

WHAT'S AT STAKE FOR THE FOREST?

introduction

Forests cover roughly one-third of Earth's landmass. They offer fundamental **ecosystem services** on which the world's population depends heavily for food, climate regulation, and building materials. According to the Food and Agriculture Organization, global forest area has decreased by 0.25 percent annually from 2015 to 2020, mainly due to human activities.¹ This may seem like a small loss, but amounts to the loss of an area the size of Spain. In lower-income countries, agriculture and livestock cultivation are the main drivers of **deforestation**, as populations increase and growing affluence stokes the demand for more animal-based foods.

The loss of tree cover and forests contribute to the rise of carbon dioxide in the atmosphere, accelerating the process of climate change. The demand for timber also puts a strain on forest ecosystems and the 80 percent of species that make their homes in forests. Forests also provide people with recreational opportunities. Human population is expected to grow to nearly 10 billion by 2050 and we will continue to rely heavily on the services forests provide. With this in mind, it is essential to practice **sustainable forest management**, with the benefit of all forest stakeholders in mind.

Vocabulary: deforestation, ecosystem services, sustainable forest management

materials

Part 1

- Article: "Landmark Deal Protects Over 9 Million Acres Of Canadian Rain Forest" (provided)

Part 2

For each group:

- Rules of the Game (provided)
- Game Board (provided)
- Stakeholder Role Cards (provided)
- Agenda Item Cards (provided)
- Development Cards (provided)



Studies For Our Global Future

concept

Forest conservation is essential for the health of the planet and the well-being of people. This "commons" must be sustainably managed even though different stakeholders may value forested land for different purposes.

objectives

Students will be able to:

- Explain the value of forests for people, the environment, and animal habitats.
- Compare the interests of various stakeholders in forest management.
- Negotiate a strategy for forest management that is sustainable and ensures a beneficial outcome for all.

subjects

Environmental Science (General and AP), English Language Arts, Economics, Government

skills

Reading comprehension, role playing, analyzing costs and benefits, evaluating, defending a position, decision making, conflict resolution

method

Acting as different stakeholders with various interests, students play a strategy game where they work in groups to negotiate management of a publicly owned forest.

Part 1: The Landmark Deal

procedure

1. In class, or before as a homework assignment, have students read the article “Landmark Deal Protects Over 9 Million Acres of Canadian Rain Forest,” to provide background information on a real-world forest management case.

2. Go over the following questions to debrief the article:

a. Who were some of the people/groups involved in the agreement to protect the Great Bear Rainforest?

Forestry companies, environmental groups, indigenous leaders, aboriginal groups (known as First Nations), and logging companies.

b. It took these groups 10 years to come to an agreement. Why do you think it took so long?

There are several stakeholders with competing interests in the future of a forest. It can be difficult to negotiate between all parties involved and come to an agreement that benefits everyone. Additionally, it takes time for stakeholders to get to know one another and often there are pre-conceived biases that need to be worked out in order for collaboration to take place.

c. Do you think the agreement reached at the Great Bear Rainforest is fair and beneficial to all groups involved?

Answers will vary.

d. What does it mean to designate lands as ‘protected’?

Protected lands vary in level of intensity, but for the most part, they are restricted in their ability to be logged or developed.

e. What are some of the ecosystem services that forests provide?

Forests provide water purification, flood control, air filtration, CO₂ absorption, recreation, wildlife habitats, and much more.

Part 2: What’s in it For Me?

procedure

1. Divide the class into groups of eight and provide each group with one Game Board, one set of Stakeholder Role Cards, one set of Agenda Item Cards, one set of Development Cards, and the Rules of the Game. If you don’t have enough students to make groups of eight, you could have students play more than one stakeholder, or if you want to make groups larger than eight students, you could assign more than one student to a role and have them work as a pair.

2. Set-up the game for your students by reading the following paragraph:

“You have been hearing a lot of talk about proposed development for the publically owned 950-acre forest located adjacent to your community. This forested land has been untouched (developmentally speaking) as long as you can remember, despite rumors of development cropping up from time to time, and you’ve often wondered what would become of it. Word has it that plans for the forest include the construction of apartment buildings, luxury condominiums, retail space, resort space, and possibly some recreational developments. This news raises a lot of questions and thoughts in the community. On the one hand, the possibilities are quite exciting, while on the other hand, concerns are raised regarding the health and preservation of the forest. Since this forest is public land, in other words it is not privately owned, there are various stakeholders, or persons with interest or concern for this space, that will need to collaborate and determine how best to handle the development of the forest.”

