

Carbon Accounting and Offset Recommendations for the Methow Valley

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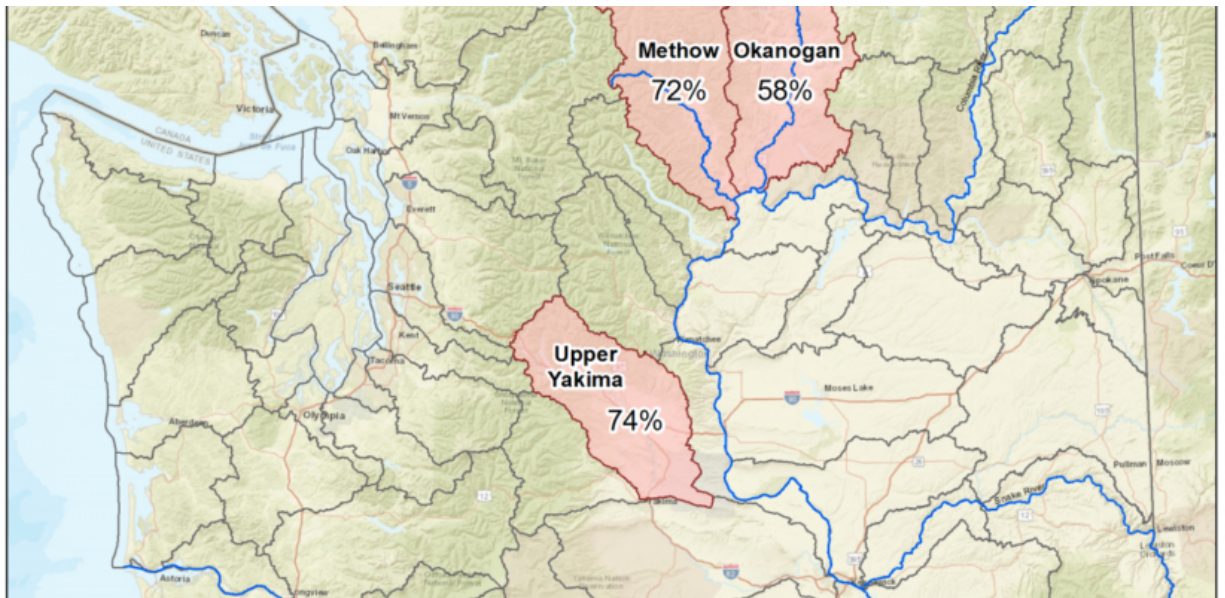
Image of Twisp, Washington: https://commons.wikimedia.org/wiki/File:Methow_Valley_SE_of_Twisp_WA.jpg

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Executive Summary

In the last several decades, the global community has become acutely aware of the impending climate crisis, and the need to address this issue. According to the IPCC, climate change will lead to sea level rise, warming global temperatures, increasingly volatile weather, increased risk of drought, and other adverse effects.



The Methow Valley is at high risk for drought. This 2019 map from the Washington Department of Ecology shows the percentage of normal watershed volume in 3 basins, including the Methow. <https://www.gazette-tribune.com/uncategorized/governor-declares-drought-emergency-for-okanogan-and-methow-basins/78457/>

Many of these ecosystem changes are already observable around the world. Greenhouse gas emissions are a leading cause of climate change. In recognizing the urgency of the problem at hand, actors at all levels are working to find solutions to reduce greenhouse gas emissions and preserving the planet for future generations. Top-down policy and local- and community-based action are both vital in this endeavor. This report will focus on local structural action to sequester carbon and allow individuals and other entities to quantify, understand, and reduce their carbon footprint. The first step in individual carbon emissions reduction is understanding the individual's quantity of carbon emissions. Once one understands the scope and source of emissions, the efforts to reduce emissions and sequester carbon can begin in earnest. Accomplishing these things is vital to the continued health of our community and planet. Along with global warming, increased air pollution from emission such as increased wildfires, a consequence of climate change, can have disastrous effects on community health. Climate change is a negative externality to the production of most consumptive goods, meaning it

