



# Chehalis River Basin Gage Inventory Update

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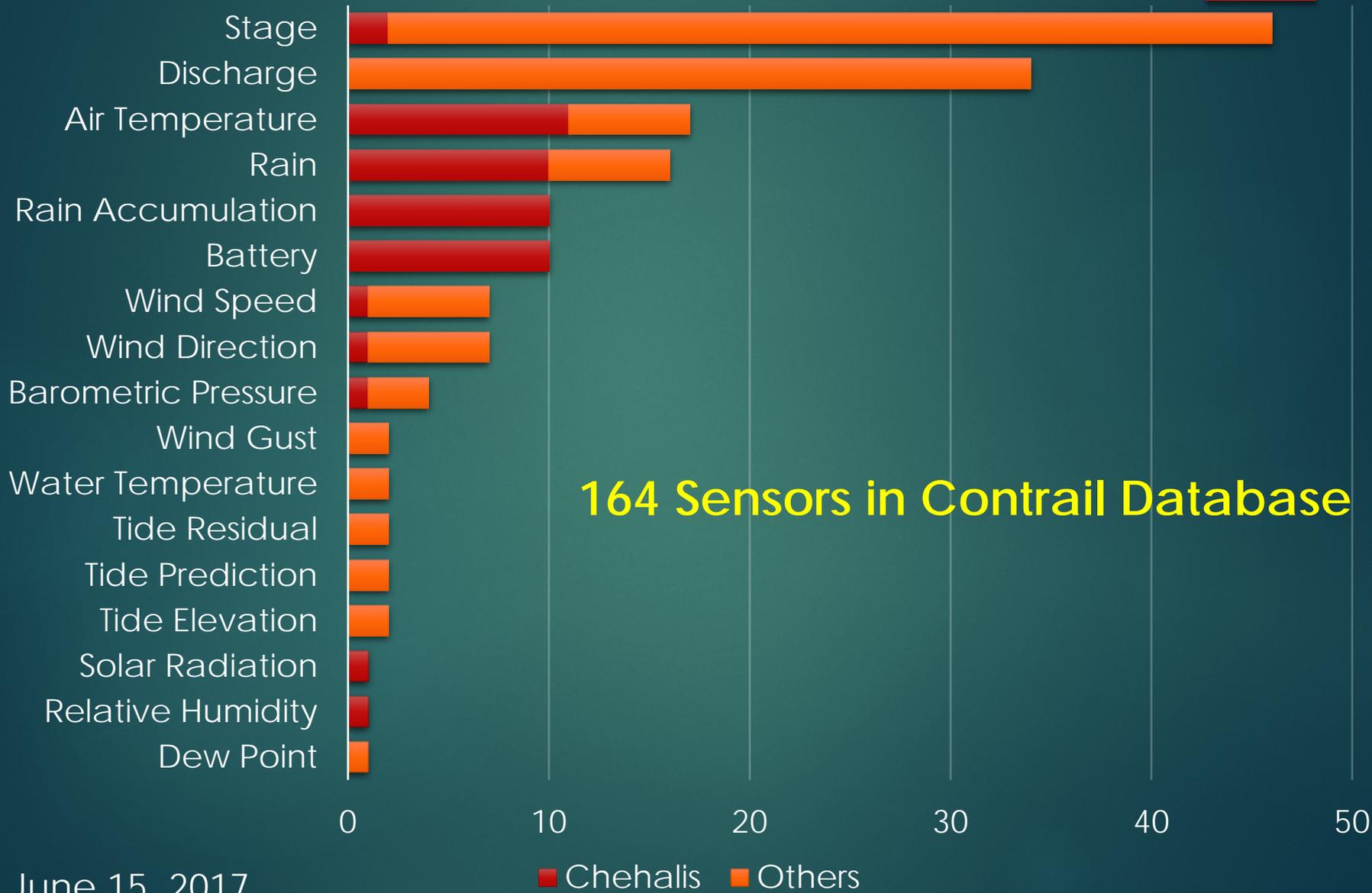
WEST CONSULTANTS

