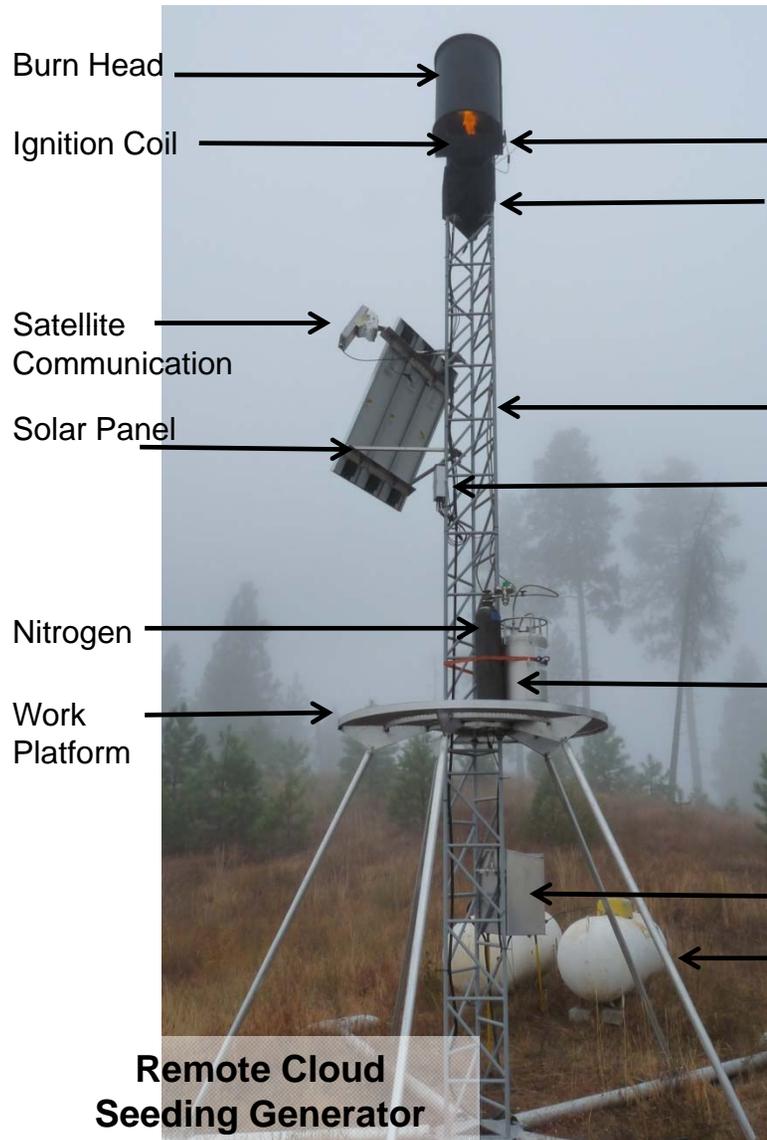


# Idaho Power Company's Cloud Seeding Program

February 12, 2016

Derek Blestrud  
Atmospheric Scientist

# Seeding Mechanisms



Temperature Probe

Valve Box

Tower

Computer Box

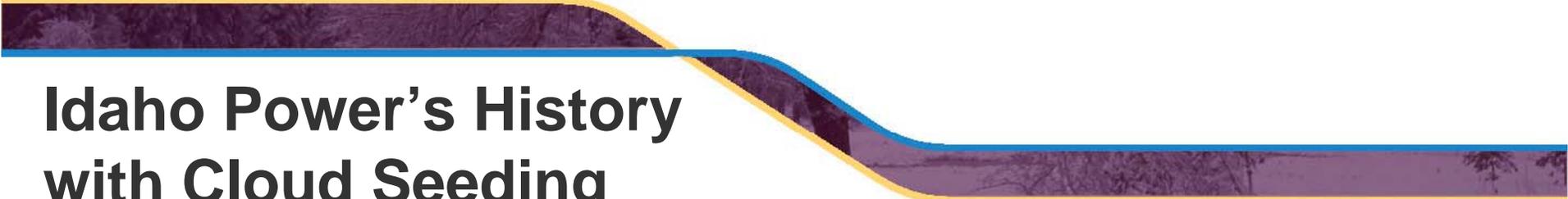
Solution Tanks

Batteries

Propane



**Modified Aircraft  
King Air C90F**



# Idaho Power's History with Cloud Seeding

- 1993 - Began investigating cloud seeding (shareholder question)
- **2003 - Payette project operational** (7 generators, aircraft, assessment)
- **2008 - Collaborated with HC RC&D** and E Idaho Counties to enhance their program (motivated by ESPA CAMP) – 5 year pilot effort
- 2010 - Started working with WW RC&D to evaluate cloud seeding opportunities in western Wyoming (primarily above Palisades)
- 2011 - Started working with NCAR to develop WRF model to guide and evaluate CS operations and projects