increases the social cost of production, without imposing this added cost on producers or consumers. Instead, future generations will pay the price in myriad ways. Recently, some experts have suggested that carbon emissions be taxed to account for this externality. A carbon tax imposed on producers of carbon (commercial or individual) would incentivize sustainable practices and a reduction in emissions, as well as fund programs to offset emissions through carbon sequestration using tax dollars (see section IV part A.). Carbon sequestration is any process which removes carbon from the atmosphere or prevents carbon from entering the atmosphere. Sequestering carbon prevents the Greenhouse Effect, and is a viable method of combating climate change and global warming. Any program to offset carbon emissions must consist of three parts. The first is the sequestering entity. This entity is responsible for removing carbon from the atmosphere. The second is the producer of carbon. The producer wishes, for motivations personal, ideological, or financial, to offset their carbon emissions by paying for the equivalent of some or all of their emissions to be sequestered. They accomplish this through the offset program. The third and final piece of an offset program is the interface between the producer and the sequestering entity. This interface is responsible for management, finances, and accounting. This means accounting for carbon sequestered, carbon emitted, and any money that changes hands in the process of offsetting emissions. These three parts must function efficiently and in conjunction with one another in order to maintain a functioning offset program.

In this report, we will describe a range of Methods, their implementation, and an analysis of their potential efficacy in the Methow Valley. In order to form our recommendations, we used benchmarking to determine the feasibility of Methods, and interviewed local stakeholders to fit the Methods to the needs, resources, and infrastructure available locally. A detailed breakdown of our interview findings can be found under Stakeholder Interviews. The recommendations found in this report are necessarily broad in scope, but accompanied by plans for specific action. In order to effectively address the climate crisis, every industry and every aspect of human relation to the planet must be retooled to effectively and immediately reduce our carbon footprint. We intend to appeal to Methow Valley residents to consider what they consume, their lifestyle choices, and the potential impacts and to set goals about how to reduce their carbon footprint. This report is intended to educate Methow residents on why their lifestyle choices can make a difference, and provide the tool(s) that can help quantify personal carbon impact. By changing our individual behaviors as a society, we can create sustainable systems to drive positive change in larger human systems in the long term, as well as pressure policy-makers and corporations to address climate change in the short term.

Our recommendations for the Methow Valley include carbon accounting according to GDP for individuals and incorporating the emissions from wildfires regionally. We also suggest that local sources like the Carbon Farming Group are utilized for the most effective carbon sequestration as this and similar programs already exist. The Authors recommend the formation of a coalition to manage this undertaking and collaborate with local non-profits and individuals

to channel energy for climate advocacy into meaningful action. The education of the citizens of the Methow is paramount, and will be the most effective tool to realize the positive impact of sequestering carbon and reducing emissions.

Introduction

This report, researched and compiled by Lazo Gitchos, Antonia Parrish, and Vince Wagner (hereafter the Authors) through ENVS471 Sustainability Planning Studio at Western Washington University, serves to recommend methods for Carbon Accounting and Carbon Offset (hereafter Methods) specific to the Methow Valley, its inhabitants, and its community at large. The Authors assume responsibility for the recommendations made in this report.

The United Nations has recognized 17 global goals for sustainable development. These sustainable development goals, or SDGs, outline a structure that prioritizes ecosystem health in local and global development. This report is relevant to SDGs 9, 11, and 12; Industry Innovation and Infrastructure, Sustainable Cities and Communities, and Responsible Consumption and Production. These goals align with our project goals to preserve the natural environment and ensure a sustainable future for the Methow Valley.

The adverse effects of climate change will not impact the human species uniformly or equally. As with any disruptive change, those without power, privilege, and wealth will face the most uncertainty, the most danger, and the most consequence for our failure to act. In solving any issue, we must expect those with power, privilege, and wealth to exercise these attributes in service of a more just society and a healthier planet. It is unrealistic to expect marginalized people to devote themselves disproportionately to climate justice while corporations and their beneficiaries profit from climate destruction. In the Methow Valley, wealth disparity is highly prevalent, and necessarily impacts the way we address community climate action. We must address climate issues by focusing on inequity in our own community. We propose a system in which the needs of all are met by those with the necessary resources to benefit the local and global communities.

