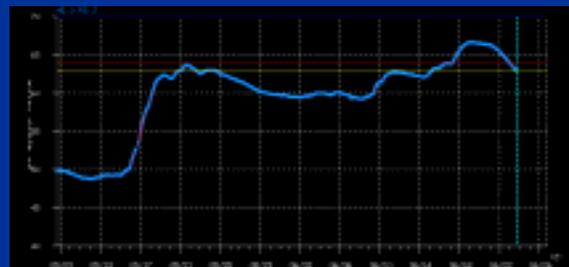


NOAA National Weather Service Northwest River Forecast Center Kootenay River Stakeholders Meeting

Harold H. Opitz
Hydrologist in Charge





National Weather Service

Mission Statement



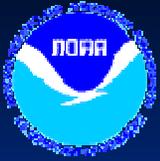
- National Weather Service provides weather, hydrologic, and climate forecasts and warning for the United States
- Protection of Life and Property
- Enhancement of the National Economy



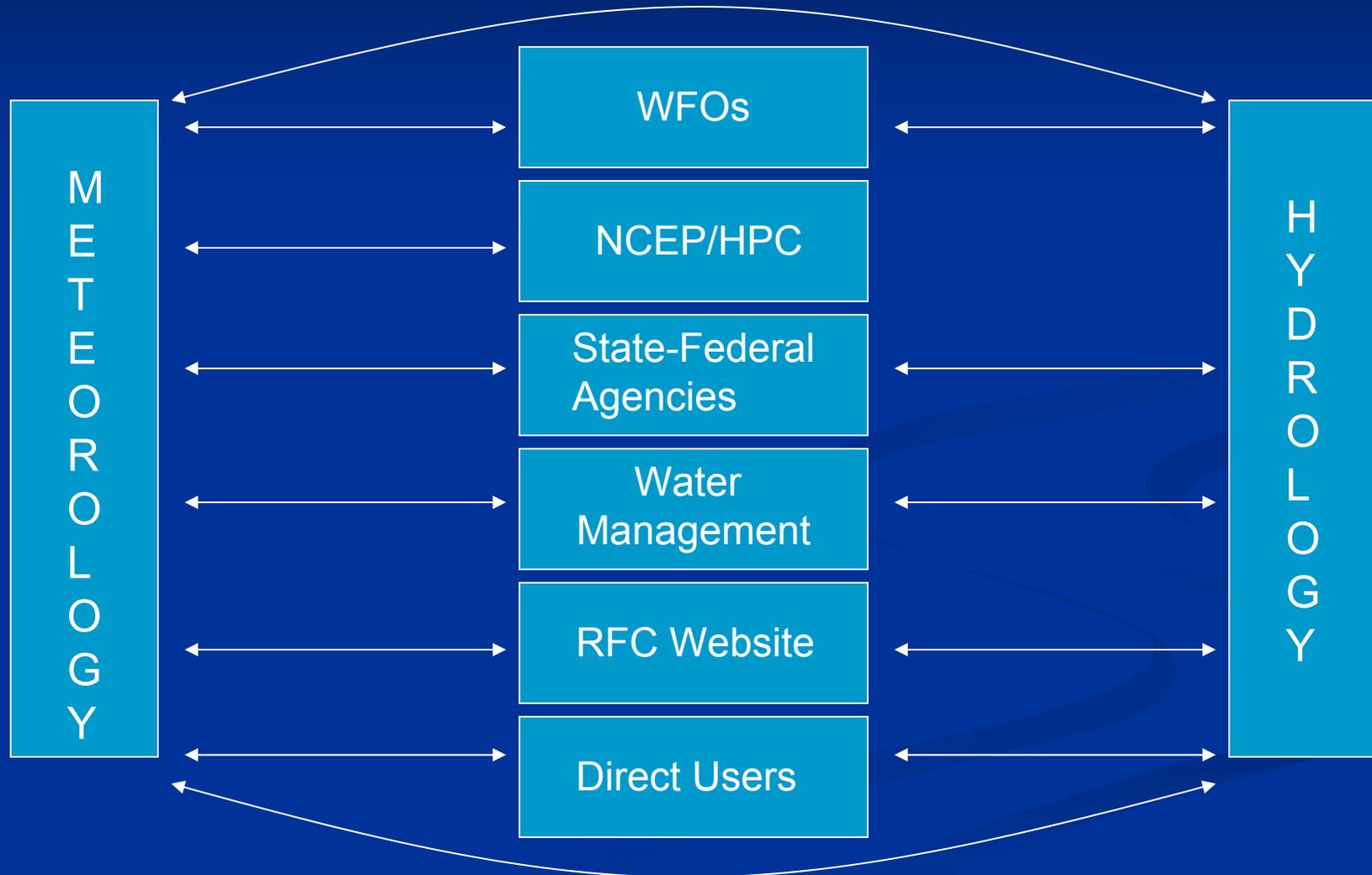
NOAA National Weather Service Northwest River Forecast Center