- **2013 – At the request of Big Wood Canal Company** contracted to target Wood River basin (using Payette aircraft only)
- 2014 - Expansion (44 generators, 2 aircraft)
  - Boise and Wood Basin's – remote generators and aircraft seeding
  - Continued expansion in Salt and Wyoming Ranges
  - IWRB funding a grant for equipment associated with expansion
- 2015 - Expansion (53 generators, 3 aircraft)
  - Additional remote generators in Central Mountains and Upper Snake (Total of 53)
  - Third aircraft based in Pocatello for upper Snake (1 year pilot project with State)
  - Additional meteorological equipment

# Current Program

## Payette, Boise, Wood & Upper Snake

- **Payette**

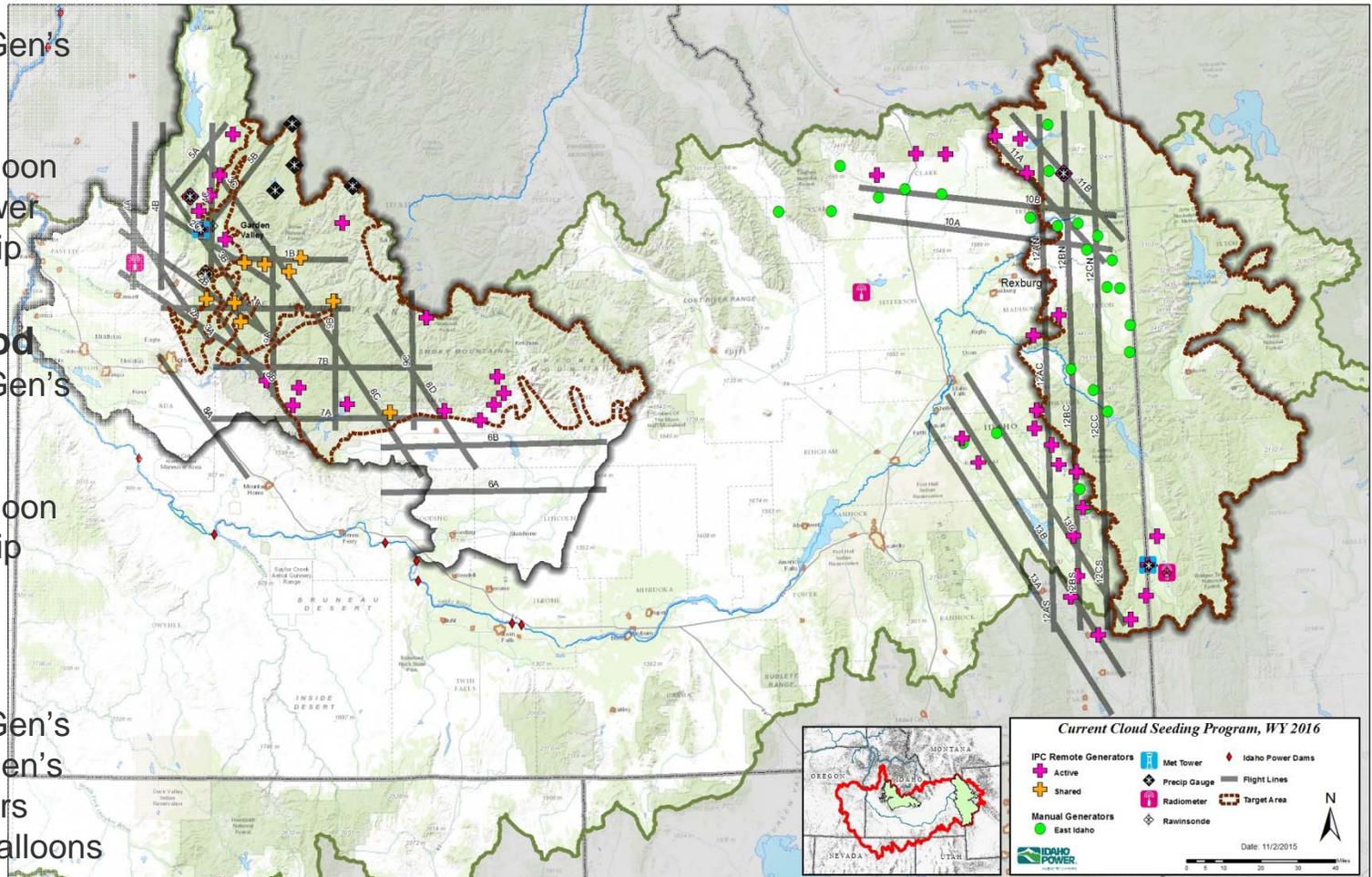
- 17 Remote Gen's
- Aircraft
- Radiometer
- Weather Balloon
- Weather Tower
- 8 hi-res precip gauges

