

# PIREPs Re-visited

Tom George  
Alaska Regional Manager  
Aircraft Owners and Pilots Association



# AOPA and Pilot Reports

- Long time champion of PIREPs
- Worked on the Sky Spotter Program



– Developed Online training course:

[www.airsafetyinstitute.org/skyspotter](http://www.airsafetyinstitute.org/skyspotter)

PIREPs not only valuable to pilots, but fuel icing forecast model and help validate forecasts

# Alaskan Concerns



Valdez Fly In 2014:  
PIREPs were in short  
supply

Alaska group started to  
focus on PIREPs

# Alaska vs "contiguous states"

Over 1,800 surface observations in contiguous 48 states

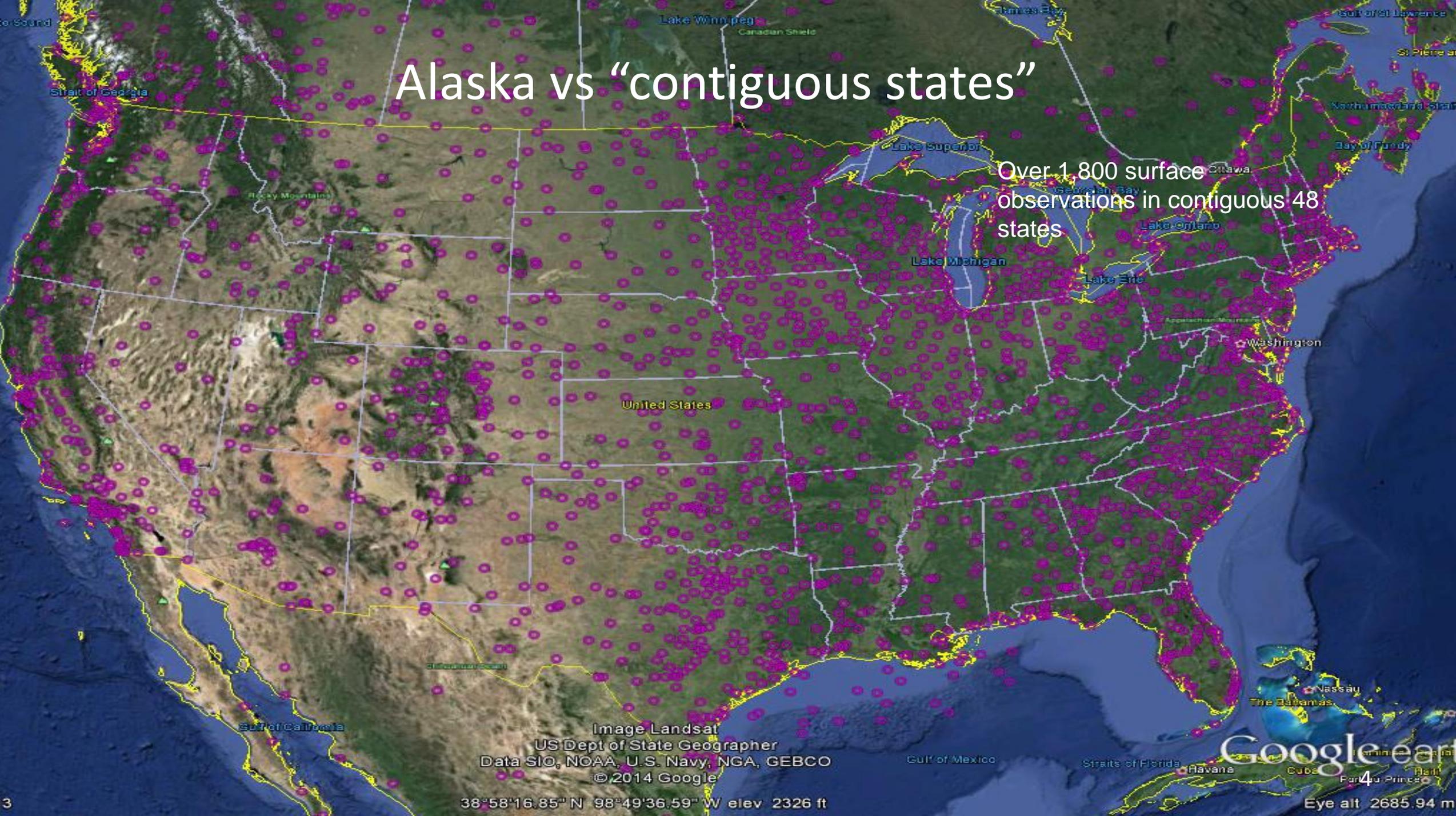
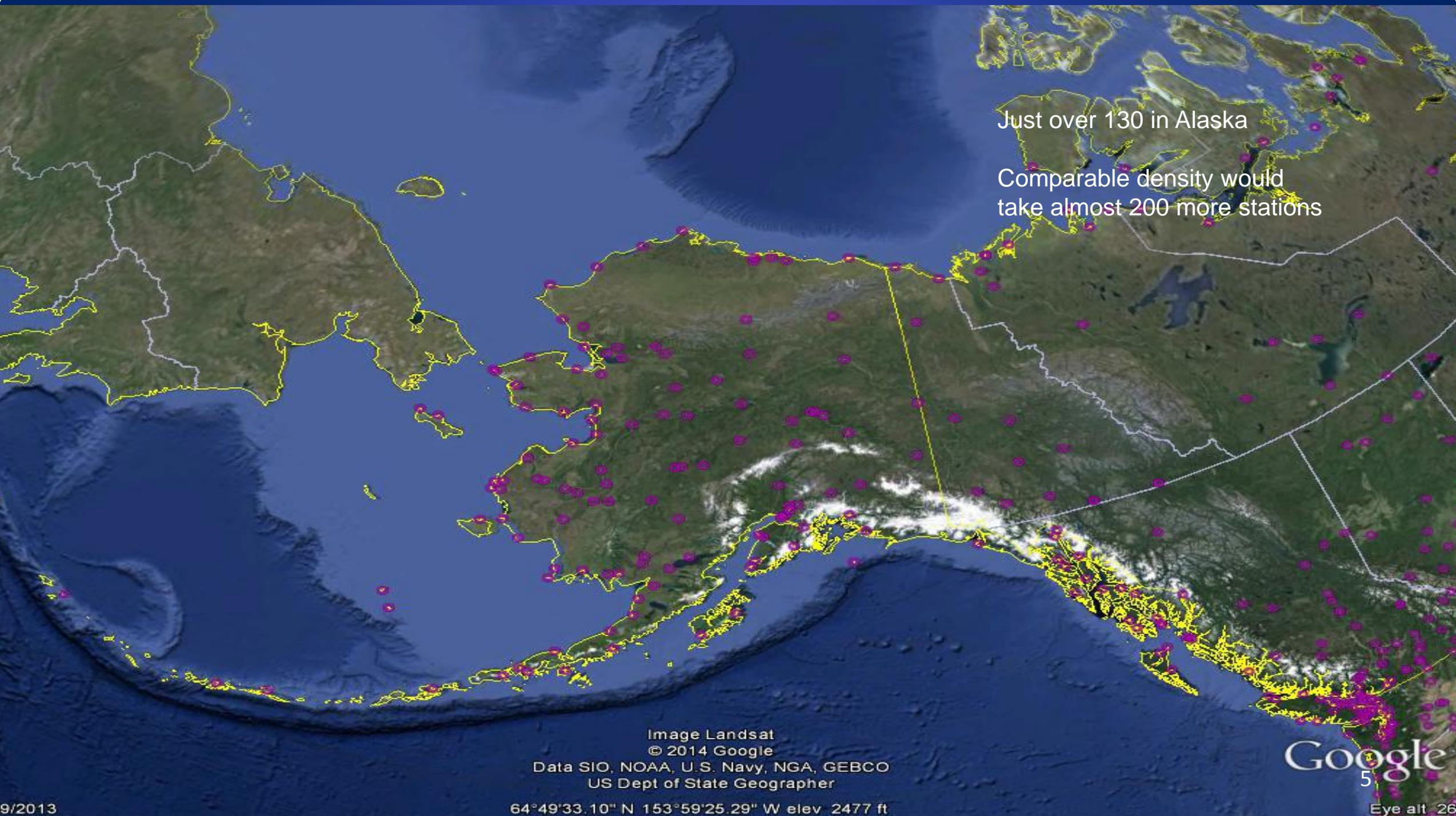