3. Explain that each group member will represent a different stakeholder with an interest in what happens to the forest. Have students select a Stakeholder Role Card from their set at random. The Stakeholder Role Cards provide a description of the character each student will play and the goals they must strive to achieve during the game. One Stakeholder Role Card is the Development Company who wants to optimize profits from the forested land, and the other seven cards are various community stakeholders.
4. Go over the Rules of the Game as class.
5. Let the game begin!

discussion questions

1. Was everyone able to achieve all of their goals? Do you think all parties in the real world walk away with what they want?

Answers will vary. In the real world there are a lot of compromises that must be made when it comes to managing public lands. Each stakeholder may have a different idea of what is ‘best’ for the land and it takes time, discussion, and understanding to come to a resolution that benefits most, if not all.

2. Can you think of any other stakeholders in a forest community?

Farmers, commercial or development groups, native populations, etc.

3. Were you able to come to an agreement on how to manage the forest?

Answers will vary.

4. What was your gameplay strategy to achieve your goals?

Answers will vary. Some students may consider forging alliances with one or more stakeholders. Others may have a hard stance on their issue area and strongly oppose another stakeholder’s wants.

5. What disagreements occurred between stakeholders? How were they resolved?

Answers will vary.

6. How did the development track (which advances one space for every failed vote) affect your game strategy?

Answers will vary. The development track may sway students towards cooperation. Students may realize that if too much goes unresolved, it is possible that none of the stakeholders will get what they want.

7. Is development always bad? What are positive outcomes of development?

No, development can have positive impacts on communities. It can help spur local economies and provide necessary infrastructure for community members such as grocery stores, roads, and retail.

8. Which stakeholders would benefit from the Developer's plans and how?

Answers will vary.

9. How would this game be different if the forest is privately owned?

If the forest is privately owned, then under standard laws of typical municipalities, counties, states, or federal government, the owner would be allowed to do whatever they want to the forest without public input.

10. How might population growth contribute to the challenges associated with forest management?

Answers will vary. Students may mention that there could be more perspectives and stakeholders, that there could be a stronger need for development to provide housing, schools, etc. for more people, that wildlife may be even more threatened because of human encroachment, etc.

assessment

Students write a short, persuasive argument from a different stakeholder's point of view (not the stakeholder they represented in the game). This argument should be in favor of achieving all of the desires indicated on the Stakeholder Role Card. Ask students to consider how their wants might impact other stakeholders and the overall fate of the forest.

follow-up activities

1. Have students write a short reflection on how their stakeholder fared in the game – were they able to meet their goals as indicated on their Stakeholder Role Card? If not, how did they feel about the agenda items that were passed?
2. Have students come up with their own agenda items. What are some local issues that your community might face if this were happening in your hometown? How would those issues be resolved?

¹Food and Agriculture Organization of the United Nations. (2020). *Forests and Climate Change*. Retrieved July 15, 2020 from <http://www.fao.org/state-of-forests/en/>

Landmark Deal Protects Over 9 Million Acres Of Canadian Rain Forest

A landmark deal 10 years in the making will protect 9.1 million acres of Canadian rain forest on the Pacific Coast of British Columbia.

The protected area in the Great Bear Rainforest is about half the size of Ireland.

The new land-use order — reached between aboriginal groups known as First Nations, environmental groups and logging companies — designates 85 percent of the forest land as permanently protected from logging.

The remaining 15 percent of the forest will be “available for logging, supporting local jobs,” a press statement from the British Columbia government says. The CBC says logging will be permitted there “only under conditions described as the most stringent in North America.”

The Great Bear Rainforest “represents the largest tracts of intact temperate rainforest on Earth,” according to CBC.



The Canadian broadcaster describes how Monday’s agreement arose out of conflict:

“The agreement to protect the region was first announced 10 years ago, following a period of deep conflict between First Nations and timber firms over old growth logging that made headlines worldwide, and led to commercial pressure to avoid products sourced in the area.”

“A coalition between forestry companies and environmental groups was formed in 2000 in an attempt to resolve the conflict, with both logging and boycott campaigns suspended voluntarily in 2001. At the same time, parallel talks were taking place between the province and indigenous leaders.”

