

# *Eastern Oregon Climate Change Coalition*

EOC3 Newsletter, Volume 1 No. 1, April 20, 2022, Pendleton, Oregon

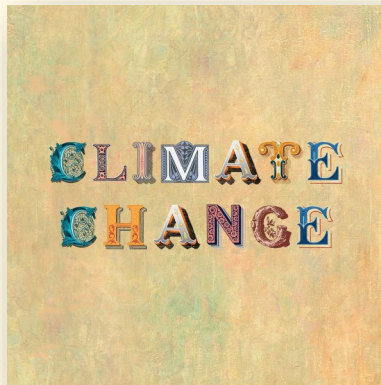
## ***Newsletter of the Eastern Oregon Climate Change Coalition***

**A** few months ago, EOC3's officers and Board chartered a small group to explore how we could better engage in climate change advocacy and activism. It's a delicate balance; EOC3 maintains its' position (and status) as a primarily education and information-sharing group, so advocating for changes in government policy or laws can be only a minor part of our activities as an organization.

One of the ways we have identified to help the group is a periodic newsletter for EOC3 members. We intend to cover the education and information work of EOC3 as well as developments in the policy and legislative arenas. In your hands (or more likely, on your screen) is the first edition of this newsletter.

We are hopeful that this periodic newsletter will identify issues and opportunities for EOC3 members as individuals (not representing EOC3) to reach out to legislators and policy makers, expressing how climate change and potential policy changes could affect the people, land, and biota of eastern Oregon and southeastern Washington. Towards that end, we will include the contact information for state and federal legislators representing our piece of planet earth.

This first edition includes an essay from local high school student Anders Oja about how climate change will affect his generation, a piece on proposals to charge grid access fees for residential solar power, and a recent column from Jeff Blackwood that was published in the East Oregonian. Dave Powell and Norm Cimon have also contributed some very helpful pieces you will find interesting.



We'd like your help in identifying other topics ripe for development as short (500-800 word) articles. Topics such as developments in climate change science, upcoming legislation and policy changes, testimonies about how climate change is or will be affecting you or your livelihood, opinion pieces, etc. all seem relevant. We'd love to have a bin of ideas to dip into as subsequent issues are developed.

We also welcome any articles that members may want to prepare related to climate change and potential advocacy opportunities for our members.

Your suggestions and articles can be emailed to Bill Aney at [aneykblj@yahoo.com](mailto:aneykblj@yahoo.com). Thank you – and we hope you enjoy this first issue.

*Contributed by Bill Aney*

# Utility Companies Pushing Back Against Small Scale Solar

**T**o address climate change, we need abundant sources of renewable energy, including small scale, rooftop solar and battery installations.

Unfortunately, there are efforts underway in some parts of the country that will discourage new installations and may even cause people with working installations to [disconnect from the grid](#), feeling that they're not part of the solution to the problem or threatened by what they see around them.

To understand why that is, it's useful to know something about the business of electricity. Rural electrification created regulated monopolies so that everyone could get electric power. That was a good thing. Because they were regulated, and to give them an incentive to deliver that power, utilities were guaranteed 10% of anything they built to get the job done. Over time that became a primary means of profit. Customers pay for the infrastructure, for the financing, and for that rate-of-return. That's been a lure for investors, so many utilities have developed their business models around that built-in profit. That's [a significant barrier](#) to the change we need.

A result of that financial inertia is opposition to allowing other sources of power onto the grid. Utilities like to build their own stuff so that they get that 10%, and the bigger the better. That hasn't stopped homeowners or businesses from [installing rooftop solar in California](#) and selling the excess power back to the utility. Those two opposing realities have now come into serious conflict.

Having to continually satisfy investors has resulted in [the State's largest utility falling behind](#) in its [maintenance of existing lines](#) through fire-prone forests and shrublands. One result has been a series of catastrophic fires, many caused by downed power lines. Climate change has been disastrous for the utility, with PGE declaring bankruptcy, something of great concern to the regulators.

