

# Tye W. Parzybok, GISP

President and Chief GIS Meteorologist

Metstat, Inc.

Windsor, Colorado U.S.A.

[tyep@metstat.com](mailto:tyep@metstat.com)

970.686.1253

## EDUCATION

**B.S. Physical Geography** (atmospheric science emphasis)

June 1993

Oregon State University

Corvallis, OR

## RELATED SKILLS

### *Meteorological & Climatological Techniques*

- Quality control
- Spatial modeling
- Data analysis
- GIS analysis of meteorological data
- Interpret & synthesize meteorological data
- Meteorological measurement & analysis
- Climate analysis
- Spatial analysis & interpolation
- Storm analysis

### *Computer Skills*

- ArcView
- MS Word
- MATLAB
- Perl
- ArcGIS 8.x/9.x
- MS Excel
- Adobe Illustrator
- RAOB
- GRASS GIS
- MS Access
- GrADS
- SPAS (Storm Precipitation Analysis System)
- ArcInfo
- MS Power Point
- UNIX/LINUX scripting

## WORK EXPERIENCE

**President & Chief GIS Meteorologist**

Windsor, CO

Metstat, Inc.

1999 – Present

- 
- Contractor for NOAA's National Weather Service Office of Hydrologic Development
  - Develop precipitation frequency grids/maps using custom programs, GIS, statistics, analyzed maps, climatology and meteorology.
  - Highly involved in NOAA's U.S. Areal Reduction Factor (ARF) update project.
  - Manage, manipulate, create, interpret and document large datasets with differing formats through the use of LINUX/UNIX scripts and programming.
  - Highly involved in the NOAA Atlas 14 precipitation frequency updates.
  - Designed and maintain the NOAA/NWS Precipitation Frequency Data Server (<http://hdsc.nws.noaa.gov/hdsc/pfds/>)
  - Conduct in-depth, meteorological storm studies of extreme precipitation events using SPAS (Storm Precipitation Analysis System).
  - Provide data analysis and meteorological support for hydrometeorological studies, probable maximum precipitation (PMP) and precipitation frequency (PF) studies.
  - GIS consultant.
  - Periodic instructor for UCAR's COMET hydrometeorological classes (e.g. Advanced Hydrologic Sciences Course).

**Research Scientist/GIS Analyst**

Corvallis, OR

The PRISM Group, Oregon State University

1996 – 1999

- 
- Managed, manipulated, created, interpreted and documented large datasets with differing formats, including the on-line datasets (digital maps & climate data), through use of UNIX scripts and Programming.
  - Derived climate maps of snowfall, freeze dates, degree days, extreme precipitation and ~40 other variables using algorithms and GIS for the new National Climatic Data Center (NCDC) Climate Atlas of the United States.

- Quality checked, manipulated and created 102 years (1985-1996) of high resolution, sequential temperature and precipitation maps for the United States as part of the NOAA/NASA Climate and Global Change Project . Participated in a similar collaborative project (VEMAP) in 1997.
- Served as a guest lecturer for weather/climate-related topics and conducted weather map discussions for college-level atmospheric science course.
- Provided GIS expertise in developing maps with ARC/INFO and Arcview. Supervised undergraduate/graduate students conducting GIS and data related tasks.
- Author of several technical reports, , monthly summaries, special reports, and storm summaries.
- Studied climate/weather patterns, including El Nino, and helped produce long-range weather outlooks for Oregon.

#### **Operational Meteorologist/Forecaster**

WeatherBank, Inc.

Salt Lake City, UT

1994 – 1995

---

- Provided and generated site-specific weather forecasts and warnings for a variety of U.S. clients.
- Streamlined a method for tracking, recording and utilizing incoming real-time weather observations.
- The staff climate expert responsible for handling climate-related requests, questions or information.

#### **Graduate Research Assistant**

University of Utah , Meteorology Department

Salt Lake City, UT

1993 – 1994

---

- Conducted meteorological research on the great Mid-West flood of 1993 through statistical analysis.
- Aided in mid-level cloud research to improve the accuracy of Global Circulation Models (GCM's).
- Lead the daily synoptic weather briefing/discussion.

#### **Undergraduate Research Assistant/GIS Technician**

Oregon Climate Service, Oregon State University

Corvallis, OR

1992 – 1993

---

- Contributed research, technical writing and computer skills to several climate reports/studies.
- Established groundwork for a significant 500-mb "map-typing" study.
- Developed elaborate spreadsheets to track and correlate climate trends and atmospheric indices.

