This document provides a lesson outline using a phenomenon from the Global Vegetation Project (gVeg). Our intent is to provide you with a phenomenon from gVeg that you can use to stimulate discussion and lessons within your classroom. Bookmarks are present throughout the document to ease your navigation. Your class may take the phenomenon in many directions; we aim to anticipate a few of those directions and provide resources and ways to utilize gVeg. We also recognize that each educator has specific styles, student needs, time restraints, and outcomes to hit. This is intended to be a resource that fits your needs as an educator while sparking student interest and joy. Use this resource in whatever way best suits you!

Overarching Phenomenon

Why do trees stop growing at a certain point on mountains?

Image credit: https://earthscience.stackexchange.com/questions/7027/what-is-the-name-for-the-forested-areas-in-mountains-below-the-treeline

Introduction and Background

At a global scale, vegetation is largely shaped by precipitation and temperature differences which lead to large groupings of plants that are evolutionarily adapted to survive in the regional climate. These ecological relationships have led to major terrestrial life zones, or biomes, which include grasslands, forests, deserts, and tundra. However, if we take a closer look at individual communities across these climate gradients we see that there are more factors at play. For example, much of Wyoming is classified as desert shrubland yet we still find coniferous forests from place to place within those biomes.

At a more local scale, plant communities are also shaped by other abiotic (non-living) conditions and biotic (living) interactions that determine species' growth, survival, and reproduction; a group of factors that are collectively called evolutionary fitness. Who "wins" and who "loses" is dependent on whether an individual plant's physical characteristics, or traits, are well adapted to the local environment. Species with waxy leaves do better in desert environments and a low, cushion-like growth form is advantageous in the alpine, for instance.

Elevation is one such abiotic factor that can majorly affect vegetation at local scales within a single biome. As elevation increases, atmospheric pressure decreases, air expands, and temperature decreases in predictable increments. When rising air cools, it also carries moisture which condenses and falls as precipitation at higher altitudes. The result is a series of local climatic conditions that allow one to pass through shrubland, forest, and alpine life zones just by climbing a single mountain. In fact, a distinct treeline can be even seen at the boundary where elevation makes conditions too cold for trees to grow and survive. Climate change seriously affects these local life zones because warming temperatures literally shift zones higher and higher, forcing plants and animals onto an "escalator towards extinction" as they chase suitable habitats upward until the mountaintop is reached.

When considering why trees stop growing at certain points on a mountain, several factors are at play. The one seen to be most critical is temperature, which lowers as elevation gets higher. If a tree is to survive the harsh alpine winters, it must have a sufficient growing season in the summer. The more quickly soil temperatures warm, the more quickly trees can begin acquiring resources for winter. This changes with latitude. In places like Mexico, treeline is much higher than it is in Wyoming. Treeline is also impacted by changes in summer weather conditions. For example, treeline on some Northeastern U.S. mountains occurs much lower than the Rockies because their summers are cool and cloudy. Overall, there are certain conditions where soil temperatures and summer weather conditions prevent tree success, leading to the phenomenon of a treeline.

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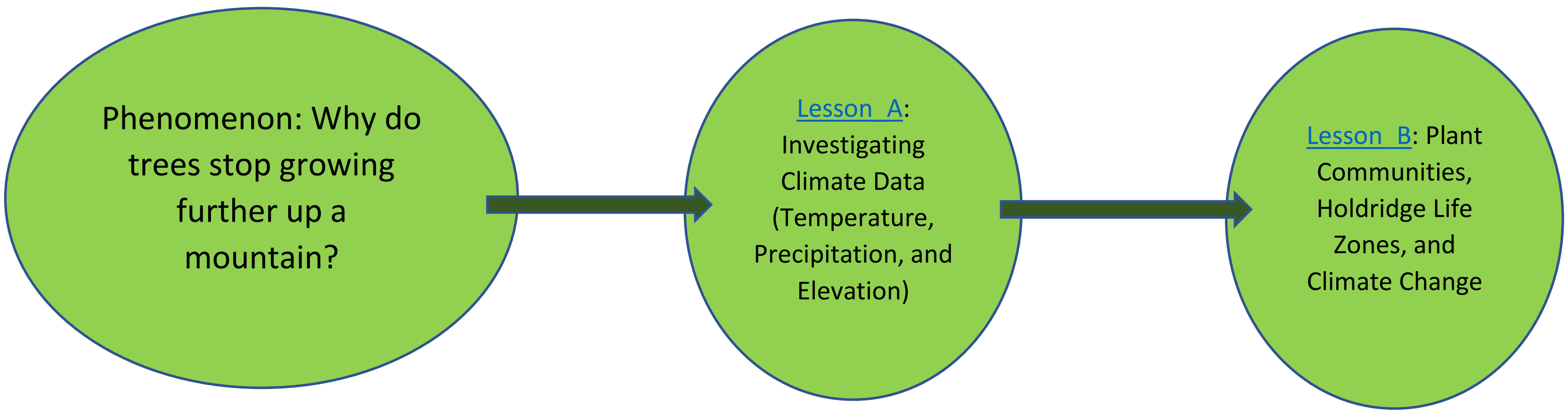
Lesson Ideas

Below is written a framework for presenting the phenomenon, a plan for analyzing data, and several potential lines of student-generated inquiry that may develop. A suggestion for the presentation of the phenomenon is at the beginning. Following that, the Phenomenon Map provides several lines of inquiry that your students may generate. You may choose to go in any of those directions. Allow the students to guide the path of your teaching!

Phenomenon Map

The figure below maps a potential course for engaging students with the phenomenon and given material. The green bubbles are the activities described in this document and support by gVeg. In this format, begin with Lesson A and then progress to Lesson B.



