



Ohio River Basin Precipitation Frequency Study

Progress Report
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Outline

- What is the Precipitation Frequency Study?
- Current Status & Recent Progress
- Projected Schedule
- Issues

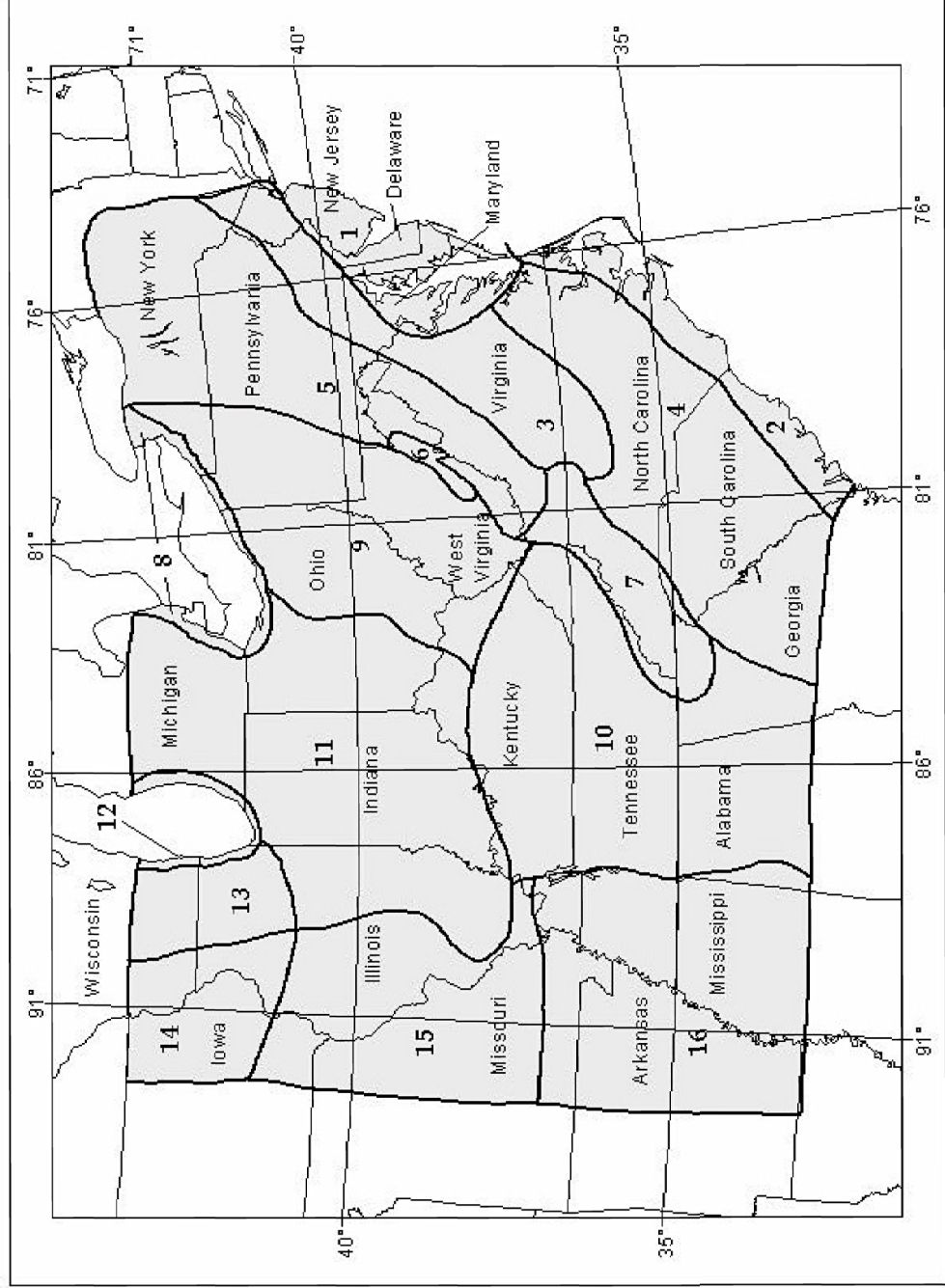


What is The Ohio River Basin Precipitation Frequency Study?

