

Reading the sky

WHY IS IT SO TOUGH TO PREDICT ALASKA WEATHER?

By GEORGE BRYSON
Anchorage Daily News

(Published: November 12, 2006)

How accurate are the weather forecasts in Alaska? How dependable is the weather page in your own Daily News?

More specifically, what are the exact chances that those two consecutive "sunny day" icons that appear on Page B-8 this morning will actually prove true?

Eric Floehr, a 37-year-old computer programmer from Marysville, Ohio, can tell you. The founder and president of ForecastWatch.com, Floehr has developed software that tracks the dependability of weather forecasts all across the country, including Anchorage.

For the past three years, he's tracked the performance of five forecast services nationwide, including The Weather Channel, AccuWeather, Intellicast, MyForecast.com and the National Weather Service.

To compare them, anyone with a computer can log on for free to Floehr's accuracy tracker at ForecastAdvisor.com and type in the town and state of the closest major weather station. Adjacent charts compare the five forecasters' relative accuracy for one- to three-day forecasts "last month" and "last year."

The tracker shows that last year in Anchorage the accuracy of the five services varied by 6 percent. MyForecast was at the top of the list with an accuracy factor of 69.91 percent. The National Weather Service was at the bottom, 63.76 percent.

But scores tend to vary from month to month and place to place. Last month in Anchorage, Accuweather led the chart with an overall accuracy factor of 73.37 percent, followed closely by MyForecast at 72.76 percent. In the same period, the National Weather Service scored high in Fairbanks and The Weather Channel scored high in Juneau.

Floehr says that his forecast comparisons aren't perfect. They



The farther inland you go, the more difficult it is to predict the weather, according to a computer analysis of success rates. *(Photo by STEPHEN NOWERS / Daily News archive 2005)*



Carven Scott, science operations officer, sitting, and Bob Hopkins, meteorologist in charge, talk about forecasting at the Anchorage office of the National Weather Service. "You get a real cold day and it's 18 below zero at the airport, but probably on the east side of town it's 30 to 35 below," Scott says. *(Photos by BOB HALLINEN /Anchorage Daily News)*

don't acknowledge the importance of correctly predicting the most important weather events when lives might be on the line. Nor do they penalize forecasters for being drastically wrong. A temperature prediction that is 20 degrees off is scored as one day of being incorrect -- but no more incorrect than a temperature prediction that is only four degrees off.

TWEAKING FOR TV

WeatherAdvisor does not measure the forecasts that are produced locally by Anchorage television stations -- a primary source of weather information in Alaska.

At KTUU Channel 2, the evening weather delivered by reporter Jackie Purcell is a hybrid of graphics and satellite imagery produced by Weather Services International (using government data) -- combined with Purcell's own reading of data and forecasts posted online by the Anchorage office of the National Weather Service.

She examines other sources too, says Purcell, who's earned "weathercaster" certification from the American Meteorological Association.

"I can't say that I have any better information than a team of scientists who are on call 24 hours a day looking at everything," she says. "But I have felt OK about certain things, like pattern recognition. If I think, 'No, traditionally this or that happens ...,' I can tweak it."

At KTVA, Channel 11 reporter Kris Kuyper draws on similar sources (his station also purchases graphics and satellite imagery from WSI) to produce his own evening forecast.

"It's coming from my interpretation of the models," says Kuyper, who earned a bachelor's degree in atmospheric science from the University of California at Davis. "It's nothing that I just rip and read. It's something I take care in."

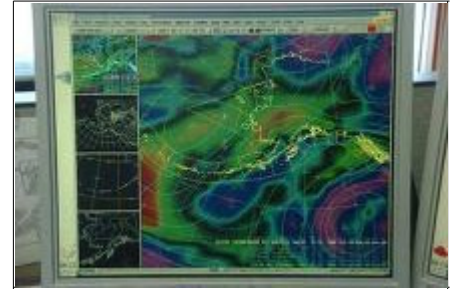
He thinks Alaska forecasts probably vary a good deal from one provider to the next, simply because there's so much dramatic weather up here.

"You look at a place like Arizona or California, where the weather is pretty blase, and I think there is probably not a lot of difference there," Kuyper says. "But I think up here -- because our weather can be so different and variable from day to day -- there can be a difference in how accurate everybody is."

PREDICTABLE PREDICTIONS

In a 2005 study titled "Best Places to Live or Work if You Need to Know What the Weather Will Be Like Tomorrow," Floehr found that the locations with the most consistently accurate forecasts tended to be coastal communities where the weather doesn't change much.

Oceans act like powerful thermostats, warming cooler air and cooling warmer air and generally stabilizing the weather. And if tomorrow's weather promises to be pretty much like today's, the



A computer screen glows colorfully at the Anchorage office of the National Weather Service. The Interior towns of Fairbanks and Nenana rank lowest in the state for weather predictability. (
*Photos by BOB HALLINEN
/Anchorage Daily News*)

forecaster who says so will tend to be correct.