<u>Presentation of Phenomenon</u>

Activities	Rationale
Begin with students looking at [Phenomenon Pictures] (or other pictures of treeline that could be close to home. If mountains are visible from your school, you can have students observe outside!). Have students record what they notice, what it reminds them of, and what they wonder. Have students share answers with a classmate. Then, record student wonderings in a place visible for the whole class.	This is the first step in engaging students with this phenomenon. This allows for you to determine students background knowledge, previous experience, misconceptions, and questions. Recording this for the whole class to see allows transparency in the learning process and provides students' to observe the agency they have in generating knowledge in the classroom.
Ask "Why do the trees stop growing further up the mountains?" Give students a few minutes to think and develop answers and questions they want to investigate. Have them share with a student next to them. Again, record all ideas and student lines of inquiry	If students did not hit on the subject of the trees stopping during the initial observation, this question ensures they begin thinking about this particular phenomenon. You can also begin to get a more clear picture of which lines of inquiry students may be interested in most.
Open the gVeg platform and pull up these two photos: Photo 1-Subalpine: Elevation 10,210 ft; Photo 2 - Alpine: Elevation 11,063 ft. You have the option of showing them in front of the whole class or having students access the pictures on their own. Only tell students the elevation of each picture. Have students look at each photo and make detailed observations for each one, noting the types of plants, where they are growing, plant height, number of plants, etc. You may have students record observations in a T-chart or Venn Diagram to compare similarities and differences between the two sites. When done, have students share answers in small groups	By providing students with a closer in look at snapshots of these environments, you can begin to gain a better understanding of student knowledge and questions. Students may now start thinking about the specific plants that live in these places or the conditions that may be impacting them on a regular basis.
Now that they have looked up close, ask the question again: "Why do the trees stop growing further up the mountains?" with the added context of looking at both of these environments up close. Record new ideas or lines of questioning students generate	By fielding questions here, you will get an idea of what direction students might take this investigation. If students begin talking about weather, climate, precipitation, or elevation, you may choose to continue with Lesson A. If the questions lead more towards the types of plants, their

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	adaptations and characteristics, or climate change, you may continue with Lesson B

Lesson Ideas

Lesson A

Below are the Performance Expectations, Science and Engineering Practices, Crosscutting Concepts, and Disciplinary Core Ideas present in this lesson. The color coding is in line with the Next Generation Science Standards (NGSS). The color coding is consistent throughout the document, reflecting where each of the three dimensions are present.

Performance Expectations	HS-LS2-2 Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.
Science and Engineering Practices	Engaging in Argument From Evidence: *Construct, use, and/or present an oral and written argument or counter-arguments based on data and evidence. Make and defend a claim based on evidence about the natural world.* Using Mathematics and Computational Thinking *Use mathematical, computational, and/or algorithmic representations of phenomena or design solutions to describe and/or support claims and/or explanations.* Analyzing & Interpreting Data: *Apply concepts of statistics and probability (including determining function fits to data, slope, intercept, and correlation coefficient for linear fits) to scientific and engineering questions and problems, using digital tools when feasible. Consider limitations of data analysis (e.g., measurement error, sample selection) when analyzing and interpreting data.*
Crosscutting Concepts	Cause & Effect: *Empirical evidence is required to differentiate between cause and correlation and make claims about specific causes and effects. Changes in systems may have various causes that may not have equal effects.* Patterns: *Empirical evidence is needed to identify patterns.*

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	Classifications or explanations used at one scale may fail or need revision when information from smaller or larger scales is introduced; thus requiring improved investigations and experiments.
Disciplinary Core Ideas	Interdependent Relationships in Ecosystems: *Ecosystems have carrying capacities, which are limits to the numbers of organisms and populations they can support. These limits result from such factors as the availability of living and nonliving resources and from such challenges such as predation, competition, and disease* Adaptation *Adaptation also means that the distribution of traits in a population can change when conditions change. Changes in the physical environment, whether naturally occurring or human induced, have thus contributed to the expansion of some species, the emergence of new distinct species as populations diverge under different conditions, and the decline–and sometimes the extinction–of some species.*

Lesson Progression

This lesson takes the two gVeg locations from the phenomenon presentation and provides students with the opportunity to compare temperature and precipitation data. Students can begin to get a better idea of how these sites may differ and how those differences may impact how plants grow there, specifically trees. The higher elevation site is colder and sees more precipitation in the form of snow, limiting tree growth. Students will also begin to investigate how elevation impacts climate and species richness. Higher elevation sites will be colder and have snow on them longer. Species richness also declines with elevation. Students will be able to see how sites throughout the world at high elevations have either no trees or very low trees and shrubs. They can connect this to the temperature and precipitation and also consider thinking about other conditions that may impact plant growth at high elevations (such as strong winds).

Activities	Rationale
Hopefully a student brought up weather/climate/precipitation and you can engage this line of inquiry, giving students agency. Tell students that there is data they may dig into to investigate their ideas. Provide students with data tables on precipitation and temperature for each site (these are also accessible in the excel	Students are provided with an opportunity to make sense of climate data provided to them. Hopefully students will notice that the lower elevation, subalpine site that has trees has generally warmer temperatures and less precipitation than the higher elevation site. Using this as evidence, students may