Methodology

In order to recommend an effective carbon calculation and sequestration project plan, we conducted multiple interviews with important stakeholders in the Methow Valley and a benchmark study on various examples of carbon accounting and offset locally and regionally. These interviews provided us with a deeper understanding of carbon accounting, local sequestration techniques, and community outreach. Using a benchmark lens, we can decide which elements of previous carbon studies will be useful in our project, and could be applicable to the Methow Valley.

We interviewed the Methow Conservancy to gauge their interest in incorporating their easement program into a carbon offset program, and because they are a driving force in ecological health in the Methow. We interviewed Julie Tate-Libby of Twisp Works in order to gain insight into the local economy and to more effectively integrate an offset program into the structure of the local community. By interviewing Rob Crandall, we learned more about local energy for carbon offset programs and existing efforts to counter carbon emissions. Finally, we interviewed a representative of the C6 Forest to Farm, an emergent biochar program here in the Methow Valley. From C6, we learned about their program and their plan, a carbon offset-based operation that will sequester carbon in the soil from underbrush and plant matter. This series of interviews gave us insight into the conditions in this community that will help or hinder the creation of such a program, and the ways in which we can adapt existing models to fit specific requirements of this place.

We created an inventory for our project that includes two components, carbon calculators and carbon offset programs. The multiple examples of each component were examined and then categorized as we combined the most relevant elements of each into an inclusive plan for the Methow Valley. To examine calculators and offset programs, we looked at accessibility, format, data quality, and context for the Methow of each source. These are important categories to focus on because we need to form a plan that allows communities in the Methow Valley to easily incorporate these programs into their lives.

Research Methods

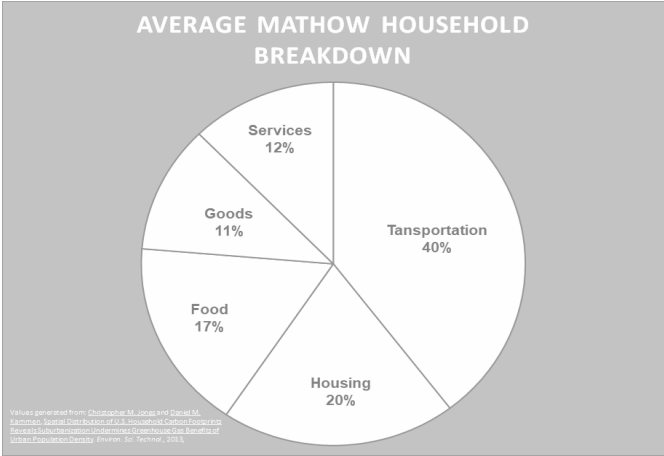
Calculators

A portion of our research was dedicated to investigating the existing programs for carbon calculators, both on an individual and community scale. By examining multiple carbon calculators online, we found the basic requirements for a carbon accounting site. The typical carbon calculator quantifies carbon emissions by household and measures emissions in categories such as travel, food, and housing. We classified the calculators by format, data quality, accessibility, and efficacy for the Methow. To provide context we also found sources that compare the local footprint to the greater region (figures 5,6 appendix) As the Methow Valley is largely agricultural, a substantial amount of farmers' carbon emissions will stem from their land use practices, and from their transportation of goods. Acres of farmland owned and irrigation water used per year is an important factor for determining emissions quantity in this area (figure 1).

<u>Methow Valley Regional Carbon Emissions</u>	
<u>Carbon Source</u>	<u>Annual Emissions (tons CO2)</u>
<u>2015 Twisp River Fire</u>	<u>749,000</u>
<u>All Non-Local Traffic Between Mazama and Twisp (2019)</u>	<u>7,218</u>
<u>500 Acres of Alfalfa</u>	<u>40,413</u>
<u>Total Methow Valley Wood-Stove Home Heating (2018)</u>	<u>16,724</u>

Figure 1. Raw data: Methow Valley Traffic Geoportal, citydataWA, Greenhouse Gases Equivalencies Calculator, Asgharipour et al., United States Department of Agriculture

Figure 2. Data: Jones Kammen



The home energy footprint of Methow Valley is affected by the lack of electrical heating systems. Because homes use wood-burning stoves for several months out of the year, it is important to account for the amount of wood burned, as well as the efficiency and emissions of the stoves being used. In order to gain an accurate perspective on carbon emissions for each household, the amount of wood burned is an important factor not often accounted for by calculators (figure 3).