- 314,279 Square Miles
- 6-state Area of Responsibility
- 2 Canadian Provinces
- Elev. Range: 10 - 14110 ft msl
- Variable Orographic Relief
- Highly Variable Precip/Snow
- Seasonal Ops Workload
- Economies driven by Water Supply



NWRFC Operations Collaborative System





NWRFC Operations

Forecast Services



- Operate Suite of Hydrologic and Hydraulic Models
- Forecast Services
 - Apply 10-day precipitation forecasts
 - Apply 10-day maximum/minimum temperature forecasts
- Deterministic, Volumetric, and Probabilistic



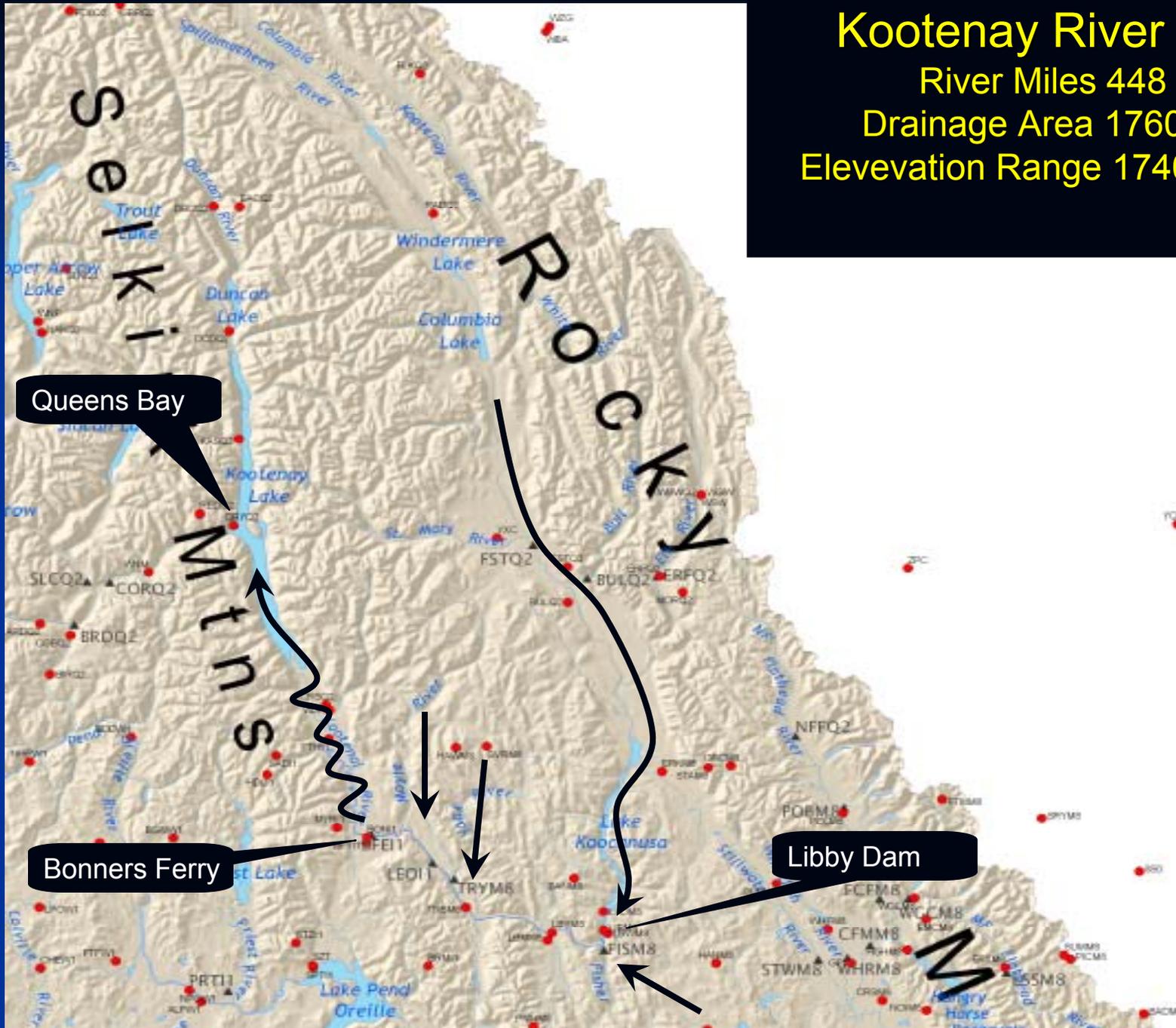
NWRFC Operations

Forecast Services



- Collaboration with NWS Weather Forecast Offices
- Regulation
 - Forecasts are Extensively Coordinated
 - Regulation via Shared Modeling System between the NWRFC and Corps of Engineers RCC.

