

The Power of Individuals Has Increased

Dr. Annette Olson
3rd conference on Climate Change
and Sustainability, Barcelona, 2024



Who We Are

We are a 501(c)(3) nonprofit
that expands individuals'
effective climate action
via a
Knowledge hub + community.



Three organizations I am involved in.

- a. Jack-of-all-trades biologist
- b. Smithsonian scientist for 8 years, U.S. Geological Sciences for 8 years, advisor to other orgs, incl WWF, NOAA, EPA, NIST here and there
- c. Troubleshooter for national and international research programs for 7 years
- d. Destroyer of barns, house renovator
- e. Change from science to action - Climate Steps



What can I do to fight
climate change?

Our **Mission** is to help you
answer that question
and take action.....

Two friends asked in 2016 and there are multiple instances of this question of the internet.



Headlines: *“Individuals can’t solve the climate crisis...”**

BROOKINGS

Election '24 U.S. Economy International Affairs Technology & Information Race in Public Policy Topics



COMMENTARY

Taking power as individuals (and why individual climate action can't save us)

Dana R. Fisher
February 13, 2024



Many leaders want people to vote, protest, and join groups that can leverage industry and governments *at scale*.

➔ WE DO NEED THIS scale to achieve real change in time.

But ...

Headline source. The Guardian:

<https://www.theguardian.com/commentisfree/2019/jul/10/individuals-climate-crisis-government-planet-priority>, and <https://www.brookings.edu/articles/taking-power-as-individuals-and-why-individual-climate-action-cant-save-us>.



Don't dismiss us individuals – we have more power than you think.

....many folks are tired of being asked just for money, are waiting for opportunities and are also still waiting for results to be put forth.

....many folks have no voice through representatives, for instance.

.....**And** dismissing is “Old School.” People want to do something(s) and have much **more power now because of the INTERNET.**

“the Coronavirus pandemic has changed the climate movement with much activism moving online.” (Fischer and Nasrin, Oct 2020)

<https://wires.onlinelibrary.wiley.com/doi/abs/10.1002/wcc.683>. Also see:
<https://www.amnesty.org/en/latest/campaigns/2020/05/activism-in-times-of-covid-19/>; <https://www.iied.org/climate-activism-time-covid-19>;

Information and Communication Technology have helped people directly participate in social processes, subject discussion, and decision-making, and for communication between citizens and policymakers. (Hognogi, et al, 2023; <https://www.nature.com/articles/s41599-023-02358-7>)



Internet Benefits

Citizens finding data, information and tools.

- Scientists are compiling data for *actions* (Projectdrawdown.org).
- Governments – public regulations commenting moved online
- Designers/developers – (e.g., Game of Extremes, action apps)

Taking Action

- Via organizations (<https://www.earthhero.org/activism-groups/>), or
- Individuals just find and/or organize their own actions.

Game of Extremes can be found at: <https://www.usdn.org/projects/climate-trainings.html>.

Will go into more examples further down...



Challenges People Face

- Challenge 1 – being told that “*individual*” action is ineffective

- Challenge 2 – Finding the *best* information to take effective action.

*It is not to Recycle.**

- Challenge 3 – Finding the *resources and opportunities* to take action, e.g., how can I find a clean energy provider?***

*<https://www.bhg.com.au/easy-changes-to-live-a-more-sustainable-life-at-home>

***<https://greenneighborchallenge.org/About>

Information is fragmented, and dichotomous – vague to the point of useless, or centered on very determined activists.



Challenge 1

... Are Individuals *Ineffective*?



...a “Distraction by Industry,” “Individuals Aren’t Responsible” *

- Industry-caused emissions estimates range from 14.5-71% CO₂ emissions **, (depends on fossil-fuel portion of calculation)
- But, as *consumers*, we do share responsibility.
- Further, *sitting by is not an option*.
- Certain individual actions are more effective than others.



[*https://www.yesmagazine.org/environment/2022/01/31/climate-change-fossil-fuel-industry-individual-responsibility](https://www.yesmagazine.org/environment/2022/01/31/climate-change-fossil-fuel-industry-individual-responsibility)

[*https://www.theguardian.com/commentisfree/2019/jul/10/individuals-climate-crisis-government-planet-priority](https://www.theguardian.com/commentisfree/2019/jul/10/individuals-climate-crisis-government-planet-priority)

**There are many different ways of defining ‘caused’. The 71% results from realizing that the fossil fuel industry serves all the other industries, governments, and individuals.

<https://www.theguardian.com/sustainable-business/2017/jul/10/100-fossil-fuel-companies-investors-responsible-71-global-emissions-cdp-study-climate-change>.

