



# ***Overview of a proposed Hydrometeorological Testbed (HMT) core facility at the Hydrometeorological Prediction Center (HPC)***



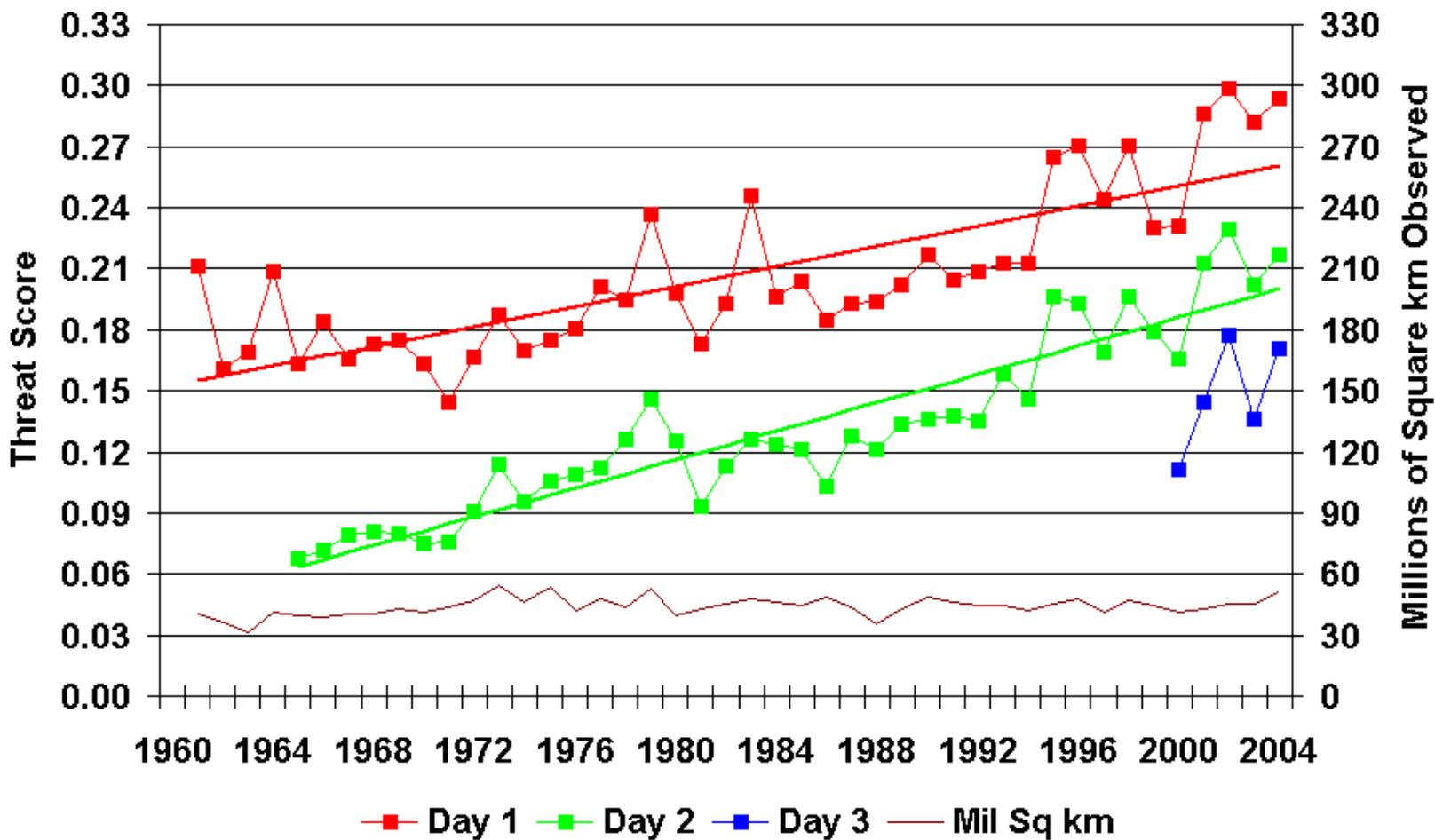
- Why is an HMT needed?
- Vision for the HMT
- Scientific areas of particular need and interest for the HMT
- International component of the HMT

