

CLASS TIME: two to three class periods

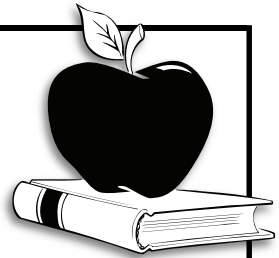
VOCABULARY: consensus

MATERIALS: research article summaries in Appendix D; role-playing cards; The Scenario

COMMON CORE STANDARDS: English language arts
MS Writing 1, MS Writing 2, MS Writing 4, MS Writing 8,
MS Reading 7, MS Reading 8, MS Speaking and Listening 1,
MS Speaking and Listening 2, MS Speaking and Listening

NEXT GENERATION SCIENCE STANDARDS: MS-ESS3-3,
MS-LS2-5

TEACHER'S GUIDE



ACTIVITY

Town Meeting

OVERVIEW

In a simulated town meeting, students use information they have learned during the unit to make decisions regarding a forest.

CONCEPTS

- People and some birds depend on forests for their needs.
- People alter and manage forests to accommodate their wants and needs.
- Each forest management option may limit other forest uses.
- People can act to help conserve Neotropical migratory forest birds and their homes.

OBJECTIVES

Students will be able to: 1) understand the complexity of making land-use decisions; and 2) demonstrate what they have learned through the unit and apply their knowledge to bird conservation.

KEY POINTS

- People can consider birds when they make land-use decisions.
- Using a forest in one way may limit other uses.
- Environmental decisions require compromise.

TEACHER BACKGROUND

This activity requires the students to use what they have learned throughout this unit by participating in a simulated town meeting. Environmental decision-making is complex and requires compromise. Read the land-use scenario accompanying this activity. Some possible ways students may resolve this land-use conflict are as follows.

The Development Company may have the trees cut in an 80-acre plot, then build a retirement center and golf course, leaving a few mature trees scattered and agreeing to enforce a rule that all cats be kept inside. They

might also agree to limit use of pesticides on the golf course. They could contract with the Timber Company to cut the wood and agree to plant some new oaks along the edge of the golf course. On the other side of the golf course, Parks and Recreation might develop a nature center with trails for hiking and cross-country skiing, agreeing to keep the trails close to the forest edge and to post "Keep on the Trails" signs along the borders of the 200-acre interior section of the forest. They could invite Audubon Society members to use their facility as a meeting place and to make presentations related to migratory forest birds. In return, Audubon Society members might volunteer to identify and remove brown-headed cowbird eggs from songbird nests along the edge of the forest.

Or, the Timber Company could purchase the land, agreeing to cut small parcels along the edge at 10-year intervals and replanting to maintain the land as forest. They might plant hardwoods rather than pine, since the soil might be more suited to hardwoods and, in this location, the hardwoods would provide better wildlife habitat. The Timber Company could agree to the Parks Department's request to use the forest for education. The Parks Department could then teach students about forest management techniques through the Timber Company's activities. The Development Company might have to build elsewhere, and the retirement community might be less convenient for the elderly residents and their families.

Or, the Parks Department might claim the woods, using it primarily for hiking trails, limited campsites and a nature center. The Department could agree to the Audubon Society's request to set aside a large portion of the forest to be undisturbed. The Timber Company could reach an agreement with another community and work with that county. The Development Company could build elsewhere, too. If this kind of scenario is adopted, students should be sure to discuss possible ramifications of simply moving operations elsewhere without an environmental assessment at that site. They should be aware of the possible economic loss to their community.

Students may be able to reach complete, or at least partial, consensus by giving each interest group something they want. Perhaps the majority of participants at the meeting feel that having edge species is wonderful and sacrificing other uses of the forest for the sake of interior forest birds is out of the question, while Audubon Society members refuse to give in. If no consensus can be reached, it is important to discuss how the community should proceed from the stalemate. Students might decide more research is needed or they simply need more time to air their opinions and try to convince each other of their way of thinking. They may need to re-examine their method of decision-making. The students don't need to actually do this, but they can think about what a real town could do to traverse the difficulties inherent in making land-use decisions that affect the lives of many people with different interests at stake.

In order for this activity to work, students must be given ample time to organize their groups, discuss the perspective they are given and plan their stance for the role playing. It is best to have this activity take place over two or more days.