But what we should not do is let select corporation leaders, or the 1% *manipulate us* into holding the blame personally.

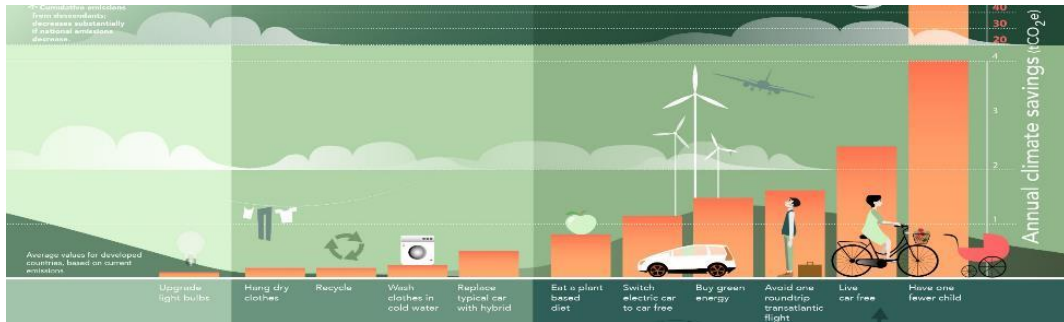
We do litter, but we aren’t the ones who fought direct deposit laws for bottles.

We do buy gasoline, but we aren’t the ones who knew and hid the science and went against it for personal profit.

Responsibility – most individuals do not hold responsibility for the past, but we need to focus on future. We have to get the climate under control way before 2050.



Effective Personal Actions by Individuals



(Wynes and Nichols, 2017: Sources do not include social impacts, i.e., multiplier effects.)*

<https://iopscience.iop.org/article/10.1088/1748-9326/aa7541>.



Data and Information

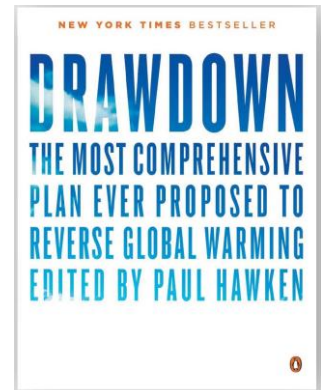
Research Organization - Project Drawdown, 2024

www.projectdrawdown.org

Four of the top 5 climate solutions have inherent personal components*

- Refrigeration (Management of refrigerants) = 629 M. cars equivalent
- Family Planning and Education = 448 M and 448 M respectively!
- Reduced Food Waste = 495 M. cars
- Eat your Veggies = 464 M. cars

..... Clean cooking = 137 M. cars



<https://edition.cnn.com/interactive/2019/04/specials/climate-change-solutions-quiz/>
<https://drawdown.org/programs/drawdown-labs/job-function-action-guides>

Dietary changes in Europe, **20% less meat**.*

<https://www.livekindly.com/europe-meat-consumption-dropped-20>

<https://www.weforum.org/agenda/2022/11/meat-consumption-environment-climate-food/#:~:text=The%20consumption%20and%20production%20of,and%202019%2C%20one%20study%20reports.>



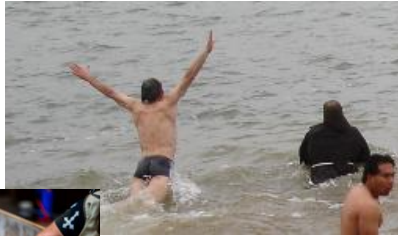
But Critically: Individual ≠ Personal

Misconception that “individual” action = “personal” action
(e.g., light bulbs, recycling, eating veggies),
i.,e., the glossy magazine approach.

But “Individual” action broader and powerful.



Political Social/Community Industrial/Corporate



Broccoli - Elena Mozhvilo, courtesy of Unsplash.com
Woman handing out pamphlets - Madeleine Maguire, Unsplash
Compost - Conscious Design, Unsplash
Sewing - Devn, Unsplash
Plastic cup - Catherine Sheila, Pexels.com
Climate March - me (Annette Olson) - CC-BY 4.0

Individuals have other impacts they can make.



Benefits of Individual Action

1. Diverse
2. Gives easy first steps that inspire growth
3. People feel they are taking control, alleviates anxiety.
4. Actions for *introverts* and extroverts.

5. *Top-down mandates need to be implemented by individuals, anyway. Ex: COVID.*
Exs: Government rebates for cars, appliances.



Examples

of *One Person* Making an
Impact.



Two Women in a Retirement Home...