document found with the lesson resources). There are also blank graphs available. Have students graph the data. Use the attached Walter-Lieth guide to assist in both yours and students understanding of these diagrams.	begin making connections to why one site has trees and the other does not.
When finished graphing, have students compare the data from both sites. Pose the questions: "What do the patterns of temperature and precipitation data tell us about these two locations? How might this weather affect the plant life?" Student claims must be backed by evidence. Have students discuss their claims and justifications in pairs or groups of three. Have them pay particular attention to any difference sin their arguments/claims. They all used the same data so why may there be differences? See these discussion prompts for students to use while talking about data.	Students have the opportunity now to both compare their claims to peers and to practice justifying their claims with evidence. Students should be using information from the graph and data tables to show how the alpine site is colder and receives more precipitation. This may get students to start thinking about how trees may not be able to deal with colder temperatures or the amount of precipitation, especially in the form of snow.
When students are done sharing, transition the conversation to elevation (hopefully students brought this up or this was a previous question/observation). Note again the difference in elevation between the two locations. Draw on student experience or thoughts, prompting discussion on ow mountains change as the elevation changes.	This sets the stage for investigating how elevation impacts temperature, species richness, and other environmental features as one gets higher on a mountain.
Bring in another data set on elevation temperature and pressure. You may have students graph this data or just use the table (if graphing both, have pressure and temperature on separate graphs). If graphing, have students create their own graphs. Have students determine if they can fit a linear trendline to either the pressure or temperature data. You can have them use that to predict the temperature at the two gVeg sites. When finished, have students also look at the graph on elevation and species richness. With this new information, have students return to their claims from the previous activity. Have students revise their claims based on this new evidence.	Students have some advanced opportunities to analyze data mathematically and to also revise their thinking based on new evidence. Students should see both drops in pressure and temperature with elevation along with a decline in species richness. With evidence from the previous activity, they can start to see a picture of alpine zones with lower temperature and low species richness. They now have data to back up these claims.

It should be clear to students that elevation plays a role in vegetative growth through temperature. Have them test if temperature limits are consistent with data from around the globe. Have students re-engage the gVeg platform. Using the filter setting on gVeg, set the elevation from 3000 m to 4500 m (see this picture for guidance). Have students look at sites in other countries or locations. Have them note similarities and differences to the Wyoming sites. Using the linear trendline from earlier, have students calculate the temperature at the sites they investigate (elevation data is present on gVeg) Have students determine whether a consistent pattern exists among temperature and treeline. Students may compare patterns to each other to see if any similarities or differences arise.	This piece of the activity allows students to get a sense of regional and global patterns of elevation and the presence of trees. Students can also put some of their mathematical analyses to the test, using the elevation and temperature trendline to see if there is any worldwide pattern (for example, do no trees exist above 4000 m worldwide? Does temperature perhaps account for this phenomena?). Students can also gain more familiarity with gVeg.
In ending, return to the original phenomenon question on why the trees stop. Determine whether students identified anything they think answers the problems, especially in relation to temperature. Potentially have student read this article on treeline that is linked. Also record any new questions or lines of inquiry that students now have. Let them know that the next lesson will allow a further dive into the characteristics of trees and plants that allows them to survive in certain conditions.	This provides a natural checkpoint that allows you to determine what students have taken from this activity. Hopefully students have a pretty good idea that colder temperatures, more snow, and high elevation impacts the presence of trees. However, this is not the whole story. If students begin discussing tree characteristics, traits, adaptations, or anything related to plant structure, you may continue with Lesson B

Lesson B

Below are the Performance Expectations, Science and Engineering Practices, Crosscutting Concepts, and Disciplinary Core Ideas present in this lesson. The color coding is in line with the Next Generation Science Standards (NGSS). The color coding is consistent throughout the document, reflecting where each of the three dimensions are present.

Performance Expectations	**HS-LS4-5**: Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.

Science and Engineering Practices	Engaging in Argument From Evidence: *Compare and evaluate competing arguments or design solutions in light of currently accepted explanations, new evidence, limitations constraints, and ethical issues. Respectfully provide and/or receive critiques on scientific arguments by probing reasoning and evidence and challenging ideas and conclusions, responding thoughtfully to diverse perspectives, and determining what additional information is required to resolve contradictions. Construct, use, and/or present an oral and written argument or counterarguments based on data and evidence. Make and defend a claim based on evidence about the natural world or the effectiveness of a design solution that reflects scientific knowledge, and student-generated evidence. Evaluate competing design solutions to a real-world problem based on scientific ideas and principles, empirical evidence, and logical arguments regarding relevant factors (e.g. economic, societal, environmental, ethical considerations).* Analyzing & Interpreting Data: *Analyze data using tools, technologies, and/or models (e.g., computational, mathematical) in order to make valid and reliable scientific claims or determine an optimal design solution. Evaluate the impact of new data on a working explanation and/or model of a proposed process or system. Analyze data to identify design features or characteristics of the components of a proposed process or system to optimize it relative to criteria for success.*
Crosscutting Concepts	Cause & Effect: *Empirical evidence is required to differentiate between cause and correlation and make claims about specific causes and effects. Changes in systems may have various causes that may not have equal effects.* Patterns: *Empirical evidence is needed to identify patterns.* *Classifications or explanations used at one scale may fail or need revision when information from smaller or larger scales is introduced; thus requiring improved investigations and experiments.*
Disciplinary Core Ideas	Ecosystem Dynamics, Function, and Resilience: *Anthropogenic changes (induced by human activity) in the environment—including habitat destruction, pollution, introduction of invasive species, overexploitation, and climate change—can disrupt an ecosystem and threaten the survival of some species.* Weather and Climate

	Changes in the atmosphere due to human activity have increased carbon dioxide concentrations and thus affect climate. Current models predict that, although future regional climate changes will be complex and varied, average global temperatures will continue to rise. The outcomes predicted by global climate models strongly depend on the amounts of human-generated greenhouse gases added to the atmosphere each year and by the ways in which these gases are absorbed by the ocean and biosphere. Global Climate Change *Though the magnitudes of human impacts are greater than they have ever been, so too are human abilities to model, predict, and manage current and future impacts.* Biodiversity and Humans *Humans depend on the living world for the resources and other benefits provided by biodiversity. But human activity is also having adverse impacts on biodiversity through overpopulation, overexploitation, habitat destruction, pollution, introduction of invasive species, and climate change. Thus sustaining biodiversity so that ecosystem functioning and productivity are maintained is essential to supporting and enhancing life on Earth. Sustaining biodiversity also aids humanity by preserving landscapes of recreational or inspirational value.*

Lesson Progression

This lesson involves a combination of concepts is an extension of Lesson A. It begins by looking at a trend of mountain species and climate change, where warming temperatures allow lower-dwelling species to move up mountains. Eventually, species living near the top of mountains are outcompeted and threatened with extinction. Students will investigate this idea along with the idea of Holdridge Life Zones They compare recent climate data to the historic data they analyzed in Lesson A. Following that analysis, they use their knowledge of life zones from Lesson B to sketch out how life zones on mountains may change with 100 years of continuing climate change. Students can think dynamically about how treeline may change with a changing climate as well.