March 3, 2005

*Jim Hoke  
Director, HPC & OPC*

# Case for a Hydromet Testbed: Accuracy of Precipitation Forecasts Is Improving, but Much Better Forecasts Are Needed

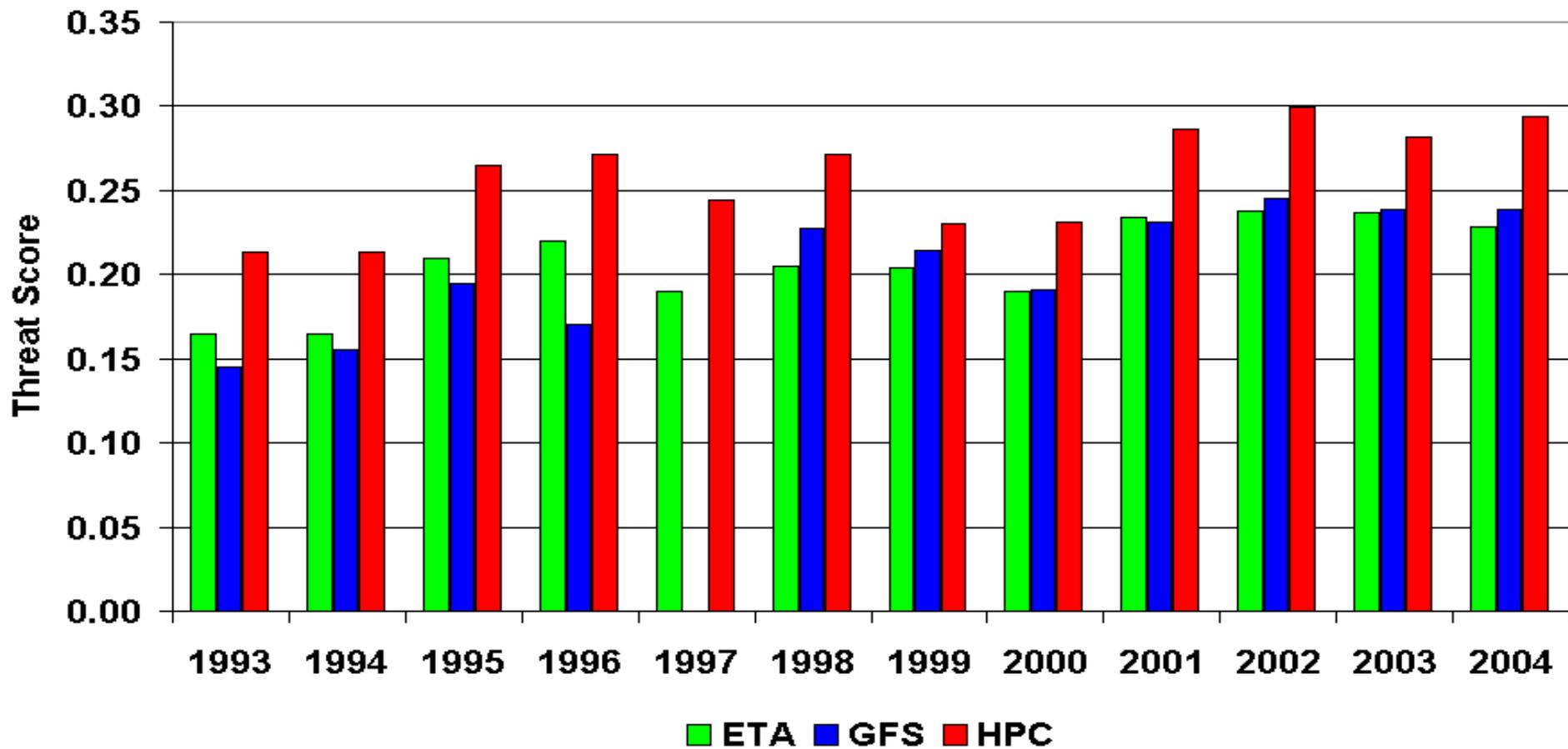
## HPC 1-inch Threat Score for Days 1, 2, & 3





