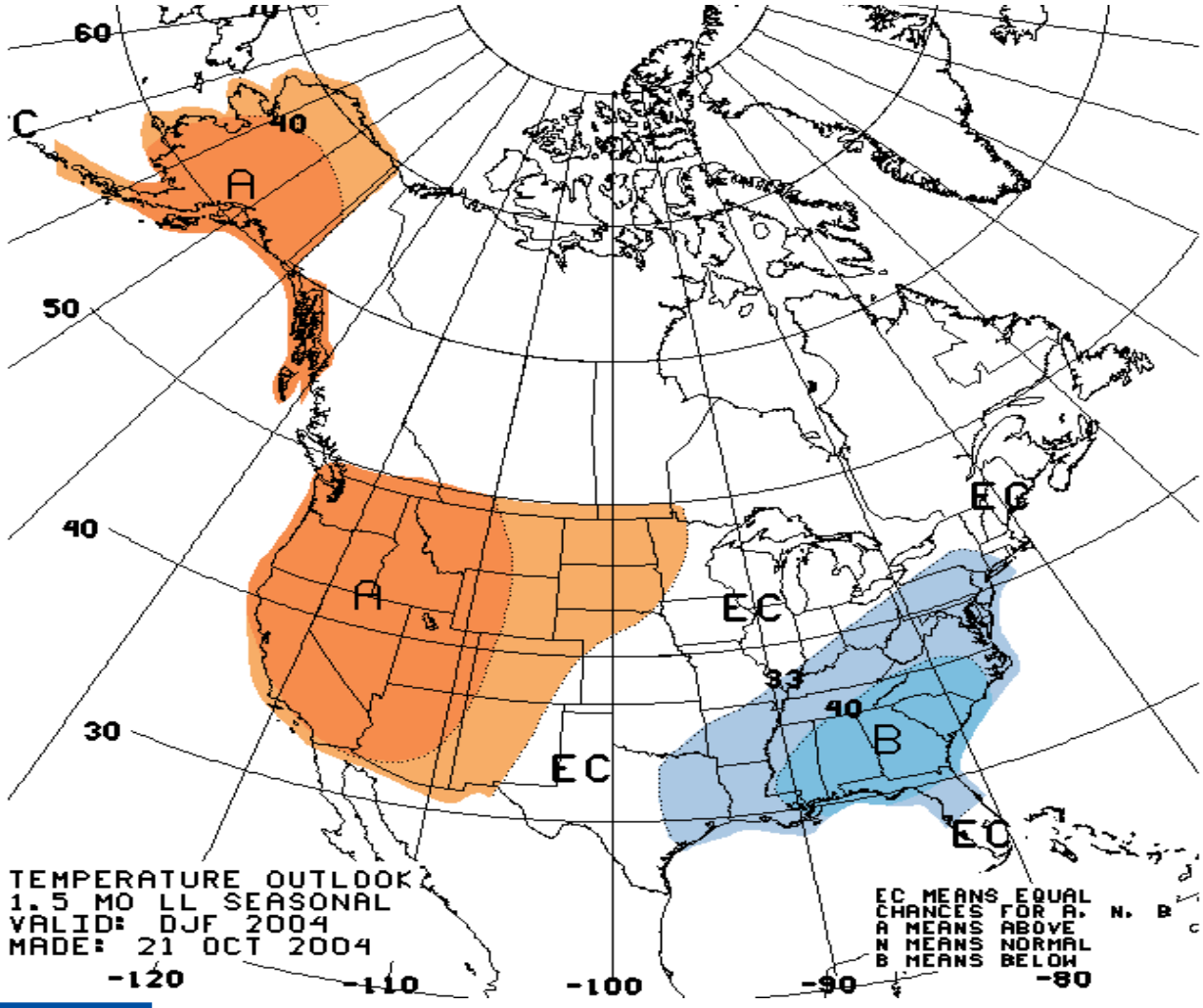
Burning off: Fog does not actually "burn off", it is warmed from underneath. As this happens fog stratus can form. As the earth is heated the fog is lifted (dissipates from the ground up). In the time the fog layer has left the surface of the earth and has completely dissipated, it is termed - fog stratus.