Activities	Rationale
Open by reframing the phenomenon question, potentially showing the Phenomenon Pictures. Provide a new question: "What do you	This gets students thinking in alignment with the goal of this activity. It also allows students to consider the idea that

think will happen to the trees if the climate continues to warm?" Have students generate ideas and questions.	maybe treeline is not permanent and is something that can change with time and new circumstances.
Introduce the Escalator_to_Extinction diagram. This is from a study in Peru. Explain that the left side shows bird data collected in 1985 for the Common Scale-backed antbird (light green), the Versicolored Barbet (yellow) and the Variable Antshrike (blue). The population was sampled at different elevations on a mountain. Ask students "Why do you think these populations and ranges changed between 1985 and 2017? What may have changed on the Earth since then?"	This diagram illustrates well the idea that as the climate changes and gets warmer, species tend to move up mountains, pushing the species at the top to extinction. Student shoulder generate ideas on why this has happened, hopefully honing in that since 1985, global temperatures would have risen, leading to increased temperature and perhaps changes in precipitation (drought, less snow, more rain than snow).
Allow students to share and compare answers with a partner. Explain that this trend may be found in plant species on mountains as well and will continue as the climate continues to change and warm.	Students have the chance to voice their opinion and also compare their answers to a peer's, perhaps learning or considering a different explanation.
Introduce students to the diagram on Holdridge_Life_Zones. These are a way to characterize zones by latitude, temperature, and humidity. For a brief explainer, look here. For a much deeper dive, check here Have students first look at the diagram and have them determine what they think it is telling them. Then, have them decide what the environments they have viewed in gVeg fall under.	The Holdridge Life Zones are one way to characterize different environments. Students may have heard some of these terms before, but seeing them in this way may give a little more purpose, especially when considering the factors of latitude, temperature, and humidity. It also connects back to the previous lesson where they looked at how temperature, precipitation, and elevation interacted.
Bring in the Holdridge_Zone_Maps showing carbon dioxide levels and the Holdridge_Zone_Key. The first picture shows the life zones with current CO_2 levels. The second shows what could happen if CO_2 emissions double. Have students compare the two diagrams (perhaps label a select number of sites for students to compare, like Wyoming, Florida, or parts of U.S. southwest). They can determine which life zones may disappear entirely. Have them devise explanations for why rising CO_2 levels would impact these sites so dramatically. Have them thinking of what vegetation will look like in those areas as well.	These maps show predictions for how life zones would change with rising carbon dioxide levels. The maps show a gradual shift northwards in life zones, with warmer life zones extending to higher latitudes and colder life zones retreating further north. By breaking it down into different areas, students can begin to consider what these areas might look like if our current carbon dioxide outputs continue. The places they recognize now would not look the same.

Return back to the photos on gVeg: Photo 1- Subalpine: Elevation 10,210 ft; Photo 2 - Alpine: Elevation 11,063 ft.. Students looked at historic climate data in Lesson A (1961-2009). Now they will compare that to data from 2010-2018. You may have them look at the recent data tables or compare the recent Walter Lieth diagrams (information can be found here or on excel sheet). Prompt students to think about the major differences and patterns in the climate data and how it has shifted. Is this connected to the rising carbon dioxide levels? What may this suggest for alpine environments? You may choose to have students share with a partner or in small groups once they have analyzed the data.	This activity provides an opportunity for students to explain through data how climate has changed in Wyoming over the last several decades. Instead of just speaking about climate change, students can see the numerical backing, especially in terms of rising temperatures and changes in precipitation. They can also connect this to the previous activity concerning rising carbon dioxide levels. The rising carbon dioxide is contributing to the increases in temperature they will see in this data.
Students now have the opportunity to dig into climate change here. First, ask students to think about how the loss of alpine environments may impact humans. After brainstorming, give students time to investigate these impacts. Some resources are provided below: Threats to Alpine Nature Climate Change in Wyoming Wyoming Grassland and Tundra Threats Rocky Mountain Climate Change Climate Change in Alps	Students can now compare their own thoughts and findings to research being done in the scientific world, especially relevant to Wyoming and other alpine environments. While students may see themselves as separate and disconnected from alpine environments, this research shows that there are important connections to the alpine and that their loss would impact the state, especially in terms of water availability. This process enables students to see the interdependent nature of humans with the ecosystems surrounding them.
After research, tell students that they will oversee the protection of the alpine and subalpine environments in the Wind River Mountains (or if relevant, closer mountain range to the school) for the next 50-100 years. Based on what you have discussed and researched, what would their plan be? What could they do to protect these life zones? How will this preserve certain human resources/activities? Why do they think this is important?	Students can now take this research and consider what humans can do to alter it. While things are not always trending in a positive direction, it is important for students that change to mitigate human impacts and the effects of climate change are possible.

