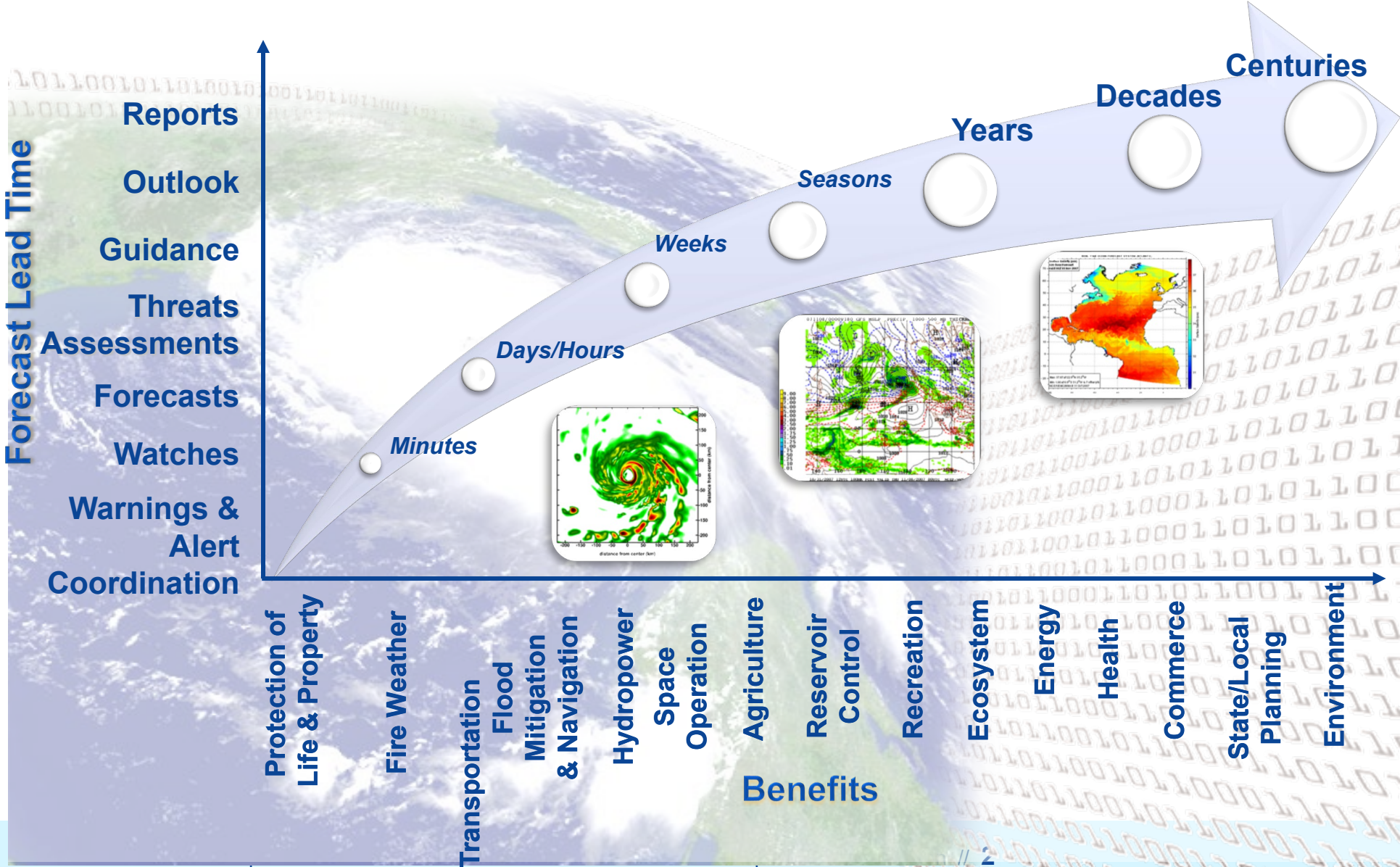


# Computing and Data within NOAA High Performance Computing

**Frank Indiviglio**  
**Chief Technology Officer**



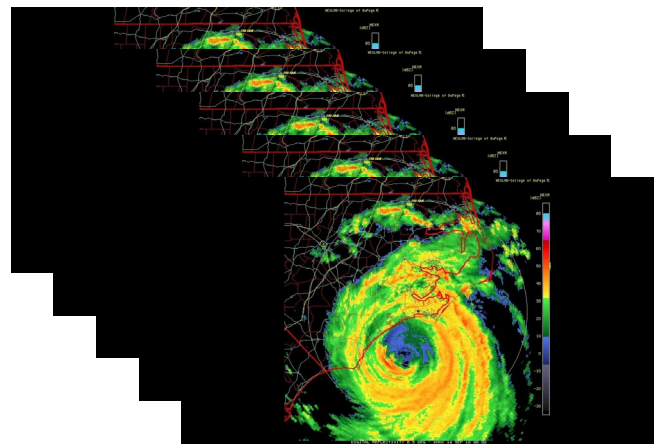