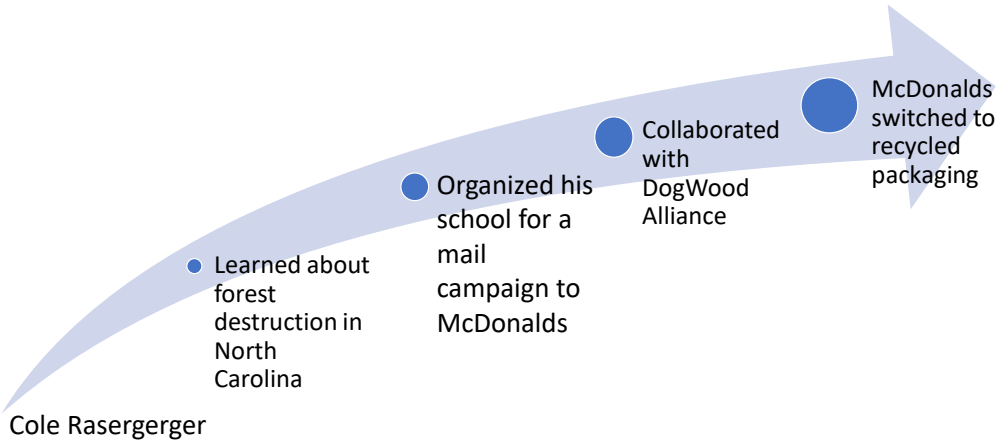


<https://results.org/blog/remembering-marshall-saunders>.

Climate Steps founded in a similar way; Two friends took me to lunch and told me to start a blog.



A Teenager Organizes...

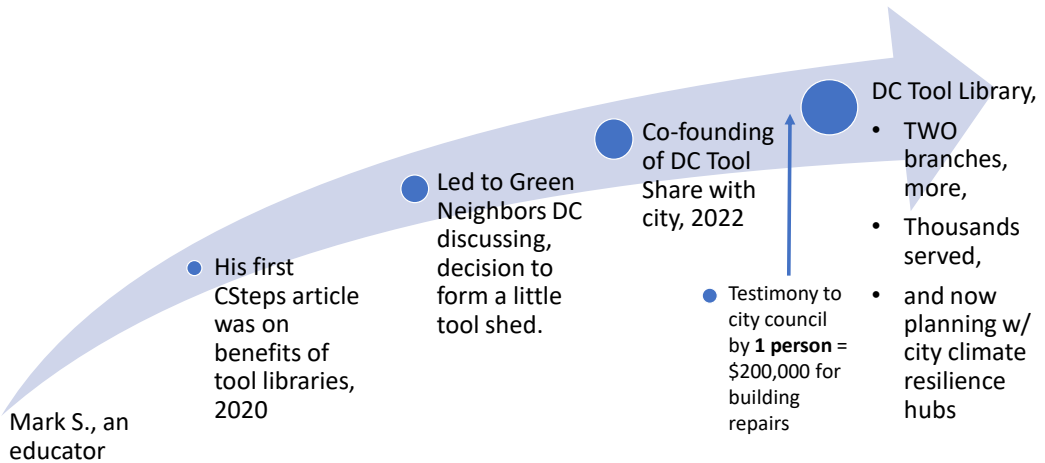


Reference: <https://www.spokesman.com/blogs/down-earth/2011/jun/21/tuesday-video-fourth-grader-vs-kfc/>

Similar one for a teenager in Miami helping [South Miami Approves Solar Roof Rules, Inspired by a Teenager - Inside Climate News](#)



A CSteps Research Volunteer Inspires



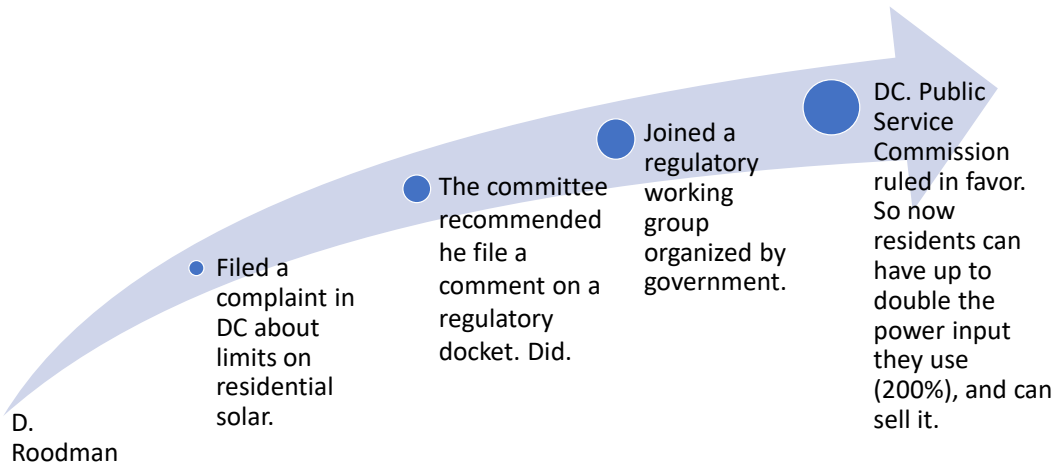
Dr. Olson, pers. Comm.