#### **Research Assistant**

Colorado Climate Center/CIRA , Colorado State University

Fort Collins, CO

1987 – 1990

---

- Completed various studies on hailstorms, map typing, Doswell days (severe weather) and precipitation amounts vs. cloud reflectivity. Also assisted in climate data archival, processing and analysis.

### **PROFESSIONAL SOCIETIES**

- Certified geographic information systems (GIS) Professional (GISP) since 2005.
- Full member of the American Meteorological Society (AMS) since 1986.
- Member of the National Weather Association (NWA) since 1986.

### **PUBLICATIONS, PRESENTATIONS AND JOURNAL ARTICLES**

- Hultstrand, D.M., **T.W. Parzybok**, E.M. Tomlinson and W.B. Kappel: 2008. Advanced Spatial and Temporal Rainfall Analyses for Use in Watershed Models. In U.S. Geological Survey Scientific Investigations Report: Proceedings of the Third Interagency Conference on Research in the Watersheds, Estes Park, CO, September 8-11 2008 (in press).
- Tomlinson, E.M., W.B. Kappel, **T.W. Parzybok**, D.M. Hultstrand, and G. Muhlestein, 2008. Site-Specific Probable Maximum Precipitation (PMP) Study for the Florence Drainage Basin, AZ.
- Tomlinson, E.M., W.B. Kappel, **T.W. Parzybok**, D.M. Hultstrand, and G. Muhlestein, 2008. Site-Specific Probable Maximum Precipitation (PMP) Study for the Magma Drainage Basin, AZ.
- Tomlinson, E.M., W.B. Kappel, **T.W. Parzybok**, D.M. Hultstrand, and G. Muhlestein, 2008. Site-Specific Probable Maximum Precipitation (PMP) Study for Blenheim-Gilboa Drainage Basin, NY.
- Tomlinson, E.M., W.B. Kappel, P.J. Diederich, **T.W. Parzybok**, and D.M. Hultstrand, 2008. Nebraska Statewide Probable Maximum Precipitation (PMP) Study.
- Bonnin Geoffrey M., Deborah Martin, Bingzhang Lin, **Tye Parzybok**, Michael Yekta David Riley, Daniel Brewer, Lillian Hiner, 2007: Updates to NOAA Precipitation Frequency Atlases. World

Environmental and Water Resources Congress, Tampa, Florida, May 15-19, 2007 hosted by the American Society of Civil Engineers.