Weeks-long blackouts have, naturally enough, been a concern to those who've watched the disaster unfold and who have the resources to do something about it. Solar panels and battery storage have been installed by some people to avoid the im-

pacts of blackouts. These are the direct descendants of the alternative energy advocates of the 1970s, but with more money and much better off-the-shelf technology than the original do-it-yourself group. [The electric utility industry's very own think tank](#) has made the point that this emerging source of power and grid services should be encouraged to inter-connect but that's at odds with the business model.

The argument has made its way to the California Public Utility Commission, with [its own "firestorm" of opposition](#). Utilities are making a social equity claim, suggesting that the costs of putting power from small scale solar onto the grid are being pushed off to poorer households that can't afford rooftop solar. This so called "cost-shifting" seems to be a red herring since every bill already includes a charge for the delivery of power which covers the cost

of grid transmission. Utilities have lobbied to have solar customers pay a monthly fee to sell their excess power, while reducing what they're paid for it. That's without even considering the [valuable services](#) that small producers with storage resources have the potential to provide.

Conceptually, the current design of the grid has always been top-down. But digital devices installed in homes and businesses are re-making it into a two-way street, with power and services made available to the utility. The grid needs to be re-wired to take advantage of those resources. Pushing those producers off the grid is not a good idea if we expect to meet our climate goals. It may seem counter-intuitive, but utilities need to change their reliance on big power sources and tap the aggregated power of smaller producers. As difficult as it may be, utilities need to bite the bullet and build out a digitally metered and monitored grid by adding their own digital controls to incorporate those emerging power sources.

Where will the funds come from? The [\\$20 billion a year in subsidies to fossil fuels](#) is a place to start. That money can be used to transform our energy system by getting as many people as we can onto the grid. It will help put all kinds of savings into people's pockets, including those for whom it would make a real difference. More, not less roof-



top solar is one of the keys to that transition. It's a difficult time for utilities and for those who've taken the steps to generate some or all of their own power, worried as they are about climate change. But it's also a time of tremendous opportunity. The network of local electric grids that pulse power in all parts of the country is the circulation system for the body electric. It's time to pump all the new blood coming online through it.

*Contributed by Norm Cimon, EOC3 member*

## **Blue Mountains Climate Change Vulnerability and Adaptation Report Issued**

**T**he US Forest Service's Pacific Northwest Research Station has just issued an interactive version of an important, book-length report called "Climate Change Vulnerability and Adaptation in the Blue Mountains Ecoregion." The entire report can be downloaded from this website: <https://www.fs.usda.gov/treearch/pubs/53937>

This report is especially useful because it covers the Blue Mountains as one unit. The Blue Mountains ecoregion is the largest ecoregion in Oregon, covering 23,984 square miles (about 15.3 million acres). The report pertains to the national forest portion of this ecoregion – the Malheur, Umatilla, and Wallowa-Whitman national forests, which encompass about 5.3 million acres.

Here is a link to an interactive version of the *Blue Mountains Climate Change Vulnerability & Adaptation (CCVA)* report chapters: <https://www.arcgis.com/apps/PublicGallery/index.html?appid=40a5742830ce4a5aa658ffa2a80a861b>

People respond to information in different ways. For some of us, information is best comprehended in a visual form. Interactive presentations of Blue Mountains CCVA chapters are provided as 'story maps,' a visually

rich format for presenting information.

What are story maps? They often start as a map that has been given a lot of context, and with supporting information, eventually becomes a stand-alone resource. Everything is brought together in one place; a story map often integrates maps, legends, text, photos, and video. Generally, some special functionality is also added, like swipe tools, pop-ups, and time sliders, so that users can explore a story map's content at their own pace.

Check out the Blue Mountains CCVA story maps, organized by chapter, when you get a chance.