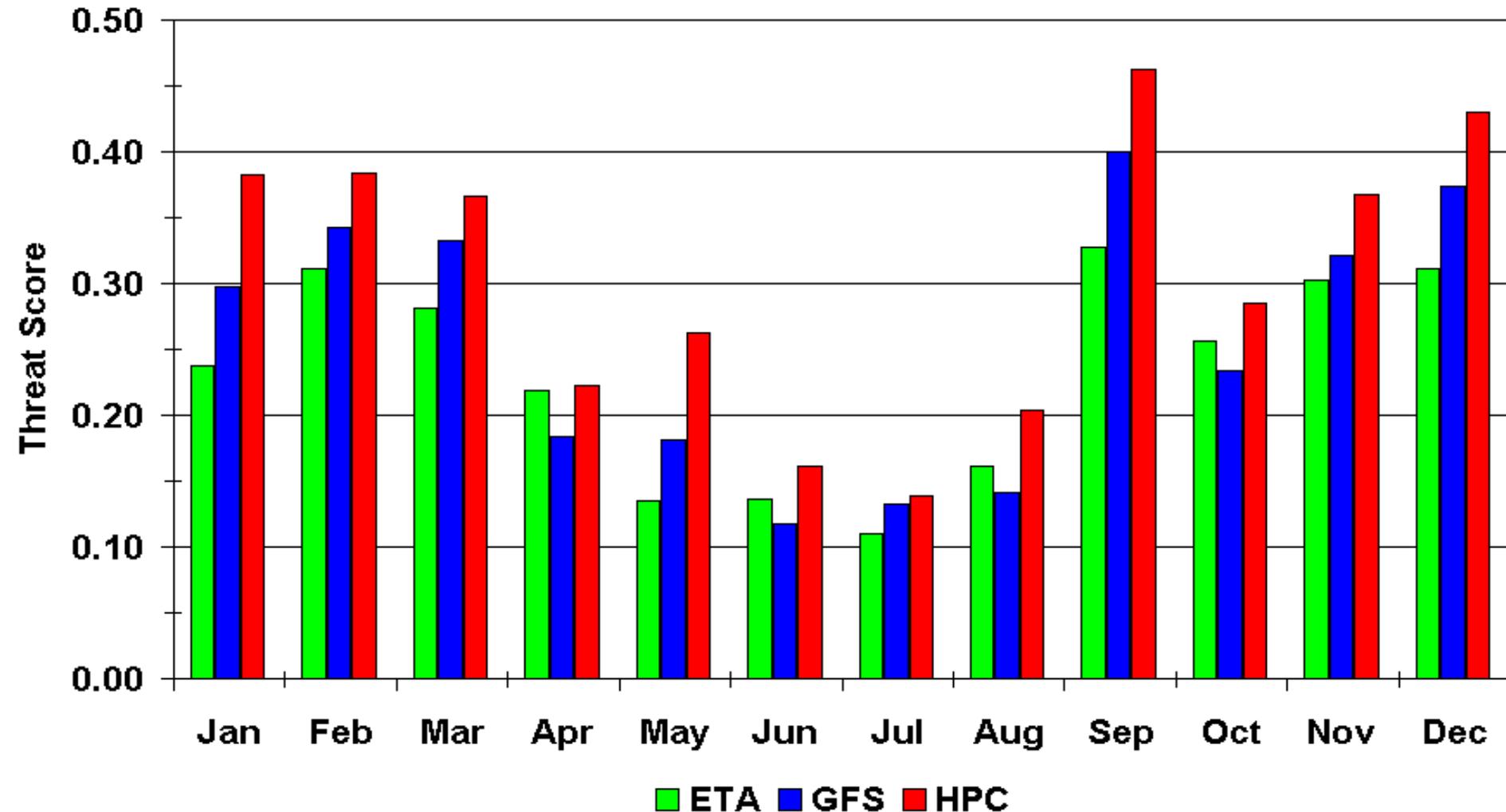
# HPC Forecasters Add Value to Model Quantitative Precipitation Forecasts (QPFs)

