Focus on Requirement 1 first:

Essential elements:
- model should be based on a network.
  - Descriptive local variables of the earth's health (some measure of it that you choose; start with just one or if you really, want a very small number) appear at the nodes
    - many possible factor groups are listed (demographic, biological, etc.). I'd suggest focusing on modeling a small number of these (at first just one) well rather than all of them meagerly.
  - Network links indicate how the values at the nodes might be related to each other: We can look at how to model these connections at a secondary step, after we define just how variables change locally.
  - Dynamic time element
    - eventually have to build a model that is going to describe how the state variables should update from one time to the next
  - Human element:
    - we can put this aside as something we will eventually need to model, but we can start constructing a model without necessarily including this at a first pass. But it tells us that we better choose a modeling framework that does have some connection with human activity.

Things we should do with the model after we build it:
- set parameters (this tells you that you should choose a modeling framework for which data is likely to be accessible for the variables you choose)

Suggested approaches:
- Ice cap size (physical) as measure of Earth's health
These variables affect each other locally.

- Greenhouse gases can be transported by winds and diffusion from nodes to odes.

- Use available historical data to build models and test hypotheses.
  - Machine learning and linear regression as alternatives to explicit theoretical models for complex relationships between variables
  - CO2 (chemical) as measure of Earth's health
    - Nodes as sources as sinks
    - Links represent transport by winds