- Update Intensity Frequency Duration Standards:
 - ▶ annual and seasonal durations; 5 minutes - 60 days
 - ▶ return periods; 2 -1000 years
- Will Replace:
 - ▶ Hydro-35, 1977; 5 minutes - 60 minutes
 - ▶ Technical Paper 40, 1961; 30 minutes - 24 hours
 - ▶ Technical Paper 49, 1964; 2 day - 10 day
- High Resolution Gridded Results
- Web Delivery



Study Domain





Current Status

- Data Collection & Quality Control 100%
- Trend Analysis Update 0%
- Seasonal Analysis 50%
- Frequency Analysis 0%
- Spatial Interpolation & Mapping 0%
- External Review 0%
- Depth Area Reduction Relations 20%
- Temporal Distributions 0%
- Documentation 5%



Highlights

- Resolved Statistical Approach in 2001
- Began Application on Semiarid Southwest
- Completed QC of New Data
- Examined Science for:
 - ▶ Depth area relations
 - ▶ Temporal distributions
- Resolved Spatial Interpolation Approach
- Revised Schedule

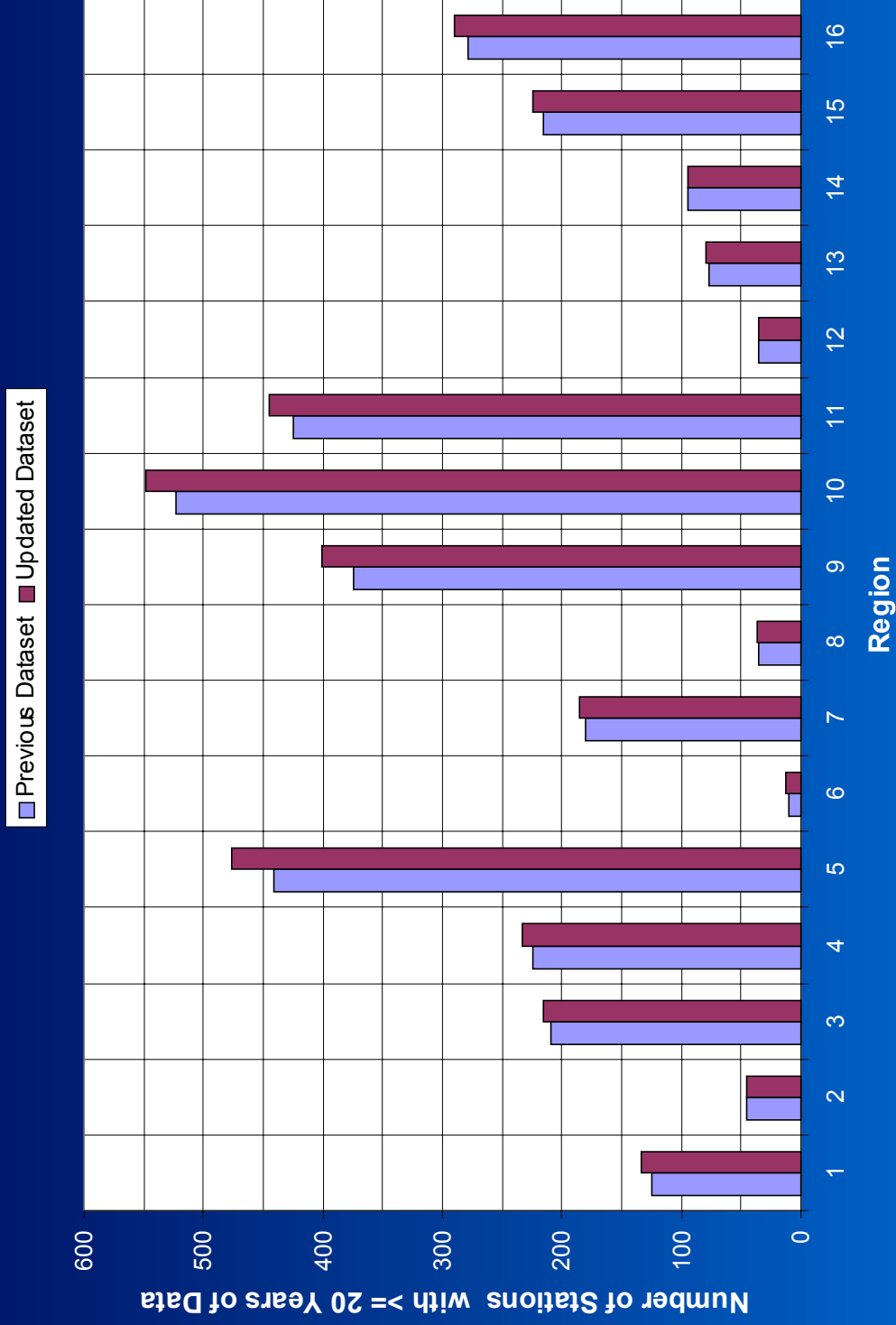


Data Collection & Quality Control

- Complete through December 2000
- Added NCDC Daily Data Prior to 1949
 - ▶ QC Complete
 - ▶ 5% more stations
 - ▶ 5% average increase in data years
- Added USACE Data
 - ▶ QC Complete
 - ▶ Huntington, Louisville, Nashville Districts
 - ▶ Extends record through 2000 at some NCDC sites