Kootenay River Basin
River Miles 448 mi
Drainage Area 17600 mi²
Elevation Range 1740-11000 ft





Forecast Assessment



Preceding Conditions

- Unseasonably High Temperatures Dominate throughout Area ~ May 10
 - Several climate stations reported record daily maximum temperatures.
- Near Normal-to-Slightly Below Normal May 1 Snow Pack*
 - Overall Index at 99% on May 1st
- Mid-May Temperatures Accelerated Snow Melt
 - Above normal melt rates
 - Snow melt rises occurred earlier than normal.

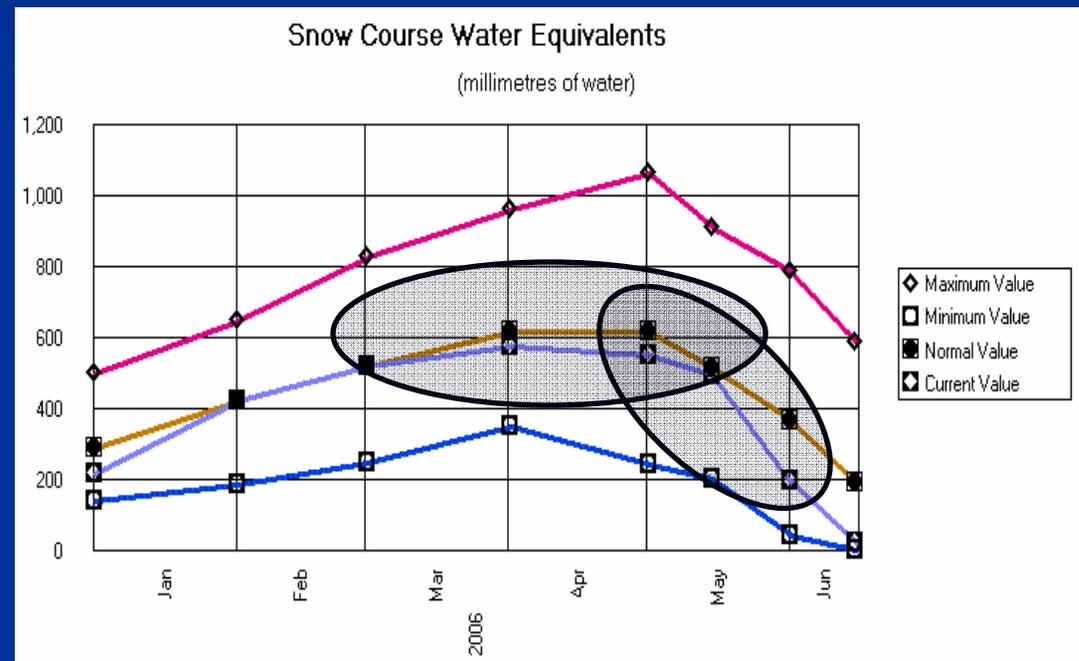
*Some Data provided by Environment Canada



Forecast Assessment Preceding Conditions



- Mid-May Temperatures Accelerate Snow Melt
 - Above normal melt rates
 - Above normal runoff.