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of
most
heat
wood

<u>Methow Wood Stove Carbon Footprint (Winter 2019-2020)</u>			
<u>Stove Type</u>	<u>Efficiency</u>	<u>Cords of Wood Burned</u>	<u>Carbon Footprint (tons CO2)</u>

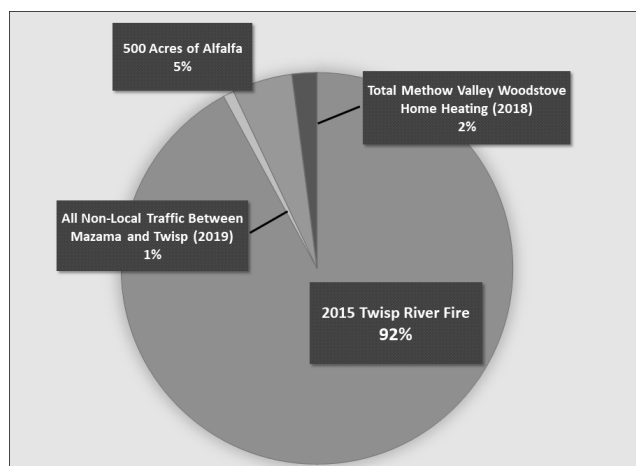
<u>Non-Catalytic Stove</u>	<u>67%</u>	<u>4.0</u>	<u>10.0</u>
<u>Catalytic Stove</u>	<u>72%</u>	<u>3.4</u>	<u>8.5</u>
<u>Pellet Stove</u>	<u>78%</u>	<u>2.6</u>	<u>6.5</u>

Figure 3. (Stove Efficiency Data: Gulland, 2019-2020 Methow base data: Lazo Gitchos)

Community Offset Programs

Figure 4. Raw data: Methow Valley Traffic Geoportal, citydataWA, Greenhouse Gases Equivalencies Calculator, Asgharipour et al., United States Department of Agriculture.

One of the largest carbon emitters in the Methow Valley is wildfire (figure 4). In fact, the town of Methow is ranked first as the most at-risk communities in the state for wildfire. Forests in the valley are overcrowded and stressed and as fire seasons become more severe, extreme fire behavior can be recognized. Not only do fires emit carbon, they also destroy the existing carbon storage pump when forests are burned. In order to combat climate change and increasing carbon emissions, excess fuel should be removed from forests, preventing catastrophic wildfire events. These excess forest materials can be locally processed into biochar, a product that can store carbon for hundreds of years, as well as be used for numerous other beneficial purposes such as increasing soil fertility (*Let's Use Forest Health, Wildfire Strategies to Combat Climate Change – Methow Valley News*, n.d.)



In 2019, scientists studied the effects of returning beavers to the headwater streams of the Methow River. When they compared the carbon and nitrogen content of the soil in beaver introduced areas to non-beaver areas, the carbon to nitrogen ratio was much higher in beaver populated areas. The reintroduction encourages the integration of these elements into sediment, therefore helping to sequester carbon (McCreesh et al., 2019).

There is also a current project in the Methow Valley that plans to implement USDA-inspected meat processing for farms and ranches in Okanogan county run by the Methow Conservancy. The marketing of USDA meat allows farmers to sell larger cuts of meat to restaurants and businesses. A local USDA processing plant would decrease the carbon emissions from transportation to inspect facilities that are hours away (*Methow Grown Farms and Ranches*, n.d.).