www.dctoollibrary.org (dctoolshare@gmail.com)

<https://climatesteps.org/2020/09/03/a-tool-library-is-a-seed>



Homeowner Requests Government Change



<https://pv-magazine-usa.com/2020/08/12/dc-citizen-wins-increase-in-net-metering-limit-to-200-of-past-usage/>

<https://votesolar.org/how-i-helped-double-the-limit-on-rooftop-solar-in-my-state-and-maybe-you-can-too/>

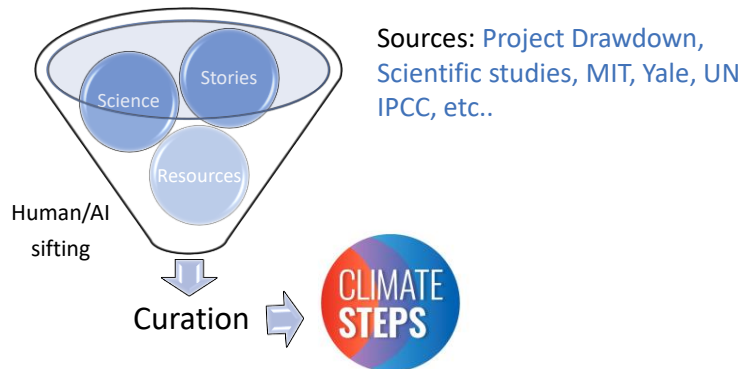


Challenge 2

... *How to Be Effective*



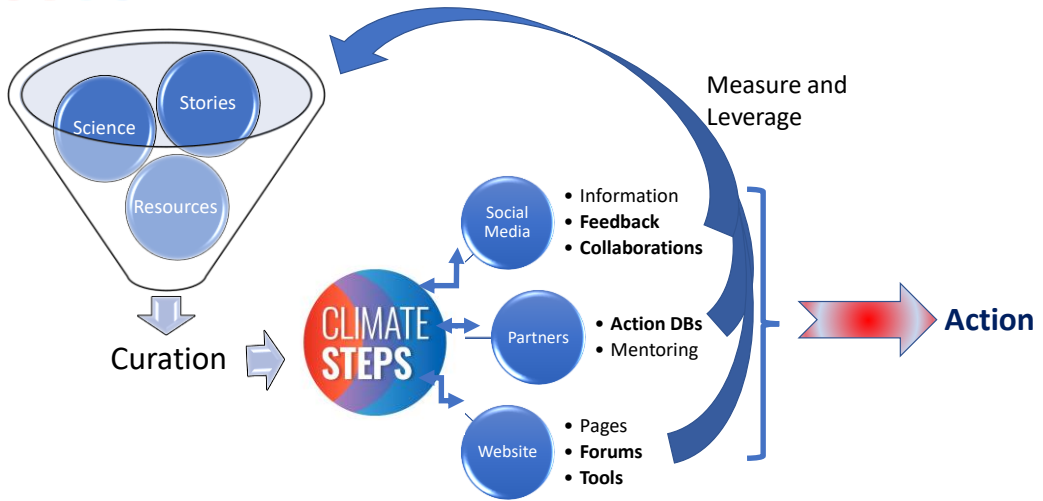
Challenge 2 - Finding the Best Information on *Effective* Actions - Response:



People struggle with limited information spread across the internet. Difficult to use. Inefficient., out-of-date..., and likely to lead to ineffective actions.. Focus on individuals, not policy, or gov, ngo, or industry action.



Hub Network





Four Critical Areas for Individuals

- Citizen Science
- Creating action **“Ripple”** effects in our *Culture*
- Inserting ourselves into decision-making – government and corporate
- Changing our infrastructure – utilities, pipelines, transit.