“An agreement between all parties to protect the forest was announced in 2006, leading to a decade of discussions and negotiations before that agreement could be fulfilled.”

There are 26 First Nations in the forest area, the Globe and Mail reports. Chief Marilyn Slett is the leader of one such group, which she says has lived in the Great Bear Rainforest for more than 10,000 years. Here's her reaction, in the British Columbia government press release:

“Today we celebrate the restoration and implementation of responsible land, water and resource management approaches in the Great Bear Rainforest. Ecosystem-based management is the modern term which describes what we have always believed and practiced: If we use our traditional knowledge to take care of our lands, waters and resources they will take care of us. Our vision for the future is one where ecosystems and potential developments in the Great Bear Rainforest are in balance.”

In reaction to the decision, Jens Wieting of the Sierra Club British Columbia called the rain forest “a landscape where economic activity will again begin to align with nature’s limits.”

The forest is home to a rare variant of black bear that has cream-colored fur, known as a spirit bear. As National Geographic reports, “it’s found almost exclusively here in the Great Bear Rainforest. Also here in this spooky, wild, mysterious place: Grizzlies, black bears, wolves, wolverines, humpback whales, and orcas.”

©2017 National Public Radio, Inc. News report titled “Landmark Deal Protects Over 9 Million Acres Of Canadian Rain Forest” by Merrit Kennedy was originally published on npr.org on February 2, 2017, and is used with the permission of NPR. Any unauthorized duplication is strictly prohibited.

WHAT'S AT STAKE FOR THE FOREST? | rules of the game

Goal of the Game

The board is made up of two separate tracks. One track is the 'cooperation track' and the other is the 'development track.' The seven community stakeholders must advance through the cooperation track before the development track is complete. If the development track is complete before the cooperation track, the Developer will gain exclusive access and control over the forest.