Image Landsat  
US Dept of State Geographer  
Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
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38°58'16.85" N 98°49'36.59" W elev 2326 ft

Google Earth  
Eye alt 2685.94 m



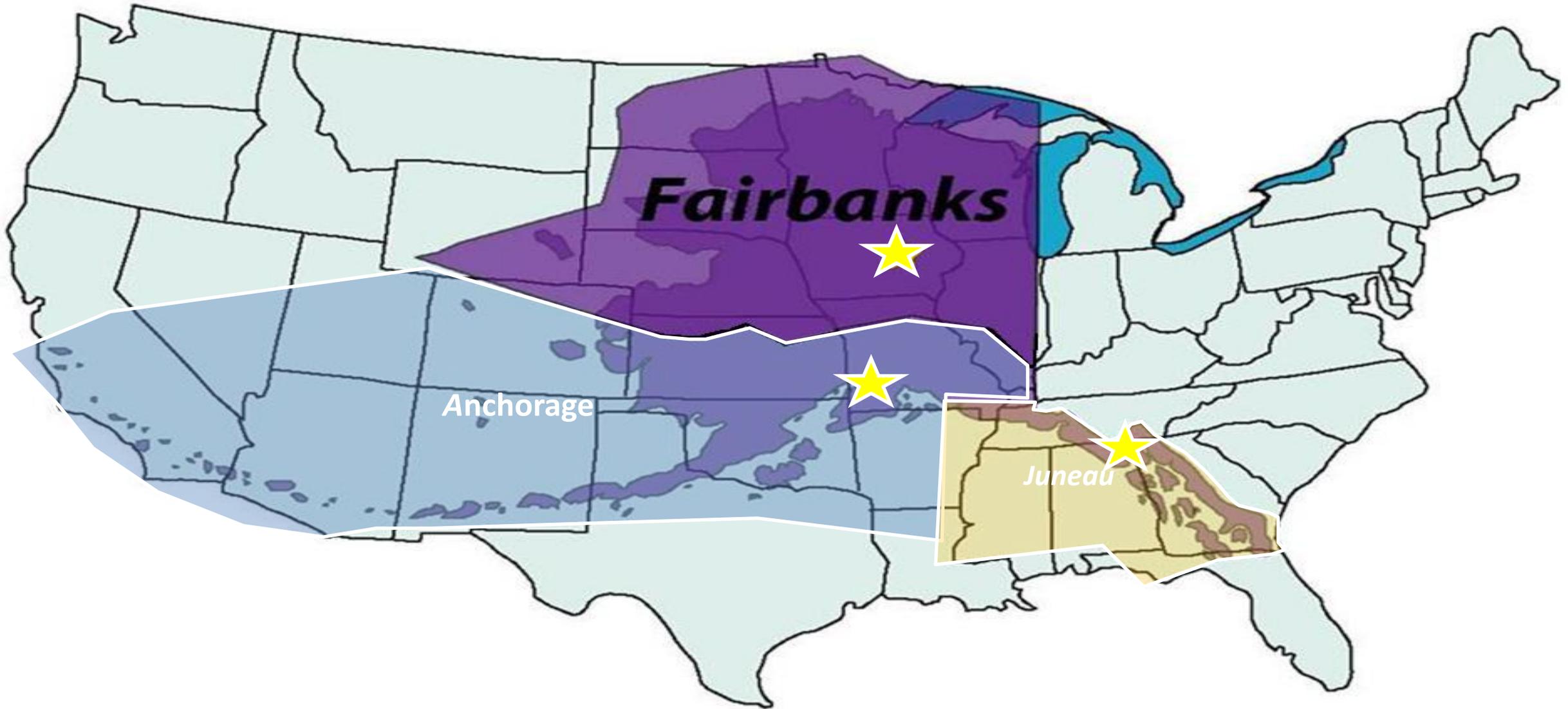
Just over 130 in Alaska

Comparable density would  
take almost 200 more stations

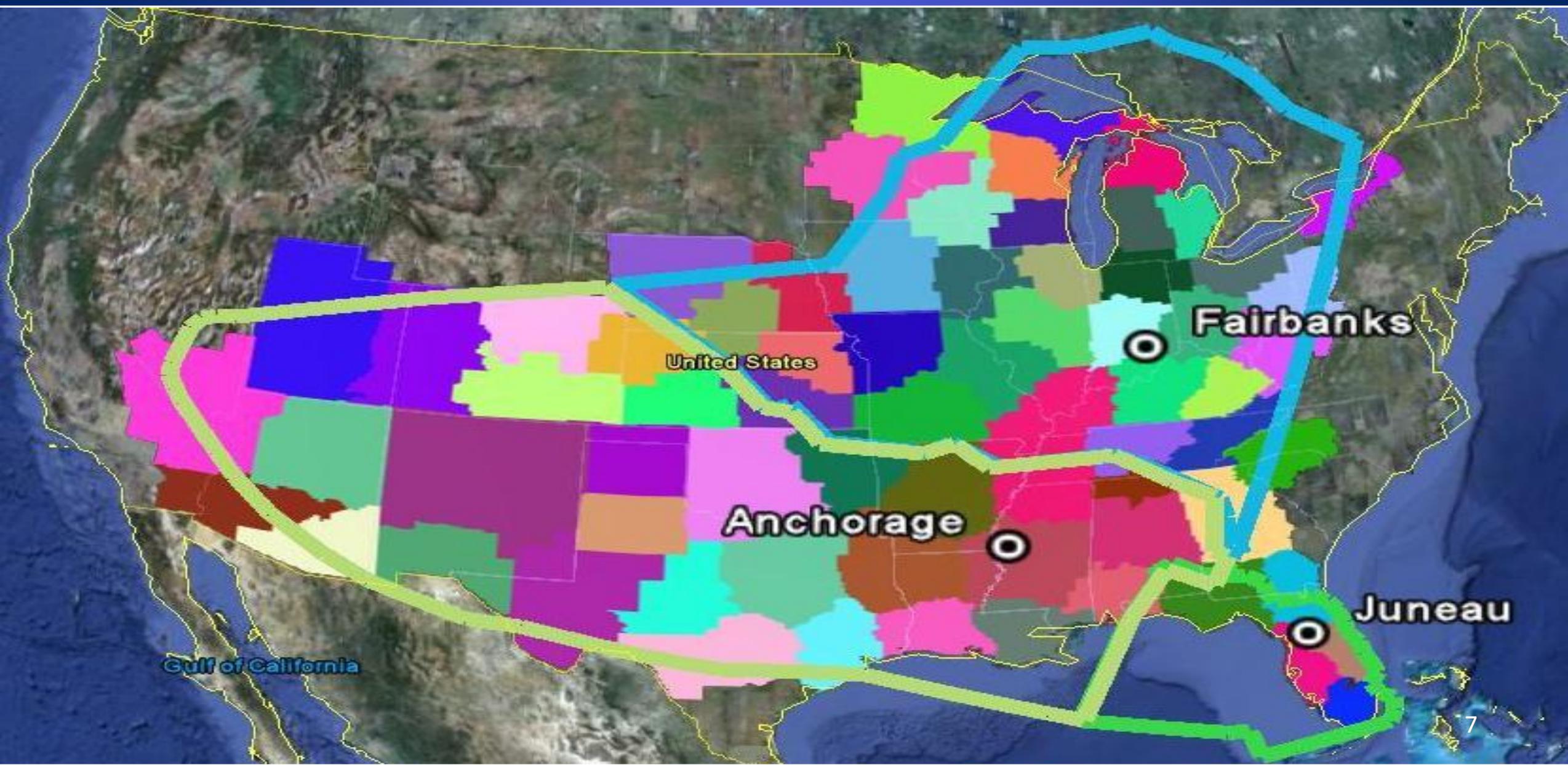
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# Alaska forecast offices



# Alaska's Wx Forecast Offices vs. Lower 48 states



# AOPA PIREP Survey

- Just completed a national PIREP survey
  - Ran in May, 2016 for ~30 days
  - Around 700 respondents
  - Preliminary assessment: still evaluating the results

## 1. How important do you consider PIREPs to be to aviation safety across the National Airspace System?

#	Answer	Bar	Response	%
1	Extremely important		288	41%
2	Very important		297	42%
3	Moderately important		95	14%
4	Slightly important		22	3%
5	Not important at all		1	0%
	Total		703	

A red bracket on the right side of the table groups the 'Extremely important' (41%) and 'Very important' (42%) rows, with a line pointing to the text '83%'.

# Initial Training

- Most pilots learned about PIREPs from a combination of ground school and inflight training

3. Where did you learn about Pilot Reports (PIREPs)?				
#	Answer	Bar	Response	%
1	Ground School		221	32%
2	In-Flight Training		48	7%
3	Both		387	55%
4	Neither		43	6%
	Total		699	

- 71% said the emphasis on PIREPs during initial training was “little” to “none”

4. How much emphasis was placed on PIREPs during your initial flight training?				
#	Answer	Bar	Response	%
1	None		108	15%