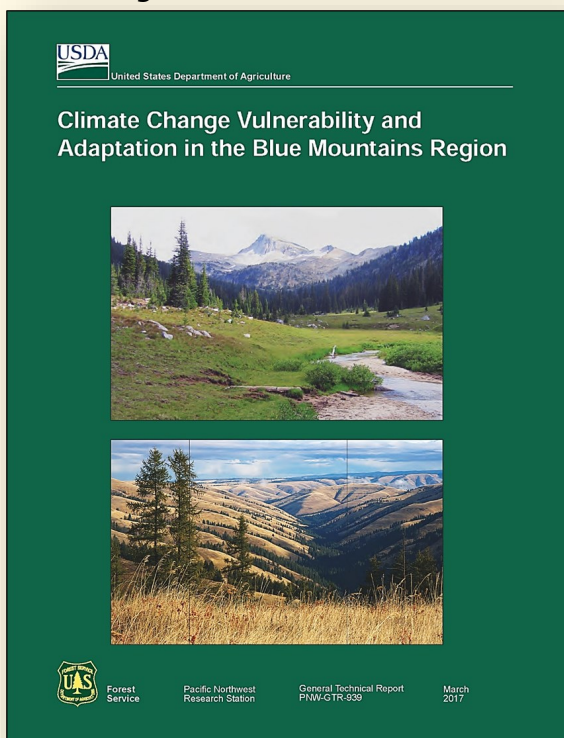
The Blue Mountains CCVA report is a go-to climate change resource for our neck of the woods. Individual chapters are also available for download from the Forest Service's Tree search website.

I am an author of the Upland Vegetation chapter of the report (Chapter 6). That chapter is 102 pages long, mostly because we included many photos, maps, and boxes (special call-out sections to highlight a particular topic). If interested, here is a Tree search weblink to Chapter 6: "Effects of Climatic Variability and Change on Upland Vegetation in the Blue Mountains:" <https://www.fs.usda.gov/treearch/pubs/54509> .

To increase access to the Blue Mountains CCVA information and findings, we also published the CCVA chapters as shorter articles in a journal called

Climate Services. Here is a weblink to the Climate Services special issue devoted specifically to "Assessing and adapting to climate change in the Blue Mountains, Oregon (USA)": <https://www.sciencedirect.com/journal/climate-services/vol/10/suppl/C> .

*Contributed by Dave Powell, EOC3 member with thanks to Richie Gardner, Umatilla National Forest Staff Officer for pointing us to the Blues CCVA story map.*



# Collecting Rainwater As A Buffer Against Drought

**It is now April**, and it looks as though we're still in a long-running drought. Pendleton's precipitation amount for calendar year 2022 already lags behind the normal amount for this time of year, although the early April moisture has helped.

For those of us that pay attention to long-term weather patterns, it is surprising we've had to deal with drought. Why? Well, historically we could monitor a broad-scale phenomenon called ENSO (El Niño-Southern Oscillation) which describes ocean-atmosphere interactions in the equatorial Pacific.

ENSO has two phases – El Niño, and La Niña. A strong El [Niño](#) event reflects warmer and dryer conditions for the Northwestern United States; a strong La Niña event reflects the potential for colder and wetter conditions for the Northwest. For the last several years, the Northwest has experienced La Niña events, but they have been moderate (not strong), and overall, we have not been wetter than normal.

Often, Pacific Northwest drought conditions accompany an El Niño event, but with recent climate change, we are now experiencing dry conditions even during the La Niña phase (albeit at moderate strength). Why is that? I'm not sure – it could be related to the strength of our recent La Niña's or it could reflect the fact that Jetstream shifts associated with La Niña are shifting further north, and perhaps our portion of the Northwest is now becoming dryer than historically during La Niña. Generally, the southwestern US and southern Great Basin is dry with La Niña and wet with El Niño; the opposite situation occurs for the Pacific Northwest.

For gardeners, one option for dealing with drought conditions is to consider using rain barrels. I have used 5 rain barrels for many years now, and they really help get my landscape plants off to a good start in spring.

If you are interested in trying some rain capture by using rain barrels, here are some things to consider:

**1. Size/capacity.** Barrels come in a variety of sizes, depending on their source. Commercial barrels tend to come in 50, 65, or even 80-gallon sizes. I have one commercial barrel (it was my first one – just to try the concept and see if I liked it), and 4 barrels I purchased years ago (for a very reasonable price — see photo on previous page) from Barhyte Specialty Foods in Pendleton (located on the airport road). My Barhyte barrels are food-grade, heavy duty, and used to have pepper mash in them. They also came with sturdy lids, which is important.