It is important that students take bird conservation into consideration while making their decisions. For this reason, part of each group's argument should include an environmental assessment regarding the impact of their proposal on Neotropical migratory birds. It is the teacher's role to keep the discussion focused on bird conservation.

Students should attempt to reach consensus about the use of this piece of land. Historically, any land area not privately owned was considered a commons or free-for-all area. Any benefits to be received from the area (economic or otherwise) were for any individual to enjoy; sharing was not necessary. Likewise, each individual had to bear the entire expense of any conservation effort s/he might undertake. Any effort to preserve the natural environment might be in direct opposition to the objectives of other individuals. In Latin America, the town meeting process is rare and land-use decisions are often subject to this "tragedy of the commons." For example, people may simply move into a forested area and chop down trees to meet their own survival needs. Or, the most powerful interests involved at the site may use the land as they see fit.

Consensus decision-making requires that each student, or a representative of each cooperative group, has a chance to voice an opinion, and there is opportunity for discussion. When a motion or solution is proposed, each individual has a chance to state his or her agreement or disagreement. Discussion continues with amended proposals until **all** participants can accept the same conclusion. This process is different from majority

rule where a vote settles differences of opinion and action is taken according to what **most** participants think. Consensus decision-making works through cooperation and compromise so that everybody wins. It is possible your class will not come to agreement in the time period given, but consensus is a desirable goal for the activity.

PROCEDURES

1. Read the scenario regarding the land-use issue facing the town. Students will represent different interests in a simulated town meeting. Indicate clearly the amount of time students will have in groups to develop their arguments and strategies, the amount of time each group will have to present its point of view at the town meeting and how much time will be left for general discussion.
2. Assign one role to each of five cooperative groups: the Natural Products Timber Company; the Westerly Parks and Recreation Department; the Private Landowner; a local Audubon Society chapter with interests in bird conservation; and Tall Oaks Home Developers. Give each group the map of the forest and their appropriate role-play card. Explain that representatives from each interest group will come together at a town meeting where they must attempt to reach consensus on how this land is to be used. Each proposal for land use must include an environmental assessment showing impacts of their proposal on the birds.
3. To understand and represent their group's perspective, students should draw on what they have learned in this unit, the information given on the role-play cards and the accompanying research article summaries.
4. In each group, assign the following cooperative roles: a Facilitator to organize ideas; a Notetaker to document positions; a Cartographer to draw the proposal on the map; a Checker to be sure each group member understands the position and strategy of the group; and a Processor to review how the group worked together. Tell the students that during the actual town meeting, each student must be able to provide their group's arguments and position.
5. Have each group list the benefits of anything they propose, draw their proposal on the map and write down the impact their proposal would have on wildlife, especially birds. Note that some birds need interior forests, while others require edge or open space. Each group should submit a copy of their proposal to the teacher prior to the meeting.
6. Arrange desks and tables in a U-shape or square for the meeting. With the teacher as moderator, call the town meeting to order and give each group limit-

ed time to outline their proposal on how the forest should be used and the benefits of the proposed use. Remind students that they must listen closely to other groups, because they must be able to find common elements with their own positions to reach consensus. Be sure each group receives equal time to speak and to clarify compromises as they arise. It may be useful to write agreements on the board as they are made. Continue until an agreement is reached by all interests or the time is gone.

7. In a large group, discuss how similar or different this would be to real-life decision-making. Make the point that using a forest one way may limit the option of another potential use. Ask students how the decision they made today would affect Neotropical migratory birds. How might their decision have global effects?
8. Ask the Processors of each group to report on how their group worked together. Have their skills in working in cooperative groups improved since the beginning of the unit?

DISCUSSION

1. What would have helped the town reach an agreement faster or easier? Did each group adequately represent their interests during the role play? What did the students learn about cooperation and compromise? Can education make a difference?
2. What did the people in the town gain from the compromise? What did they lose? What did people in other places in the region, or in Latin America, gain or lose by the compromise? How will the decision affect Neotropical migratory birds that have used the forest for nesting? Will there be the same amount of nesting habitat? How will this change in forest habitat affect birds as a whole? What if people in other places are making decisions similar to these? What effect will these decisions collectively have on Neotropical

migratory forest birds? In the event of a stalemate, what should the people in the town meeting do to make a decision?

3. Based on what students have learned during the unit, what problems do you think international planners encounter when they try to reach agreement about land use? How can we work with people in Latin America to conserve Neotropical migratory forest bird habitat?