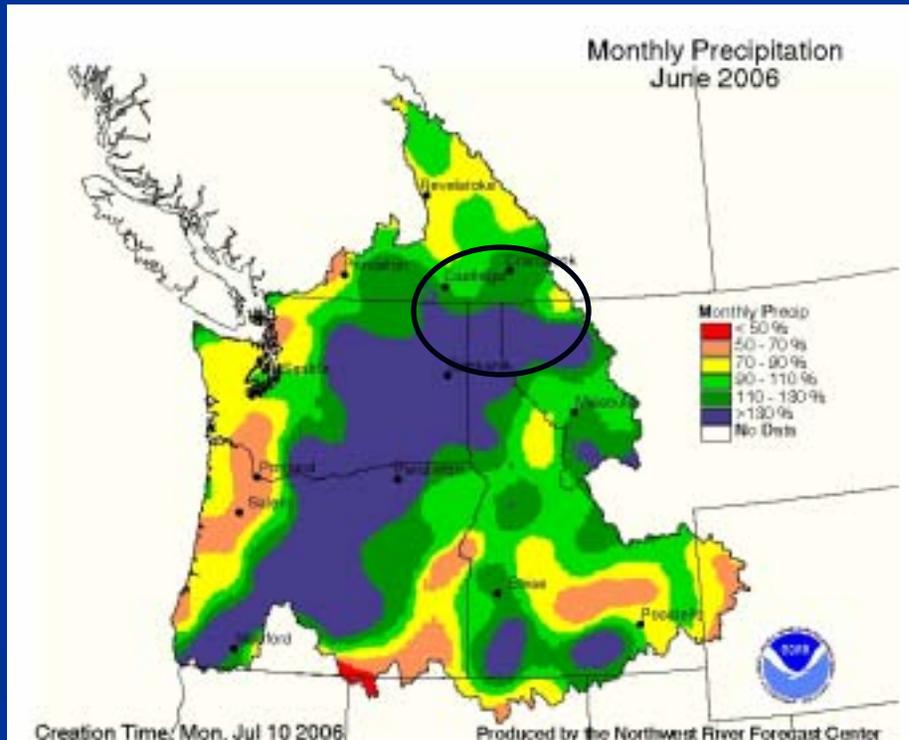
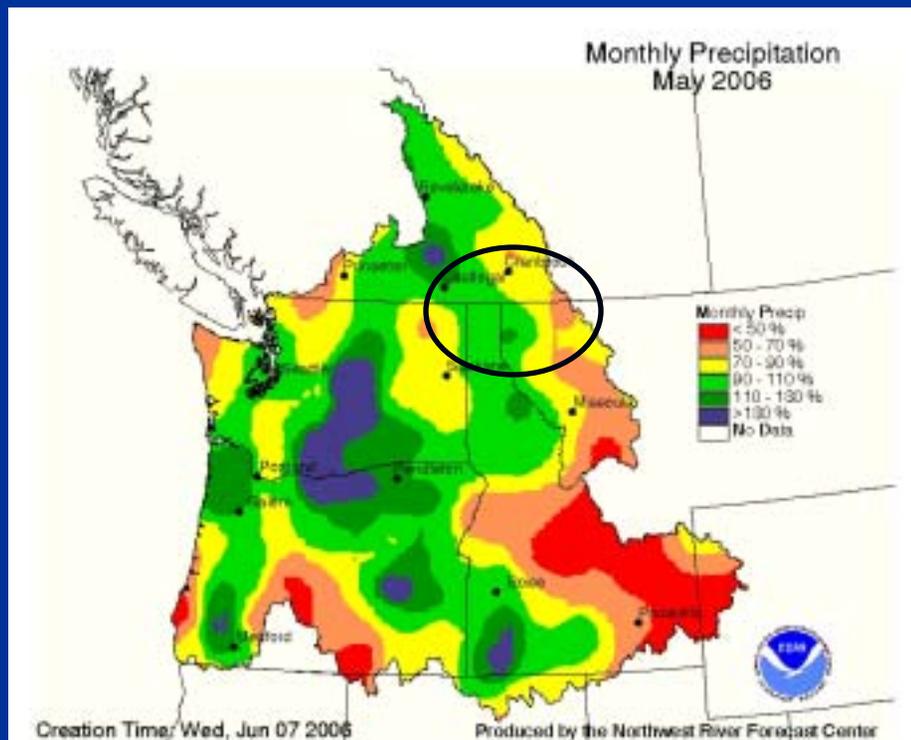
¹Snow Index courtesy of Environment Canada

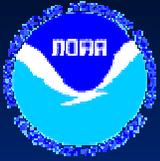


NWRFC Water Supply Monthly Precipitation



- Precipitation Water Supply Index for June reflects the Above Normal Precipitation that occurred the last half of May.