**2. Soft rainwater.** Your plants will thank you when you use rainwater! It is quite soft, and I can tell a positive difference with how the plants react to it.

**3. Water supply.** Look at the length of gutter that will feed your barrel or barrels. If you decide to set up multiple barrels in sequence, make sure that you pick a long stretch of gutter to feed them with as much water as possible. For short gutter lengths feeding a downspout, only consider a single barrel for those areas.

**4. Spigot.** You'll need hardware to set up a rain barrel. Bulkhead fittings can be purchased, especially online, and they work well. A spigot, preferably solid brass, needs to be installed as low on the barrel as possible. If you want to fill watering cans directly from the spigot, then you'd need to consider putting the barrel safely on a stand in order to have enough room to fit a watering can under the spigot. You will also drain your barrel during autumn from this spigot.

**5. Water is heavy!** If you decide to put your barrel on a stand, consider that water weighs 8 pounds per gallon. A barrel of 55 gallons (or more) can weigh 500 pounds when full. Any stand must be able to safely handle that much weight. Many YouTube videos show how to develop a rain barrel stand, and how to set up a barrel in general.

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**6. Overflow.** You will also need to install a bulkhead fitting (spigot usually) at the top of the barrel, immediately below its rim, so that when your barrel is full, it doesn't overflow and cause issues for your foundation or the area where it is installed. For my barrels, I hook up a hose to the top spigot and run it to a shrub or tree that could use the overflow water when it occurs.

I used to be able to count on filling all my barrels at least twice during the spring. No more! Has anyone noticed that the climate seems to be changing? Now, I start hooking up my barrels no later than mid-March because if I wait any longer than that, they may not fill. The days when we were still getting rain in

Pendleton until late May or early June are seemingly gone. If I dally and wait until April to set up my barrels, then I'm missing the boat and they may not fill completely.

**7. Water access.** If your land slopes away from the barrel, consider hooking up a short length of hose to the bottom spigot and filling your watering cans away from the barrel.

**8. Lid.** Make sure that your barrel has a lid. The lid needs to have an inlet to accept rain-water from a downspout or another source. An open barrel collects dust and debris and will attract insects or critters to the water source, neither of which you want. If you want to monitor your water level without removing the lid, install a screen panel in the lid – you can then monitor the water level, and keep out critters.

**9. Water diverter.** Kits can be purchased to divert water from a downspout and into your barrel. I've had good luck with these kits. They come with a plug so that after you decommission your barrel in the fall, you can plug the downspout outlet so the downspout will work normally.

**10. Barrels in sequence.** You can also hook up multiple barrels in sequence. You can buy a kit (online) designed for this purpose or do it yourself. All that is needed are bulkhead fittings (spigots) for the bottom of each barrel, and short lengths of hose to go from barrel to barrel. The barrels will equilibrate and come to the same water level. If you set up a sequence, only the last barrel needs an overflow, and only the first barrel needs an inlet from the downspout. Intermediate barrels only need bottom spigots connected with short hoses.

**11. Using the water.** I hand-water with watering cans from my barrels. It is possible to purchase a small pump which can be used to transfer water from one barrel to another (in a different place), or to provide rain-barrel water under some pressure for irrigation use. I have not used a pump, but many YouTube videos provide advice about this option

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*Rain barrels set up in sequence. These blue barrels were purchased from Barhyte Specialty Foods, and they are sturdy and reliable. One barrel has a lid installed, and the other two are open (as they are being cleaned in late summer). Each barrel holds about 55 gallons. Notice the white hose in upper right – it leads from a downspout diverter to the first barrel in the sequence. The barrels are installed on a low frame made from 4" x 4" pressure treated timbers. Spigots and hoses to hook up the barrels are present on the other side, low on the barrels (not visible in this photo).*

**12. Drain the barrel for winter.** In mid to late fall (October to early November), be sure to drain your barrels before freezing weather starts. This is the voice of experience talking! I waited too long one fall, and I received a nice long crack along a bottom edge of my commercial barrel. Thankfully, it was a straight crack and I could repair it, but often-times a frozen barrel is rendered unusable.