Citizen Science

Help discover problems – and
solutions



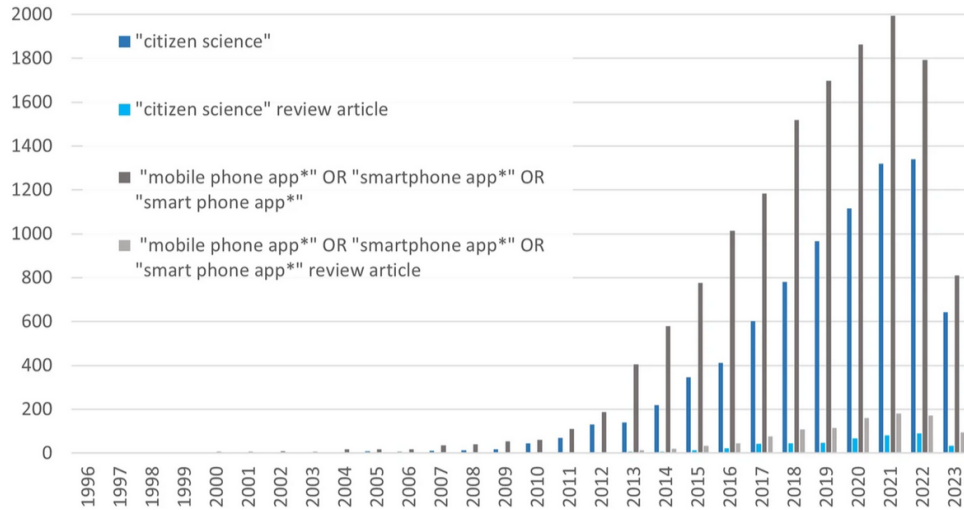
Citizen Science – Public Participation (in some form) in Science itself

- We need the science to determine the correct actions. So, help is critical. Citizen Science is especially useful for large-scale, geopositioned data collection.
- It is a learning, contributory experience, and increases scientific literacy. (Hognogi, et al., 2023)

Hognogi, et al., 2023. <https://www.nature.com/articles/s41599-023-02358-7>

Fig. 1: Scientific interest for CS and mobile apps throughout the years.

From: [The role of citizen science mobile apps in facilitating a contemporary digital agora](#)



The evolution of the number of studies on the topics of "citizen science" and "mobile phone app", according to WoS (17.08.2023).

Figure is about key words used to describe data collection in scientific articles. New technologies have increased the “performance” of CScientists (Hognogi, et al., 2023)



RIPPLE

1. PASSIVE ACTION

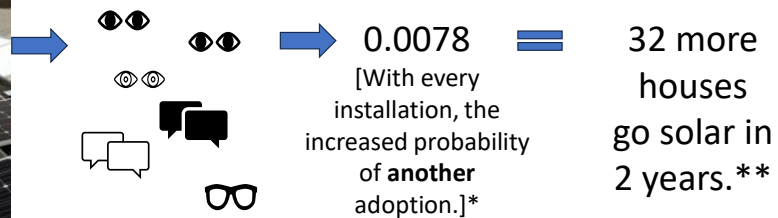


Behavior is contagious

Solar installation study by *Bollinger & Gillingham, 2012*



Neighbors in the same zipcode (U.S.):



“Clustering pattern very clearly increases.”*

“Marketing by solar installers (e.g., signs) increase rate of adoption even more.*

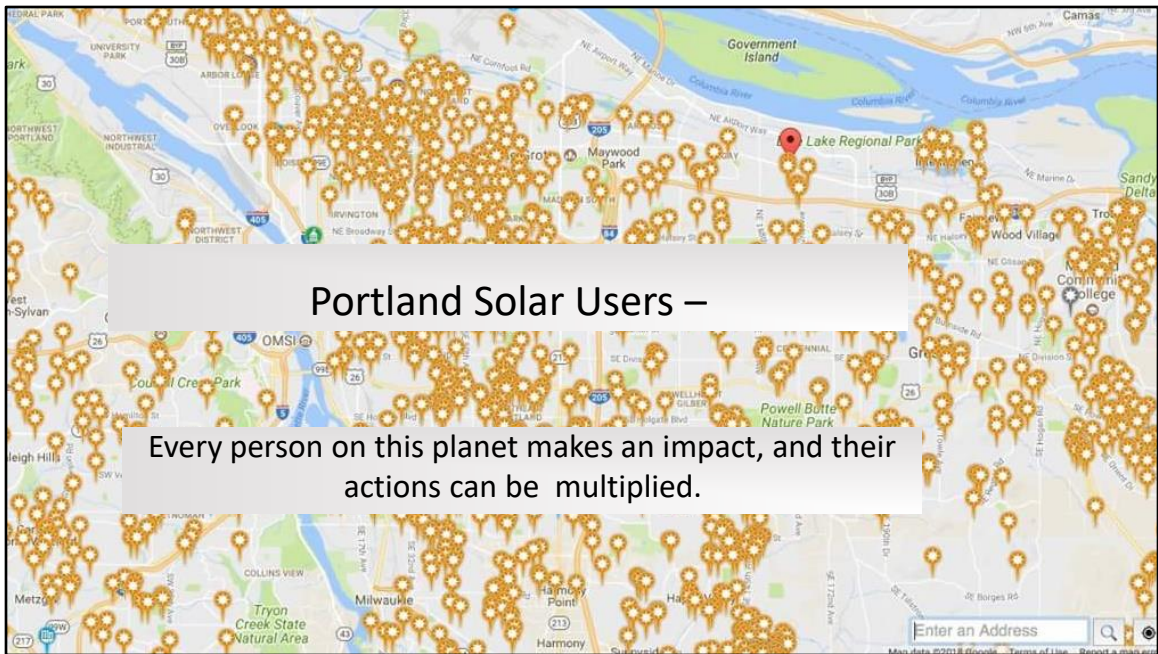
A whole scientific field on behavior contagions, domino dynamics, and more.