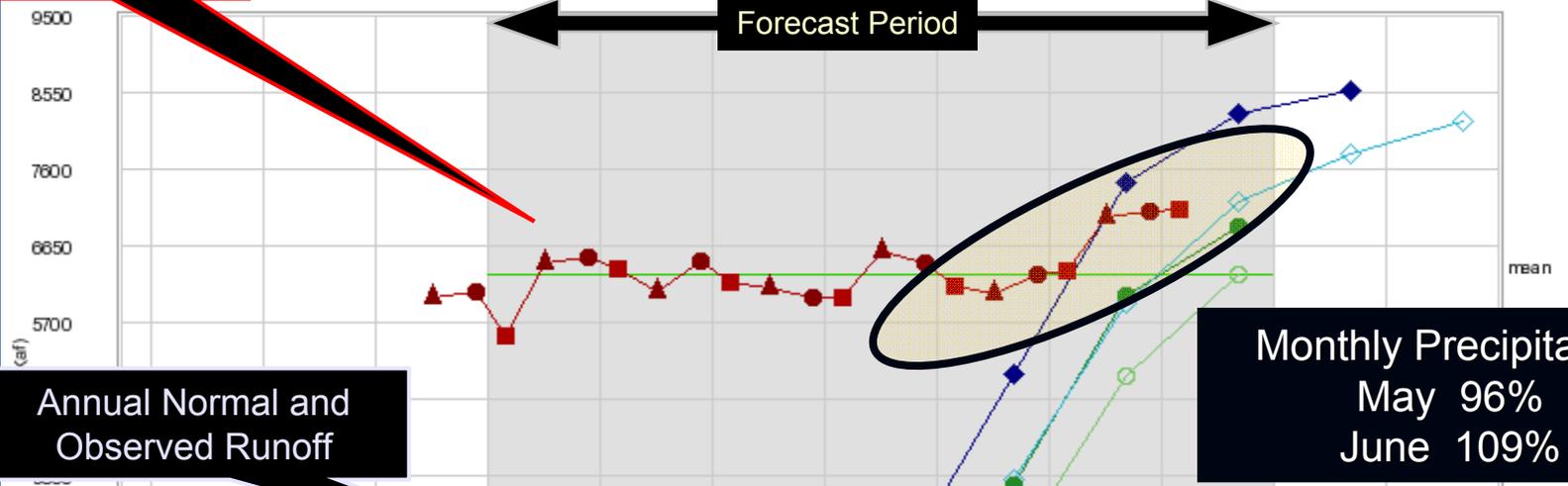
NWRFC Water Supply Seasonal Forecasts – Libby Inflow



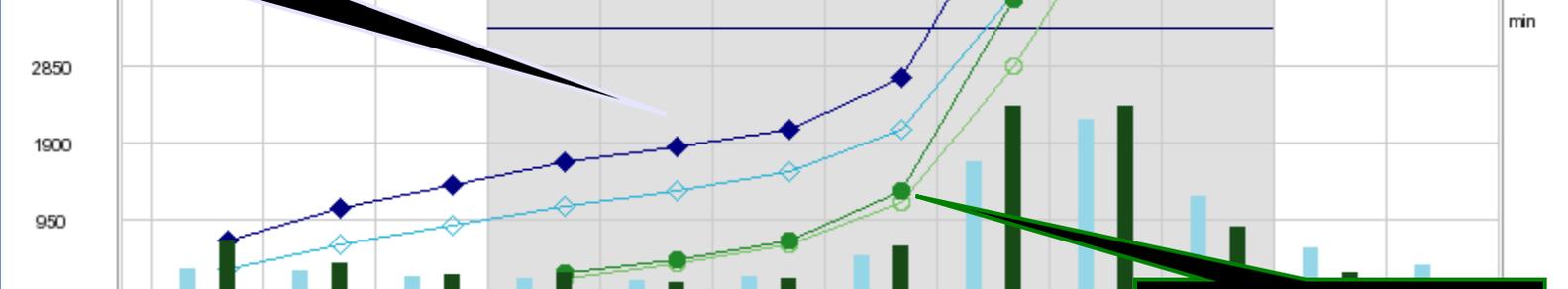
WS Forecasts

LIBBY RES INFLOW, MT (1) (LYDM8)