MODIFICATIONS

Have the students present their group's interest to the rest of the town members (perhaps some other class in your school) and then hold a vote to determine the fate of the forest. Or have the teacher act as mayor of the town. It would be up to the mayor to listen to all the arguments and make a final decision.

Ask students to step out of the role they have been given. How would they have compromised on this land-use issue, personally?

EXTENSION

1. Students can make a model of the proposed forest plans.

ASSESSMENT

1. Collect and evaluate a copy of each group's proposal prior to the town meeting.
2. Evaluate ability to explain his/her group's proposal.
3. Assess student participation in the town meeting according to a rubric or checklist. Be sure to inform students of the criteria you are using to evaluate them.
4. Assess participation in cooperative groups during the planning and preparation.

The Scenario

The Town of Westerly, Illinois, includes a large area (400 acres*, or 162 hectares) of undeveloped deciduous forest (see map at close of this lesson plan). The forest land was owned by the Johnson family until this year, when it was donated to the town. There has been no significant management of this forest land for the last 100 years. Therefore, what exists is a mixed hardwood forest, consisting primarily of mature oaks and hickories, some black cherry (*Prunus serotina*) trees and much undergrowth, mainly brambles. The only restriction placed by the Johnson family on Westerly's use of the land was that it remain a favorable habitat for wildlife. The Johnsons did not indicate what type of wildlife. The Town of Westerly now needs to make some decisions as to how to use this forest. Already two businesses have expressed interest in utilizing the forest in ways they feel will help the community. The Natural Products Timber Company has submitted a proposal to the Town Council indicating interest in harvesting some trees in the forest. Simultaneously, the Tall Oaks Home Developer submitted a proposal to construct a retirement community partially within the forest.

Many citizens of Westerly have an interest in how the land is to be used. Fifteen percent of the population of Westerly works for the Natural Products Timber Company. Any increase in business generated from resources in the forest can potentially help these employees. Likewise, 25 percent of the population is more than 50 years old, and the senior citizens have put great pressure on the town to provide a suitable living environment for the elderly in town. The local Audubon Society is very active, and these citizens have noted the value of the forest for providing habitat for many nesting birds. Audubon members are very aware of just how little large forest area still exists in northern Illinois. They remind Westerly of Sara Johnson's wish that the area remain beneficial to wildlife. The Parks and Recreation Department wants to maintain the forest as a nature reserve and outdoor recreation center to bring much needed tourist dollars to the community. The private landowner is obviously concerned with how the neighboring land will be used and wants to be able to make decisions regarding his/her own property independently, without pressure.

* 1 acre = 4,047 square meters; 1 square mile = 640 acres

Role Play Cards

Natural Products Timber Company

The company plans to harvest mature oak trees from the site. Oak is currently in demand, and the company can sell the wood for a high price in the furniture market. The slash (residue remaining on the ground after cutting, such as tree tops and bark) could be sold to a local fire-wood dealer. Since 15 percent of the town's residents are employed in this company, the increase in business would benefit those people financially. In addition, the company would hire several additional employees, including a site manager and forester, though not necessarily from this community. These economic benefits will only extend into the future if the wood is harvested in a way that sustains the forest. The company has adequate resources to afford any harvest it plans in the Johnson forest.

Tall Oaks Home Developers

This company began in Westerly in the early 1900s when much of the area was being settled. Over the years, the company has overseen much of the housing and business development in the area. The developer has a good reputation in the Midwest for innovations in construction to conserve energy and make use of locally available materials. Several members of the community work for this developer and many more work for businesses that contract with the developer, such as plumbers and electricians. Tall Oaks has been looking for a place in Westerly to locate a retirement community. They propose that this forest would be an ideal location. Many elderly people have an interest in bird watching. There is no retirement community in Westerly and as the population ages, there is more and more need for this housing. Tall Oaks has made efforts to locate the community elsewhere. The only other suitable location, however, is 30 miles north. Tall Oaks has already received financial backing from a local bank to develop a retirement home. However, Westerly zoning law requires that any commercial development plans include an environmental assessment.