*By: Dave Powell, EOC3 board member*



## A Climate Change Perspective From The Next Generation

**M**any people may call me a pessimist, but I consider myself a realist. I cannot rationally foresee a future unplagued by the mounting issues resulting from humans' unrelenting exploitation of our planet and accelerating collective emissions of greenhouse gasses. I believe that we have evolved for millions of years to live in concert with the natural world. Our exploding population, growing carbon footprint, and insatiable desire to exploit the planet's treasures in pursuit of ever more extravagant possessions threaten the very ecosystems upon which our species has depended since its infancy. The greatest challenge facing our future generations will be meeting the challenges imposed by the inevitably damaging impacts of climate change.

In the tumultuous political climate of today's nation, finding consensus on environmental issues is difficult. Yet the sheer magnitude of environmental collapse should sufficiently motivate us to promote sustainability. I place my judgment in those who, by virtue of their intellectual and academic achievements, can best evaluate the path we must take in our ongoing fight against climate change. We desperately need to set aside our preconceived notions and adhere to the policies and suggestions prescribed by scientific experts.

At some point, the option of mitigating the growing consequences of climate change by technological means may no longer be viable. We risk passing the point of no return after which we will have no effective means to break the self-reinforcing cycle of global warming. We are on a path to destruction and the major emitting industries and general population have refused to take drastic action. I see the task of achieving sustainability as daunting, yet still attainable. The problem that most people encounter when convincing themselves to go green is a pessimistic and irrational outlook. We find ourselves thinking our efforts are futile in a world inhabited by eight billion people. What difference does it make whether or not we recycle, if those around us do not? Although the majority of emissions can be traced to industrial giants, reducing our collective carbon footprint begins with the individual. Consumption drives our capitalist nation, and a society's devotion to promoting sustainable products will inevitably influence emission on the commercial scale. Perhaps the greatest power an individual can hold stems from voting. Curbing the accelerating rate of climate change ultimately lies in the hands of politicians and policy makers. As a nation, we must elect officials and representatives that advocate for environmental reform.

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## ***Journal Article Review: Clear Scientific Consensus on Human-Caused Climate Change***

**S**everal years ago, it was still common to hear skepticism expressed about whether climate change is real or not. Nowadays, that sentiment is not as common, although locally (eastern Oregon) I still hear it expressed occasionally.

Scientific research is deliberative – when society becomes concerned about an issue, the research community is often asked to design a rigorous study to examine it, test some alternative approaches to address it, and assess the consequences of taking action (or not) in response to it.

A recent issue of utmost importance: is climate change occurring and, if so, are humans responsible for causing it?

A recent journal article examined the issue of human-caused climate change in detail. The authors wanted to quantify the scientific consensus on climate change, especially in the context of skepticism about human-caused global warming. They assembled a dataset of 88,125 climate-related papers published since 2012 (yes, that many papers, and more, have been published about climate change, and just since 2012!).

They used 2012 as their cut-off year because that was the last time when a comprehensive examination of human-caused climate change issue was completed. The study authors used scientific methods to identify a random sample of 3,000 papers from the dataset for detailed analysis.

Here is what they found (taken from their abstract): “From a dataset of 88125 climate-related papers published since 2012, when this question was last addressed comprehensively, we examine a randomized subset of 3000 such publications. We also use a second sample-weighted approach that was

specifically biased with keywords to help identify any sceptical [British spelling] peer-reviewed papers in the whole dataset. We identify four sceptical papers out of the subset of 3000, as evidenced by abstracts that were rated as implicitly or explicitly sceptical of human-caused global warming. In our sample utilizing pre-identified sceptical keywords we found 28 papers that were implicitly or explicitly sceptical. We conclude with high statistical confidence that the scientific consensus on human-caused contemporary climate change—expressed as a proportion of the total publications—exceeds 99% in the peer reviewed scientific literature.”