- **Boise and Wood**

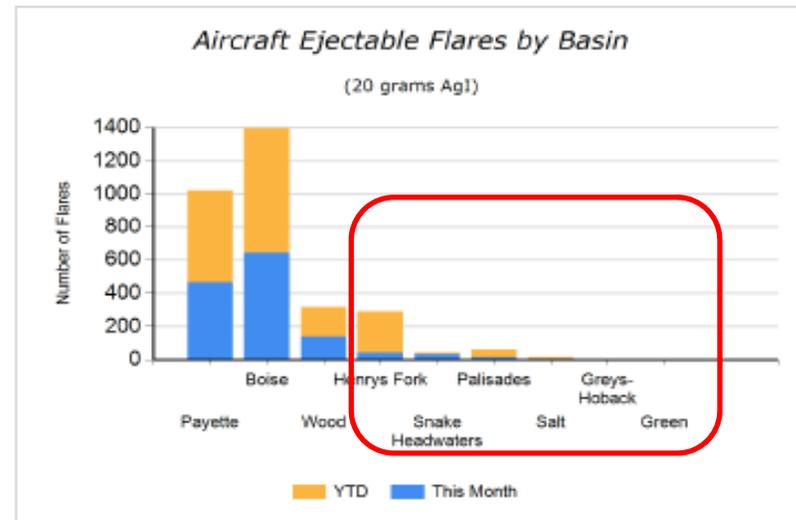
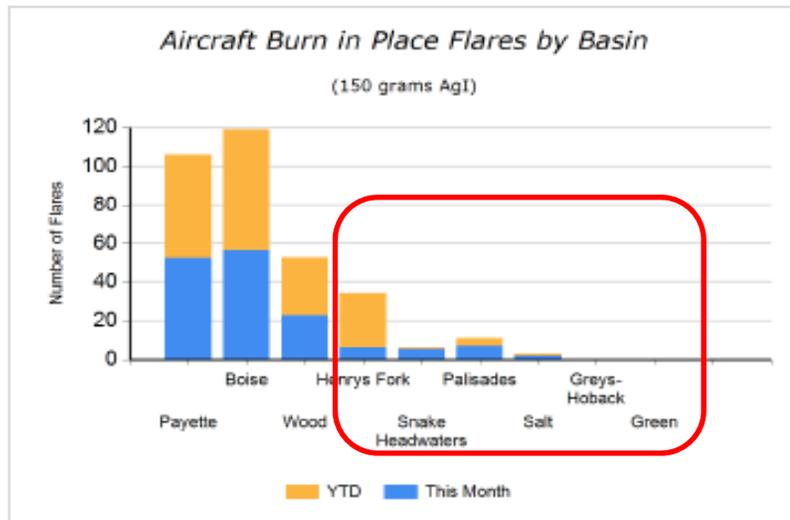
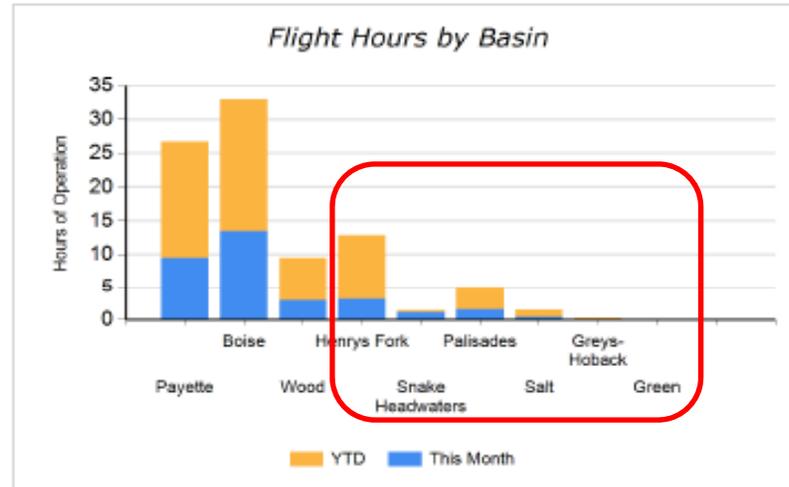
- 11 Remote Gen's
- Aircraft
- Radiometer
- Weather Balloon
- 2 hi-res precip gauges