Audubon Society Members

Sara Johnson was an active member of the local Audubon chapter and a great bird enthusiast. The Audubon members remind the town that the Johnsons advocated the conservation of the forest for wildlife, including birds. Audubon Society members advocate for Neotropical migratory birds and the preservation of at least some forest. They recognize that some development may occur but prefer that it be limited and restricted to specific areas of the forest where it will have the least impact on nesting forest birds. Because of large membership, the Audubon Society has sufficient monetary donations to carry out any projects it desires.

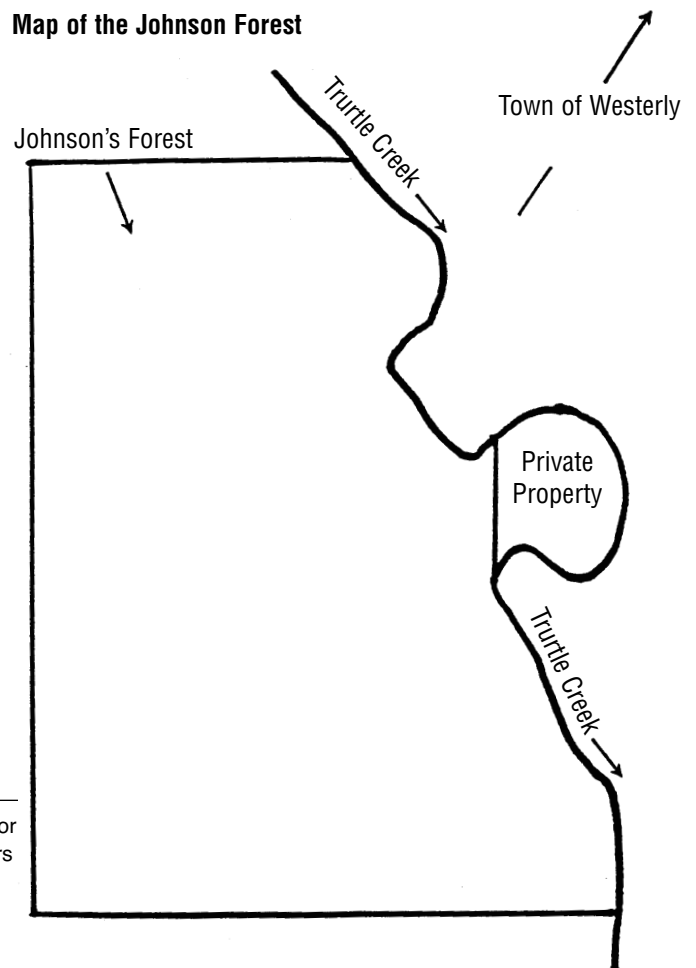
Parks and Recreation Department

This Department has been under pressure by the Chamber of Commerce to increase tourism in Westerly. The Chamber of Commerce feels that Westerly currently lacks outdoor recreational opportunities. The town is located close enough to a large urban center to bring vacationers. By developing more recreation opportunities in Westerly, the Chamber of Commerce hopes to draw some of these people into Westerly to spend money in local restaurants, shops and hotels. They propose a large park, including trails for nature observation, hiking and cross-country skiing and a nature center. The extent of development, such as amount of parking, building space and trail configuration must be discussed. By law, any Parks development must include an environmental assessment to determine impacts on wildlife. Park staff will want to make sure there is adequate habitat for the birds and other wildlife within the forest as this is one reason people will come to the area. The county has already provided grant money to Parks and Recreation to develop parks in Westerly.

Private Landowner

Just at the border of the Johnson forest is private property owned by Sara Johnson's daughter and her husband, the Millers. Their property consists of a small home on 20 wooded acres. The Millers are wildlife enthusiasts and believe the neighboring Johnson forest provides them many opportunities to see wildlife on their own land. The Millers occasionally harvest wood from their property to supplement their income. This year, they had planned to conduct a very large wood harvest. In addition to bringing in income, they feel the planned timber cutting on their property will attract additional wildlife to their area, particularly edge-dwelling species, such as indigo buntings and white-tailed deer (*Odocoileus virginianus*). However, the Millers are aware that changes to the Johnson forest in the near future may cause them to change their plans for harvesting timber on their land. They attend the town meeting to offer their own proposal for the Johnson forest that would complement their plans for their own land. The Millers are also concerned that if the Johnson forest is developed, it will add significant traffic and noise near their property.

Map of the Johnson Forest



Scale: □ = 1 acre or 4,047 square meters (640 acres = one square mile)