Mesoscale Model Data Reformatter Program

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Objective

- Use predicted meteorology from MM5 or WRF in EPA recommended models
- Alternative to meteorological preprocessor programs (i.e., CALMET)
- Reformatted meteorological data used in CAMx and CMAQ

MM5/WRF-to-CALPUFF

- Fish & Wildlife Service, and EPA Region 7 and 10 Collaboration
- EPA Region 7 wrote initial program code
- EPA Region 10 and Fish & Wildlife Service wrote work scope

MM5/WRF-to-CALPUFF (cont'd)

- Program reads mesoscale meteorology and reformats the data for input into dispersion model
- Program will calculate missing meteorological variables needed by dispersion program

MM5/WRF-to-CALPUFF (cont'd)

- Calculated Parameters
  - Convective Velocity Scale
  - Surface Friction Velocity
  - Monin-Obukhov Length
  - Air Density
  - Surface Relative Humidity

MM5/WRF-to-CALPUFF (cont'd)

- EPA OAQPS and Region 10 provided contract money
- Insufficient budget to carryout work scope
- Initial phase of work scope to be completed in 2-4 months by contractor
- Non contracted work to be completed by EPA
- Independent evaluations and tests to be completed by EPA

Work Scope Highlights

- Review Region 7 code, the reading and reformatting of meteorology and geophysical parameters
- Review parameters that will have to be diagnosis/calculated
- Program can to run on different platforms
- Capability output statistical comparisons (observed to measured)

Work Scope Highlights (cont'd)

- Generate wind roses
- Output hourly predicted meteorology
- Documentation that describes all parameters, algorithms, and methods
- Diagram laying out code structure
- Guide describing all input switch

Workgroups

- EPA, Forest Service, National Park Service and Fish & Wildlife Service to develop statistics, benchmarks, and methods to calculate missing parameters
- Outside testers and evaluators
- Submit to OAQPS for approval

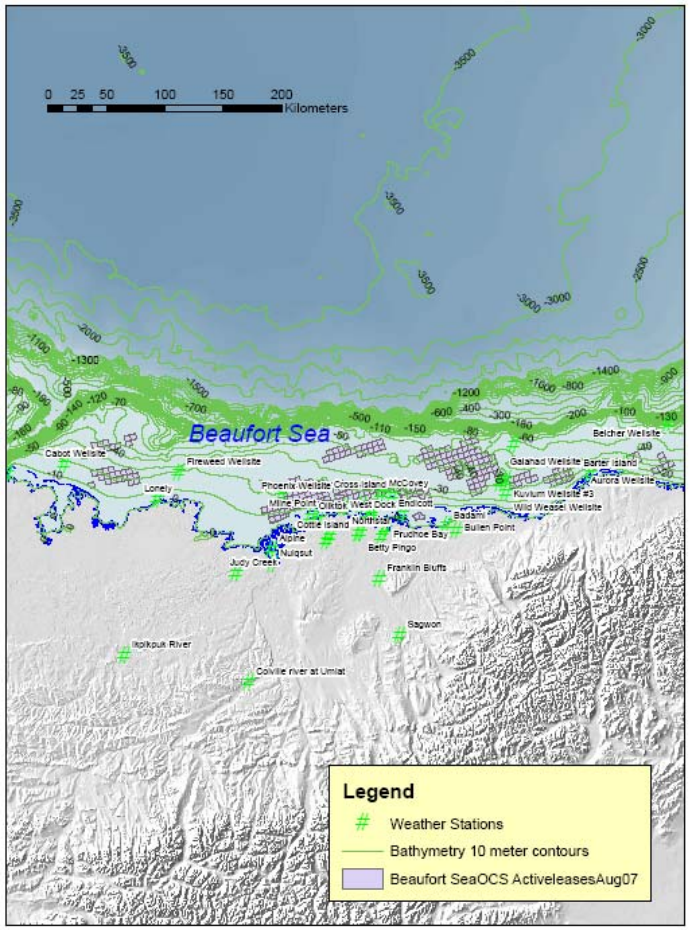
EPA R10 Interest

- Exploratory and developing operations in the Outer Continental Shelf of Beaufort Sea and in the open water of the Chukchi Sea (i.e., no complex terrain)
- Data → MM5/WRF → Reformatter → Over Water Model = Prediction
  - Buoy Data Collection By Shell Oil
  - UAF WRF with icing model

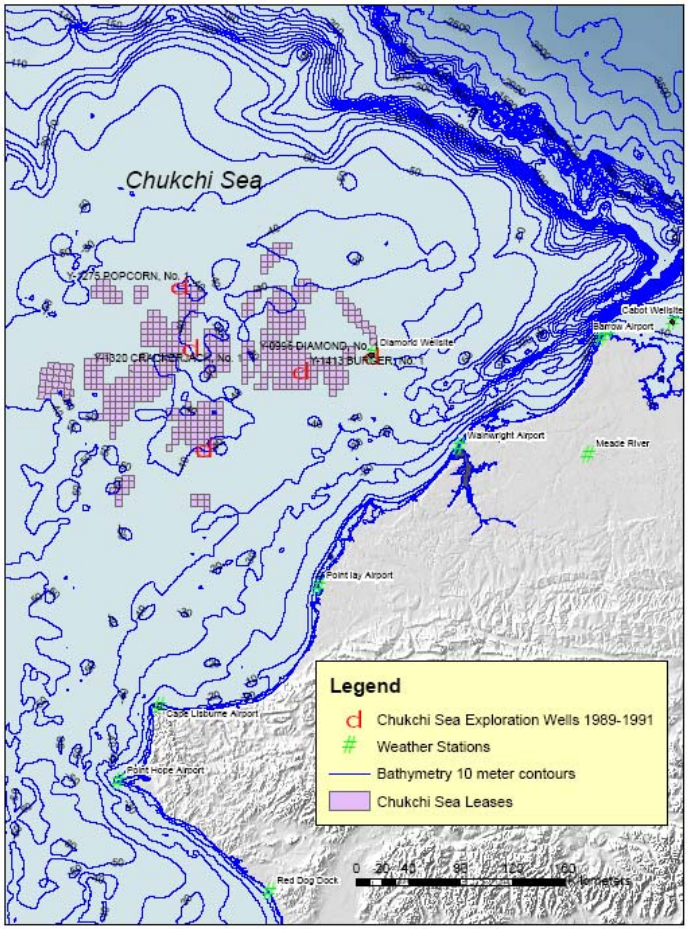
EPA R10 Interest (cont'd)

  - MMS COARE program elements in Reformatter
- New Over Water Transport Model
  - OAQPS, MMS and R10 evaluate and test CALPUFF Version 6 using tracer gas experiments
  - 2-3 years to complete over water model
- Submit over water modeling methodology and model for OAQPS approval

Beaufort Sea Lease Area



Chukchi Sea Leases



WRF Modeling Domain