2	A little		392	56%
3	A moderate amount		172	25%
4	A lot		29	4%
	Total		701	

71%

# Types of flying

Pilots responding to this survey:

- 94% flew under Part 91
- Part 135 and 121 combined represented only 6%

Types of operation:

- About 2/3 fly VFR and 1/3 IFR

12. Under what type of flight rules do you primarily fly? (select one)				
#	Answer	Bar	Response	%
1	Visual Flight Rules (VFR)		437	64%
2	Instrument Flight Rules (IFR)		250	36%
	Total		687	

# PIREP utilization

**8. How often do you use PIREPs during your preflight planning decision-making?**

#	Answer	Bar	Response	%
1	Never (0% of flights)		26	4%
2	Rarely (1-33% of flights)		153	22%
3	Sometimes (34-65% of flights)		171	25%
4	Frequently (66-99% of flights)		225	33%
5	Always (100% of flights)		115	17%
Total			690	

50%

- PIREPs pushed by ATC

**9. How often does Air Traffic Control (ATC) provide PIREPs applicable to your flight while en route without your requesting them?**

#	Answer	Bar	Response	%
1	Never (0% of flights)		116	17%
2	Rarely (1-33% of flights)		365	54%
3	Sometimes (34-65% of flights)		149	22%
4	Frequently (66-99% of flights)		45	7%
5	Always (100% of flights)		3	0%
Total			678	

71%

- PIREPs pushed by FSS

**10. How often does a Flight Service Station (FSS) provide PIREPs applicable to your flight while en route without your requesting them?**

#	Answer	Bar	Response	%
1	Never (0% of flights)		108	19%
2	Rarely (1-33% of flights)		181	32%
3	Sometimes (34-65% of flights)		134	24%
4	Frequently (66-99% of flights)		112	20%
5	Always (100% of flights)		34	6%
Total			569	

51%

# Do you file?

- Almost three-quarters of the pilots do!

