



# WORKSHEET YOU DECIDE

**A magnificent forest, 400-Acre Wood, has just been donated to your community. You and your team have the job of deciding what to do with this forest.**

As you might have guessed, 400-Acre Wood is a parcel of forestland that is 400 acres in size. An acre is an area of land equal to a square that is 209 feet or 70 yards on each side, and 400 acres is approximately 0.6 square miles.

## HOW BIG IS AN ACRE?

An acre is a measure of land area that is exactly 4840 square yards. It can be any shape, but is approximately the size of a football field without the end zones.



*1 acre = About the area of a football field*

### Metric Unit Conversion:

1 acre = 0.4047 hectare  
1 hectare = 1 square kilometer

400-Acre Wood is made up of pine forest, with about 150 mature pine trees per acre. Because the forest currently has no roads or trails, few people visit it. It has a small stream running through it, which contains trout. In addition, lots of wildlife live in the forest, including owls, deer, bear, woodpeckers, turkey, quails, wood rats, fish, and woodland salamanders.

Wildlife biologists use something called management indicator species to evaluate the positive and negative effects of people's actions on the environment. For 400-Acre Wood, the indicator species are barred owls, wood rats, and woodland salamanders. Wildlife biologists estimate that eight owls, 400 wood rats and 10,000 salamanders currently live in 400-Acre Wood.

In the northwest corner of 400-Acre Wood is a rock outcropping with three petroglyphs on it. These images were chiseled into the rock surface by Indigenous ancestors and are believed to be 600 to 1,000 years old. Your plan should safeguard this cultural site, keeping trails, camping, and exhaust from cars (which can erode the rock) a safe distance away.

You and your team will develop a management plan for 400-Acre Wood and make a map of it. You may decide to do one thing with the entire forest, such as create a campground. Or you may want to divide the forest and do different things in different areas, such as devote 200 acres to wildlife management or hiking, 80 acres to a campground, and 120 acres for timber or hunting. Your goal is to find what your group thinks is the best balance between five priority interests: 1) the number of visitors, 2) wildlife conservation, 3) forest cover, 4) cultural site protection, and 5) costs and revenues.

**NOTE:** Managing a landscape for various uses will lead to different effects. Effects can be both positive and negative, and play a huge role into the decisions made on the landscape. The following effects described are specific to this learning activity. Actual forests may have very different effects depending on the geography, species of trees, types of animals, and people involved, as well as other local conditions.

Below are the different forest uses you can include in your plan. The “What’s the Score?” worksheet will help you evaluate your plan’s total effect on the five priority interests (wildlife, trees, visitors, cultural site, and cost and revenue).

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## FOREST USE

## EFFECTS

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### Wildlife Management Area

The purpose of a wildlife management area is to allow wildlife to thrive by preserving important ecosystem features and removing any impact from human activities. Typically, wildlife management areas have no roads, operations, graded trails, or campsites.

Wildlife management areas will bring some visitors to the forest. The numbers of trees and amount of wildlife will remain the same. These areas are also compatible with the cultural site. It will cost money to monitor the area.

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### Timber Harvest and Regeneration

Timber harvest and regeneration involves cutting trees for logs and planting new trees. Part of sustainably managing a forest includes determining which areas of the forest to harvest and regenerate. Using sustainable practices based on research, trees are removed in a way that minimizes effects on wildlife and people, while also producing logs over the long-term. For pine trees, which take 35 years to reach maturity, one-fifth of the trees are cut every 7 years. Trees must also be removed to build the road.

Note that to protect the stream’s water quality, timber production may not occur next to the stream. This is called a streamside management zone.

With the addition of roads, some visitors will come to this area. The timber harvest and regeneration will have a minimal effect on the three indicator species. It will cost money to build and maintain the road and for management, but the harvested trees can be sold.

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### Trails

Graded trails allow different types of visitors to enjoy a forest area, including walkers, cyclists, families with strollers, and wheelchair users. Trails should not be built near a cultural site.

Trails will bring more visitors, but will also disturb the wildlife, particularly the owls and wood salamanders. It costs money to build and maintain trails, and trees will need to be cut to make room for the trails. But you may sell the cut trees and charge an entrance fee.

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### Campground

A campground allows visitors to enjoy a forest area overnight or over the weekend. It typically has campsites, plus picnic tables, fire pits, parking spaces, and bathrooms. A campground also needs to have a road winding through it. Campgrounds should not be built near a cultural site.

A campground will bring more visitors, but will cause all three indicator species—owls, wood rats, and salamanders—to disappear from the area. Trees will need to be removed to build the road and campsites. It costs money to build and maintain the campground. But you may sell the cut trees and charge a camping fee.





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## FOREST USE

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### Hunting and Foraging

Some forest areas are managed to encourage game animals (deer, turkey, and quail) for hunters and edible items (medicinal plants, mushrooms, and berries) for foragers.

## EFFECTS

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Hunting and foraging will bring some visitors, but with regulations to keep game populations constant, there should be no effect on the three indicator species—owls, wood rats, and salamanders. It will cost money to manage the area. But you may charge a license fee.

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### Reservoir

To supply water to the nearby community, a forest stream can be dammed to form a freshwater reservoir. A reservoir will bring visitors for kayaking and other non-motorized boating. Trees will also need to be removed to create the reservoir.

The reservoir will cause all three indicator species—owls, wood rats, and salamanders—to disappear from the flooded area. It will cost money to build the dam, and it will cost money to manage the reservoir. But the cut trees can be sold, and visitors may be charged a recreation fee.

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### Cultural Sanctuary

The purpose of a cultural sanctuary is to allow space to honor the people who lived there before and to respect the history, culture, and beliefs of Indigenous people today. A cultural sanctuary has no roads, graded trails, or campsites.

A cultural sanctuary will not change the number of visitors, trees, or amount of wildlife. It will cost money to monitor the area.

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