Water Year 2006, Forecast Period Jan-- Jul, Through Aug 20, 2006



Annual Normal and
Observed Runoff

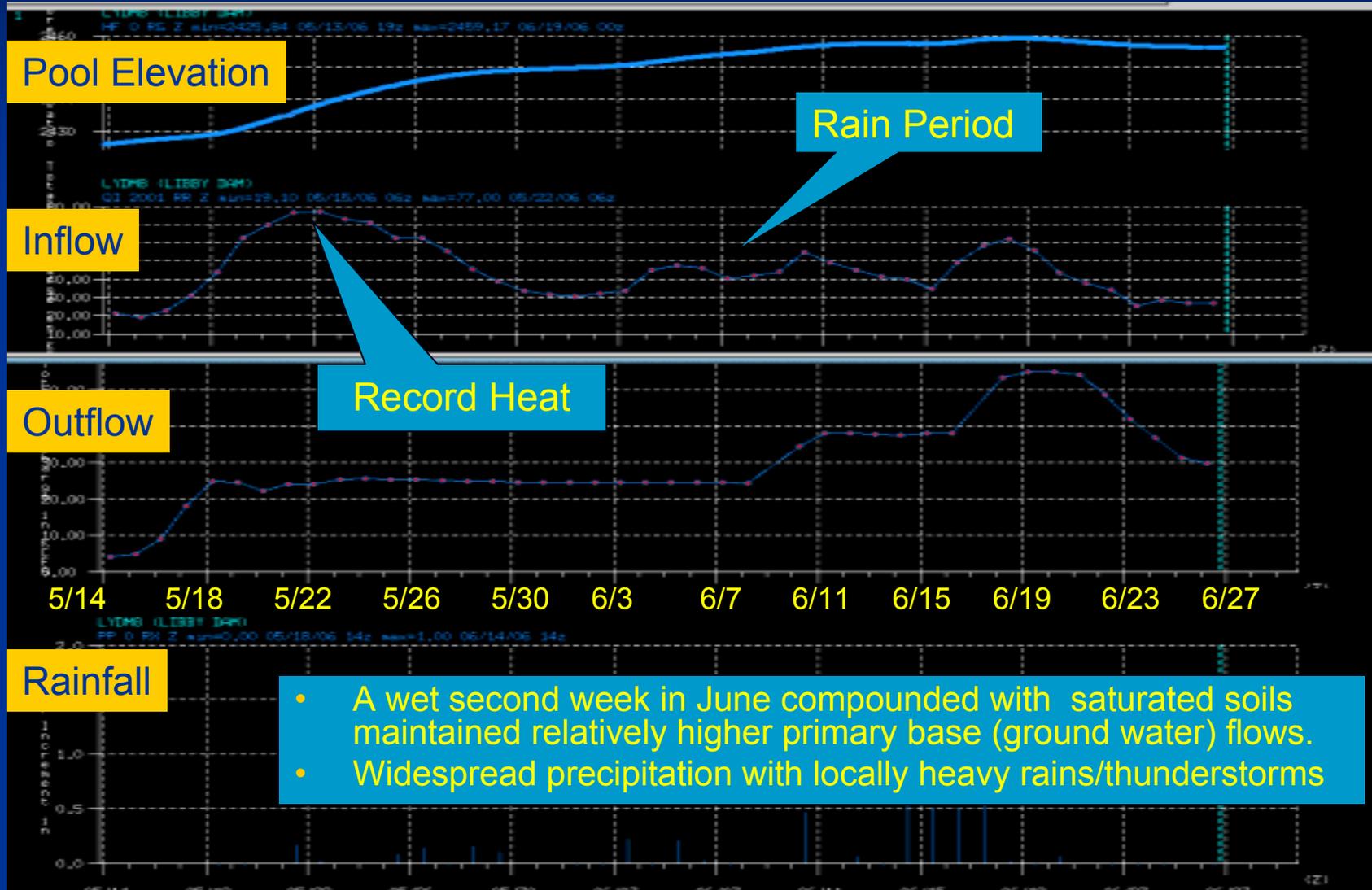


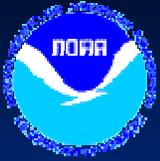
Seasonal Normal and
Observed Runoff

Forecast: Early ● Final ■ Midmonth ▲
 Observed: Monthly Normal □ Current Month ■
 Sum Obs: Sum of Normals ◇ Year to Date ◆ Sum of Normals for Period ○ Forecast Period to Date ●