JUNE 15, 2017

# Gage/Sensor Network Study

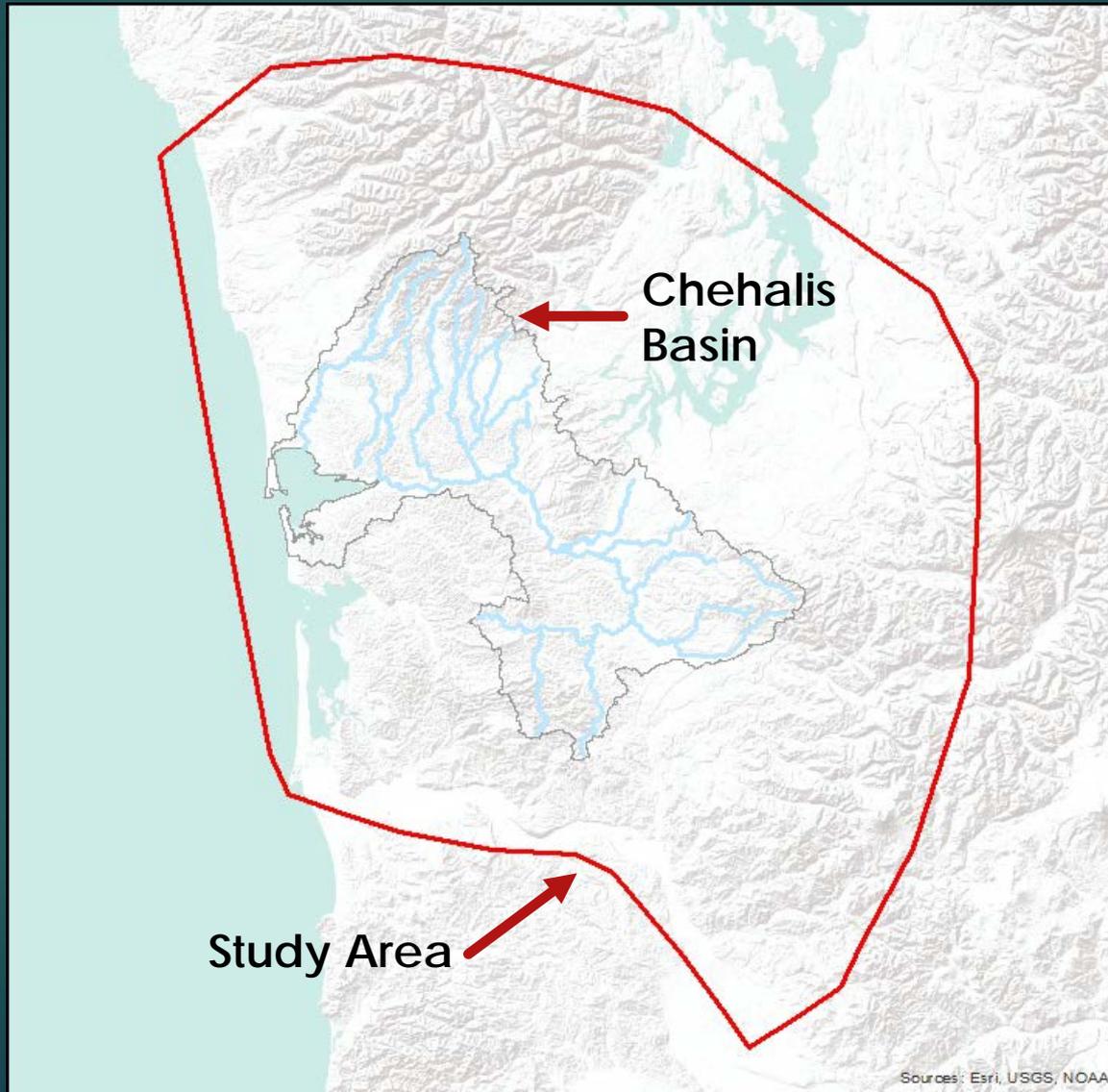
- ▶ Network review/inventory
  - ▶ Assess current state of the network
  - ▶ Identify gaps in monitoring and communication
  - ▶ Identify unmet gage needs
  - ▶ Develop master gage and network strategic plan
- ▶ Common gage datum
  - ▶ Identify key audiences affected by potential change
  - ▶ Develop an outreach and education approach
- ▶ NWS gages
  - ▶ Identify steps to transition NWS gages to USGS
  - ▶ Evaluate rating curves

