

Chapter 2
Tools of Environmental Science
Section 3, Making Informed Decisions
Day 1

Values and the Environment

- Scientific research is an essential _____ in solving environmental problems.
- However, before research can begin, an _____ is usually needed.
- _____ are principles or standards that an individual considers important.
- Many values affect environmental decision-making.

An Environmental Decision-Making Model

- A _____ is a conceptual model that provides a systematic process for making decisions.
- Decision-making models can be used to help you make decisions about _____, which can be very difficult.

A Decision-Making Model

- The first step in the model is to _____. This includes things such as watching news reports, and talking to experts.
- Second, consider which _____.
- Next, explore the _____ of each option.
- Finally, _____.

A Hypothetical Situation

- The _____ population is declining in Valley County.
- The town of Pleasanton, in Valley County, is growing rapidly, and much of the new development is occurring outside the city limits.
- Biologists who have been studying the warbler warn county officials that if they do not take action, the state fish and wildlife service may list the bird as an _____.

A Hypothetical Situation

- Several groups join together to propose that the county buy several hundred acres of land where the birds are known to breed and save the land as a _____.

A Hypothetical Situation

- The group also proposes _____ on land surrounding the preserve.
- The group obtains enough petitions to put the issue to a vote, and the public begins to discuss the proposal.

A Hypothetical Situation

- People who own property within the proposed preserve oppose the plan.
- These property owners have an economic interest in the situation. They believe that they will lose money if they are forced to sell their land to the county instead of developing it.
- Other residents do not like the idea of more government regulations on how private property can be used.

A Hypothetical Situation

- Other landowners support the plan and fear that without the preserve the warbler will be listed as an endangered species.
- Once listed as endangered, the state will impose a plan to protect the bird that will require even stricter limits on land development.
- People who have land near the preserve think that their land will increase in value.
- Many residents also look forward to hiking and camping in the preserve.

How to Use the Decision-Making Model

- The _____ in Pleasanton can be used to illustrate how to use the decision-making model.
- Michael Price is a voter in Valley County who will vote on whether the county should create the nature preserve.
- The steps Michael took to make his decision follow.

Gather Information

- Michael studied the warbler issue thoroughly by
 - _____
 - _____
 - _____
 - _____
- Several of the arguments on both sides made sense to him.

Gather Information

- Michael also gathered scientific information that included _____ of the decline of the warbler population.

Consider Values

- Michael made a _____ to help him clarify his thoughts and values.
- Michael considered the environmental, economic, and recreational values of the preserve.
- He believed these to be important, but someone else might have thought other values were more important to consider.

Explore Consequences

- Michael decides that in the short term, the positive and negative consequences listed in his table were almost equally balanced.
- For example, some people would suffer financially from the plan, but others would benefit.
- In addition, taxpayers would have to pay for the preserve, yet all residents would have access the previously private property.

Explore Consequences

- The long-term consequences allowed Michael to make his decision.
- Michael realized that the _____ were an important factor in his decision.
- The thought of the warbler becoming extinct distressed him, and protecting the habitat now would be less costly than protecting it later under a state imposed plan.

Explore Consequences

- Michael considered that there were long-term benefits as well.
- He had read that property values were rising rapidly in counties where land was preserved for recreation.
- He also found that people would pay more to live in counties that have open spaces.

Explore Consequences

- Because the county contained little preserved land, Michael thought that creating the preserve would bring the county long-term economic benefits.
- He also highly valued the aesthetic and recreational benefits of the preserve, such as walking trails.

Make a Decision

- Michael chose to vote in favor of the nature preserve.
- However, someone else who looked at the same table of pros and cons might have voted differently.
- If you lived in Valley County, how would you have voted?

Make a Decision

- As you learn about issues affecting the environments, use this decision-making model as a starting point to making your decisions.
- Be sure to consider your values, weigh the pros and cons, and keep in mind both the short-term and long-term consequences of your decision.