14. Do you file PIREPs?				
#	Answer	Bar	Response	%
1	Yes		500	73%
2	No		188	27%
	Total		688	

- How often? Sometimes

16. On average, how often do you provide an unsolicited PIREP?				
#	Answer	Bar	Response	%
1	Never (0% of flights)		0	0%
2	Rarely (1-33% of flights)		189	38%
3	Sometimes (34-65% of flights)		230	46%
4	Frequently (66-99% of flights)		71	14%
5	Always (100% of flights)		9	2%
	Total		499	

# Are you asked?

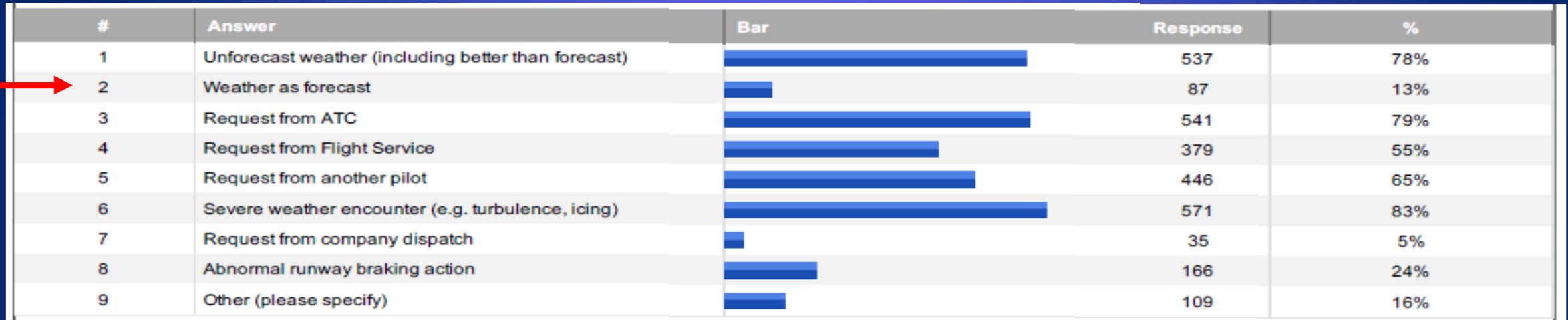
- By ATC?

17. On average, how often does ATC request PIREPs from you?				
#	Answer	Bar	Response	%
1	Never (0% of flights)		85	17%
2	Rarely (1-33% of flights)		292	60%
3	Sometimes (34-65% of flights)		90	18%
4	Frequently (66-99% of flights)		18	4%
5	Always (100% of flights)		4	1%
Total			489	

- By FSS?

18. On average, how often does Flight Service solicit PIREPs from you?				
#	Answer	Bar	Response	%
1	Never (0% of flights)		86	20%
2	Rarely (1-33% of flights)		116	28%
3	Sometimes (34-65% of flights)		59	14%
4	Frequently (66-99% of flights)		93	22%
5	Always (100% of flights)		66	16%
Total			420	

# What would prompt you to file a PIREP? (check all that apply)



#	Answer	Bar	Response	%
1	Unforecast weather (including better than forecast)		537	78%
2	Weather as forecast		87	13%
3	Request from ATC		541	79%
4	Request from Flight Service		379	55%
5	Request from another pilot		446	65%
6	Severe weather encounter (e.g. turbulence, icing)		571	83%
7	Request from company dispatch		35	5%
8	Abnormal runway braking action		166	24%
9	Other (please specify)		109	16%

- “Weather as forecast” is notably low among conditions.

# Reporting non-threatening conditions

## 22. How often do you file PIREPs when conditions are as forecast?

#	Answer	Bar	Response	%
1	Never (0% of flights)		182	37%
2	Rarely (1-33% of flights)		217	44%
3	Sometimes (34-65% of flights)		71	14%
4	Frequently (66-99% of flights)		24	5%
5	Always (100% of flights)		2	0%
	Total		496	

81%

## 23. How often do you file PIREPs for benign conditions (e.g. no turbulence, no icing, no wind, etc.) regardless of the current forecast?

#	Answer	Bar	Response	%
1	Never (0% of flights)		164	33%
2	Rarely (1-33% of flights)		212	43%
3	Sometimes (34-65% of flights)		86	17%
4	Frequently (66-99% of flights)		31	6%
5	Always (100% of flights)		3	1%
	Total		496	

76%

# Where do you file?

## 24. To whom do you normally submit PIREPs? (check all that apply)

#	Answer	Bar	Response	%
1	ATC		333	68%
2	Lockheed Martin Flight Service		184	37%
3	FAA Flight Service (Alaska)		70	14%
4	Your company's dispatch		12	2%
5	Other (please specify)		33	7%

Most file with ATC, followed by FSS, however getting reports into the system is a problem

“I know ATC can be overworked... Somehow get the report in the system so we can see it in Foreflights, ect. Don't just keep it to yourself...”

“Used to be 122.0 flight watch. Now not so sure.”

“That is a problem. I have tried various frequencies and been told no we do not take them. I am flying, navigating, watching for traffic, I usually just give up.”

# Encouraging more...

- What do you think it would take to encourage you or other pilots that you know to file more PIREPs?

#	Answer	Bar	Response
1	Additional training on procedures		141
2	Requests from ATC or Flight Service		331
3	Other (please specify)		201
	Total		673

## Comments tell the story

- 201 comments on this question
- Reinforce other parts of the survey

# Comment themes (1)

Most respondents are using flight following or flying IFR, and say:

- Too time consuming to leave ATC freq
- “...I usually don’t have time to drop off frequency to talk to flight service.
- **Have to hunt for FSS freq (loss of Flight Watch)**  
“A single frequency such as for Flight Watch...would be helpful.”
- **FSS is not efficient taking the report**  
“It is a hassle to provide a pilot report. It appears that FSS requires a checklist must be completed before a PIREP can be placed into the system...”  
“Less emphasis on format; more emphasis on the information...”

# Common Themes (2)

## Want simpler procedure

- Take what is important over the radio
- “...when filing one with FSS, it takes way too long and they usually start asking for a novel on the weather.”
- “...Too awkward to have to find FSS frequency and then switch to file PIREP...”