# Continuum of Products





# Prediction Is Complex

10-100s of members

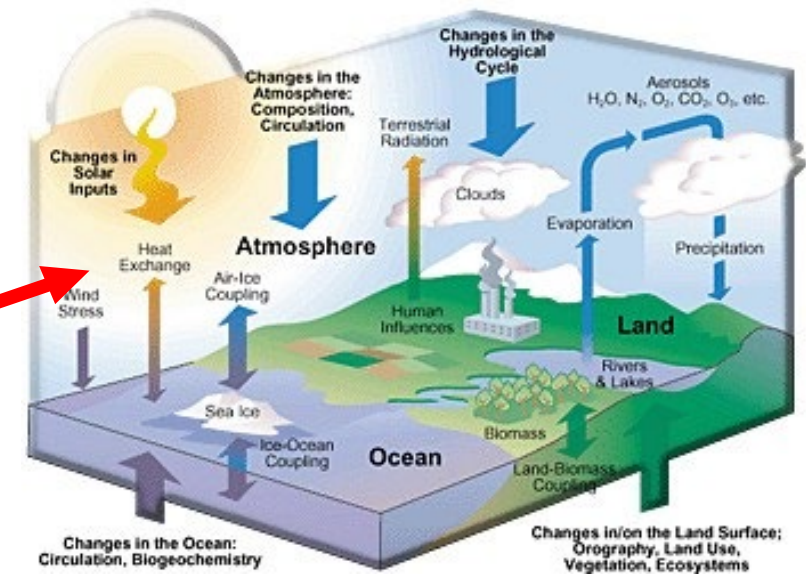


Ensembles

Model Complexity

Model Resolution

## Global Climate System Components



13 KM



3 KM