Another local initiative to offset carbon emissions is Forterra's Evergreen Carbon Capture (ECC) Program. It provides carbon offset solutions for companies and individuals through the planting of native trees in the Puget Sound including the Douglas fir and Western hemlock. For every 5 tons of carbon emitted, ECC will plant a tree. In the 2019-2020 year, the 6,000 trees planted offset roughly 30,000 tons of carbon (*Evergreen Carbon Capture*, n.d.)

Stakeholder Interviews

C6 Forest to Farm

The C6 Forest to Farm Biochar project is a non-profit organization with the goal of generating biochar material from small-diameter forest material and slash debris from logging. Before the end of the calendar year, C6 plans to acquire a research-scale Karr biochar plant and begin testing and proofing the process in Twisp. C6 estimates a 1-year operating cost of between \$85,000 and \$100,000 for the research-scale facility, with production output of approximately 0.8yds every 24 hours. The estimated cost of the full scale processing facility is between \$8m and \$10m, and output varies based on quality and quantity of feedstock and type of reactor. In the future, C6 plans to sell carbon offset credits to businesses and individuals in the Methow Valley and throughout the state. This model fits well within the management framework described in section II part D. as an independent contractor providing carbon sequestration. C6 has demonstrated a willingness to work collaboratively and cooperatively with an offset management organization, and with other established infrastructure frameworks in the Methow Valley.



<https://c6f2f.com/>

Methow Conservancy

The Methow Conservancy is a land trust non-profit that has been operating in the Methow Valley for a quarter century. Much of the land under conservation here is agricultural land, with great potential for increased carbon sequestration if regenerative agriculture methods are implemented. Some efforts to implement these practices have been proposed, and some have been enacted, by the Carbon Farming Group within the Methow Conservancy. This group aims to support farmers in the transition to more sustainable farming practices, including decreasing water usage, soil depletion, and other consequences of industrial agriculture. The emphasis on an economically viable transition, accomplished through subsidy and financial support, is vital to these efforts. This program has room to grow within the structure of the Conservancy, and has not yet been fully realized. The Conservancy has expressed interest in fleshing out this program, and incorporating carbon accounting into the efforts to make the transition more economically viable. Members of the Methow Conservancy bring valuable perspectives to the management and operation of a collaborative organization, having been involved in the Methow Housing Trust, the Methow Salmon Recovery Foundation, and many other advocacy, action, and equity programs. The Conservancy has expressed interest in exploring opportunities and options related to a carbon offset program.



<https://methowconservancy.org/about-us>

Twisp Works

Twisp Works is a nonprofit collaborative that houses artists and businesses, as well as coordinating a variety of programs within the community to support economic development and sustainability. Julie Tate-Libby, Director of Programming, hopes to encourage sustainable development and climate advocacy through Twisp Works' impact in the community, leading the way for businesses and individuals to adopt sustainable practices. In an interview with the Authors, Tate-Libby expressed interest in using Twisp Works' relationship with local businesses to effectively manage the front-end purchase of carbon credits, which serves as the funding for carbon sequestration efforts.



<https://twispworks.org/event/twispworks-foundation-board-of-directors-meeting-2020-03-13/2020-05-08/>

Methow Natives

Rob Crandall is the owner of Methow Natives and, until the COVID-19 crisis began, was working on a plan to develop a local carbon offset program using many of the Methods outlined in this report. In a discussion with the Authors, Crandall highlighted the importance of a collaborative approach between nonprofits and other entities, and the importance of working closely with landowners and the Department of Fish and Wildlife. He also recognized the potential for labor-power as well as the educational opportunity presented by a partnership with the Methow Valley School District. Providing education on carbon emissions is a vital step to reducing our global carbon footprint, and this education can be effectively integrated into the Methods proposed in this report.