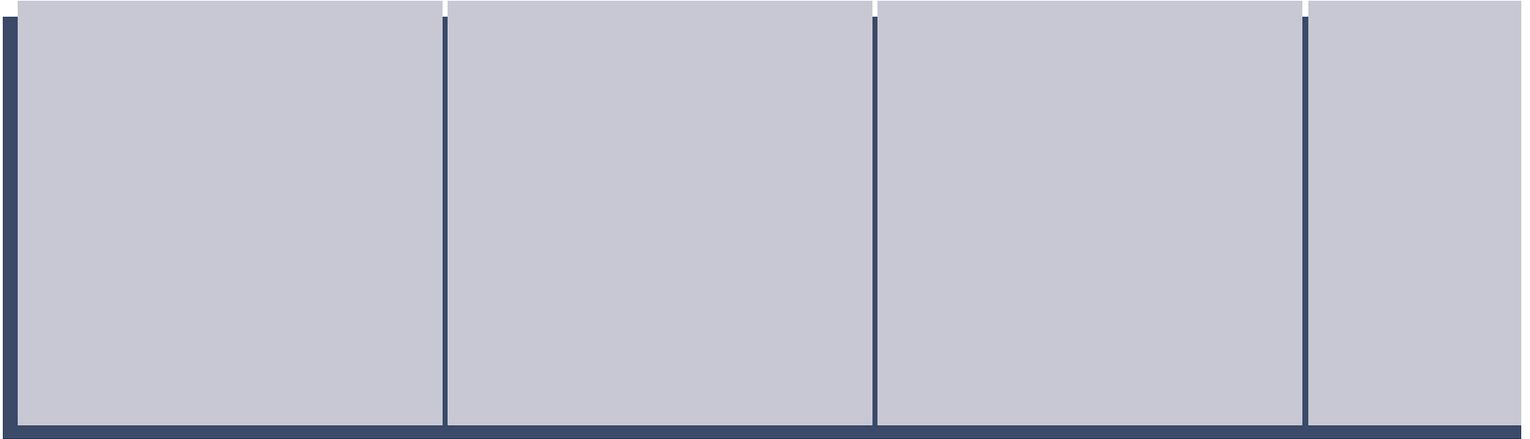
Game Play

1. Each person picks a Stakeholder Role Card at random. Take turns sharing your Stakeholder Role and priorities with the group.
2. The person with the most recent birthday starts the game by drawing two Agenda Item Cards. This player will then choose one of the drawn cards and read it to the group. (Place the other Agenda Item Card in the discard pile.)
3. After the card is read, all Stakeholders must vote on whether or not to pass the item.
 - a. Remember to consider your Stakeholder Role when determining your vote – as a Stakeholder, your goal is to make sure at least one of your priorities is passed.
 - b. You will have one minute to deliberate with other Stakeholders and try to influence each other before the official vote takes place.
4. Conduct the vote!
 - a. If there is a majority (5-3) vote in favor of passing the Item, place the Agenda Item Card face-up on the cooperation track.
 - b. If the group cannot come to consensus and the Agenda Item does not pass, the Developer flips over a Development Card, reads it aloud, and places the card face-up on the development track.
 - c. The development track advances each time the group fails to come to a consensus and win a majority vote. You will need to make difficult decisions and may need to forge alliances (that you can hopefully trust) along the way in hopes of completing the cooperation track in time.

Note: In the end, only seven Agenda Items will be enacted (meaning they make it onto the game board's cooperation track). Remember the Agenda Items are drawn at random. This means that if you vote for someone else's priorities, you may be eliminating a spot on the cooperation track for your own goals in the future. However, there is a risk that your card won't come up in time to be voted into law, so you'll need to be strategic while considering what compromises to make.
5. Continue clockwise, drawing and voting on Agenda Item Cards. If you get through all the Agenda Item Cards, shuffle them and then continue pulling from the top of the pile.
6. Game play ends when either the cooperation track or development track has been filled.