So it's no surprise that coastal towns have the most dependable weather forecasts in Alaska.

Floehr compared the records of 12 communities here. He graded the five-day temperature predictions provided by five major weather services in each area and blended them together. His comparison found that the most predictable weather in Alaska occurred in Sitka (No. 18 in the national list of 689 locations), followed by Ketchikan (79), Juneau (110), Seward (121) and Kodiak (127).

At the other end of the scale, places that ranked lowest for weather predictability tended to be communities in the middle of the continent, far removed from the moderating influence of the ocean.

The same was true for Alaska. Scoring lowest in the state for weather predictability were the Interior towns of Fairbanks (No. 571 in the nation) and Nenana (591).

Lying somewhere in the middle -- between the predictable weather of a maritime climate and the wild weather of a continental climate -- were Anchorage (201), Palmer (362) and Kenai (422).

ON THE FAULT LINE

Anchorage lies right along the fault line between warmer air masses to the south and west and cooler air masses to the north, says Bob Hopkins, meteorologist in charge at the Anchorage office of the National Weather Service. So sometimes the weather here is stable and sometimes it's not.

"Particularly in the winter ... that boundary is fluctuating," he says. "And that's where Kenai, Anchorage and Palmer have the issues."

Palmer lies about a dozen miles upriver from the ocean, but most of Anchorage lies inland as well, encompassing several microclimates -- from its relatively balmy coastline to its frigid core near Bicentennial Park to its high, windy fringe in the Chugach foothills.

"Ninety-nine percent of the population now lives away from the water, so you've got to be real careful when you're talking about Anchorage weather," says Carven Scott, the science officer at the local office.

"You get a real cold day and it's 18 below zero at the airport, but probably on the east side of town it's 30 to 35 below."

Forecasting the weather here is also complicated by the sparsity of data collectors to the south and west, because so much of that area is unpopulated wilderness and deep blue sea.

That's probably why weather forecasts in Alaska aren't as accurate as forecasts in more densely monitored regions of the country, even when their "weather persistence" patterns are similar, says Floehr.

"(There) aren't as many sensors, there's not as many observation points, there's not as much satellite coverage," he says.

IMPROVING ACCURACY

As for the National Weather Service, its own forecasts are steadily getting better, Scott says.

A five-day forecast nowadays is as accurate as a three-day forecast used to be 10 years ago, while a three-day forecast is even better, he says.

"Today you can almost go to the bank (with a three-day forecast). At 72 hours it's that good."

Errors remain modest even through a five-day forecast, Scott adds, but beyond that point they increase fairly rapidly. So that's the next frontier.

Besides the boon of new technologies -- like synthetic aperture radar, which allows meteorologists to peer beneath clouds and calculate wind speed -- the Weather Service is making new strides in converting its satellite images of moving clouds into numerical data that can be instantly digested by its network of supercomputers.

Hopkins says he's just happy if someone gets it right.

"When I get up in the morning, I'm really satisfied when I look out the window, then look at the Daily News (weather page) -- and they match," he says.

"Because no matter who's producing it, the Weather Service gets blamed for it either way. So I like to see those things be consistent. Often they're not. But I have a good feeling when they match."

Daily News reporter George Bryson can be reached at gbryson@adn.com.

Ranking forecasters

Here are the accuracy ratings for last year in Anchorage given to five weather forecasting services by Eric Floehr's ForecastWatch.com site:

70% MyForecast.com, produced by CustomWeather of San Francisco.

69% AccuWeather, a Pennsylvania-based firm that provides forecasts to the Daily News and some local radio stations.

67% The Weather Channel, airs on cable Channel 40 in Anchorage and the Valley.

64% Intellicast, a Virginia-based firm that provides graphics and satellite imagery to television stations KTUU and KTVA.

64% National Weather Service, the primary source of meteorological data and imagery for all the above.

Weather-watching

Predictable coasts

- According to Eric Floehr of ForecastWatch.com, the most predictable forecasts happen in coastal communities in Hawaii and Florida. Honolulu ranked No. 1, while Key West, Fla., ranked No. 2. Inland cities, which experience huge temperature shifts, were more chaotic. Grand Forks, N.D., near the middle of the continent, ranked No. 684, and International Falls, Minn., was 687.

Big beat

- Bob Hopkins, meteorologist in charge at the Anchorage office of the National Weather Service, has responsibility for what is the largest area of any National Weather Service officer in the nation, encompassing more than a million square miles, from the Gulf Coast to the Alaska Range to the tip of the Aleutians.

Big guns

- One supercomputer the government now uses to forecast weather, in Gaithersburg, Md., boasts a sustained computational speed of 1.485 trillion calculations per second.

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