Eta Model, Global Forecast System (model), and HPC 1-inch Threat Score for Day 1



# Warm Season QPF Skill is Low

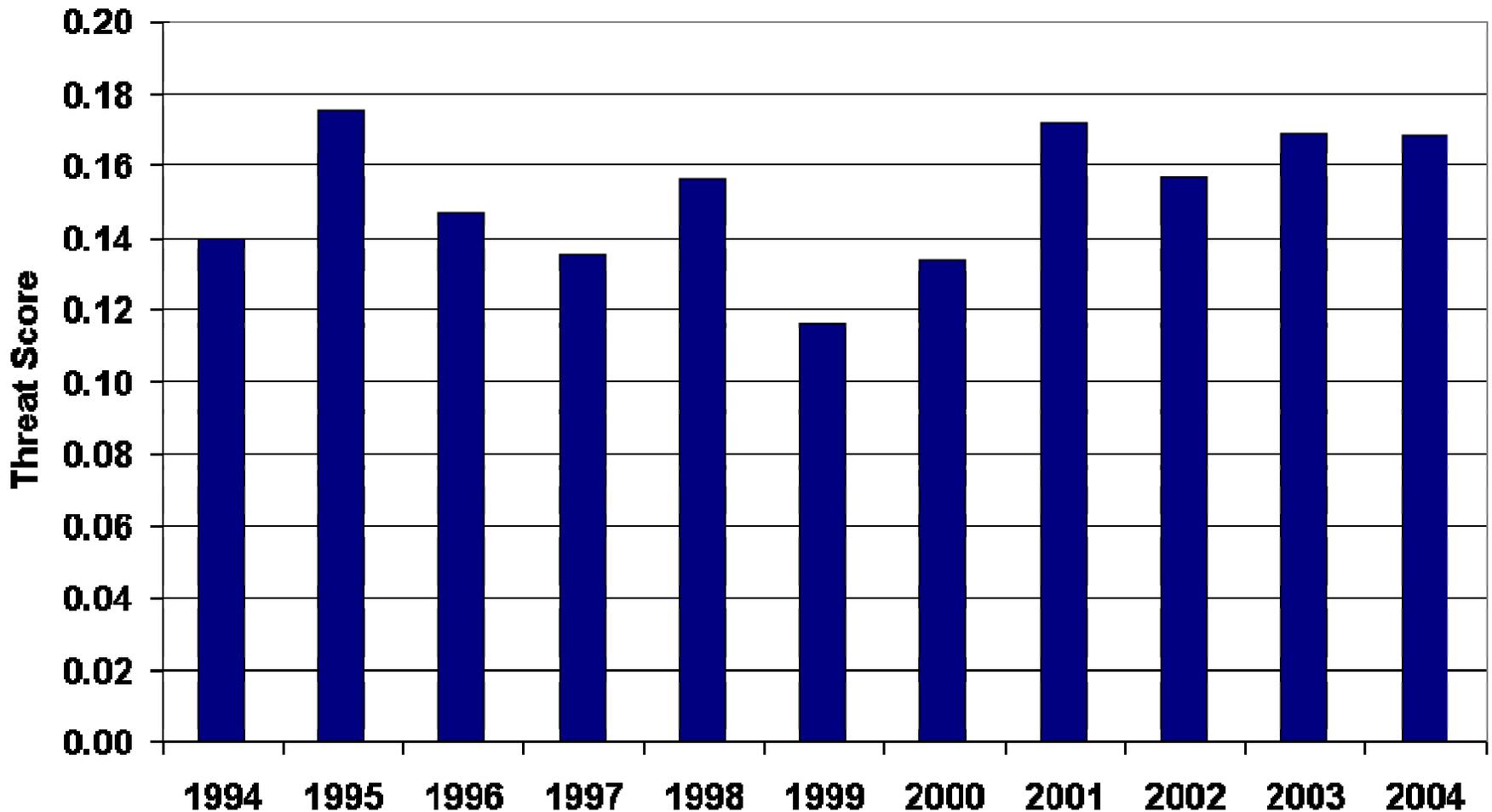
Eta, GFS, & HPC 1-inch Threat Score for Day 1 (Jan-Dec 2004)