WHAT'S AT STAKE FOR THE FOREST? | game board

COOPERATION TRACK



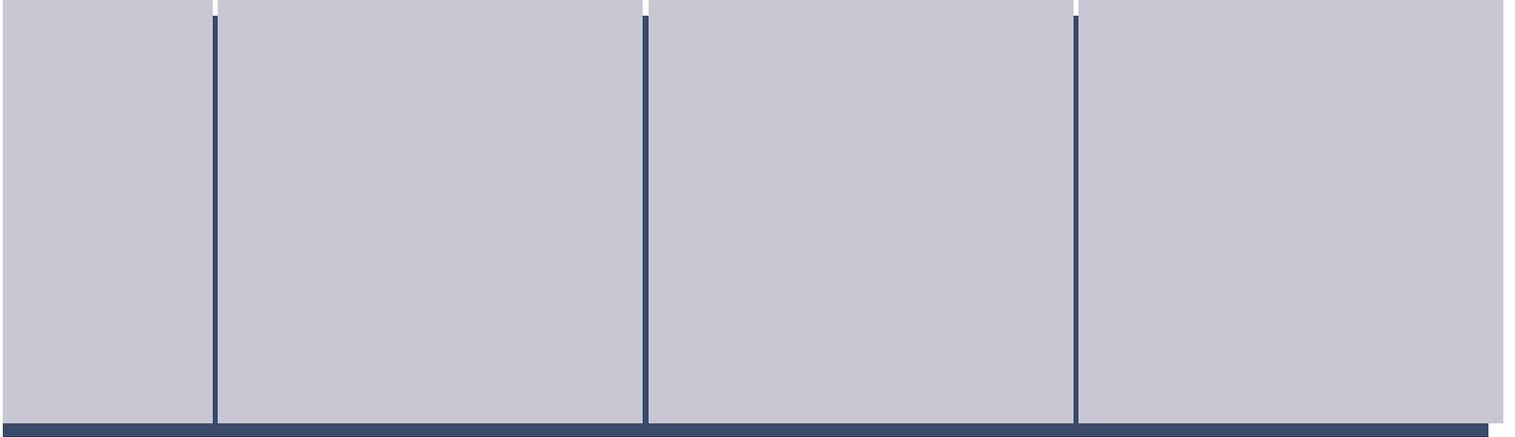
START



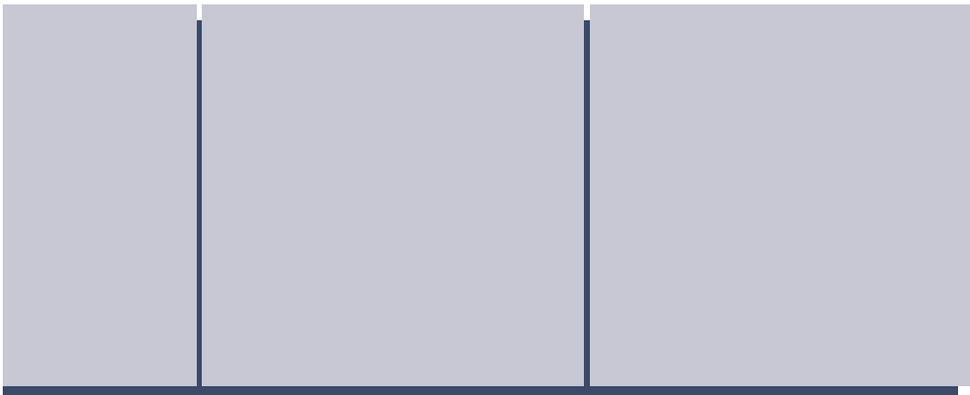
DEVELOPMENT TRACK



START



FOREST WINS!



DEVELOPER WINS!

WHAT'S AT STAKE FOR THE FOREST? | stakeholder role cards

CITIZEN

You are a local citizen, concerned for the future of the beautiful forest you have lived near your entire life. This forest has served you with recreational opportunities as well as being a welcome scenic relief from all the buildings cropping up in town. You recall fond memories of camping in the forest, hiking on nice days, and learning to fish in the river that passes through the forest. Feel free to bring your own opinions and preferences into this role.

These are your priorities:

1. The creation of designated campgrounds.
2. Scenic overlook areas are preserved.

FOREST ALLIANCE REPRESENTATIVE

This is the moment you have been waiting for (but hoped would never come!). As a longtime member of the local forest watch group you know exactly what is at stake. You represent the community, from longtime residents to recent arrivals, and your job is to convey how the community feels the forest and its resources should be managed. You're plugged into the community's social scene and know that your peers enjoy skiing, biking, camping, and just generally enjoying time outdoors. You're also aware of all the benefits, or ecosystem services, a forest has to offer and you want to highlight those and keep them functioning and available for generations to come.

These are your priorities:

1. Designated wildlife management areas (for hunting, fishing, etc.).
2. Trails are maintained for walking, hiking, biking, etc.

MAYOR

You represent the community as a whole, from concerned citizens, to business owners, to the identity and culture of your community. You recognize that the forest must be preserved, but also see the potential for your town to benefit from the growth and jobs that development brings. You've been approached by constituents who wish to see some of the forest land cleared for agricultural use such as grazing and farming; others want more recreation and educational programs to help the community enjoy and learn about the local landscape. With all this in mind, you know you have to try and see the benefit for all players in your community in all proposals.

These are your priorities:

1. Construction of forest roads because you believe it will spur tourism to your town.
2. Development, as long as it is done with social and environmental consciousness in mind and with the input of the local community.

DEPARTMENT OF NATURAL RESOURCES REPRESENTATIVE

You are a representative of the U.S. government. You are concerned with ensuring that whatever happens, this forested area is in compliance with federal forest regulations. You're interested in building a more accessible forest so that forest users and forest rangers can easily navigate the area and check on any and all operations happening within the forest. This could include logging, trail maintenance, and even first responders to any civilian injuries as a result of outdoor recreation. You're also concerned with maintaining trees and forested ecosystems, and in sustaining natural resources such as air, water, and land.

These are your priorities:

1. Enact the Wilderness Act.
2. Secure two main roads through the non-wilderness areas of the forest. This will enable access to different parts of the forest and aid in regulation of forest activities.

CONSERVATION GROUP REPRESENTATIVE

You've spent your life advocating and organizing. You're aware of other communities that have dealt with similar cases and feel confident that working together you'll be able to do right by the land and its people. You are okay with logging small parts of the forest so long as it is done sustainably and some of the profits return to the local communities. This way people benefit from much-needed products and, at the same time, ensure ecologically healthy, vibrant forests and income to the community and forest programs.

These are your priorities:

1. Designate at least 60 percent of the forest as protected.
2. An agreement to balance resource production and resource protection.
3. A nature center is erected to serve as an environmental advocate through education and advanced communication, cooperation, and exchange among organizations.

FIELD BIOLOGIST

Your approach to what could happen to the forest is a scientific one. You're concerned with research opportunities and the well-being of rare plants and animals and their habitats. You know that improperly constructed roads and poor road maintenance can increase the risk of erosion, landslides and slope failure, which can endanger the health of watersheds that provide drinking water to your town's local residents and provide critical habitat for fish and wildlife. Your life's work has been on a rare frog species that makes its home in the river located in the forest and you know that any disturbance, however big or small, can have irreversible impacts on the frog's future.