- Automate thorough electronic app

“...Incorporate reporting tools in EFB apps like Foreflight.”

“Make the inflight, electronic submission of PIREPs simple and easy to accomplish!”

## Remove enforcement threat

“Knowing it couldn’t be used against me”

# Common Themes (3)

## Perceptions:

- ATC not interested in PIREPs (doesn't write down)

“I almost always use flight following or IFR. I have little confidence my pireps are going past their ears.”

“I've heard ATC does not pass on PIREPs so it is waste of time to give them to ATC.”

- PIREPS are mostly high altitude feature

“Most of the PIREPs that [I] see are in the Fl 180 or more...”

# What problems have you encountered while using PIREPs?

#	Answer	Bar	Response	%
1	PIREPs not timely (e.g. more than two hours old)		224	35%
2	Reported weather information vague or inconsistent		134	21%
3	ATC or Flight Service provides PIREPs not appropriate for flight route		77	12%
4	I have never encountered problems.		248	39%
6	Other (please specify)		132	21%

## Need more of them:

“Too few PIREPS are available for my route of flight to be useful.”

“Too few pireps to make them generally useful”

## Shortage of low-altitude reports:

“For flying lower than 5,000 ft, there just isn’t much pirep information available...”

“Generally PIREPs are from pilots flying in the flight levels which don’t really apply to flight in my C172”

# In-cockpit technology

## 25. Do you ever use in-cockpit technology (e.g. tablet, avionics) other than the aircraft radio to file a PIREP?

#	Answer	Bar	Response	%
1	Yes		38	8%
2	No		456	92%
	Total		494	

## 26. Which technology do you use?

#	Answer	Bar	Response	%
1	Tablet computer		20	53%
2	Cell phone app		7	18%
3	Cell phone call		3	8%
4	Other (please specify)		8	21%
	Total		38	

More results from this survey after closer examination of the results.

# New tools provide better access

- PIREP mapping tools becoming available to pilots
  - In Alaska:
    - NWS's Alaska Aviation Weather Unit maps upgraded
    - FAA Weather Camera site added PIREPs
  - Nationally:
    - SkyVector.com added graphic PIREPs
    - EFB's including PIREPs



# SkyVector adds PIREPs

The screenshot displays the SkyVector Aeronautical Charts interface. At the top, there are navigation icons for Airports, Charts, Help, Fuel Prices, and DROTAMs. A 'Go Flight Plan' button is visible on the left. The main area shows a detailed aeronautical chart of the Anchorage, Alaska region, with several flight paths labeled 'Enroute AH-1', 'Enroute AH-2', 'Enroute AL-1', and 'Enroute AL-3'. A green dot on the map indicates a reported PIREP (Pilot Report) of 'Moderate Turbulence at 1500 Reported 1h 2m ago'. The interface also includes a 'WINGPO REWARDS P' logo in the top right corner and a '20:47:44 Z' timestamp.

Go Flight Plan

SkyVector®  
Aeronautical Charts

Airports Charts Help Fuel Prices DROTAMs™

WINGPO REWARDS P

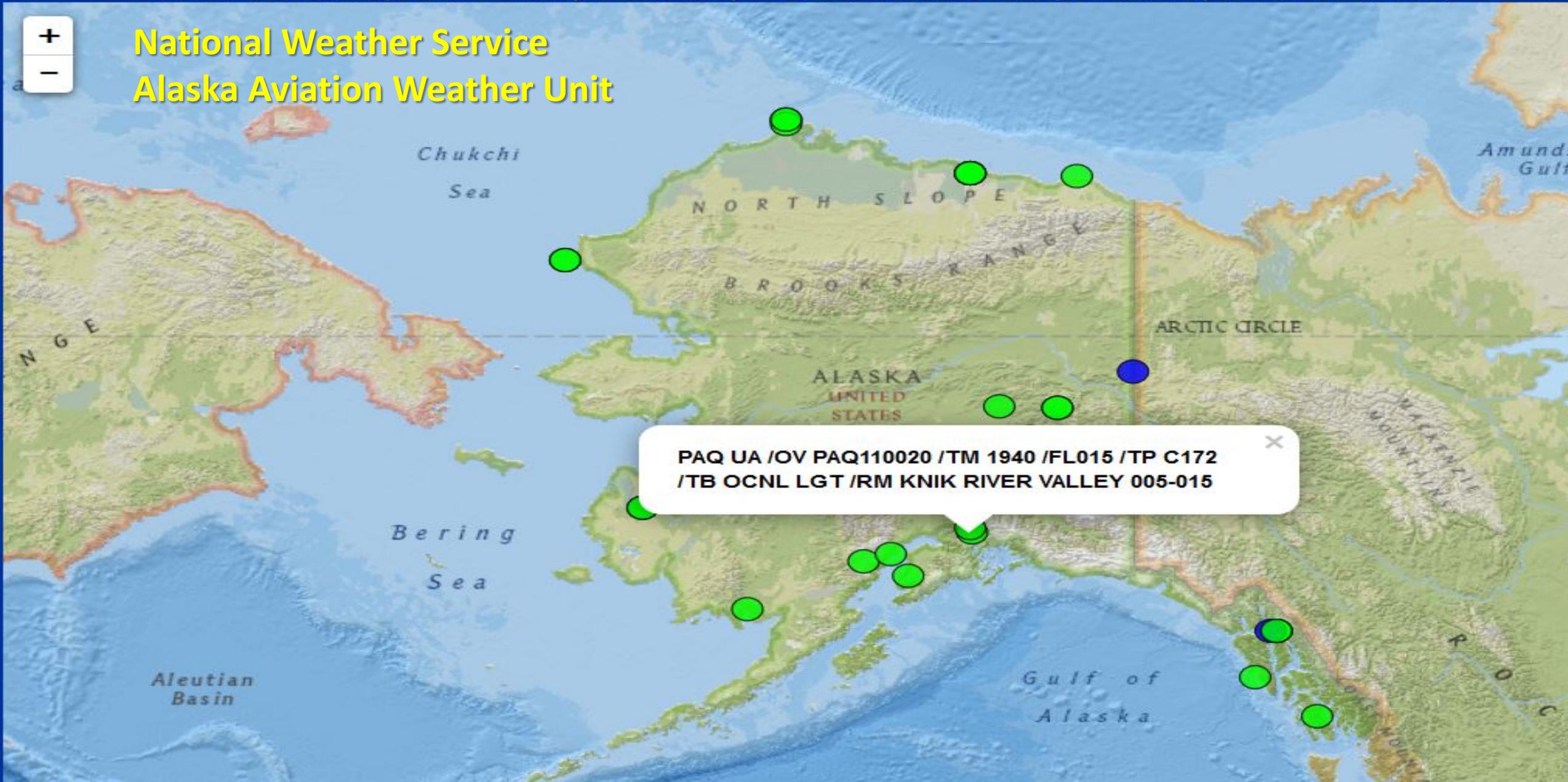
20:47:44 Z N61°31.58' W

Enroute AH-1 Enroute AH-2 Enroute AL-1 Enroute AL-3 World Hi World Lo Anchorage Area Mat-Su Valley

Moderate Turbulence at 1500  
Reported 1h 2m ago.