*https://resources.environment.yale.edu/gillingham/BollingerGillingham_PeerEffectsSolar.pdf – studied specifically the social aspects of behavior change (versus any influence by marketing, etc..)

- “an extra installation in the zip code increases the probability of an adoption in the zip code by 0.78 percentage points.”
- On the same street within a zip code, increases the probability (0.0078) by 15%. And the more you add, the more the probability of adoption by a household goes up by .01.
- Of course, influenced by neighbors already having green tendencies, as well as population age, larger households, gender, race, commute time, and higher home values. Interestingly, the higher the home value, the lower the adoption rate (in this particular study.), but the larger the household and commute time – the more adoptions, potentially due to more observance.
- Also, the size of installation is likely to increase the size of the neighboring installations

**For the 32 new installations/2 years calculation:

<https://www.nytimes.com/2020/08/19/business/behavioral-contagion-carbon-tax.html>



2011 screenshot by climate activist Brian Ettings, shared with his permission. And we need as much as possible to help save every square foot of the planet's green spaces, air and water as possible.





RIPPLE

2. ACTIVE





Engagement

Anacortes High School

LOCATION: Anacortes, WA **GRADE LEVEL:** K-6

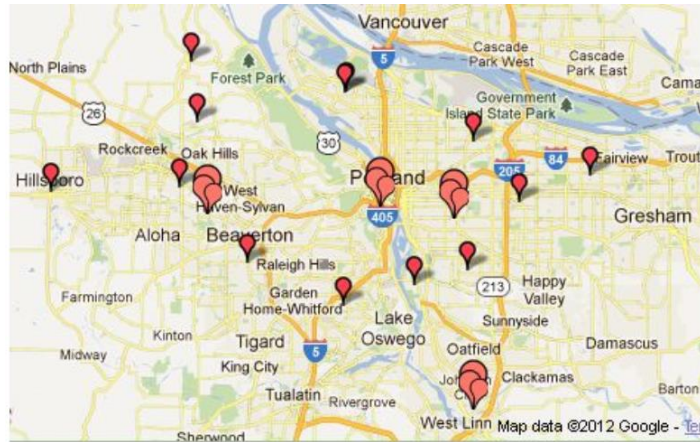
TECHNOLOGY TYPE: solar **PV SYSTEM SIZE:** 1.00 -
kilowatt



"Kirsten Woodsmith's 2008 senior project involved forming a committee of adult volunteers to install a photovoltaic (PV) system at Anacortes High School."

<https://cebrightfutures.org/browse-projects/or>

This influenced parents, other students, teachers, maintenance workers, construction workers... Led to more activities.



Solar4rschools.org

https://www.researchgate.net/publication/271668119_Recognizing_the_Child_as_Knowledgeable_Other_Intergenerational_Learning_Research_to_Consider_Child-to-Adult_Influence_on_Parent_and_Family_Eco-Knowledge..... positive child-to-adult influence



COMMUNICATE AND ENGAGE

Communication, Dr. Katherine Hayhoe

- Conversation (“climate drop”)
- Signs, chalking, protests, rallies,
- Donate climate books, tools, toys to your library
- Give tours of your green house
- Join/form Community Gardens, Events, Tool Libraries
- Communities

*(3.5% Rule = participation in protests brings change. Chenoweth, 2013)**



*Chenoweth, 2013 TedX Talk, interview at:

<https://news.harvard.edu/gazette/story/2019/02/why-nonviolent-resistance-beats-violent-force-in-effecting-social-political-change/>

<https://www.nonviolent-conflict.org/resource/success-nonviolent-civil-resistance/>

<https://www.bbc.com/future/article/20190513-it-only-takes-35-of-people-to-change-the-world>

RIPPLE EFFECT:

<https://www.theguardian.com/commentisfree/2021/nov/14/cop26-last-hope-survival-climate-civil-disobedience> (discussing Sharpe and Lenton’s 2022 article. – cascades and tipping); [fter the failure of Cop26, there’s only one last hope for our survival | George Monbiot | The Guardian](#) Study: 25% of people needed for domino dynamics – aka, **avalanche in perspectives.**

Climate Policy article.