# Little Improvement in Warm Season QPF Skill

HPC 1-inch Threat Score for Day 1 (June, July, August)

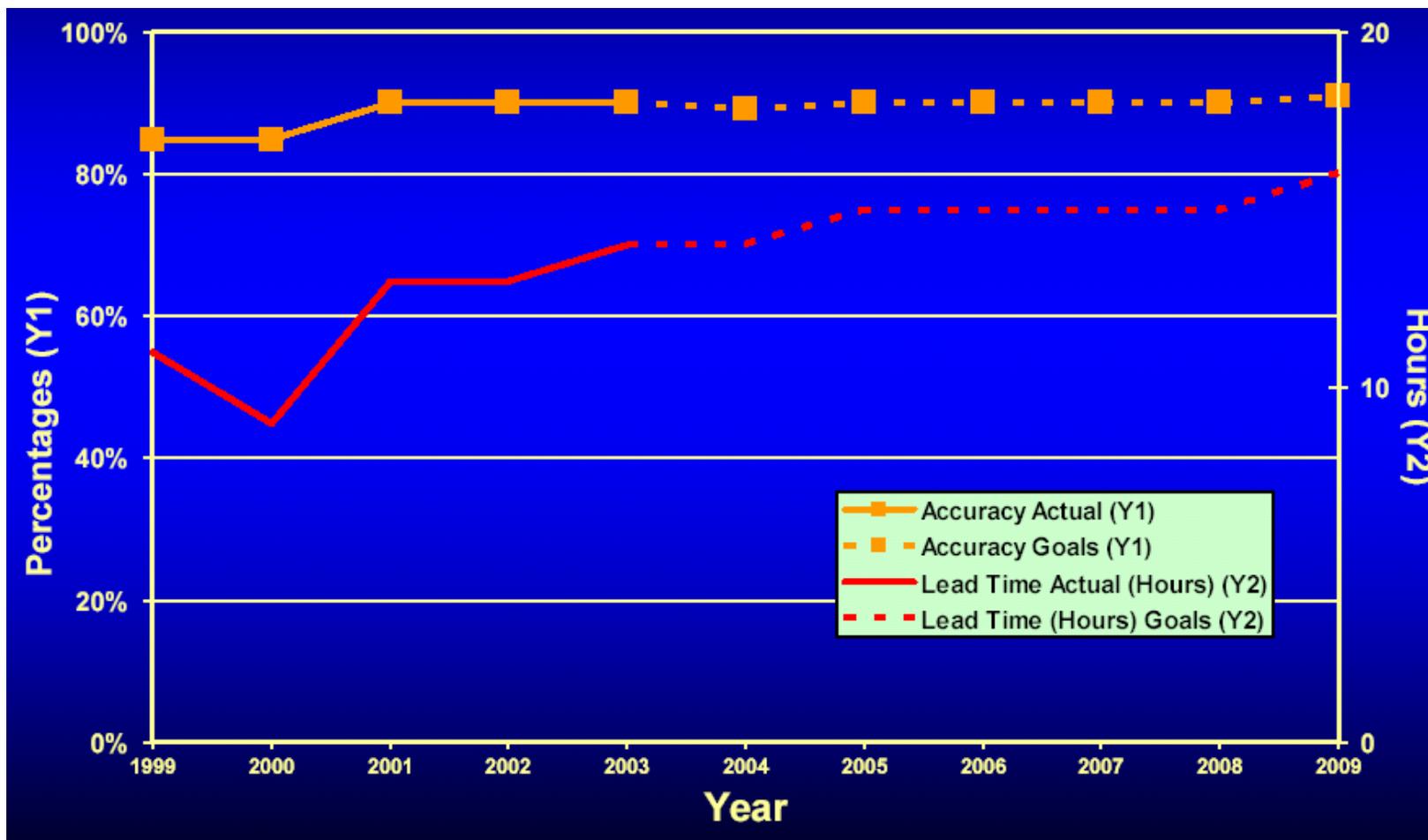




# Additionally, Still Need To Improve Winter Weather Forecasts



## U.S. NWS Accuracy and Lead Time for Winter Storm Warnings





# Vision for the Hydromet Testbed



- To accelerate the implementation of operational hydrometeorological products and services, including enhancing & extending forecast skill for high-impact weather, especially precipitation, by facilitating interactions among researchers and operational forecasters.
- The HMT will:
  - transfer more rapidly and smoothly
  - new technology, weather research results, and observational & other scientific advances