In pairs or small groups, have students compare their plans. Have them reflect on the variety of answers given a similar prompt. Students may have the opportunity to critique and ask questions of each others plans. Give students the options to revise their plans in lieu of feedback or to combine their plan with a classmate's To extend this activity, have students present their plans to the class.	This is another chance for students to justify and defend their own work while evaluating a peer's work. They will be able to learn form each other while also practicing using evidence to back their work.
Finally, connect back to the original phenomenon. See if students have refined their answers or come up with any new questions. Have students make predictions as to what will happen to the treeline as the climate continues to warm and change. They can use all relevant information from previous lessons.	At this point, hopefully students should have a pretty good idea of what is responsible for treeline. A combination of weather conditions (trees cannot tolerate extremely lower temperatures or certain levels of snow), adaptations (trees lack some of the hardier adaptations that other alpine plants have, including ways to retain water and grow low), and climate change (warmer temperatures may be pushing trees up the mountain, potentially resulting in a world where there is no treeline). Students may have some of these understandings but not all of them. Depending on where students still have questions or misconceptions, you may choose to continue exploring these ideas.

Resources

Phenomenon Pictures

Wind River Range, Wyoming
Image credit: https://www.americansouthwest.net/wyoming/wind-river-range/index.html

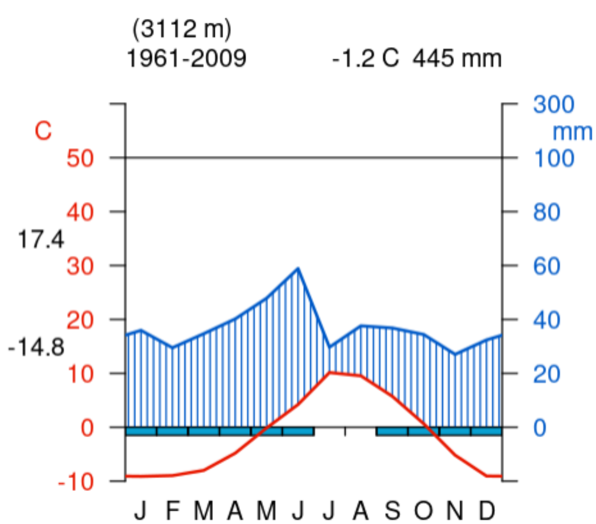
Sheep Mountain, Wyoming
Image credit: https://en.wikipedia.org/wiki/Sheep_Mountain_(Teton_County,_Wyoming)

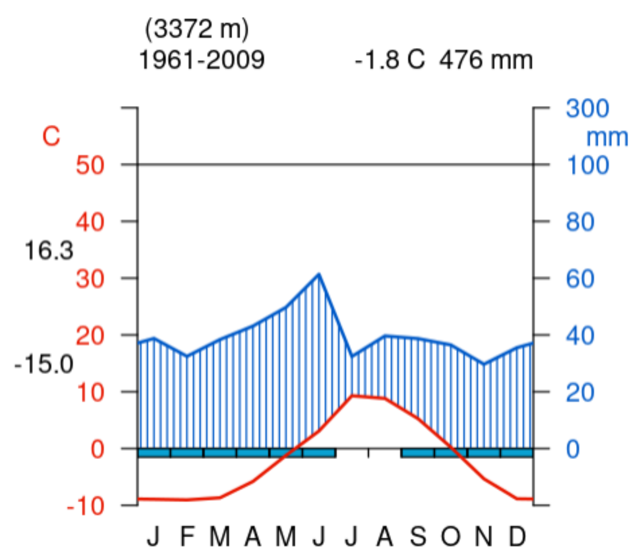
Back to Lesson A

Temperature and Precipitation Data Tables: 1961-2009

All data collected between the years 1961-2009								
Photo 1 (Subalpine)	Month	Temperature (°C)	Precipitation (mm)		Photo 2 (Alpine)	Month	Temperature (°C)	Precipitation (mm)
	J	-10	35			J	-10	40
	F	-9	30			F	-10	35
	M	-8	33			M	-9	40
	A	-5	40			A	-6	43
	M	0	50			M	-2	53
	J	4	55			J	3	61
	J	10	28			J	9	32
	A	8	38			A	8	40
	S	6	36			S	6	38
	O	2	35			O	1	37
	N	-4	25			N	-5	30
	D	-10	35			D	-10	37

Walter Lieth Diagrams (1961-2009)





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Student Data Discussion Prompts

The data for the subalpine site showed me that the weather there is [insert claim]. I know this because [insert evidence].

The data for the alpine site showed me that the weather there is [insert claim]. I know this because [insert evidence].

Some patterns I saw in the data were [insert evidence].

The two sites were similar because [insert claim]. I know this because [insert evidence].

The two sites were different because [insert claim]. I know this because [insert evidence].

The weather may impact the plant life there by [insert claim]. I think this because [insert evidence].

Elevation, Temperature, and Pressure

Standard Atmosphere

Altitude (ft)	Pressure (Hg)	Temperature (°C)	Temperature (°F)
0	29.92	15.0	59.0
1,000	28.86	13.0	55.4
2,000	27.82	11.0	51.9
3,000	26.82	9.1	48.3
4,000	25.84	7.1	44.7
5,000	24.89	5.1	41.2
6,000	23.98	3.1	37.6
7,000	23.09	1.1	34.0
8,000	22.22	-0.9	30.5
9,000	21.38	-2.8	26.9
10,000	20.57	-4.8	23.3
11,000	19.79	-6.8	19.8
12,000	19.02	-8.8	16.2
13,000	18.29	-10.8	12.6
14,000	17.57	-12.7	9.1
15,000	16.88	-14.7	5.5
16,000	16.21	-16.7	1.9
17,000	15.56	-18.7	-1.6
18,000	14.94	-20.7	-5.2
19,000	14.33	-22.6	-8.8
20,000	13.74	-24.6	-12.3