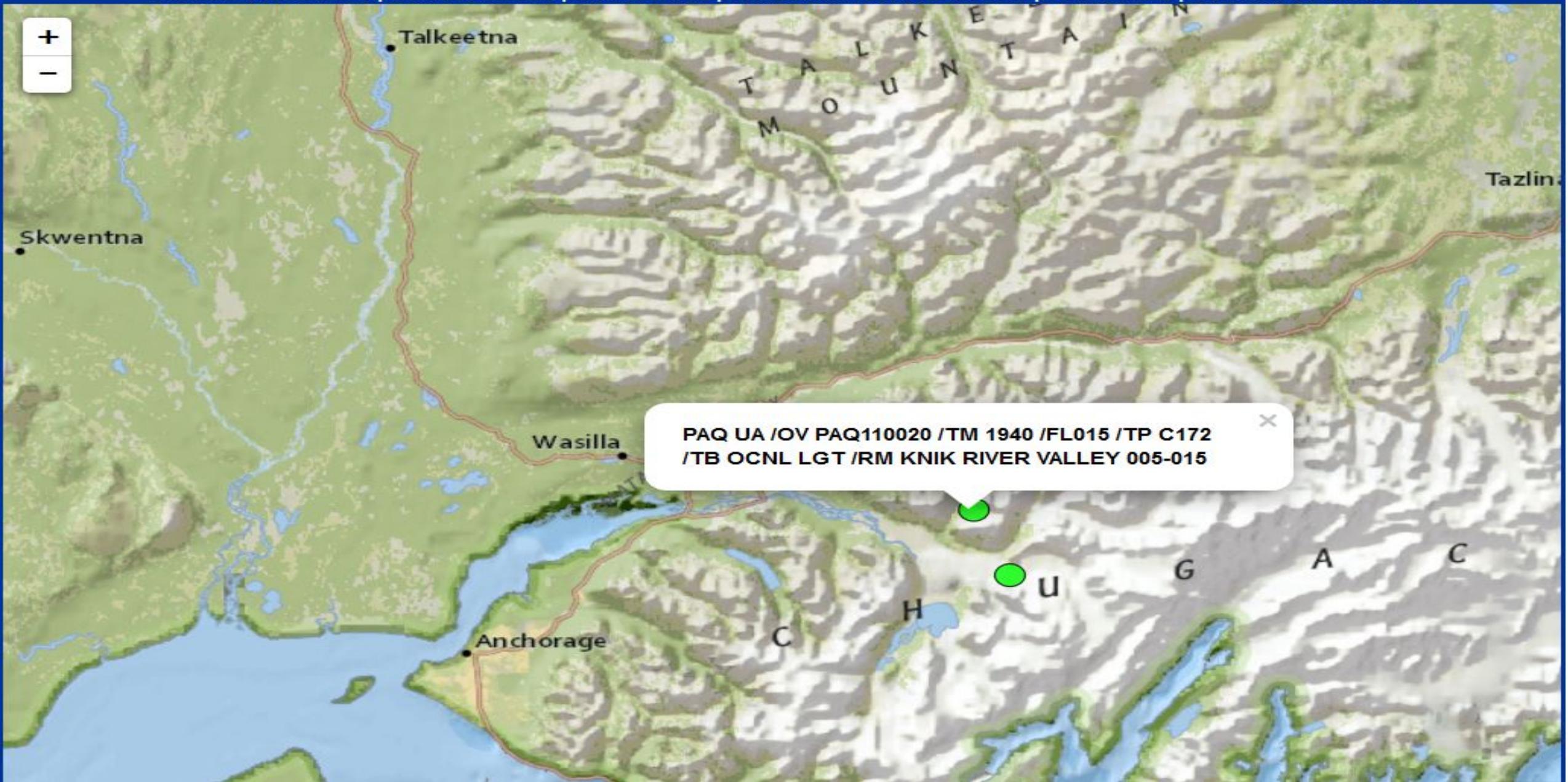
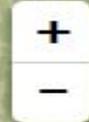
# National Weather Service Alaska Aviation Weather Unit