  - from the research and development community
  - into improved operational hydrometeorological predictions and services
  - for the hydrologic, emergency management, other communities, and the public,
  - with a **focus on**
    - warm-season and cool-season precipitation
    - out through 14 days, with particular **emphasize on first 3 days**.

# Areas of Particular Need and Interest

- High-impact weather, especially precipitation associated with
  - Land-falling tropical cyclones
  - Weakly forced summertime air masses
  - Winter storms
- Use of ensemble model output and forecaster generation of probabilistic products
- Exploring future roles of weather forecasters

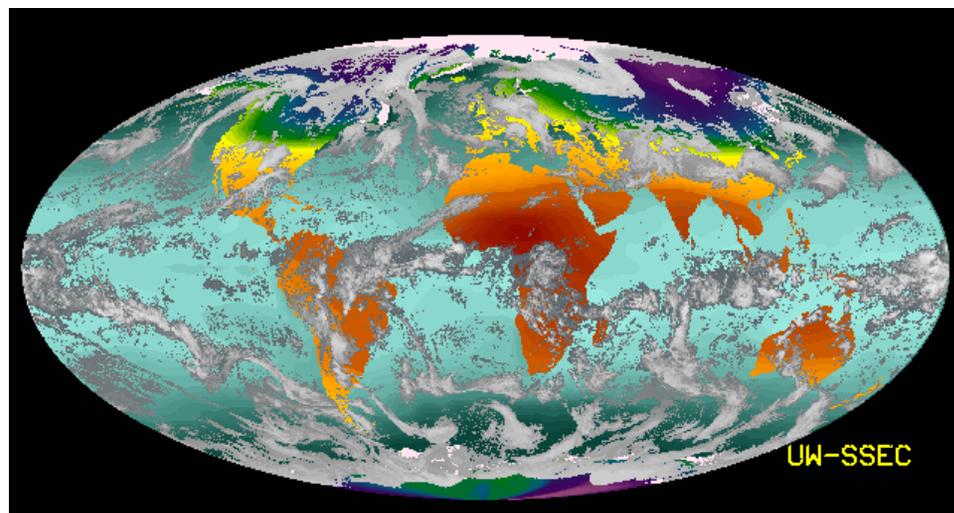
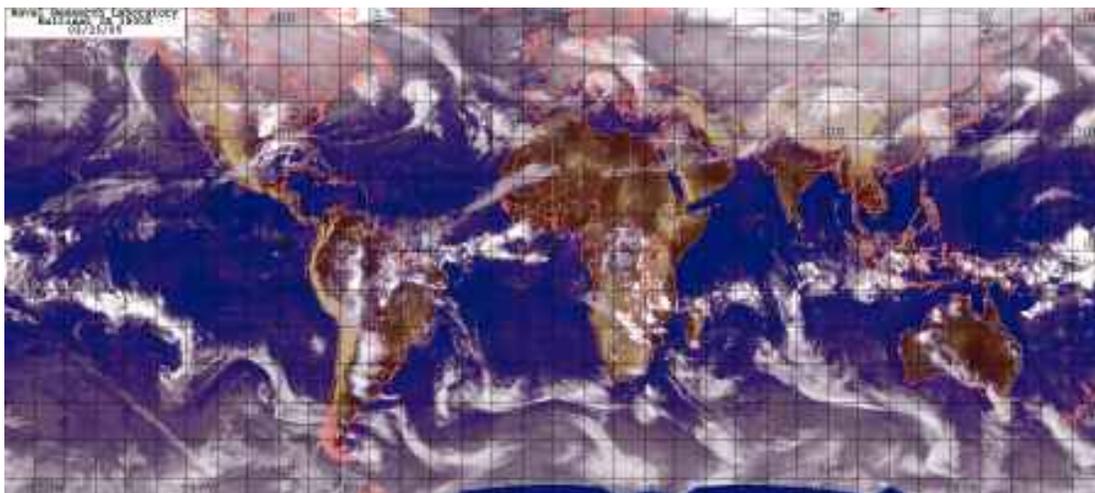