Figure 4-3. *Properties of standard atmosphere.*

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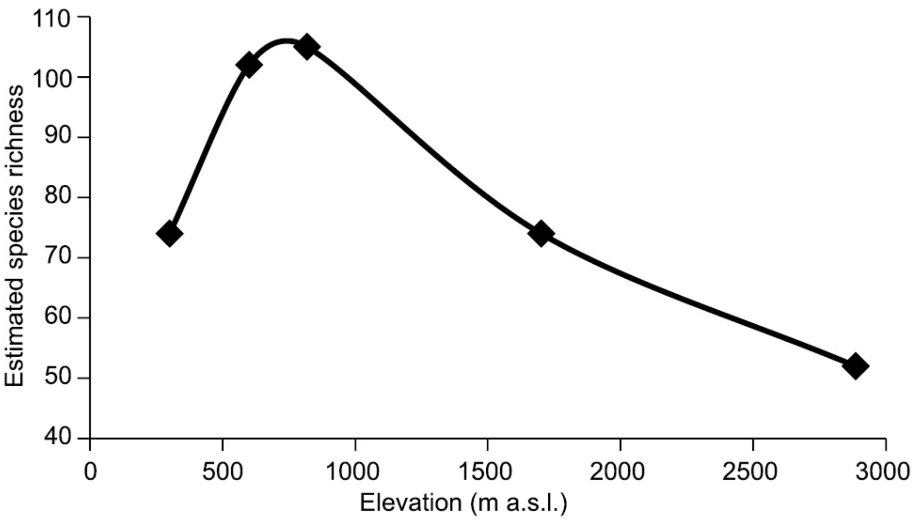
Elevation and Species Richness



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Elevation Filter

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Escalator to Extinction

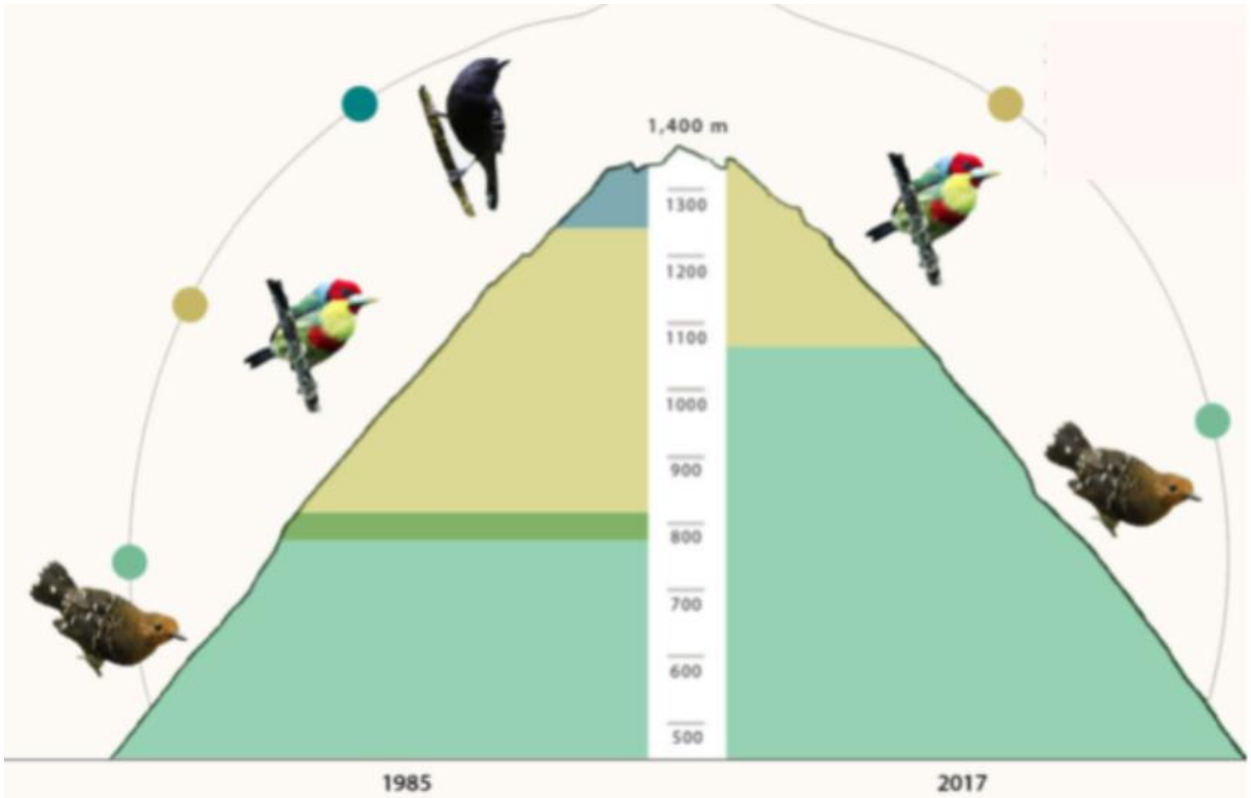

Image credit: https://e360.yale.edu/features/escalator-to-extinction-can-mountain-species-adapt-to-climate-change