- **Upper Snake**

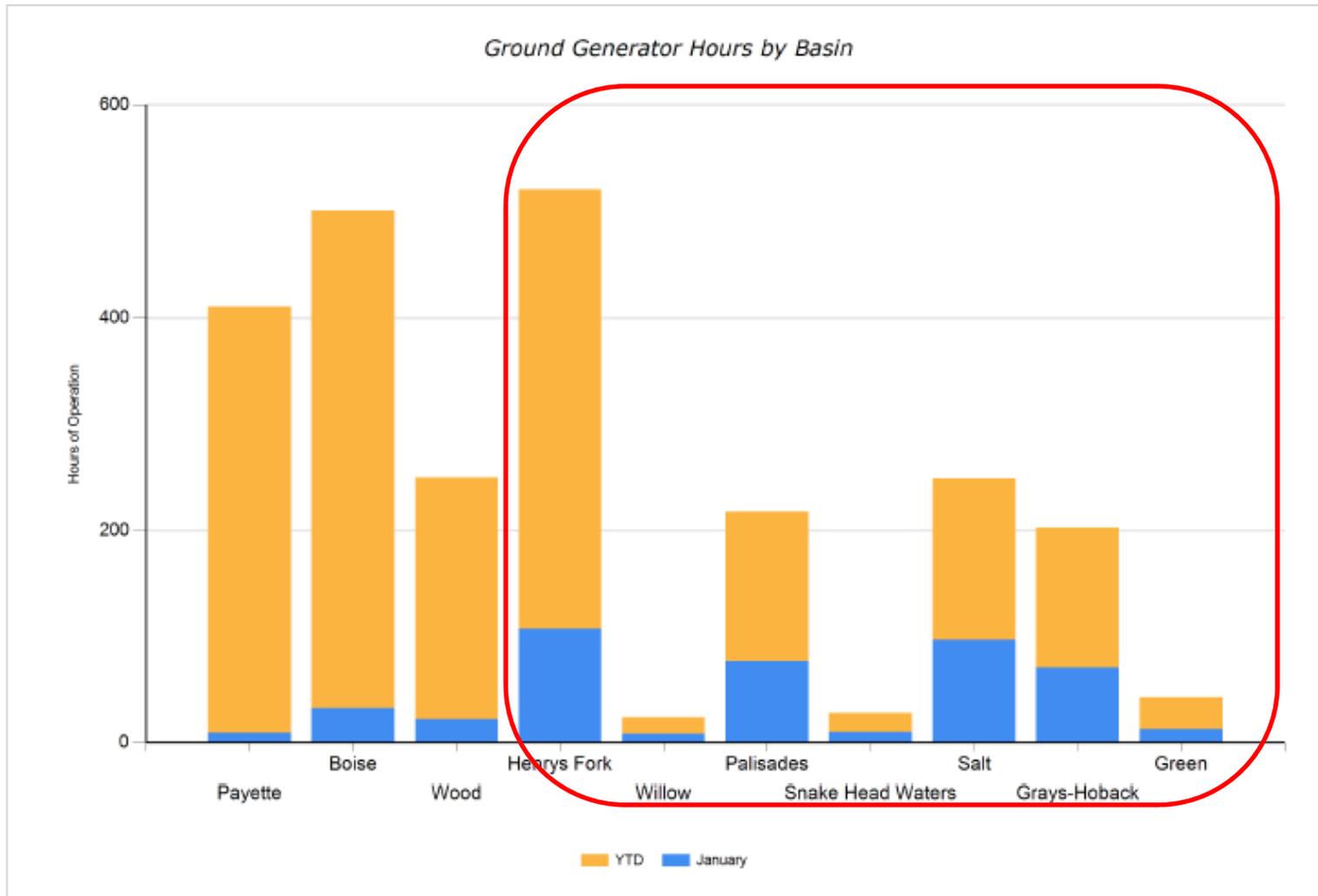
- Aircraft
- 25 Remote Gen's
- 25 Manual Gen's
- 2 Radiometers
- 2 Weather Balloons
- Weather Tower
- 2 hi-res precip gauge