- Tomlinson, E.M., W.B. Kappel, **T.W. Parzybok**, D.M. Hultstrand, and G. Muhlestein, 2007. Site-Specific Probable Maximum Precipitation (PMP) Study for the Wanahoo Drainage Basin, Nebraska.
- G.M. Bonnin, D. Todd, B. Lin, **T. Parzybok**, M.Yekta, and D. Riley, 2006: Precipitation-Frequency Atlas of the United States, NOAA Atlas 14 Volume 3, NOAA, National Weather Service, Silver Spring, Maryland, 2006.
- Tomlinson, E.M., W.D. Kappel, **T.W. Parzybok**, B. Rappolt, 2006: Use of NEXRAD Weather Radar Data with the Storm Precipitation Analysis System (SPAS) to Provide High Spatial Resolution Hourly Rainfall Analyses for Runoff Model Calibration and Validation, ASDSO Annual Conference Presentation, Boston, MA.
- B. Lin, G. M. Bonnin, D. L. Martin, **T.W. Parzybok**, M. Yekta, and D. Riley, 2006: Regional Frequency Studies of Annual Extreme Precipitation in the United States Based on Regional L-Moments Analysis, 2006, World Environmental and Water Resources Congress, Omaha, Nebraska, May 21-26, 2006 hosted by the American Society of Civil Engineers.
- **Parzybok, Tye W.** and Edward M. Tomlinson, 2006: A New System for Analyzing Precipitation from Storms, *HydroReview*, Vol. XXV, No. 3, pp. 58-65.
- **Parzybok, Tye W.**, 2004: *Weather Extremes of the West*, Mountain Press, ISBN: 0-87842-473-3, 288 pages.
- G.M. Bonnin, D. Todd, B. Lin, **T.W. Parzybok**, M.Yekta, and D. Riley, 2004: Precipitation-Frequency Atlas of the United States, NOAA Atlas 14 Volume 2, NOAA, National Weather Service, Silver Spring, Maryland, 2004.
- Tomlinson, Edward M., and **T.W. Parzybok**, 2004: Storm Precipitation Analysis System (SPAS), Association of State Dam Safety Officials Annual Conference, Phoenix, Arizona, September 26-30, 2004
- **Parzybok, Tye W.** and Geoffrey M. Bonnin, 2004. Recent Updates To NOAA/NWS Precipitation Frequency Estimates. Annual Colorado Association of Stormwater and Floodplain Managers (CASFM) Conference, Glenwood Springs, CO, September 21-23, 2004.
- Tomlinson, Ed, **T.W. Parzybok**, Ross A. Williams, and Doug Trieste; Review of the Gladstone, Colorado Rainfall Observation, October 5, 1911, Prepared for the Colorado State Engineer Office, March, 2004
- Tomlinson, Edward M., Ph.D., Robert D. Jarrett, Ph.D., **Tye W. Parzybok**, and Douglas J. Trieste, P.H., 2004: "Reanalysis of a Colorado Extreme Rainfall Storm Using GIS, Paleoflood, and Rainfall-Runoff", *The Journal of Dam Safety*, Winter 2004, 21-28.
- G.M. Bonnin, D. Todd, B. Lin, **T.W. Parzybok**, M.Yekta, and D. Riley, 2003: Precipitation-Frequency Atlas of the United States, NOAA Atlas 14 Volume 1, NOAA, National Weather Service, Silver Spring, Maryland, 2003.
- Tomlinson, Edward M., Ross A. Williams, and **T.W. Parzybok**, 2003: Site-Specific Probable Maximum Precipitation (PMP) Study for the Great Sacandaga Lake / Stewarts Bridge Drainage Basin, Prepared for Reliant Energy Corporation, Liverpool, New York, September, 2003
- Todd, T., G. M. Bonnin, B. Lin, **T.W. Parzybok**, M. Yekta, D. Riley, and E. Raynault, 2002: Updated precipitation frequencies for the Semiarid Southwest United States. Symposium on Observing and Understanding the Variability of Water in Weather and Climate, 83rd AMS Annual Meeting, Long Beach, California.
- Raynault, E., G. M. Bonnin, B. Lin, **T.W. Parzybok**, M. Yekta, D. Riley, and D. Todd, 2002: Updated Precipitation Frequencies for the Ohio River basin and surrounding states. Symposium on Observing and Understanding the Variability of Water in Weather and Climate, 83rd AMS Annual Meeting, Long Beach, California.
- Bonnin, Geoffrey M., Bingzhang Lin, **T.W. Parzybok**, 2002: Updated NOAA/NWS Rainfall Frequency Atlases, Symposium on Observing and Understanding the Variability of Water in Weather and Climate, 83rd AMS Annual Meeting, Long Beach, California.
- **Parzybok, Tye W.** and M. Yekta, 2002: NOAA/NWS Precipitation Frequency Data Server. Session on Internet Applications And Web Portals Part III, 19th International Conference on Interactive Information Processing Systems (IIPS) for Meteorology, Oceanography, and Hydrology, Long Beach, California.
- Daly, Christopher, Timothy Kittel , Alan McNab, Andy Royle , Wayne Gibson, **T.W. Parzybok**, Nan Rosenbloom , George Taylor, and Hank Fisher. 1999, Development of a 102-year High-Resolution Climate Data Set for the Conterminous United States. In print: Proc., 11th AMS Conference on Applied Climatology , Amer. Meteorological Soc., Dallas, TX, Jan 10-15, 1999.

- Daly, Christopher, George H. Taylor, Wayne Gibson, and **T.W. Parzybok** . 1998, Development of High-Quality Spatial Climate Datasets for the United States. In Proc., First International Conference on Geospatial Information in Agriculture and Forestry , Lake Buena Vista, FL, June 1-3, 1998.
- Boyal, James R., James E. Warila, Robert L. Beschta and **T.W. Parzybok** . 1997, Cumulative Effects of Forestry Practices: An Example Framework for Evaluation from Oregon, U.S.A.. Biomass and Bioenergy , 13, 223-245.
- **Parzybok, Tye W.**, Wayne Gibson, Christopher Daly and George H. Taylor. 1997, Quality Assurance of Climatological Data for the VEMAP Project . In Proc., 10th AMS Conference on Applied Climatology , pp. 215-216, Amer. Meteorological Soc., Reno, NV, Oct. 20-23, 1997.