## Existing Sensors in Contrail

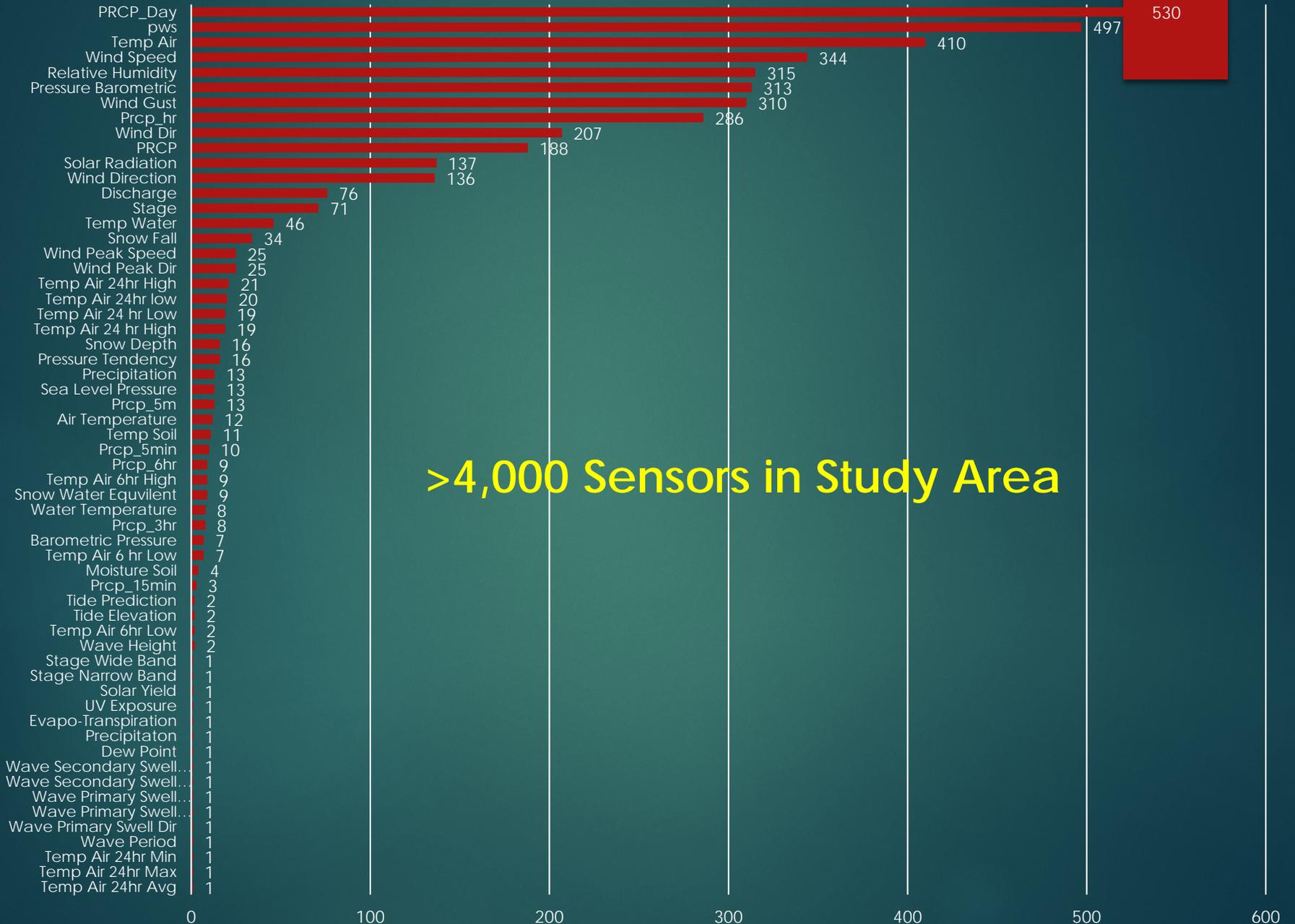


June 15, 2017

# Study Area

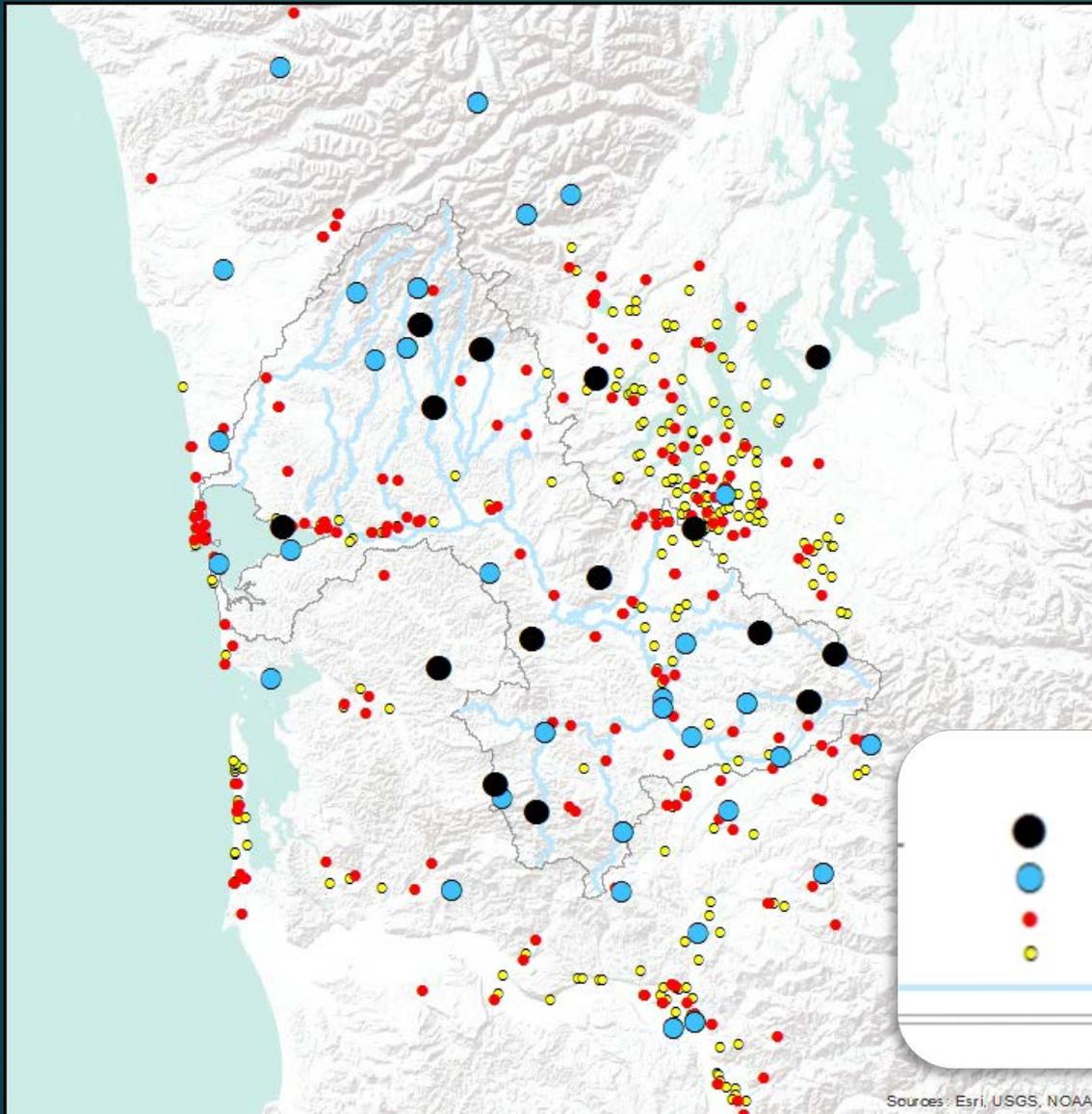


