

# ACTIVITY 4 FUTURE STRATEGIES

What happens in snowy regions as climates grow warmer? In places like Iceland, the glaciers begin to melt. Surprisingly, this causes the land to rise as the weight of the ice decreases. It also causes certain species of fish, which have provided food and income, to leave the region as fresh water flows from the melting glaciers into the ocean, changing the habitat.

In the Alps, warming climates threaten hundreds of plant and animal species that have adapted to a snowy climate. In Écrins National Park, for example, the rock ptarmigan will likely lose more than 90% of its habitat by 2090. With less snow, color-changing animals, like the Arctic fox and snow hare, find themselves exposed because they no longer blend into their surroundings. And the Alpine ibex must try to survive on less grazing land as they seek colder temperatures higher in the mountains.

Humans are affected, too. Alpine ski resorts must now use snow machines to remain open during the tourist season, tapping into water supplies that would otherwise sustain the water cycle. In the Great Lakes region, warming climates mean that the lake water freezes for shorter periods and the ice covers a smaller area. This reduces winter tourism in the region, which removes billions of dollars from the local economy.



## PART 1: UNDERSTANDING THE PROBLEM

Choose one of the regions featured in the film and conduct a brief internet search to find out more about how climate change is impacting its snowpack and/or winter weather. Here are some articles to begin with:

- **Artificial Snow Harms Alpine Water System**, <https://www.reuters.com/article/us-alps/artificial-snow-harms-alpine-water-system-scientists-idUSL1855373020070418>
- **Focus on the Ptarmigan** (you may need to click the “translate” button in your browser), [www.ecrins-parcnational.fr/dossier/zoom-sur-le-lagopede-alpin](http://www.ecrins-parcnational.fr/dossier/zoom-sur-le-lagopede-alpin)
- **What worries Iceland? A world without ice. It is preparing.** [www.nytimes.com/2019/08/09/business/iceland-ice-melt-global-warming-climate-change.html](http://www.nytimes.com/2019/08/09/business/iceland-ice-melt-global-warming-climate-change.html) (also found at [www.newsrust.com/2019/08/what-worries-iceland-world-without-ice.html](http://www.newsrust.com/2019/08/what-worries-iceland-world-without-ice.html))
- **Lake Effect Snow Season**, <https://medialibrary.climatecentral.org/resources/lake-effect-snow-season>

Write three new facts you’ve learned from your research:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

## PART 2: FINDING A SOLUTION

What is the solution? In Les Orres, France, a ski resort is being used as a Living Laboratory to help find ways to reduce carbon emissions and energy consumption in winter tourist locations. There are two other labs, one in Italy and one in Austria. Each facility is making efforts to reduce energy used in all its functions — ski lifts, snowmaking machines, hotel rooms, etc. Read more about the SMART Altitude project at [www.alpine-space.eu/projects/smart-altitude/en/home](http://www.alpine-space.eu/projects/smart-altitude/en/home).

Now it’s your turn. Can you think of some ways that local governments and communities can evolve to meet their changing weather patterns? Brainstorm with your classmates ways to prevent snow from disappearing as a result of climate change. For every idea, weigh the pros and cons below.



**Idea 1:** \_\_\_\_\_

Pros: \_\_\_\_\_

Cons: \_\_\_\_\_

**Idea 2:** \_\_\_\_\_

Pros: \_\_\_\_\_

Cons: \_\_\_\_\_