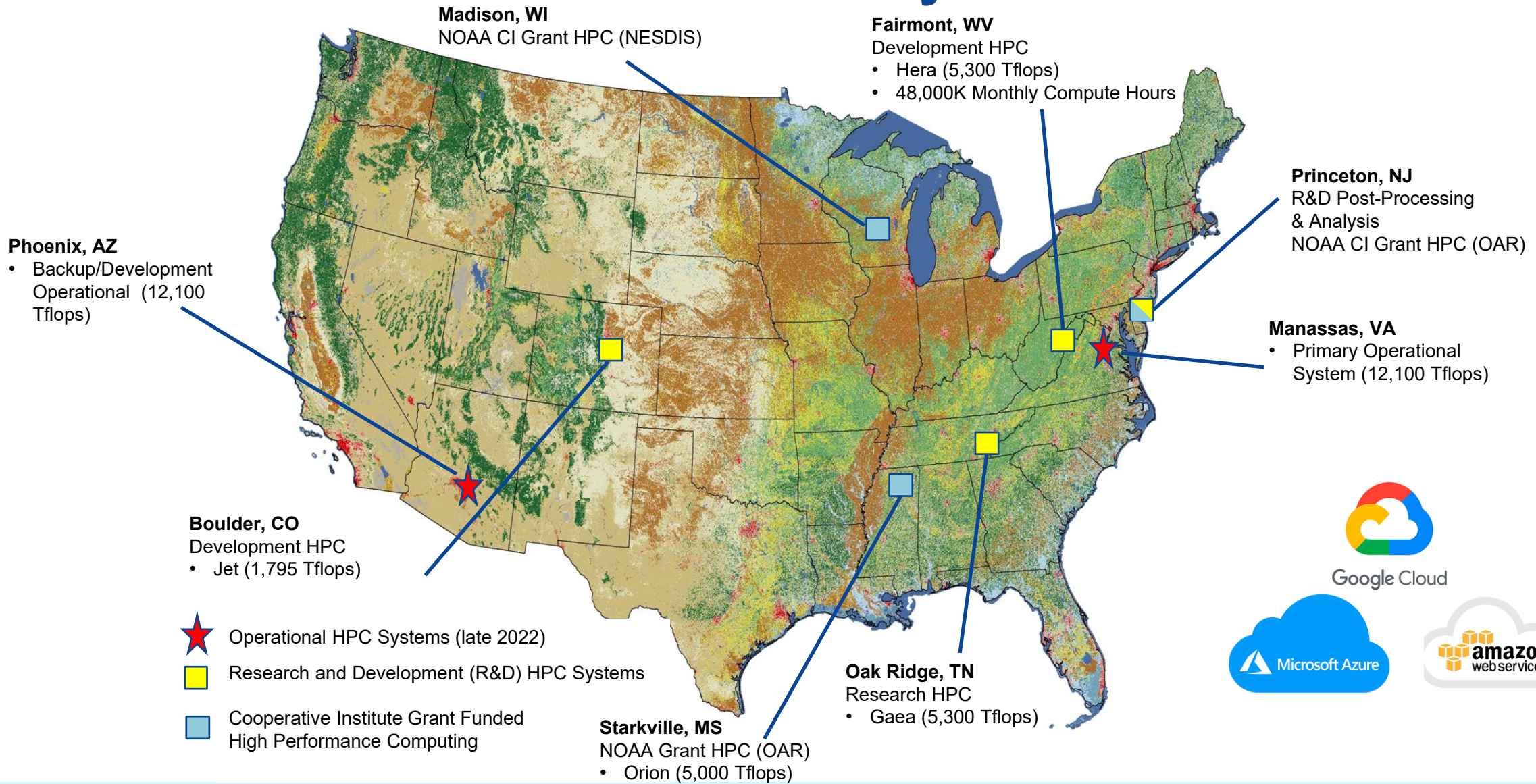


1 KM

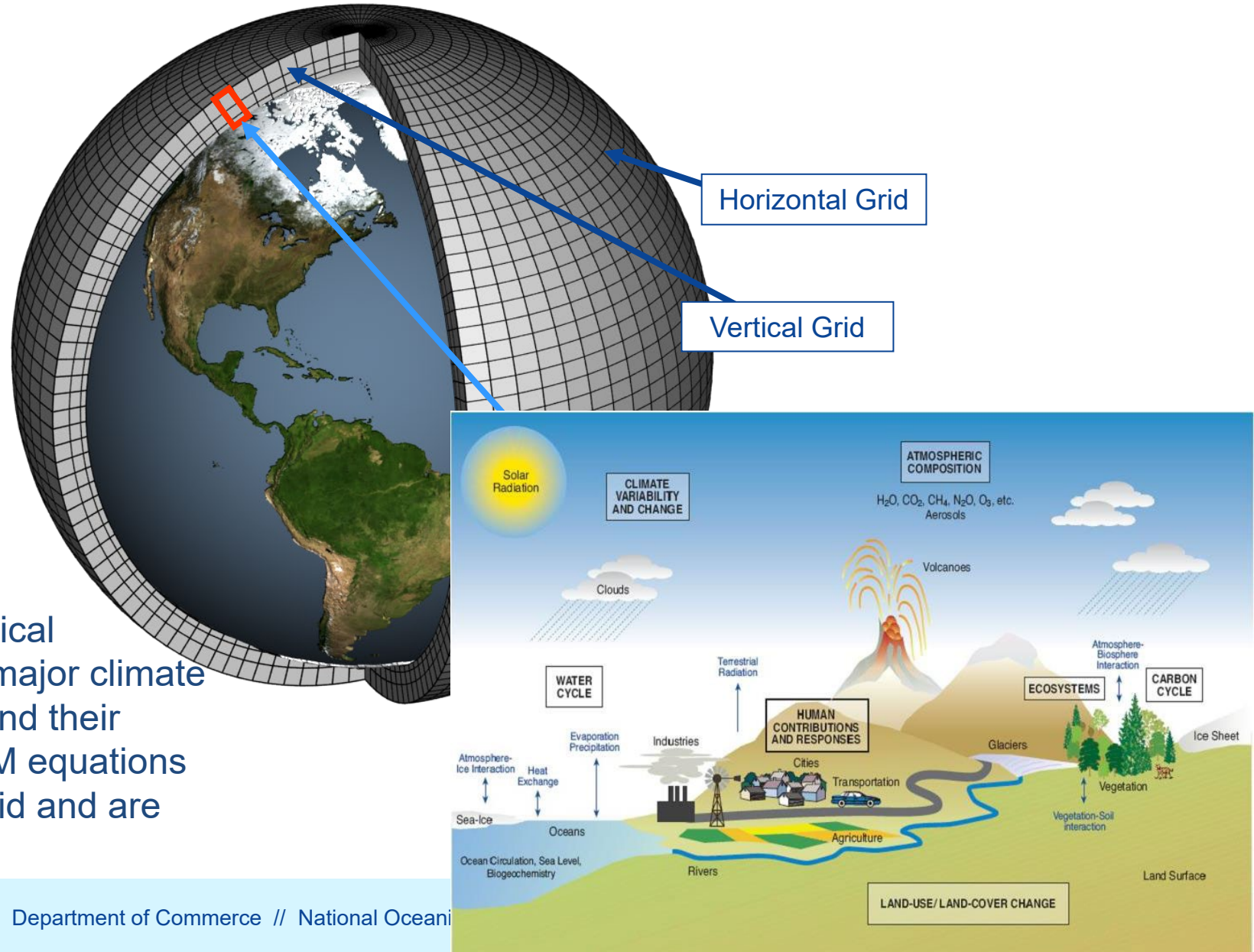




# NOAA's High Performance Computing Locations and Systems



# Schematic Global Climate Model (GCM)



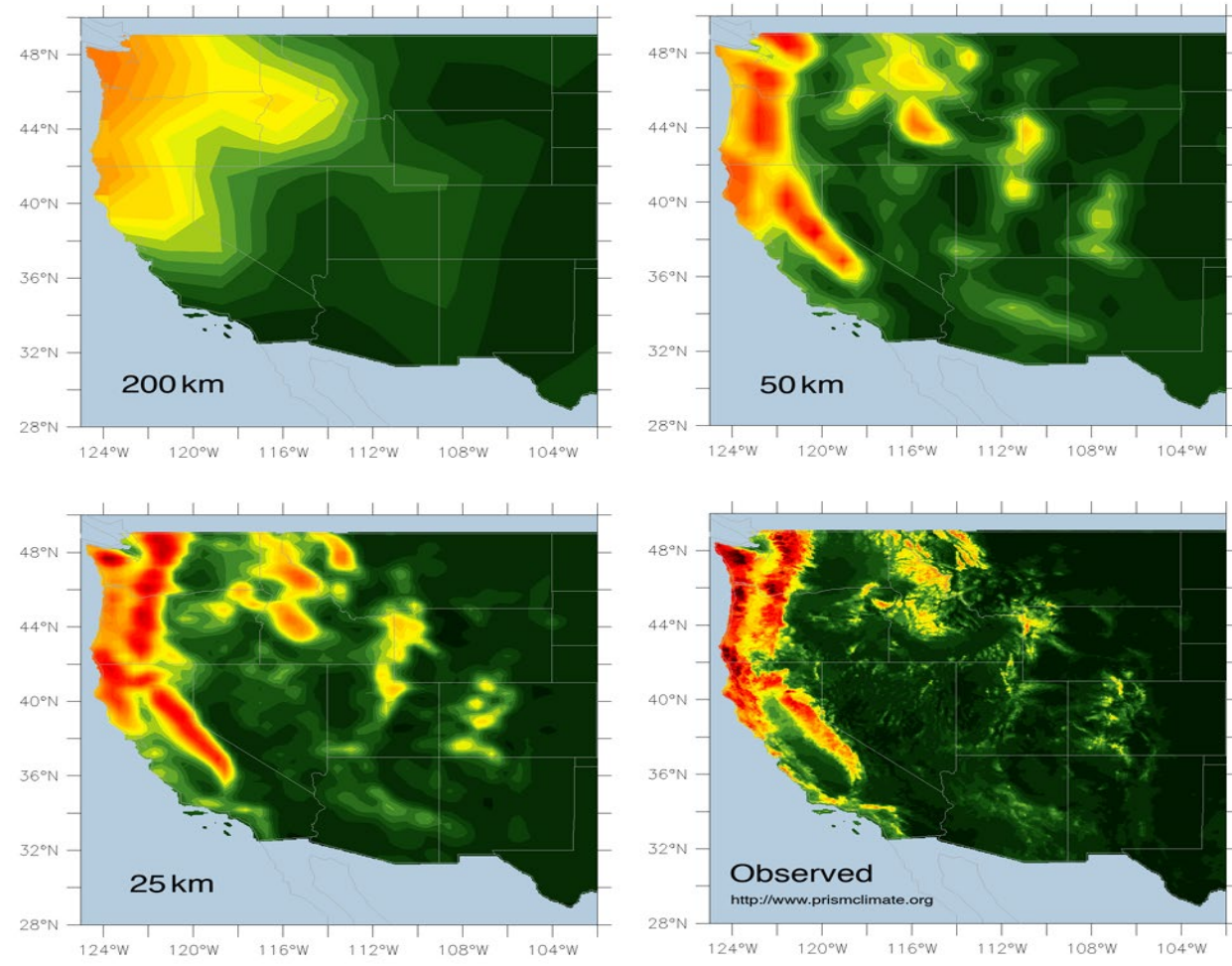
A GCM is a mathematical representation of the major climate system components and their interactions. The GCM equations operate on a global grid and are solved on a computer.