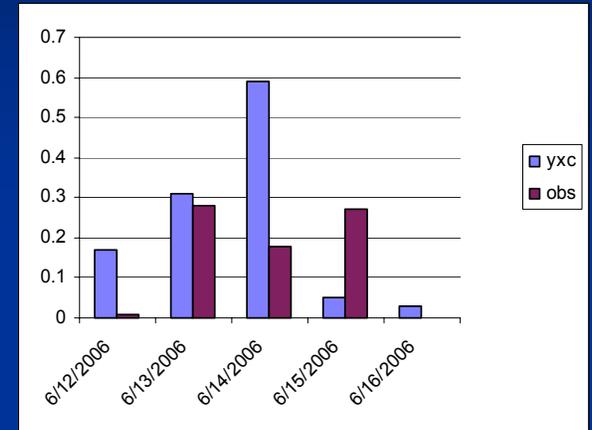
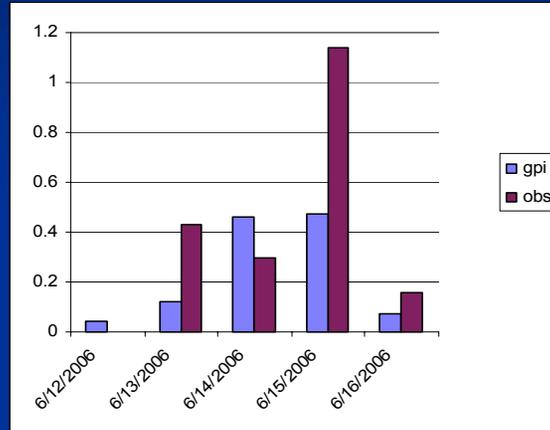
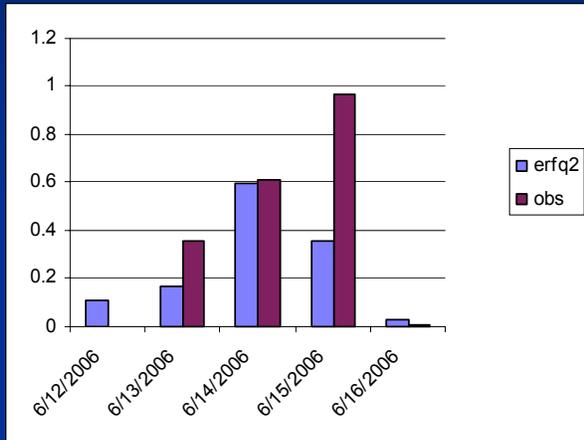
Forecast Assessment Observed Libby Conditions