PAQ UA /OV PAQ110020 /TM 1940 /FL015 /TP C172 /TB OCNL LGT /RM KNIK RIVER VALLEY 005-015

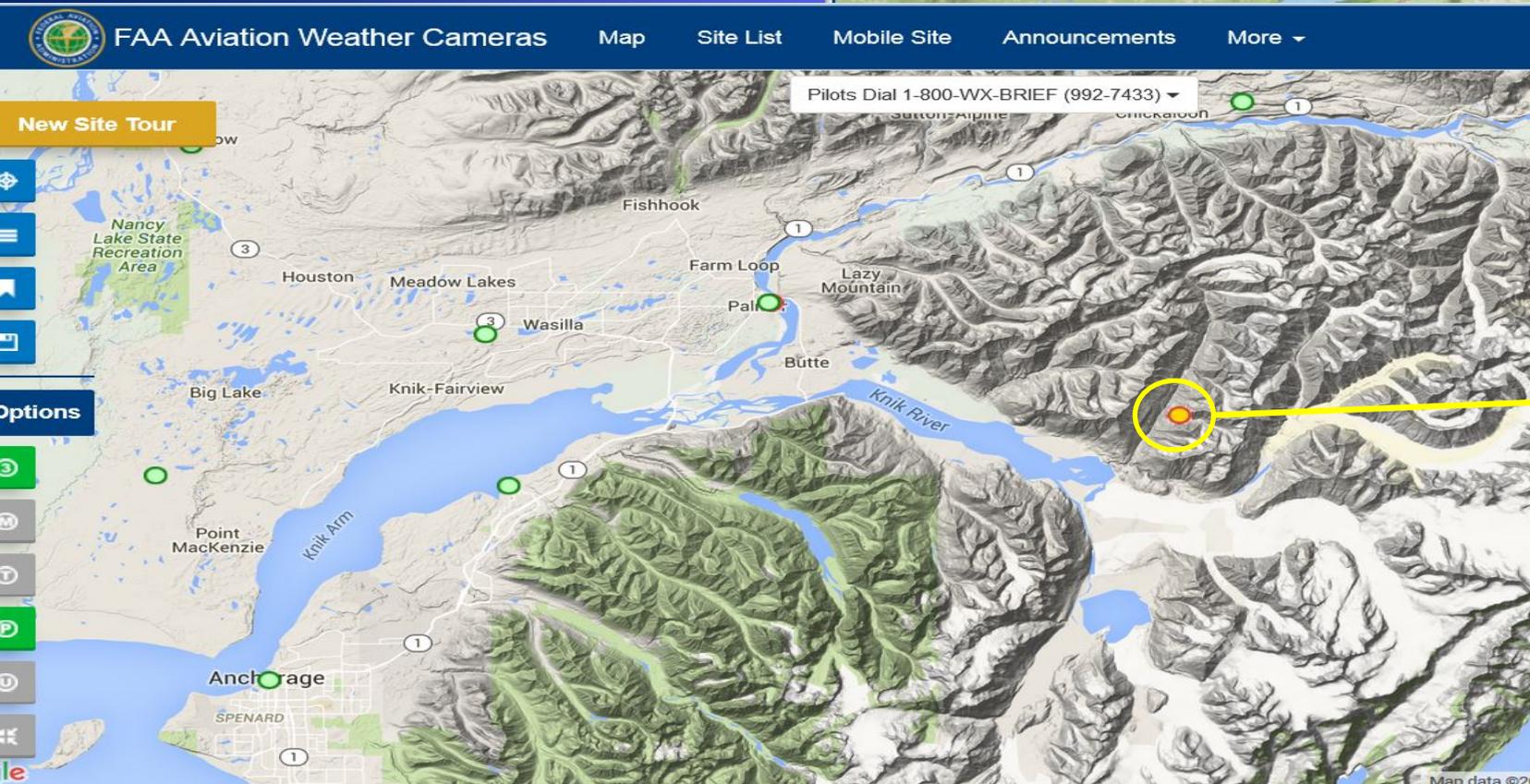
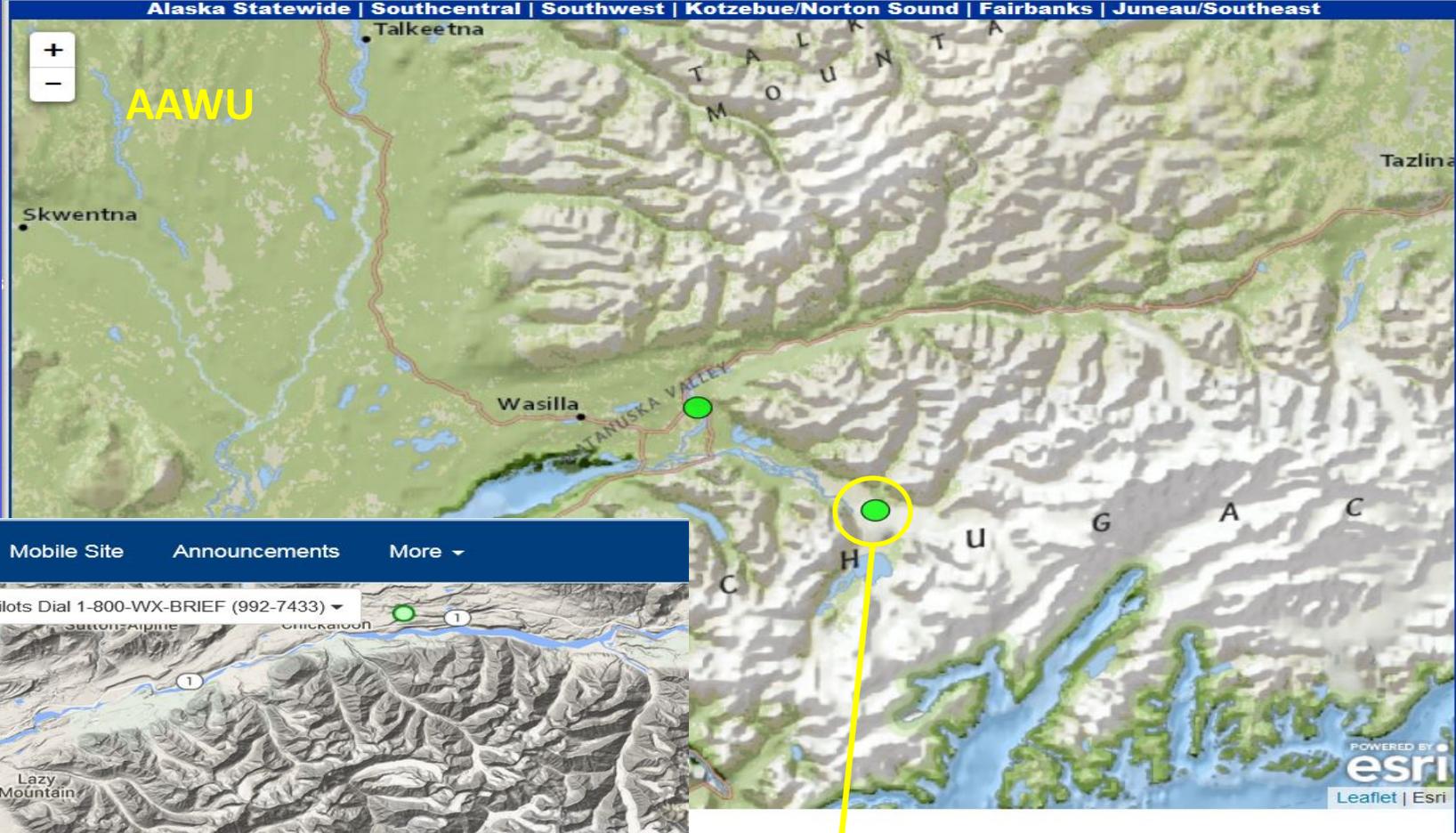
1 hour | **3 hours** | 6 hours | 12 hours | 24 hours   ● = FL000-FL190   |   ● = >FL200