<https://www.tandfonline.com/doi/abs/10.1080/14693062.2020.1870097>.

Connect idea-sharing, action-supporting community

“I was so encouraged by the response to my last post that I was inspired to write another. Thanks for all the great questions and conversation, my climate buddies.” C.R.



Photo Courtesy of Annette Olson, from a Green Neighbors DC movie night for the neighborhood on climate change.



Grassroots Organizations

With the Internet, multiple online grassroots organizations are providing knowledge, recruiting citizens online, and leveraging their citizen power. Different than past organizations seeking donations.



REFERENCE:

<https://grist.org/climate/how-the-internet-transformed-climate-activism/>.
https://www.garivers.org/files/convio_online_advocacy.pdf,

Information and Communication Technology have helped people directly participate in social processes, subject discussion, and decision-making, and for communication between citizens and policymakers. (Hognogi, et al, 2023; <https://www.nature.com/articles/s41599-023-02358-7>)

RESULTS:

Cooperative improvements – (EcoArlington).



Decision-Making

Be part of the process.



Yields Results - Tone/Content in Public Regulations Change

U.S. NEPA (National Environmental Policy Act) in 1970s => Public commenting

Results:

Balla, 1998 "...certain administrative procedures do not operate as instruments of political control."

Kirilenko, Mankad, and Michailidis , **2014**. "U.S. Commodity Futures Trading Commission (CFTC) adjusts the final rule issued in the direction of tone expressed in public comments," BUT ALSO note that *citizens can use text mining to see if agencies have given the comments consideration*.

➔ Standing for court cases.

Federal agencies are legally required to respond to every unique, fact-based comment. These responses are published, along with the final rule or action, in the Federal Register. If the agency does not respond to such a comment, or does respond but does so in a way that may be considered "arbitrary and capricious," the commenter has cause to take the agency to court for violating procedural law.

<https://publiccommentproject.org/how-it-works>

<https://regulatorystudies.columbian.gwu.edu/measuring-impact-public-comments>

(K, M, and M; 2014 -

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2377826)

Examples of How to write).

Sweet-Talking the Fourth Branch: The Influence of Interest Group Comments on Federal Agency Rulemaking

Susan Webb Yackee: <https://academic.oup.com/jpart/article-abstract/16/1/103/886945?login=false>

"The formal participation of interest groups during rulemaking can, and often does, alter the content of policy." Yackee, 2005



Extrovert

- Testify in Person
- Lawsuits
- Organize campaigns
- Green teams at work, much more

"Citizens increasingly want to become active participants in urban planning" *

[Full article: A new role for citizens' initiatives: the difficulties in co-creating institutional change in urban planning](#)



CLIMATE SOLUTIONS AT WORK

JOB FUNCTION ACTION GUIDES

SHARE THIS PAGE



Employees are critical catalysts for climate action. As the engines that keep businesses running, you represent a range of skills and knowledge that can scale climate solutions in the workplace and beyond.



Infrastructure

Can Combine:

A Personal Need/Action,

+

a Ripple Effect,

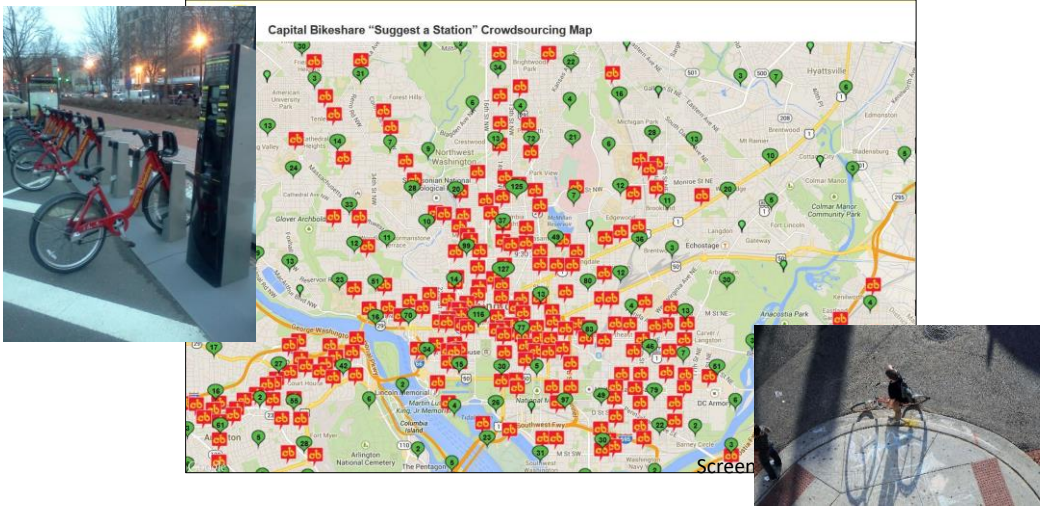
+

Decision-Making

= AVALANCHE



Capital Bikeshare, 2010 => 825 % growth





Other Examples:

- **First Proposers can** especially create change – e.g., solar installers create 1) utility consideration, 2) change from one-way distribution of energy to distributed grid, and 3) build local resilience.
- *Nationally, residential customers are the largest segment of consumers, yet are largely overlooked.” (EPA,* referring to NREL report.)*
 - National Renewable Energy Laboratory (NREL), USA, : 57% of residential rooftops have suitability for rooftop solar.**

**<https://www.nrel.gov/docs/fy16osti/65298.pdf>

<https://openknowledge.worldbank.org/entities/publication/ad0049d9-2432-5b80-a280-3afbd0222b94>.



Rain barrels, Rain Gardens, Green Roofs

<https://climatesteps.org/2022/08/05/the-10th-anniversary-of-my-beautiful-green-roof-booyah/>

<https://www.washingtonpost.com/news/where-we-live/wp/2013/08/14/a-petworth-homeowners-green-roof-one-year-later/>

<https://www.washingtonpost.com/home/2023/10/12/green-roof-benefits-costs/>



Challenge 3

Finding Resources and
Opportunities to Take Action



What We are Now Emphasizing

People unaware. *"In Wisconsin, only 14% are aware of green pricing programs."*
(pers. comm., Green Neighbor Challenge, 2023)

Learn => Choose => Find Opportunities => Plan => Mentoring and Support

A screenshot of the Climate Steps website. At the top, there is a navigation bar with links for Home, About, Steps, Action, Resources, Get Involved, Partners, Contact, and Donate. Below the navigation bar is a large banner image of wind turbines with the word "Energy" overlaid. Underneath the banner is a section titled "THE GREEN NEIGHBOR CHALLENGE" with the subtitle "Find green energy. Challenge neighbors. Breathe easier." and a "Learn More" button. Below this is a section titled "Rewiring America" with a sub-header "How much money will you get with the Inflation Reduction Act?". This section contains a form with fields for "How much do you pay?" (with a dropdown menu), "How much do you want to pay?" (with a dropdown menu), "How much do you want to pay?" (with a dropdown menu), and "How much do you want to pay?" (with a dropdown menu). There is also a "Calculate" button.



“Climate Steps has changed my entire mindset. It is hard to pinpoint any one action, such as our installing a heat pump, to a CSteps post, but everything I do now, I think of in terms of climate steps.” Amy Copeland, 2023.



Extras





Things to Focus On:

- Decisions as close to the actual point of carbon emissions as possible; (for now)
- Something that meets another community need as well, such as hunger, flooding and erosion, smog, etc.; - success improves
- Don't just shout in the wind; instead, *plan*.



Mission Rephrase

*To provide the knowledge, tools,
opportunities and guidance to all individuals
who seek to take action on the climate crisis,*

in a collaborative hub.



Methods



Story-Telling, via *Articles* on our website

Science-based **Summary Pages** on topics from food to community to politics

Resources, from books to templates to connections.

Personal Planning Tools



Guides, Community Mentoring, and Regional Chat Rooms via Facebook.

And, next up:

Personalization Tools

And

Direct Links to Opportunities



Components – Social Platforms



www.fb.com/Climate/steps
www.fb.com/groups/ClimateSteps



www.instagram.com/Climate_steps



<https://www.patreon.com/AnnetteandHerSteps>



<https://www.linkedin.com/company/climate-steps>



Niche

Climate Steps is NOT a place to learn about the science of climate change or to educate people not fully convinced about the dangers of the climate crisis. There are many well-run information sources about that already via websites, books, podcasts, and more.

Climate Steps is instead filling the next step, a much needed niche. CS provides information and support for people who already understand the general facts about climate change and who seek to counteract it. We:

- Provide science-based information on how human behavior may cause or otherwise influence climate change impacts, so as to provide actionable solutions for people.
- Provide science-based information on solutions, esp. the most impactful and suitable to the users.



Impact =
Diverse **actions** by diverse people

- Solar panels and clotheslines on clover yards
- Testifying at town halls
- Creation of a tool library
- Transportation shifts to trains
- Forming consulting businesses (2)
- Tree- and coral-planting
- Collaborations
- An art group switched to climate art & action

“My entire mindset has been changed due to Climate Steps. Every time I have a decision to make, I now think of the connection to climate change.” – Amy C.