<http://www.methownative.com/#services>

Interview Findings

As determined by stakeholder interviews, many organizations are willing to put forth efforts to establish a carbon offset program within existing infrastructure, managed separately to better function in the context of the specific needs and abilities of all stakeholders. The Authors

believe that the most effective and efficient way to establish a program for carbon offsetting would be to work within the framework of existing local momentum. This will allow the creation of a program on a “sliding scale,” with proportional productive output from an initial small investment and from a later larger investment. For example, an investment in accounting and management, as well as a small investment in local sustainability in farming through the Methow Conservancy’s working group, would yield an offset proportional to that small investment. On the other hand, a large initial investment in new infrastructure, such as the C6 Biochar reactor, would over time yield greater results but would not allow for a gradual deployment process. The management model of the Methow Housing Trust should be referenced as a framework for incorporating a variety of voices while maintaining direction and accomplishing goals, as well as generating a program to meet specific needs that are not directly met by any organization locally. A combination of approaches to incorporating existing infrastructure will likely yield the best outcome.

Results

Calculators

The most accurate carbon calculator that we found is the Nature Conservancy Carbon Footprint Calculator. It dives deeply into travel, housing, food, and shopping and quantifies carbon emissions by household. The website defines carbon footprint and provides a value for the average footprint in the US. Using this site, people can compare their carbon footprint to others and gauge whether their footprint is particularly large. Of those we researched, the *Wildland Fire Emissions Information System* would be the most effective to calculate regional emissions from wildfires in the Methow Valley provided they are at least 1 km² in area. It not only considers area burned but many local ecological elements such as fuel density, type, and percent fuel consumption. A drawback of this calculator is its use of reference satellite data no more recent than 2013. Additionally, wildfires are unpredictable in their frequency and scale, so this calculator is not well suited to make projections for the valley’s emissions in the short term (1-3 years). To provide perspective and raise awareness we also wanted to include a verified independent emissions calculator that allows a local footprint to be compared to a global average and to average citizens of other nations. We found the *United Nations Carbon Footprint Calculator* to be the most appropriate.

Community Offset Programs

The offset program that would make the largest difference regionally is removing excess material from forests as it prevents extreme forest fires and continues to sequester carbon

through biochar. As wildfires are the most substantial carbon emitter in the Methow Valley, biochar would make the biggest difference. It not only prevents future forest fires, but also sequesters carbon in an effective and useful way.

An example of a community offset program relevant to the Methow Valley is the Wood Innovations Grant through the USFS. Communities, non-profits, and businesses can apply for this grant which could apply to hundreds of projects that collect and use brush-wood from areas with an excess of undergrowth, decreasing wildfire risk. Similarly, the mass planting of trees through companies like Forterra is most effective for individuals and companies to successfully offset their emissions.

Recommendations

Accounting

One of the largest predictors of variation in household carbon emissions is household income. Because the production of goods and delivery of services produces carbon, households that consume more goods and services are responsible for more carbon emissions than those that consume fewer goods and services. Incorporating household income into a carbon footprint calculation is important to place the onus to take action on those with the resources to do so. However, GDP should not be the only factor in determining carbon footprint.

In the Methow Valley, much of the community carbon footprint can be attributed to large single-source events, such as wildfires. The Authors recommend accounting for wildfire emissions in calculations for offset in the community, as well as accounting for the prevention of catastrophic wildfires in the context of prevented emissions. This will be relevant once the Methods reach a financially self-sustaining scale and sequestration of community emissions (emissions not attributable to a household or entity) can begin. These calculations should be made in accordance with the Methow Valley Emissions Report.

Land use, specifically agricultural development, has the potential to impact the carbon footprint of the community and of individual farms. Regenerative agricultural practices produce less carbon emissions, and require less fossil fuels, than traditional practices. In order for regenerative agriculture to be economically viable, the externality of carbon emissions must be taken into account. Carbon accounting for land use is of utmost importance in the context of subsidizing sustainable practices in farming and otherwise.

Offsetting Emissions

The end product of a purchased carbon offset is the assurance that carbon has, indeed, been sequestered on your behalf, and will remain so indefinitely. Because developing infrastructure to sequester carbon is a large undertaking requiring funding in advance, the Authors recommend utilizing existing infrastructure that may sequester carbon, such as the Carbon Farming Group in the Methow Conservancy or various restoration firms throughout the Methow. In the initial stages of an offset program, it will be prudent to rely on existing infrastructure to remain economically viable.