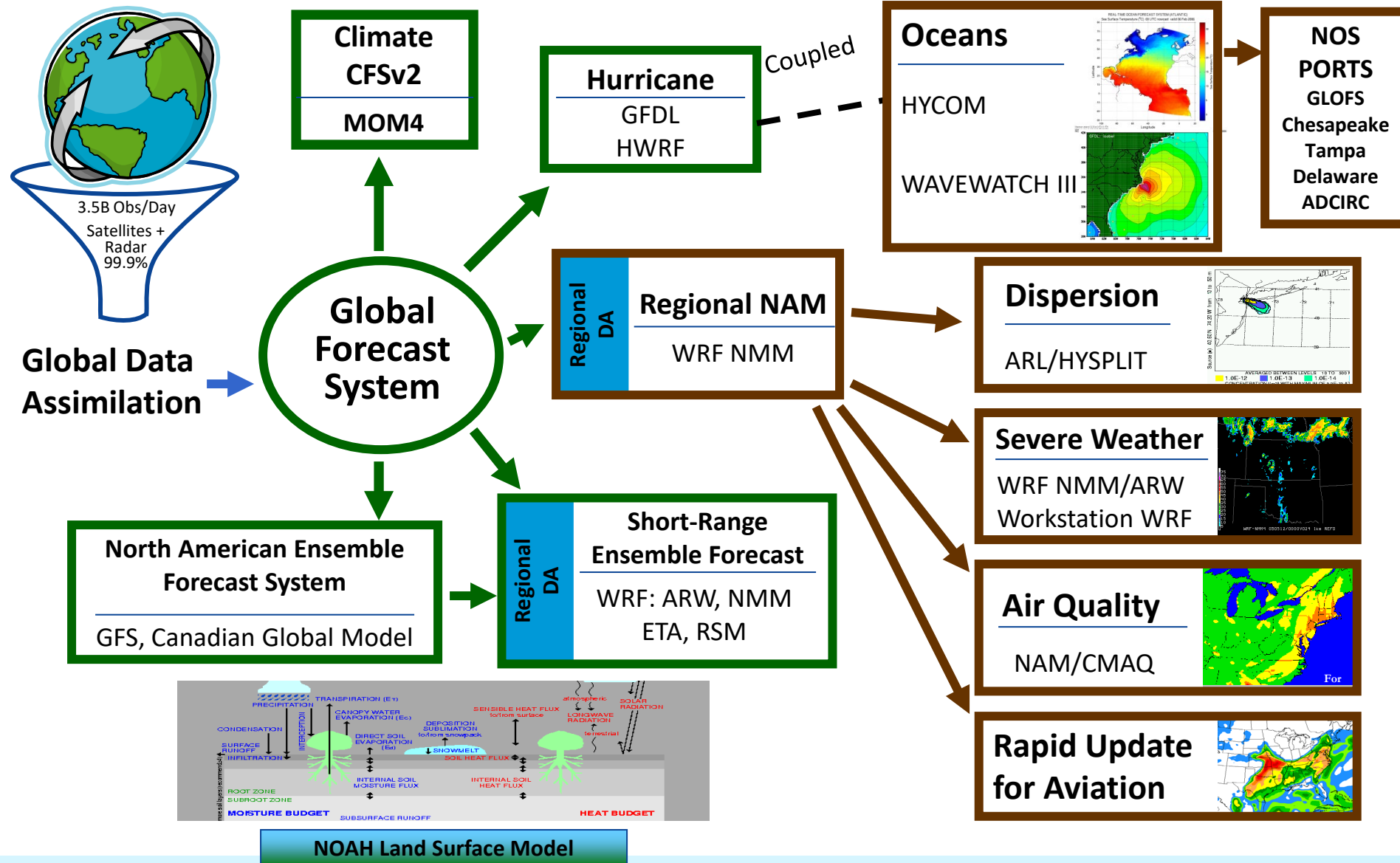


# Data Volume

## Model Grid Size



# NOAA's Model Production Suite



# Challenges

## *Data*

- Moving and processing data entails a large number of tools and protocols
  - Not all tools provide adequate verification methods
  - We have found that a successful transfer is not always successful
- A need for a uniform method for transferring data
  - There are no one-size fits all tools, wrapping transfers with verification and retry ability has been required
- Data Availability is crucial:
  - Navigating and working with large datasets can be a hurdle for some
  - NOAA Open Data Dissemination(NODD) program provides public access to NOAA's open data on commercial cloud platforms
  - Optimizing data for use in the public cloud needs to be part of how you think about releasing data.



# Thank You

- Questions?
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