Alaska Statewide | Southcentral | Southwest | Kotzebue/Norton Sound | Fairbanks | Juneau/Southeast



PAQ UA /OV PAQ110020 /TM 1940 /FL015 /TP C172  
/TB OCNL LGT /RM KNIK RIVER VALLEY 005-015

# Plotting differences...



Same PIREP, in Knik River Valley

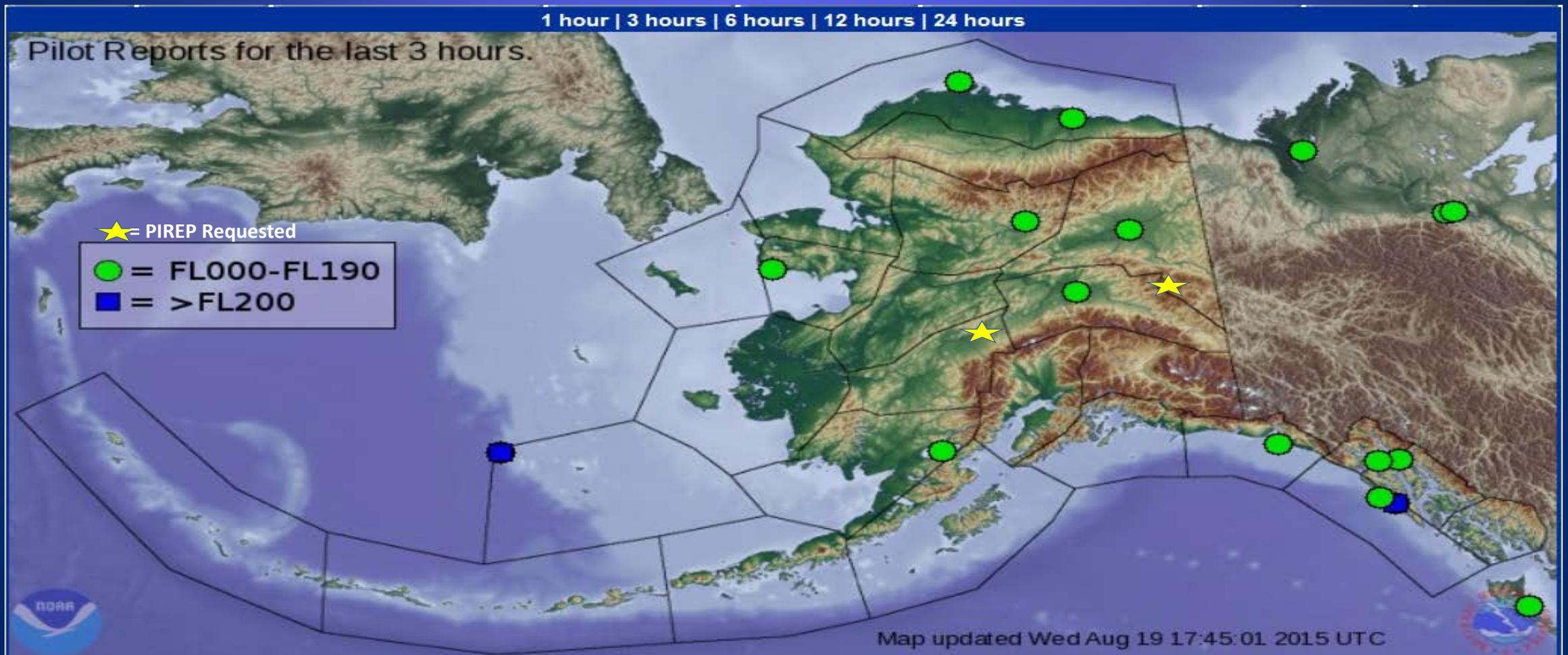
# Where do we go next?

- Long term:
  - Develop tools to get PIREPs from the cockpit electronically
- Short term:
  - Address concerns about filing by radio
    - Efficiency of collection by FSS and ATC
    - Making sure they get into the system to benefit forecasters and pilots not on the frequency
  - Promote to pilot community
    - FIRC's, Flight Reviews, safety seminars, other outreach

# Possible future mapping enhancement: Graphically depict "route" reports



Consider providing means for forecasters to “request” PIREPs directly from pilots?



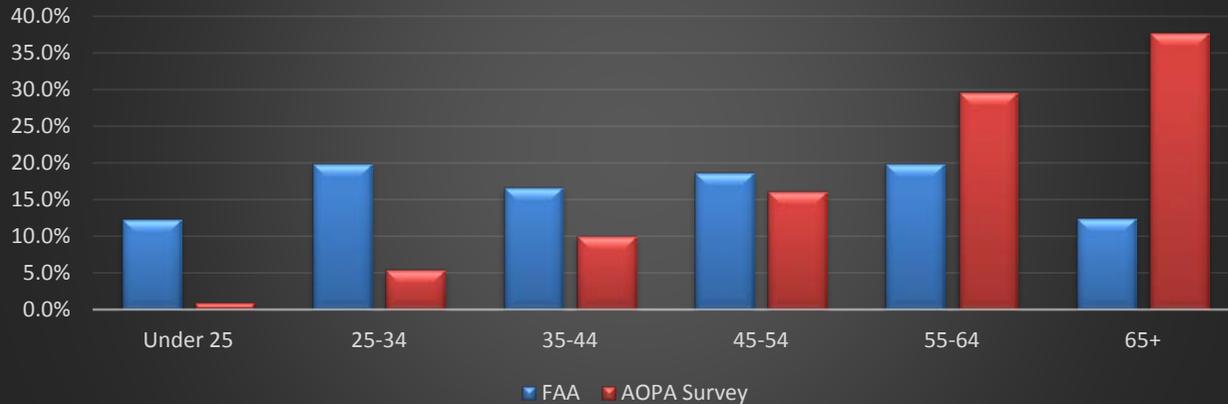
Thank You!

[tom.george@aopa.org](mailto:tom.george@aopa.org)

Back up slides

# Survey respondent demographics

## Age Distribution of Respondents vs US Pilot Population



- Respondents were:
- Older/more seasoned than general pilot population
- Larger component of Private and Commercial pilots

## Highest certificate held by Respondents