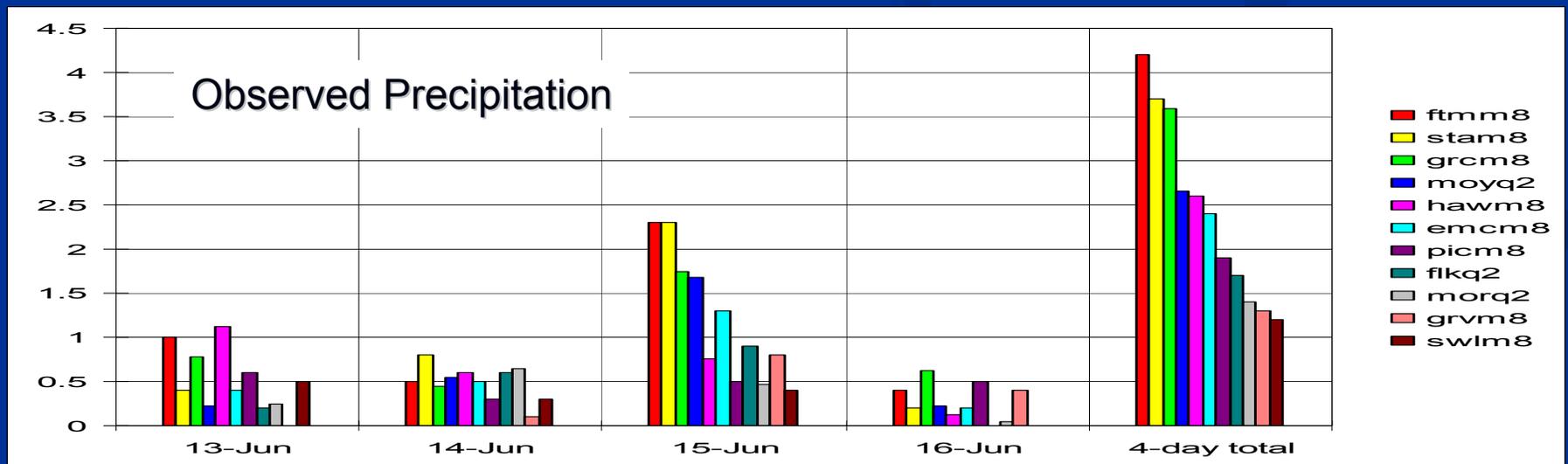


Forecast Analysis

QPS Day 1 for June 12-16



Finding: QPS under forecast



Libby Inflow Forecasts

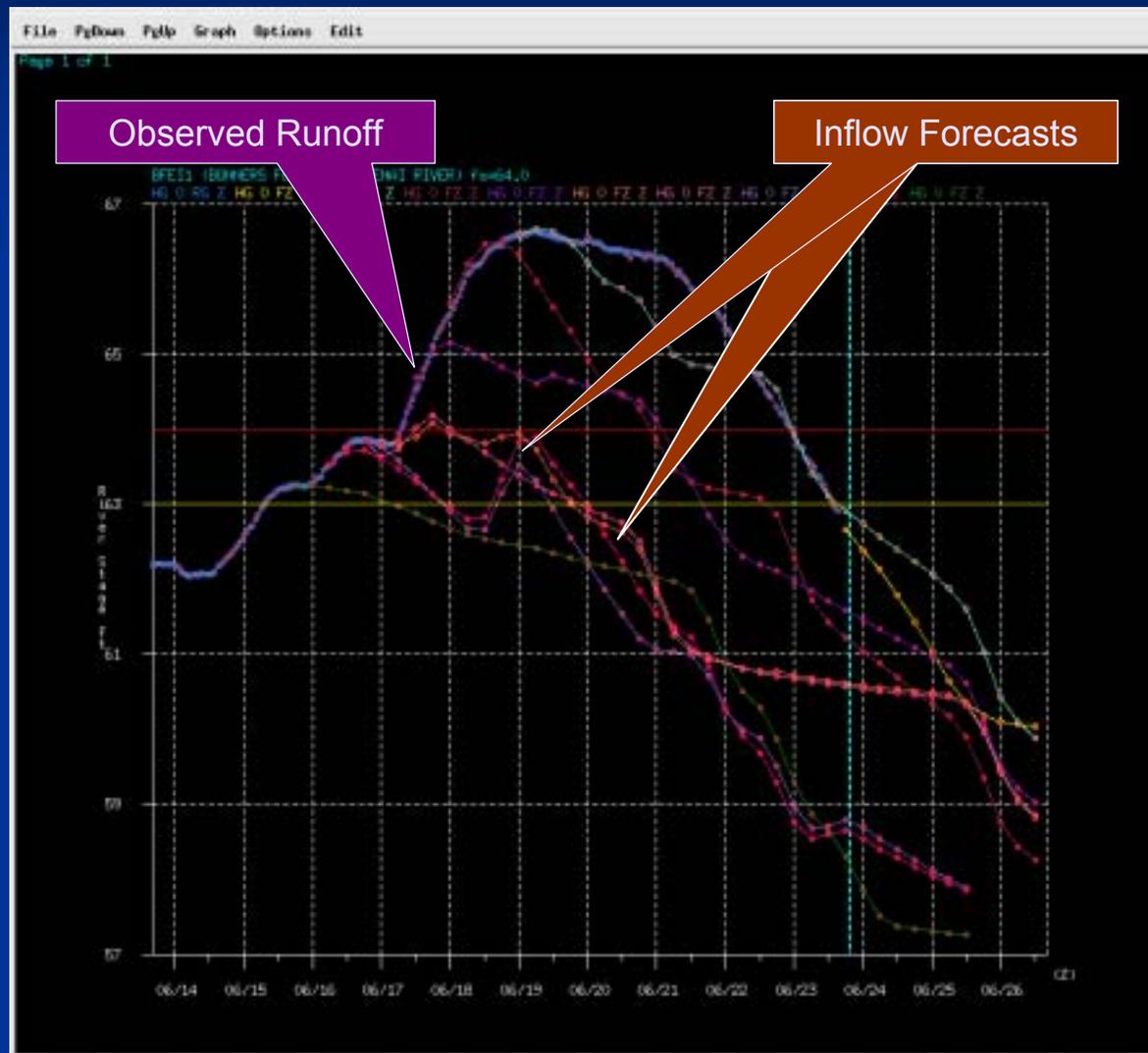
June 13-30





Bonniers Ferry Forecasts

June 14-26





Thank you...