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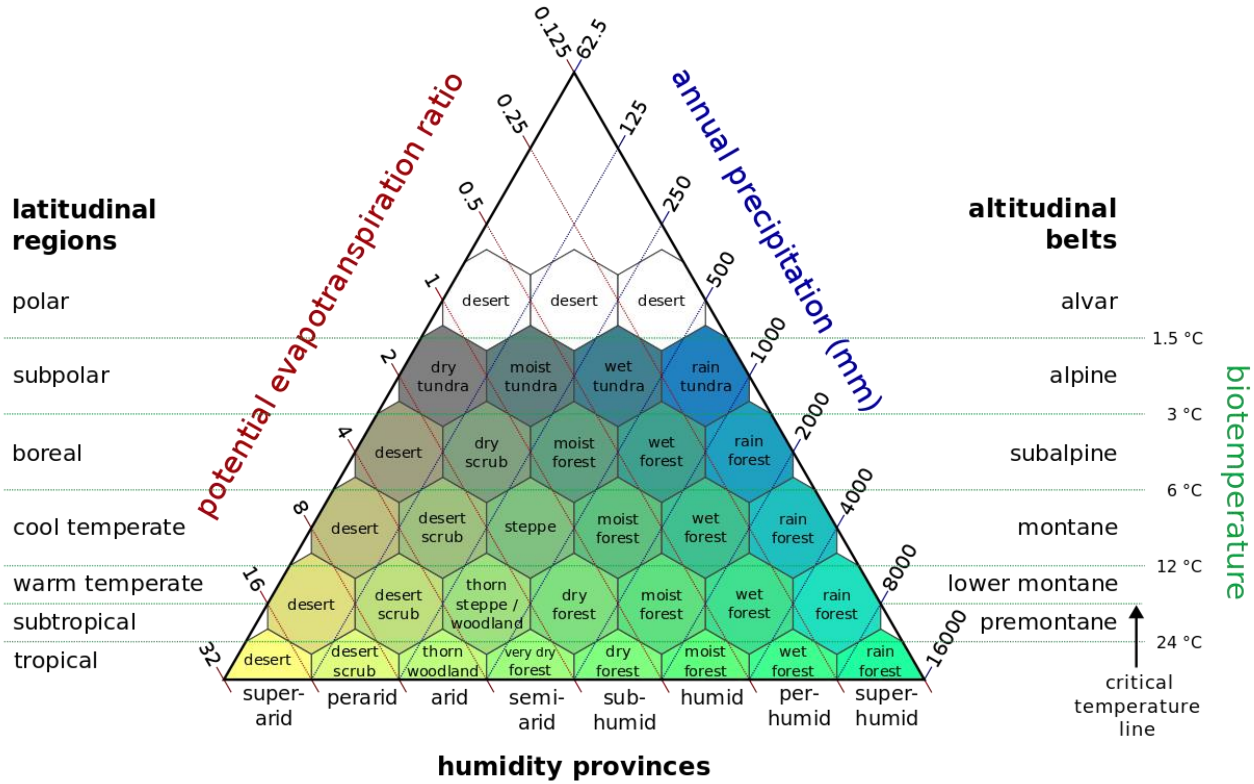
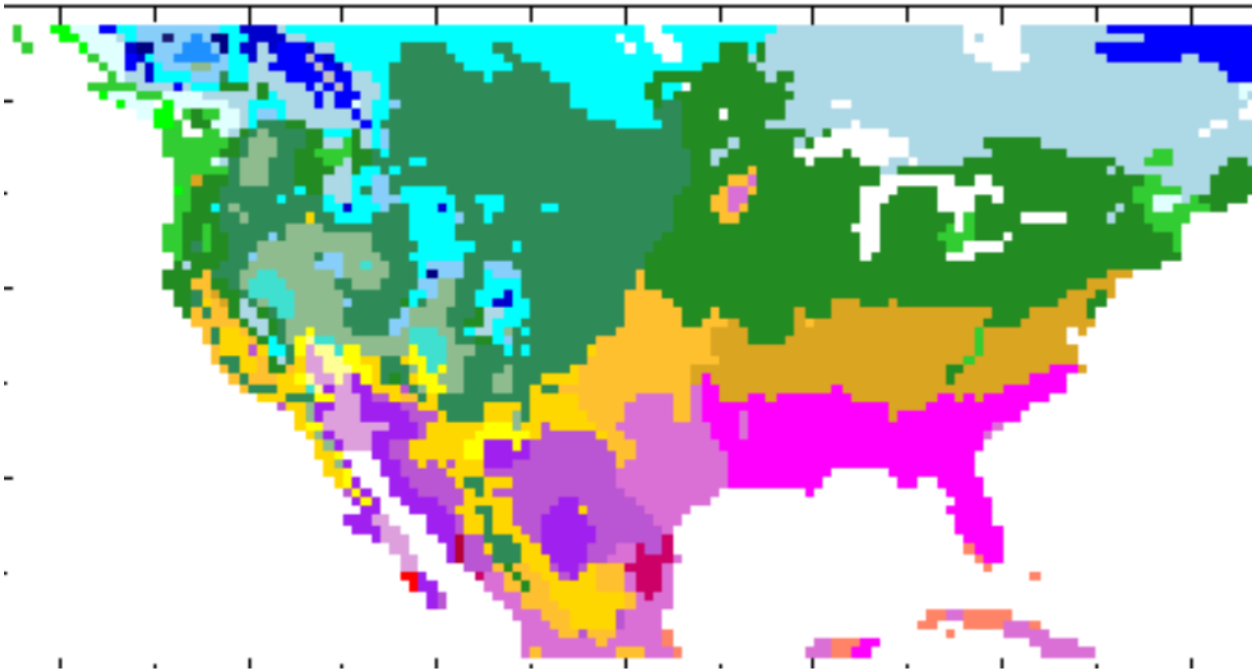
Holdridge Life Zones



[Back to Lesson B]

