XII: Management to Meet Conservation Goals - Applications

10 Points to Developing a Plan:

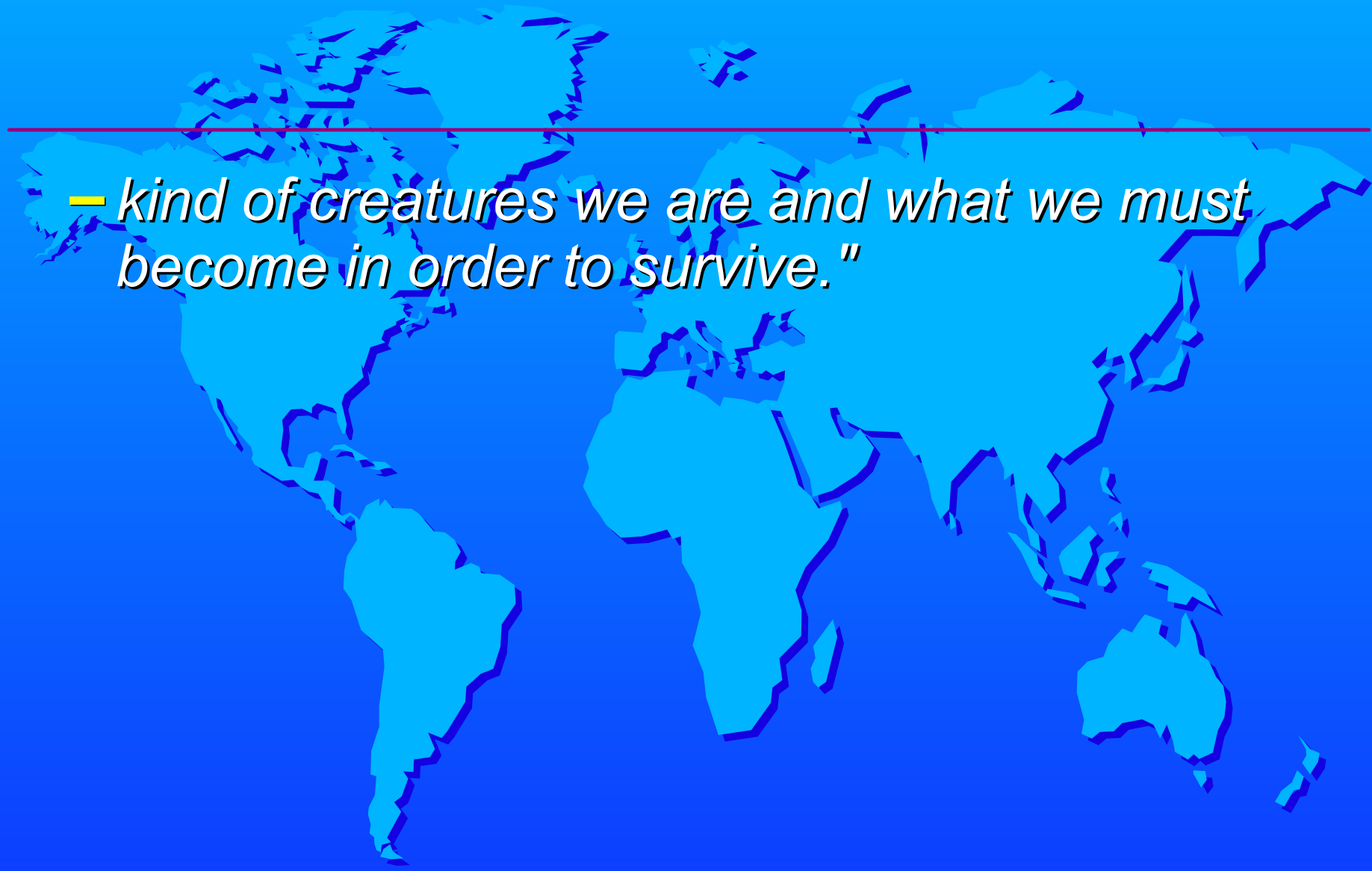
- Review/revise mission statement.
- Learn the history of the site.
- Identify problems.
- Establish an advisory group.
- Develop an adaptive management plan.
- Develop annual work plans.
- Develop an inventory of resources and a site description.
- Identify areas where research is needed.

10 Points to Developing a Plan: *(continued)*

- Maintain relationships with local community.
- Develop cooperative agreements.

Value Systems in Management

- The traditional manager has focused on anthropogenic concerns: economically important species, introductions, resource extraction as "good" management goals.
  - Lynton Caldwell - "The environmental crisis is an outward manifestation of a crisis of mind and spirit. There could be no greater misconception of its meaning than to believe it to be concerned only with endangered wildlife, human-made ugliness, and pollution. These are part of it, but more importantly, *the crisis is concerned with the*



– *kind of creatures we are and what we must become in order to survive."*

(continued)

- ***Traditional Approaches to Management:***
  - ***Maximum Sustained Yield (MSY)***
    - ***MSU occurs at K/2 when using the logistic growth equation*** **dN/dt = rN [1-(N/K)]**
    - **More complex models are necessary for most animal populations.**
    - **Fisheries models were the first developed because of their economic importance.**
    - **Single-species management is the rule.**

Problems with Single-Species Management:

- Management for high densities of one species may destroy habitat for other species.
- Non-native game species may be harmful to habitats they are planted in. (Pheasant/Prairie Chicken)
- Predator removal policies were flawed.

Habitat Management

- Silvaculture provides some good examples:
  - monoculture (short-rotational pine plantation)
  - small strip clear cuts (gap-phase dynamics)
  - selective harvest

Ecosystem Management

- 3 Biophysical Considerations for an Ecosystem:
  - Should be enclosed completely within a management area.
  - If the area includes multiple biophysical ecosystem types, linkages must be functional to support inclusion into the area.
  - Independent ecosystems may be included if there is evidence of similar stresses.

- Adaptive management should be adopted to provide a flexible and responsive system.
  - simulation modeling
  - integration of GIS and other models
- Should management mimic natural processes?
  - Disturbance? Clear-cutting, fire?
  - Restoration back to "historical" levels?
  - "Natural Regulation"?

- Including Stakeholders in Decision Making