# NCEP Ideally Suited to Host Hydromet Testbed

- **Experience:** HPC has done QPF for over 40 years and continues to add value to model output
- **Co-location of HPC with:**
  - Environmental Modeling Center (EMC)
  - Joint Center for Satellite Data Assimilation (JCSDA)
  - National Precipitation Verification Unit (NPVU)
  - NCEP International Training Desks
    - Currently serve countries in South, Central, & Caribbean America
  - Climate Prediction Center (CPC)
  - Easy access to other NWS & NOAA groups in Washington area
- **HPC expanding real-time collaborative forecast activities with Weather Forecast Offices of the U.S. National Weather Service and others**



# International Component of the HMT





# Status of Hydromet Testbed Proposals



- HMT proposals are being considered by WWRP, NOAA, & USWRP
- WWRP resolution for joint HPC-WWRP Workshop in 2004-2005 at HPC (Oslo, Sep 2003)
  - To explore testbed structure, scope, and terms of participation by WWRP members & NCEP
- Testbed discussion at WWRP Nowcast Working Group meeting (Helsinki, Jun 2004)
- WWRP/SSC briefed on HMT proposal and endorsed U.S.-hosted workshop of Invited Experts to refine the concept of operations and implementation plan for the HMT (Boulder, Oct 2004)
- Preparations ongoing for the *Invited Experts Workshop on a Proposed Hydrometeorological Testbed*, May 17-19, 2005, at HPC
- HMT funding through NOAA requested for Fiscal Year 2007 (Oct 2006-Sep 2007)
- Resources within NCEP being reviewed to see what can be reallocated to support creation of HMT



# Backup Slides





# Proposed Schedule for the Establishment of the HMT

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- **May 2005 – U.S. hosts WWRP-supported *Invited Experts Workshop on a Proposed Hydro-meteorological Testbed* to refine the concept of operations and implementation plan for an international component of the HMT (HPC, Camp Springs, MD)**
- **Jun 2005 – NOAA begins working to implement the recommendations of the *Experts Workshop***
- **Jul 2005 – NCEP establishes management structure for the HMT**
- **Oct 2005 – some limited HMT activities using existing resources**
- **Oct 2006 – proposed NOAA funding for HMT begins**
- **Jan 2007 – expanded HMT operations begin**