Winter Outlook

By: NWS Juneau Climate Team

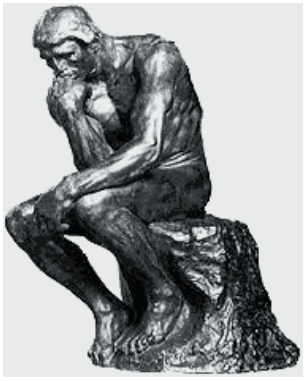
NOAA's Climate Prediction Center issued their winter outlook for the U.S. in mid-October. They are calling for slightly above normal temperatures in Southeast Alaska this winter. This forecast is based chiefly on recent trends and their prediction for a weak-to-moderate El Niño to develop in the equatorial Pacific Ocean. They had no forecast for precipitation because their models said "equal chance." Essentially that means the climate prediction models' output is for an 'equal chance' of above normal precipitation, as well as below normal precipitation. Not exactly helpful. The Climate Prediction Center also does not yet give an outlook for seasonal snow.

That's where our newly formed Climate Team at your National Weather Service Office in Juneau comes in. We sat down recently and analyzed things as best as we could in an attempt to fill in the gaps. With a weak El Niño projected, a warmer than normal Gulf, and the recent trends over the past handful of winters, a projection of slightly above normal temperatures in Southeast Alaska seems sound. The Southern Panhandle (excluding Hyder) and outer coast up to Sitka, will likely experience another mild winter with above normal temperatures. Our projection for precipitation is that it will be slightly above normal, but snowfall will be slightly below normal. Recall last year near normal snowfall occurred throughout the northern and central Inner Channels. Along the outer coast and in the Southern Panhandle was snowfall below normal. Basically the outlook is for a very similar winter to last year's, but with more snow along the Northeast Gulf Coast.



"NOAA's Climate Prediction Center is calling for slightly warmer than normal temperatures in Southeast Alaska again this winter."

Rain Weather Trivia



1. What shape are raindrops? a. teardrop b. round c. hexagon d. oval

2. At 32 °F, one inch of rain equals: a. one inch of snow b. five inches of snow c. ten inches of snow d. fifteen inches of snow

3. How fast do raindrops fall? a. between 7 and 18 mph b. between 4 and 16 mph c. between 3 and 17 mph d. between 2 and 15 mph

4. How big are raindrops? a. from 1/100 inch to 1/4 inch b. from 1/16 inch to 1/2 inch c. from 1/10 inch to 1/16 inch d. from 1/1000 inch to 1/8 inch

5. Which of the following means "rain" when added to a cloud's name? a. Alto b. Nimbus c. Cirrus d. Iluvia

WEATHER WATCHERS
SOUTHEAST ALASKA SPOTTER NETWORK

Our Most Valuable Spotter!

Sunshine, thunderstorms, and now torrential rains, many of you have conveyed invaluable information to us over past five months. It is always a tough choice, but *DARLENE LARSON* in Point Baker, and *DON NICHOLSON* in Blashkie Island are our Most Valuable Spotters. Both conveyed numerous timely reports on our record number of thunderstorms this past summer season. With no doppler radar coverage and no lightning data, these reports have allowed our forecasters to update our short term forecasts and, in a few cases, issue special marine warnings. Mariners certainly appreciate the advanced notice we give them when thunderstorms are heading their way. We also might have saved a few lives by notifying Southeasterners that lightning was coming. For their efforts they will be receiving the 2005 edition of the Alaska Weather Calendar. Congratulations and thanks for the great reports!

KEEP SENDING IN THOSE PHOTOS OF SOUTHEAST ALASKA WEATHER. IMAGES CAN BE E-MAILED TO URSULA.JONES@NOAA.GOV (IMAGE FILE SIZE MUST BE LESS THAN 5MB), OR MAILED TO US. WE WILL RETURN YOUR PHOTO AFTER IT IS SCANNED. ANY AND ALL CONTRIBUTIONS ARE APPRECIATED!

Trivia Answers: 1. b. round 2. c. ten inches of snow 3. Not including wind-driven rain, raindrops fall between 7 and 18 miles per hour (3 and 8 meters per second) in still air. The range in speed depends on the the size of the raindrop. Air friction breaks up raindrops when they exceed 18 miles per hour. 4. Raindrops are much smaller than we think. They range from 1/100 inch (.0254 centimeter) to 1/4 inch (.635 centimeter) in diameter. The rules of nature don't allow raindrops to exceed about 1/4 inch because air friction breaks up raindrops when they're larger. 5. b. Nimbus

This quarterly educational newsletter is designed for Southeast Alaska's volunteer weather spotters, schools, emergency manager, and the news media. All of our customers and partners in Southeast Alaska are welcome to subscribe to it.

NOAA's National Weather Service forecast office in Juneau, Alaska is responsible for weather forecasts and warnings from Cape Suckling to the Dixon Entrance.

This publication, as well as all of our forecasts and warnings, are available on our web site: http://pajk.arh.noaa.gov. Our newsletter is available in color on our site.

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