Abstract

Mountains are places people often go to visit and enjoy themselves. But mountains are also complex ecosystems that provide diverse resources, such as food, water, and energy, for over half the population worldwide! Without mountains, our normal everyday life would not be sustainable for long. Unfortunately, there are many threats to mountain habitats around the world. We wanted to identify those threats and to find solutions to them. We found that politics pose the greatest threat to mountain ecosystems and that these ecosystems are best managed by local communities based on their own community needs.

Introduction

Mountains are ecosystems made up of different plants, animals, and human populations. Depending on how a mountain is formed, it is used in different ways by the people living there. Some mountain areas are used for growing crops, while others are better for raising livestock. Some people use mountains for extracting natural resources like water, wood, food, fuel, power, and minerals. Tourists also like to visit mountains for activities such as hiking, biking, and camping.

Because of their height and topography, mountains are often hard to get to, which can create challenges for the local populations. The local residents are usually the ones who extract and manage the rich mountain resources. But many of the resources found in mountains are transported away rather than being used locally. For example, trees might be used to make houses in big cities far from the mountains.

Mountains are not only rich in resources for human use, they are also very valuable for nature itself. Many different plants and animals only live in mountain areas and nowhere else (like mountain goats). This makes mountain systems an exceptionally beautiful habitat. Human populations living in the mountains help preserve these unique places and have become a valuable part of the mountain ecosystems.

Unfortunately, hazards like wildfires, landslides, avalanches, and floods can affect the landscapes of mountains. Climate change, which creates weather extremes, often leads to damaging events. Mountains are also vulnerable to changes in politics outside of the mountain regions, which can have a direct influence on the local environment and mountain communities.

To sustain mountains – along with their plants, animals, and their resources – we wanted to identify the most critical threats to our mountains, and find solutions to reduce them.
**Methods**

We put together a team from around the world to gather information and determine the greatest threats to mountains. The team was made up of scientists and others who care and know a lot about these important ecosystems. They collected data on the environments of over 57 different mountains and separated them into two groups:

1. Mountains where the local population managed the resources according to their own needs. In this group, the people living in the mountains used most of the wood for their own houses instead of selling it to big cities, for example.

2. Mountains where most resources were managed according to people living far from the mountains. Here, the wood was sold to big cities rather than used locally. The team then compared different aspects of mountains from the two groups with each other. For example, they studied the ecosystems and if people used the land for growing crops, animals or for tourism. By doing this, they found the similarities and differences between the groups and identified the most important threats for various mountain types. To verify the results, they surveyed a second group of mountain experts who were not involved in the initial research.

**Results**

We found that the most sustainable mountains are the ones that the local community (not far away communities) manages based on their own needs. People living in the mountains know the best way to use their resources sustainably. Many mountain communities are isolated from larger cities. Since it can be hard for them to get support, they have learned through experience to take care of their own needs. When these communities are managed by cities far away, the choices made for them are not always the most realistic or the most helpful.
Additionally, we found that politics were the biggest threat for all the regions we studied. Political decisions that influence mountains are mostly made by people living away from the area. The political decision-makers do not know the local people, and often they make rules based on commercial reasons, rather than caring for the ecosystem. This can also affect the people living on the mountains who often do not earn a good income for the important work they do.

Discussion

Preserving mountains is essential to our everyday life. They supply many important resources to over half of the people in the world. Since political decisions are usually made by people living away from the mountains, they are not usually good for the people living there. These decisions can cause people living in the mountains to leave the area looking for a better life, like more education and jobs. Because of this, there are fewer locals with specialized skills and experience. Their important knowledge, learned over many generations, protects the mountains – but it may be lost as people leave.

Our team found that the best way to keep our mountains healthy is for the local people to work together with researchers and decision-makers to figure out the future they want for their environment. Their on-the-ground knowledge makes them very helpful in that decision making and they are the people most affected by those decisions. Together, they decide the steps that must be taken to reach those goals.

Conclusion

Although mountains appear to be large and invincible, their ecosystems (and the human communities that rely on them) can be easily damaged. It is vital to help people understand how much we rely on mountain resources and the challenges our mountains face.

If you want to help, you can start a campaign where you live. Looking for inspiration? Check out what other young environmentalists are doing: https://www.treehugger.com/child-environmentalists-that-have-already-changed-the-world-4857704

Another way to care for the environment is to take care when you are vacationing in the mountains. Dispose of your waste correctly, talk to local people about their experiences and encourage your family and friends to take care of the natural environment around you.

Glossary of Key Terms

Commercial – set up to make money, such as selling products from the mountains.

Ecosystem – a group of living organisms (such as different plants and animals, but also bacteria and humans) that interact with each other and sometimes even work together.

Extracting – activities that take materials from the natural environment; for example, when loggers cut down trees from a mountain.

Natural resources – something that is found in Nature that can be used by people. For example, trees that can be used to build houses.

Preserve – try to keep something (like an ecosystem) the way you found it.

Sustainable – using resources in such a way that they will continue to be available in the future.

Topography – the shapes and features of the land. These features usually include things like cliffs, rivers, lakes, valleys, forests, and glaciers.
Check your understanding

1. Why are mountains important for people?

2. What is the biggest challenge in mountain ecosystems and why?

3. What would be the best way to solve this problem?

4. What are some things you can do to preserve the environment when you visit the mountains?

5. Can you think of other ecosystems that are vulnerable? How can they be protected?

REFERENCES


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