# Sensor Inventory



>4,000 Sensors in Study Area

# Available Sensors



**Legend**

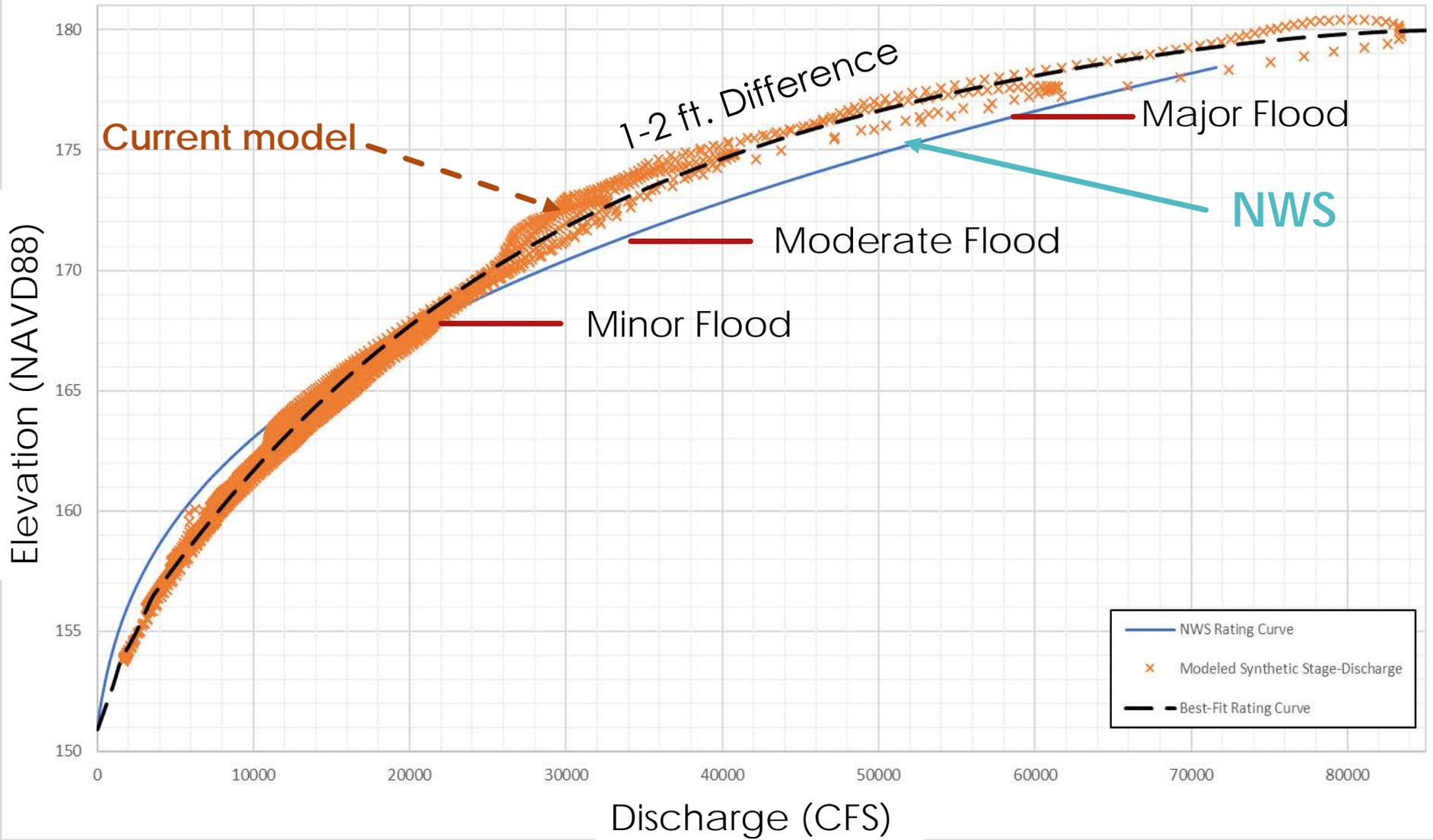
- Sites in Contrail
- Real-time professional with telemetry
- Non-real-time professional with telemetry
- Volunteer without quality control
- Streams and Rivers
- Chehalis Watershed

