How do we decide where to put the sampling sites?

- **1000 km resolution is OK? ? approx 30 aircraft sites at build-out**
- **Expected signals – what do the process/land studies say?**
- **"Phase 1": Iowa+ (agriculture belt) intensive**
  - **Can we get the growing season flux (before harvest)?**
  - **Regional inverse model**
  - **Add: Exploratory study to complex terrain (flights, towers, model development)**
  - **Model development (feedback with network design)**
- **Fencepost sites + buoys**
- **Existing sites – AmeriFlux, etc. (leverage long-term data sets)**
- **Airports, air traffic lanes (logistical considerations)**
- **$$$**

Slow ramp-up of full network starting in 2004

1. **"virtual tall towers" concept could be used for low-cost, immediate distributed network**
2. **Iteration with models informs location of new sites…**
3. **…accompanied by intensives (add multiple temporary flux stations in focus area during intensives – NCAR deployment pool can provide?)**

Instrument Development

- **CO_2 – urgent!**
  - **Aircraft (approx. 50 analyzers needed)**
  - **Oceans (buoys, etc., approx. 10 analyzers needed)**
  - **Towers, etc.**
- **CO, CH_4 – urgent!**
- **Low cost CO_2 for sondes, many towers? Industry could develop these?**
- **Boundary layer depth – lower-cost methods are needed**
- **$^{14}C/^{12}C$ of CO_2 in low-volume samples (network flasks)**
- **FTIR for column integrals of CO_2, CO, CH_4, N_2O, etc.**