Number of Stations



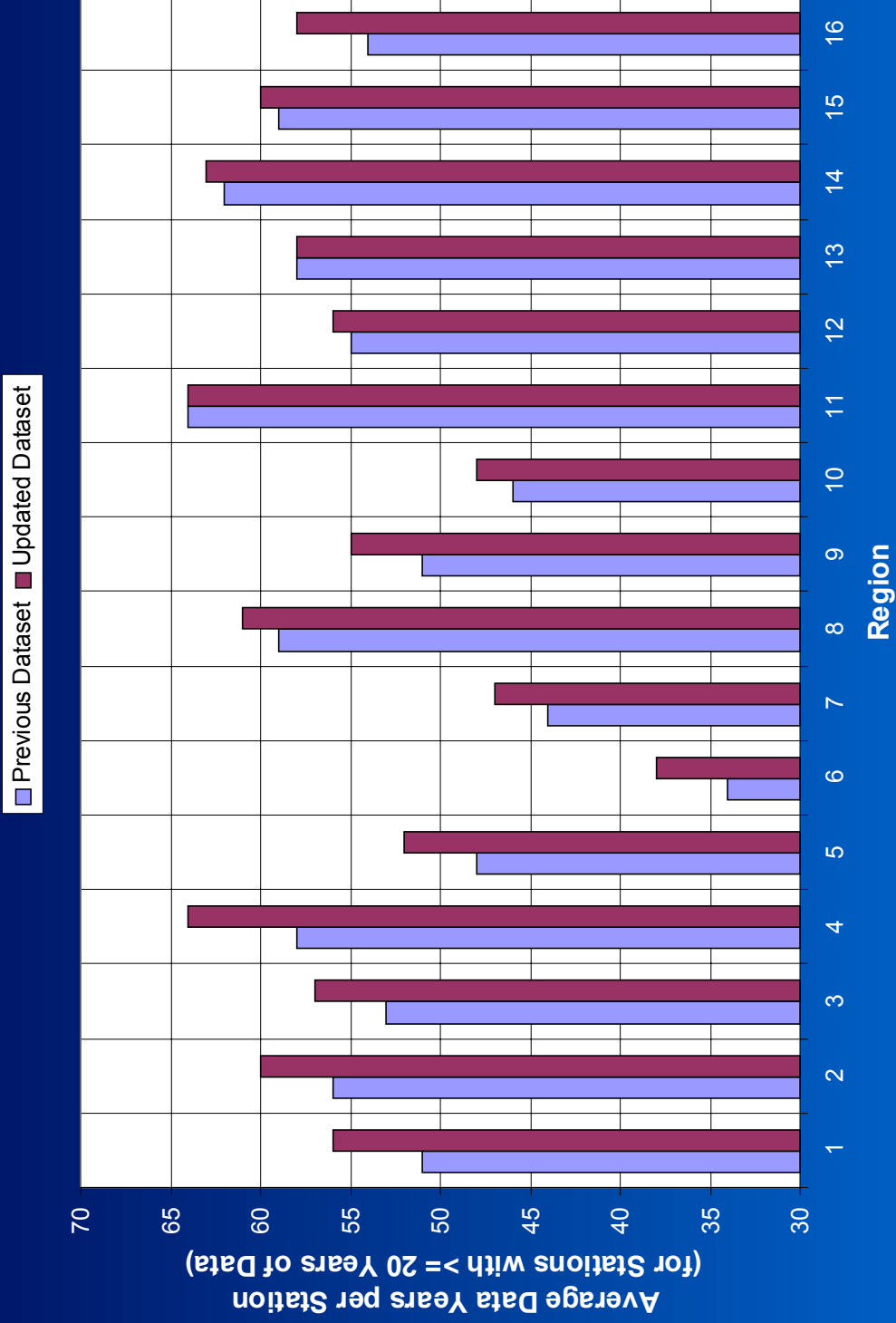


Number of Stations

Region	Daily stations with >= 20 years of data
1	133
2	46
3	216
4	233
5	476
6	13
7	185
8	36
9	401
10	548
11	445
12	35
13	80
14	95
15	224
16	290
Total	3456



Average Station Data Years





Statistical Analysis

- Regional Approach Based on L-Moments
 - ▶ Following Hosking and Wallis, 1997
 - ▶ Will base analysis on annual maximum series
 - ▶ Provide conversions to partial duration results
 - ▶ Peer review point estimates
- Semiarid Southwest Experience
 - ▶ Process running smoothly
 - ▶ Nearly complete for daily and hourly
 - ▶ Solved increase in heterogeneity
 - regional subdivision
 - ▶ Possible causes:
 - increase in variance due to switch from PD to AM
 - increased period of record



Spatial Interpolation

- Use PRISM for Spatial Interpolation
 - ▲ Oregon State University's Spatial Climate Analysis Service
 - Agreement in place
- SCAS:
 - ▲ interpolate distribution function means
- NWS:
 - ▲ compute and apply regional growth factors
- Send Results for Peer Review



Precipitation Frequency Data Server

- Web Based Distribution
- Ready To Go
- New Capability to Distribute Point Estimates
- Will Use for Peer Review of Point Estimates
- Results on Web Before Hard Copy



Projected Schedule

- Completed Review and Update of Schedule
 - Data Collection and Quality Control Mar 2002
 - Statistical Analysis May 2002
 - Peer Review Jun 2002
 - Temporal Distribution Jul 2002
 - Spatial Interpolation Oct 2002
 - Precipitation Frequency Maps Nov 2002
 - Web Publication Jan 2003
 - Depth Area Duration Relations Jan 2003
 - Final Hard Copy Report Mar 2003



National Frequency Update

- Current Projects:
 - ▶ Ohio River Basin and Surrounding States
 - ▶ Semiarid Southwest
 - ▶ Puerto Rico and the Virgin Islands
 - ▶ Hawaiian Islands
- There Is Need for National Update
 - ▶ add recent data
 - ▶ consistent technical approach to:
 - data preparation
 - frequency analysis
 - mapping
 - ▶ consistent and more user-oriented publication
- NOAA/NWS; Independent Broker for Over 50 Years
 - ▶ funds provided by other federal, state and local agencies
- Lots of Interest - Not much Money



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