Sources: Esri, USGS, NOAA

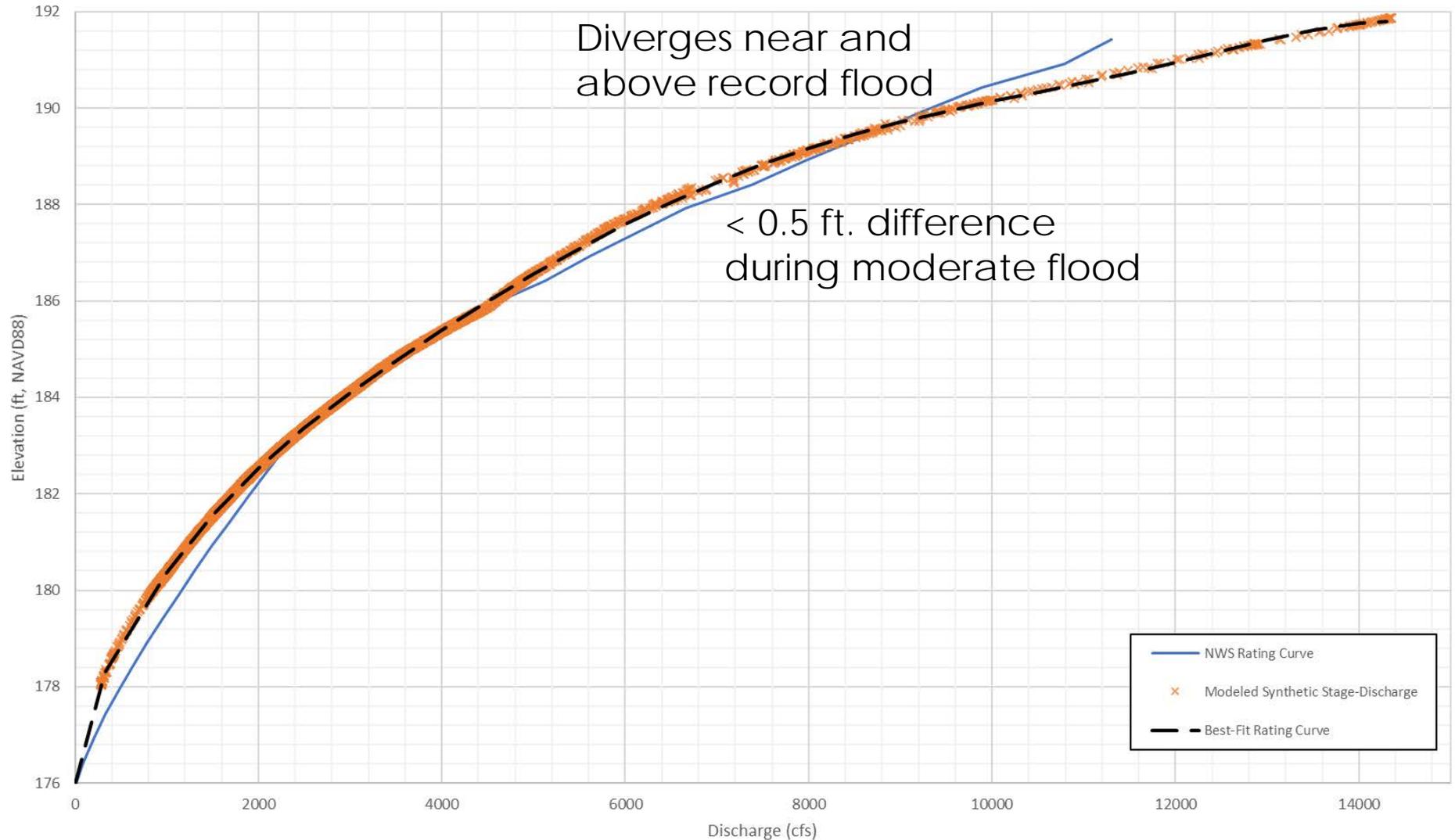
# Gage Datum

Option Number	Name	Description
1	Partial Conversion	Convert vertical datum at gages to NAVD 88. All stream gage datums would be referenced to one datum. Water levels would continue to be displayed in arbitrary or NGVD 29 datum. All associated alarms and flood stage information is not affected.
2	Full Conversion	Convert vertical datum at gages to NAVD 88. All stream gage datums would be referenced to one datum. Water levels would be referenced to NAVD 88 and displayed in NAVD 88 elevations. All associated alarms and flood stage information is affected.
3	Status Quo	Option three no conversion. Gages remain referenced to current datum. Displayed water levels are not affected. All associated alarms and flood stage information is not affected.

# NWS Rating Curve Chehalis Near Centralia



# NWS Rating Curve Skookumchuck at Centralia



# Preliminary (Very) Conclusions

- ▶ More automated gages available
  - ▶ >4000 hydrometeorological sensors
  - ▶ Additional gages needed???
  - ▶ Leverage radar
  - ▶ Investigating Contrail upgrade
- ▶ Gage datum
  - ▶ Partial conversion
- ▶ NWS rating curve
  - ▶ Chehalis River at Centralia
  - ▶ Skookumchuck at Centralia