# 2016 Aircraft Operations to Date



# 2016 Ground Generator Operations to Date



# Potential Future Program

## Payette, Boise, Wood & Upper Snake

- **Payette**

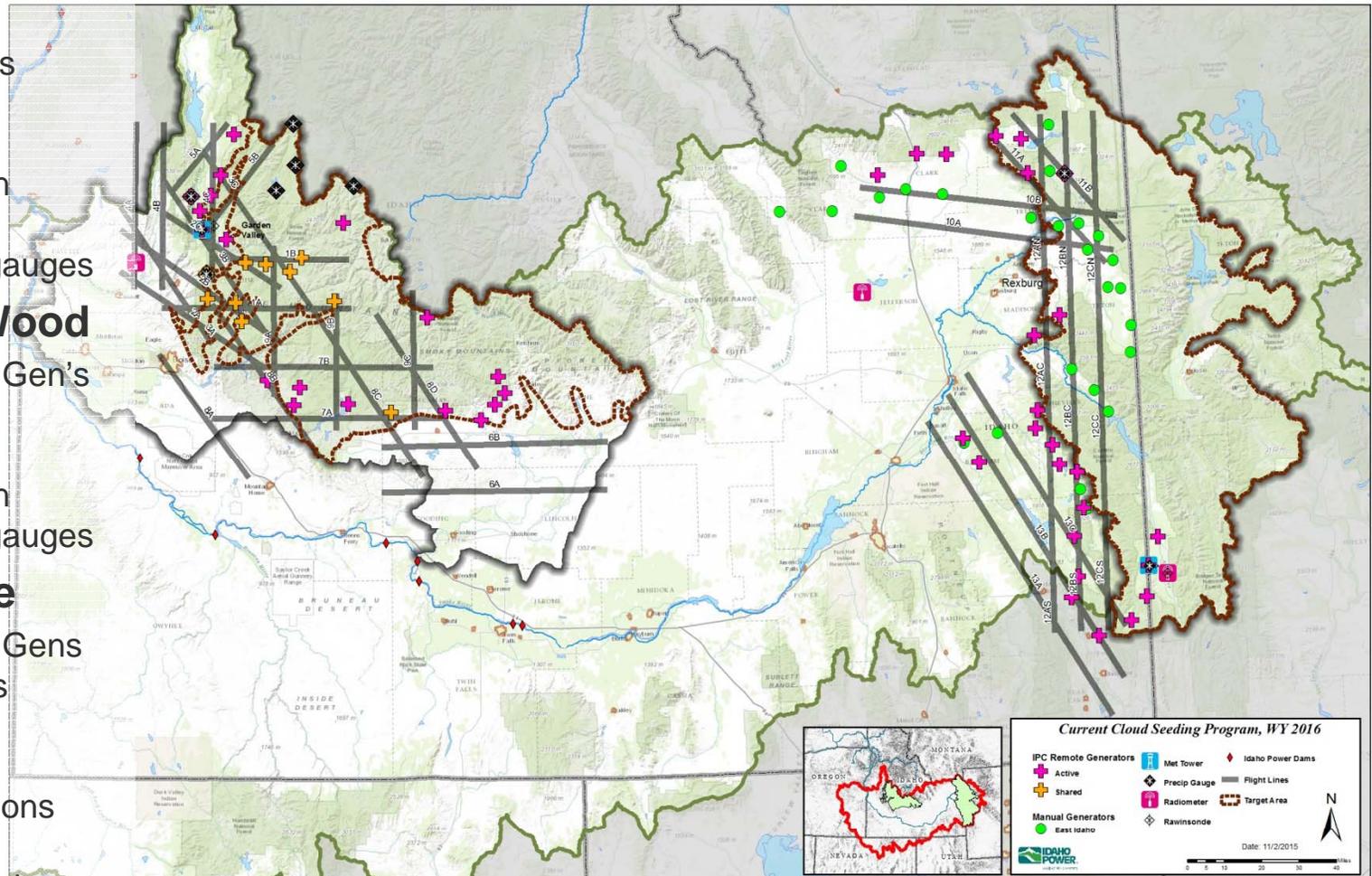
- 17 Remote Gens
- Aircraft
- Radiometer
- Weather Balloon
- Weather Tower
- 7 hi-res precip gauges