These are your priorities:

1. A requirement that any proposed development includes an Environmental Impact Assessment and a management plan for the frog's protection and viability.
2. Construct a nature and research center for other researchers to utilize and to serve as an educational facility for the local community and schools.

COMMERCIAL FORESTRY INDUSTRY REPRESENTATIVE

Your company has sent you out on your first assignment. Your job is to acquire as much timber as possible at the best price. Specifically, you are after softwood trees, which are great for making paper, and wood sourced from old growth trees because they have significant economic value. You're also interested in setting up infrastructure that would allow your company to process the harvested trees without having to transport them far.

These are your priorities:

1. A sawmill is built on the periphery of the forest and near a main road making it accessible to employees from all over the area.
2. Exclusive logging rights in the forest.

COMMERCIAL REAL ESTATE DEVELOPER

You represent the company that wishes to clear-cut the forest to build apartments, condominiums, and a luxury mall. The remaining land will be parceled off and sold to the highest bidder. That is the ideal, however your boss is interested in you coming back with something to show for your extended travel even if it isn't exactly what he wanted. Your job is to try and thwart all community agenda items and deadlock the vote. Do whatever it takes to prevent cooperation and consensus and remember that you have the development company's backing and, therefore, all their funds at your disposal.

These are your priorities:

1. At least 100 acres of land are sold to you because you can't go back to your boss empty handed!
2. Build a nine-hole golf course resort that will span 250 acres.

WHAT'S AT STAKE FOR THE FOREST? | agenda item cards

Agenda Item

All areas of the forest assessed as old growth are to be set aside for conservation.

Agenda Item

A logging access road will be built through the forest.

Agenda Item

Begin construction of at least one main road through the forest. The road will have an impact on wildlife habitats and several biodiverse areas of the forest.

Agenda Item

Build an extensive system of trails.

Agenda Item

Four campgrounds will be built throughout the forest, however the chosen sites will eliminate at least one of the main forest roads.

Agenda Item

Enact the Wilderness Act which will apply to at least 40 percent of the forest (pending an EIA of the entire forested area). This is the highest form of land protection in the U.S. and strictly prohibits activities like logging or mining, permanent roads and commercial enterprises. Wilderness areas generally do not allow motorized equipment.

Agenda Item

Conduct an Environmental Impact Assessment (EIA) on all proposed development sites (buildings, roads, campgrounds, trails, etc.). These are costly and must be paid for by the party proposing the development.

Agenda Item

100 acres will be sold to the Developer so long as they agree to use best practices and to manage the land sustainably. (Ask Developer if they agree. If yes, it passes. If no, it does not pass.)

Agenda Item

Break ground on a sawmill to process harvested trees. This will be on the periphery of the forest and is sure to create new jobs.

Agenda Item

Plan to designate wildlife management areas (to be managed by your states Division of Natural Resources).

Agenda Item

Designate at least two areas in the forest as scenic overlook areas (these roads are often accessed by vehicles or hikers).

Agenda Item

The timber company gets sole rights to log in the forest as long as they agree to employ local residents and comply with the most current environmental regulations at all of their operations.

Agenda Item

Begin construction of a two lane highway that will connect the forest to the local town and to an interstate.

Agenda Item

The Developer will build a golf course.

Agenda Item

Break ground on a pulp and paper mill to further process the lumber extracted from the forest. This will create new jobs for local residents.

Agenda Item

A nature center will be established to educate and inspire local children and adults. However, the nature center site is in direct competition with the sawmill site.

WHAT'S AT STAKE FOR THE FOREST? | development cards

<p>Development Card</p> <p>After a secret meeting with the local councilmen and councilwomen, you've secured a position on the city council.</p>	<p>Development Card</p> <p>The timber company clear-cuts 100 acres of old growth forest.</p>	<p>Development Card</p> <p>The Commercial Real Estate's legal team has had enough and decides to start a lawsuit against the city. This is sure to slow down any progress in the forest.</p>
<p>Development Card</p> <p>Development company gains 20 percent of forest.</p>	<p>Development Card</p> <p>No action, you got lucky this time!</p>	<p>Development Card</p> <p>A local family has decided to sell you their land, which includes a small, but well located, piece of the forest.</p>
<p>Development Card</p> <p>No action, you got lucky this time!</p>		