In structuring an offset program, contracting with local sequestration operations should be standard, but so too should working closely with the operations to ensure quality standards and maintain efficiency of delivery. At the outset of this program, offsets should be guaranteed only as educational tools, in a donation format. Guaranteeing the longevity of an offset should be done only when the entity is confident that the offset can be maintained in perpetuity.

Monitoring and Evaluation

As with the establishment of any community-based program, financial concern rises to the top of the list of barriers to entry. Our goal in recommending Methods in this report is to provide economically feasible guidance. It is likely that establishing a system for carbon offsetting would require the labor-power beyond the volunteer capabilities of the Methow, and would require at least 1 paid employee. Funding for this position would ideally come out of a surplus in the price of carbon offsets purchased in the community, but in the short term it will be prudent to seek grant funding and private funding from the US Forest Service and other private institutions. In the event of the implementation of a state- or nation-wide carbon tax, the demand for carbon offsets would skyrocket, creating a consistent and valuable market. This scenario would allow for greater infrastructure and management investment, and an extension of existing systems. Until then, keeping the program running efficiently will require community support and creativity with regard to sourcing carbon sequestration.

Conclusion

The Authors recommend a variety of measures to be adopted as soon as funding will allow. The Methow Valley's approach to carbon offsetting should be framed by equity, existing infrastructure, and economically viable management structures. The most effective structure for a carbon offset program is one in which incremental funding will lead to proportional

achievements in the short term, which will open the door to future larger investments and projects in the future. The best way to reach these achievements is by effectively utilizing existing infrastructure, and building a management framework that incorporates local climate action leadership as well as community stakeholders. The management style adopted by the Methow Housing Trust and described in detail in the Methow Conservancy interview synopsis should be referenced with regard to an inclusive management style. Under this umbrella of cooperative management, as much function as possible should be contracted to existing infrastructure, especially in the short term. These functions include accounting (use of online personal carbon calculators modified for specific needs of the Methow), sequestration (contracting or involving entities in the Methow that may already sequester carbon, or be prepared to do so with little retooling, and fund them directly to sequester carbon on behalf of clients), and management (involve and fund a financial entity that already manages funds for community projects). By incorporating existing structures, establishing a carbon offset program for the Methow Valley is contingent only on the market for carbon offsets. The incorporation of programs such as the Methow Conservancy's Carbon Farming Group and Rob Crandall's Methow Carbon Credit project in conjunction with existing restoration work and Methow Valley School District. The implementation of a carbon offset program in the Methow Valley should be a many-staged approach. Initially, using existing infrastructure will be paramount. However, as the market for carbon offsets is developed there will be ample opportunity for large-scale investment in new infrastructure such as processing facilities and internal sequestration systems. Including a multitude of stakeholders will also be vital to the initial success of an offset program. The Authors recommend that Methods described herein be adopted by the community of the Methow Valley under guidance of several existing organizations. Establishing a carbon offsetting program will require collaboration and creativity. Removing carbon from the atmosphere, as well as reducing our existing footprint as a community, are both necessary in ensuring a sustainable and just future.

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Appendix

C6 Interview 7/27

- Biochar has diversity of uses
 - Sequester carbon
 - Improve forest health
 - Prevent fire
 - Make composting more effective/reduce methane emissions
 - Clean way to deal with forest material
- Goal is to sell carbon credits - both to NorthWest Innovation Works and to individuals
 - Potential to sell offset credits to a management entity in the Valley
- Barriers:
 - Funding - need \$8m privately funded
 - Startup costs (facility)
 - Economic feasibility (need clients)
 - Zoning laws for industrial use
 - Lawsuits against logging - blanket disdain for forest management even if to improve health
- Business model would be made more effective by subsidy/tax on carbon sequestration/emissions
- C6 is willing (and excited) to work within the framework of a carbon bank/offset program managed by a separate entity, but needs time to get up and running

Methow Conservancy Interview 7/29

- Land use in valley vital to carbon sequestration
 - Regenerative agriculture
 - Forest management
 - Water conservation (responsible development)
- Carbon farming group
 - Run by ag coordinator Alyssa
 - Nature conservancy project for carbon farming - subsidies for regenerative ag
- Forterra - King Co. land trust
 - Potential program to model w/ farmland use/management
- Important to get systems up and running before gold rush of carbon tax occurs
 - Streamline management to funnel cash efficiently
- Utilize fluid management until goals and methods become more clear