- **Boise and Wood**

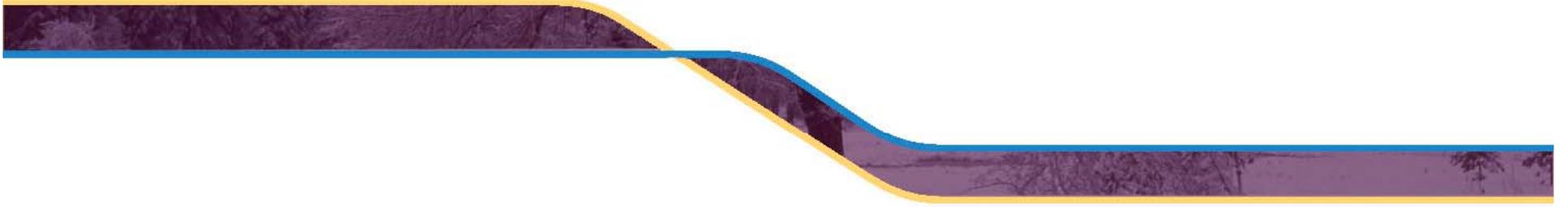
- 20 - 26 Remote Gen's
- Aircraft
- Radiometer
- Weather Balloon
- 4 hi-res precip gauges

- **Upper Snake**

- 30 - 40 Remote Gens
- 25 Manual Gens
- Aircraft
- 2 Radiometers
- 2 Weather Balloons
- Weather Tower
- 2 to 5 hi-res precip gauges







**Questions?**