Holdridge Zones CO_2 Diagrams

Current CO_2 Levels



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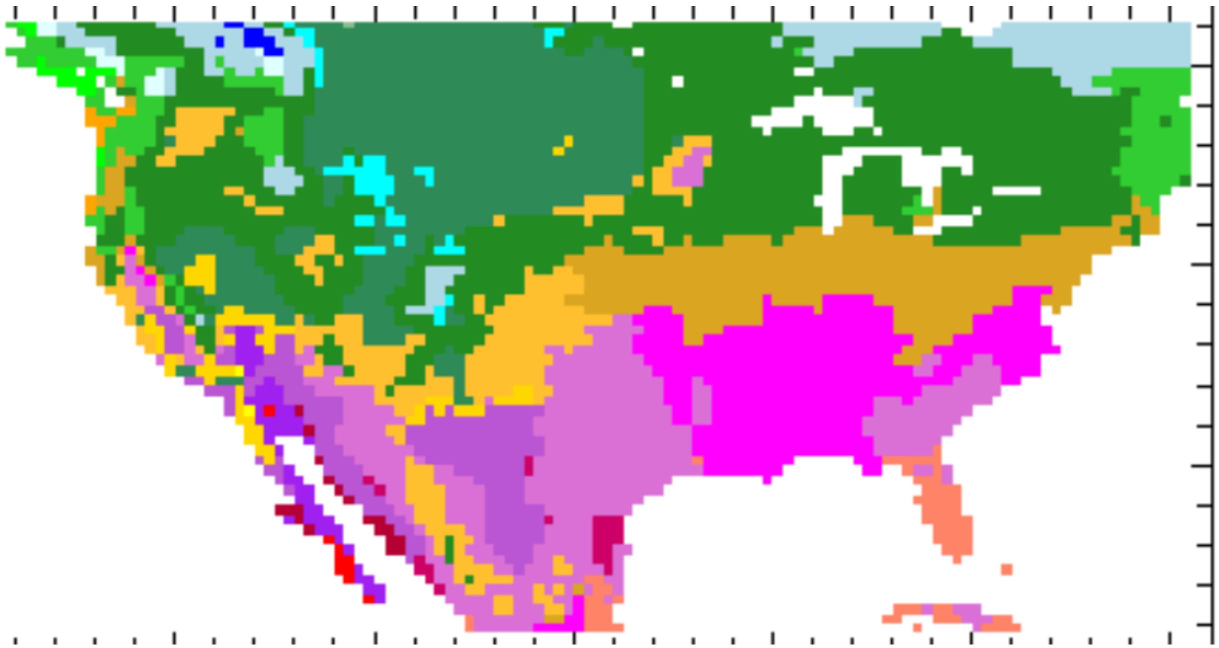
Spring 2022

Double CO_2



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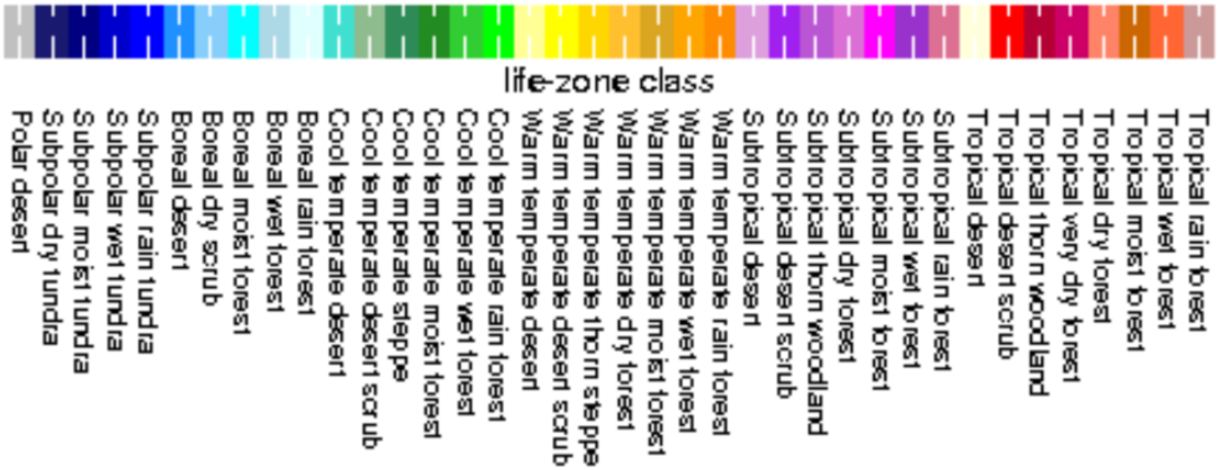
Holdridge Life Zones Key



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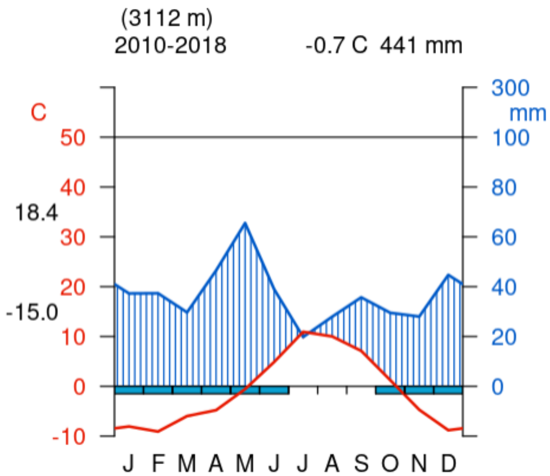
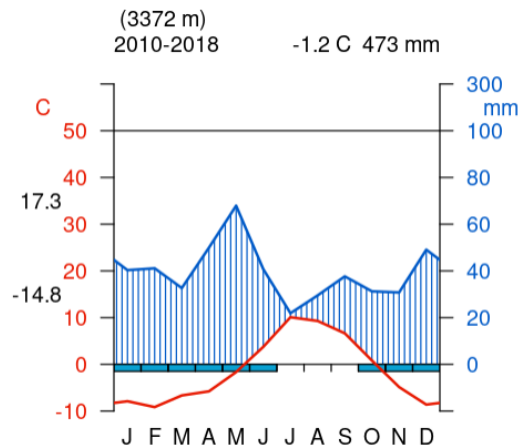
Temperature and Precipitation Data Tables: 2010-2018

All data collected between the years 2010-2018								
Photo 1 (Subalpine)	Month	Temperature (°C)	Precipitation (mm)		Photo 2 (Alpine)	Month	Temperature (°C)	Precipitation (mm)
	J	-8	38			J	-8	40
	F	-10	38			F	-9	41
	M	-6	30			M	-7	35
	A	-5	45			A	-6	50
	M	-1	67			M	-3	70
	J	5	40			J	4	40
	J	11	20			J	10	22
	A	10	30			A	9	30
	S	8	37			S	7	38
	O	4	30			O	1	32
	N	-5	28			N	-5	30
	D	-9	45			D	-8	50

Walter Lieth Recent





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