What do the authors mean by high statistical confidence? They analyzed the data by using several statistical techniques – one found that the scientific consensus on human-caused contemporary climate change was at least 99.62%. Another statistical technique yielded results of 99.53%. Regardless of which answer we choose to focus on, ***it is clear that extremely strong scientific consensus exists that contemporary climate change is primarily human-caused.***

Contributed by Dave Powell

**Source:** “Greater than 99% consensus on human caused climate change in the peer-reviewed scientific literature” by Mark Lynas, Benjamin Houlton, and Simon Perry. Published in *Environmental Research Letters*, Volume 16, Article 114005; 2021.

The article cannot be downloaded without a subscription; if anyone would like to read it, they can contact me, and I will send them the PDF file.

Contributed by: Dave Powell, EOC3 Board Member

## ***EOC3 Continues Third Tuesday Climate Change Conversations...***

**The planned presentation** in May (Tuesday, May 17) will be a speaker from Energy Trust of Oregon discussing strategic energy management programs. Energy Trust has a mission to help Oregon residential, business and nonprofit utility ratepayers use less energy, save on energy costs and move to renewable resources.

The June presentation (slated for 6/21) is still being determined by the EOC3 board. The remainder of the Calendar Year 2022 Program developed by the board follows:

- July 19** Terry Templeman — Concepts for coping with a climate-changed future
- August 16** Jack Simons — Climate change and bird diseases
- September 20** Karen Wagner/Mary Davis — Food waste, Oregon green schools, etc.
- October 18** Mike McHenry — Oregon's new recycling bill; briefing & implementation
- November 15** Bob Carson — Our special Blue Mountains (capstone event at BMCC) includes an EOC3 fundraiser (silent auction); catered appetizers; and participation by Blue Mountain Land Trust (including a book sale and signing).
- December 20** Holiday party (no program/ presentation).



# ***Understanding Our Changing Climate***

*By Jeff Blackwood*

Last January, the Oregon Climate Change Research Institute (OCCRI) published their Fifth Oregon Climate Assessment. OCCRI is a consortium of universities, researchers and professionals hosted by Oregon State University. Every few years, they publish an assessment on climate change to help our communities, agencies, businesses, and citizens better understand, prepare, and adapt to our changing climate. The report is summarized statewide but built on a county-by-county approach. A section on Umatilla County describes predictions for the 2020's and 2050. These findings and trends are common for our region and can help us better prepare for our future.

For our region, the outlook in general is for warmer, droughty summers, and less predictable rainfall in winters. Although other factors, such as wind events, blowing dust, and loss of wetlands will be factors, they are predicted to not see the dramatic changes of summer droughts and heavy winter rain events.

Summer droughts and heat waves are expected to increase in frequency and intensity. We are currently experiencing earlier spring snow melt and runoff, leading to earlier wildfire seasons and reduced late summer water availability.

The report states "Wildfire risk, as expressed through the frequency of very high fire danger days, is projected to increase under future climate change. In Umatilla County, the frequency of very high fire danger days per year is projected to increase on average by about 40% (with a range of -14 to +101%) by the 2050s under the higher emissions scenario compared to the historical baseline.

Under future climate change, the risk of wildfire smoke exposure is projected to increase in Umatilla County. The number of "smoke wave" days—days with high concentrations of wildfire-specific particulate matter—is projected to increase by 141% and the intensity of "smoke waves" is projected to increase by 82% by 2046–2051 under a medium emissions scenario compared with 2004–2009."

Warming summer temperatures will challenge agriculture and increase public health issues, including heat related illness and respiratory issues caused by poor air quality from wildfire smoke. Although the amount of winter rains may be normal or slightly more, the timing will be less predictable. The intensity of extreme precipitation events is expected to increase in the future as the atmosphere warms and can hold more water vapor. Low to mid elevations, a zone where snow comes and goes, will be more prone to rain-on-snow events that pose high flood risks.