- Ensure that all stakeholders are represented before developing concrete management structure.
- Model of Methow Housing Trust
 - Many organizations need a seat at the table
 - Specific management needs cannot be addressed by any 1 stakeholder
 - “Big tent” coalition management approach
 - Final management form is developed over time, not necessary for first stages of project
- Volunteer Methow model
 - Wrong problem was assumed
 - Because of fluid management, structure was shifted as understanding of needs evolved
 - Vital to be flexible as new issues arise/new understanding occurs
- Salmon Recovery model
 - Figure out how to make efficient impact when stakes are low
 - Take small steps to ensure effective management of money/effort so that when funds are made available, the money can be used effectively
- Building trust among stakeholders and creating a vehicle for passionate work (direct energy towards existing structure) will create a path towards a goal

Twisp Works Interview 7/29

- Julie is looking to pull twisp works in the direction of climate action through business directives
 - Subsidies
 - Grants
 - Loans
- Could Twisp Works could be the financial interface for a carbon bank? Management infrastructure already established
 - Already works with other orgs and businesses
- Reach out to:
 - Julie Muyallart
 - Madeline at Mazama store
 - Alyssa at Conservancy
- Look into housing trust study conducted in 2016
- Important to define what defines an offset
 - Fire reduction?
 - Tree planting?
 - How big do trees get

- Will they burn later
- How to ensure longevity of sequestration?
 - Using already established orgs for parts of management

Methow Natives Interview 8/12

- Primarily an educational venture at first
 - Too difficult to ensure longevity of capture
- Important to implement umbrella management with fiscal sponsor
 - Many stakeholders, many parts to run smoothly
- Sliding scale of proportional investment to proportional output/offset is ideal
- All offsets must be additive

Regional and Global Footprint Background

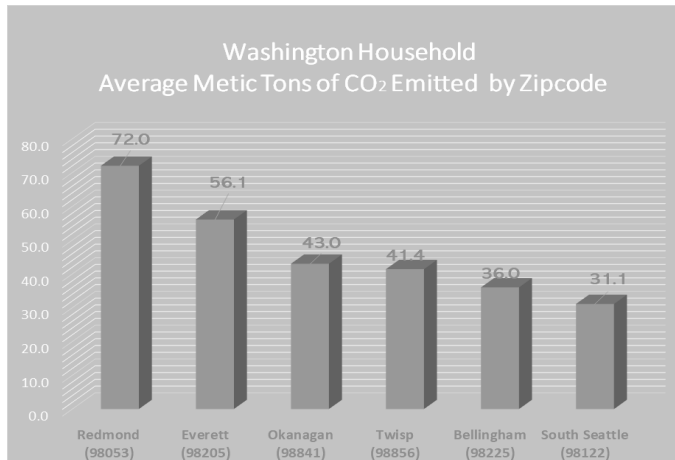


Figure 5. Data: Jones Kammen

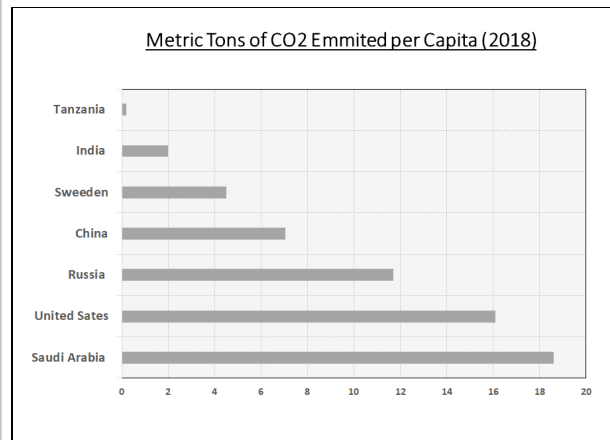


Figure 6. Data: Our World in Data