The report also states, "Warming temperatures, altered precipitation patterns, and increasing atmospheric carbon dioxide levels increase the risk for invasive species, insect, and plant pests for forest and rangeland vegetation and cropping systems."

So, as our climate continues to change, how can we best prepare, adapt, and mitigate the expected risks? With the recent passage of the national infrastructure bill, there may be opportunities to assure our roads, culverts, and bridges are designed to withstand intense flooding. In addition, there may be ways to improve community resilience to high water events.

We have opportunities to plant more shade trees as a response to future heat waves, especially in underserved communities. Along with this, we should expect to deal with more heat wave events and find ways to provide cooling shelters for people exposed to the elements or unable to afford or have air conditioning. For those of us who irrigate crops and fields, we will need to find more efficient ways of conserving water, closely monitor our ground water supplies, and in some cases convert to more drought resistant crops.

While many climate change problems are being addressed at the national and state level, we all share in the responsibility of doing what we can to reduce our personal impacts. Monitoring and reducing our food waste, purchasing sustainable products, including those with recyclable packaging, along with traveling less and reusing more are just some of the options we can consider as individuals.

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Xeriscaping our yards and taking advantage of incentives for residential solar installations will also help. Voting for candidates willing to take action to reduce the effects of a changing climate, especially at the local level, is a powerful tool as well.

There are always opportunities to share ideas and collaborate with agencies, tribes, and communities to pool expertise and resources. The more we know and the more we all share, the better prepared we will be to face the future that will impact us all.

The OCCRI report is an important tool to help us and our communities prepare and

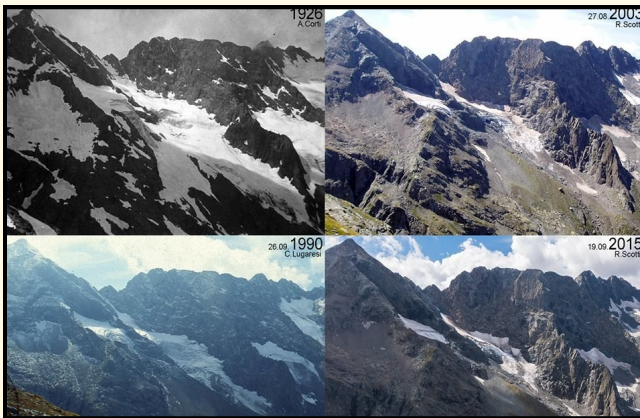
adapt to a changing climate. Similar reports are completed for Grant, Baker, and Wallowa counties. The report is available by contacting Oregon Climate Change Research Institute, College of Earth, Ocean, and Atmospheric Sciences, 104 CEOAS Admin Building, Oregon State University, Corvallis, OR 97331. Or you can download the report from this website:

<https://blogs.oregonstate.edu/occri/oregon-climate-assessments/>

Jeff Blackwood retired from the US Forest Service and is a member of EOC3



These before and after images show the shocking effects of climate change across the world over time. Google search for more photos at: "climate change photos before and after".



***Let our legislators and policy makers know where you stand on climate-change related issues...***

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## **A Climate Change Perspective From the Next Generation**

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As both a definition and a call to action, climate change is preferable to global warming as it does not focus exclusively on a global rise in temperature. Climate change integrates the ideas of environmental preservation and the disruption of long term climate patterns. Humans are a comparatively young species, hardly touching Earth's resources until the Industrial Revolution. Earth, however, is old, its deposits and precious materials the products of processes spanning millions, even billions of years. At current consumption levels we have barely forty years of oil left. We continue to consume our nonrenewable and natural resources without concern for the future. I believe that, regardless of political affiliation, it is imperative for citizens of the United States, and the world, to transition from non-renewable resources, primarily fossil fuels, to green energy.

I view our ecosystems as a fragile interconnected web dependent on a careful balance of biodiversity. Climate change threatens to destroy this web. Many of the unique species that help define our planet risk habitat loss and potential extinction if climate change continues unabated.

*Anders (Andy) Oja is a senior at Pendleton High School. After graduating this June, he plans on attending either Massachusetts Institute of Technology or Princeton University, studying environmental engineering.*