

2021 NATIVE PLANT OUTREACH WORKSHOPS: FINDINGS REPORT



Collaborators:
CSU Native Plant Research Team
and Audubon Rockies



Audubon | ROCKIES

Definitions

Native Plant Gardening: Adding **native plants** (those that occur naturally in a region without human actions) to a yard or around a home

Native Plant Outreach: Encouraging other people to participate in native plant gardening



Research Objective

Understand what motivates people to engage in native plant gardening and native plant outreach

Research Question

How do different strategies and messages affect people's actions?

Research Design

- 12 Workshops
 - Randomly assigned to control or intervention (6 each)
- Pre-, post- and follow-up surveys
- Advertised through partnering organizations interested in biodiversity conservation and Facebook groups related to gardening and wildlife appreciation

Workshop Objectives

Attendees feel confident in their ability to:

1. Add native plants to their yard
2. Encourage friends/neighbors/family members to add native plants to their yards

1,918 REGISTRANTS

1,072 ATTENDEES

Voucher Program

Participants who filled out the post-workshop survey received coupons that were redeemable at our partnering native plant nurseries:

ONE \$10 coupon to use for themselves

THREE \$10 coupons to share with other people outside of their household



HIGH COUNTRY GARDENS 

PIONEERS IN SUSTAINABLE GARDENING 2



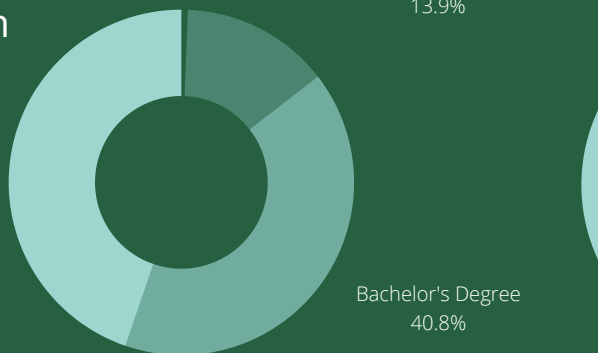
Workshop Attendees

 90% Female

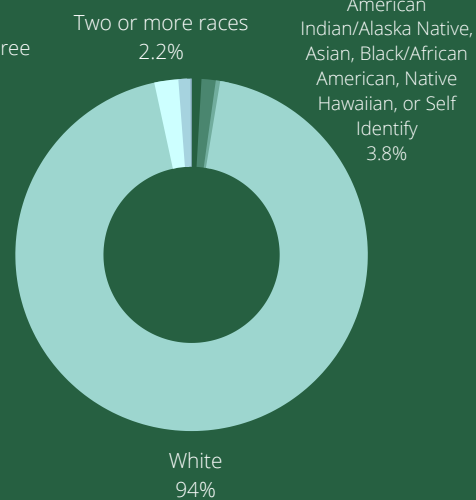
Avg. Age

54

Education



Racial Identity

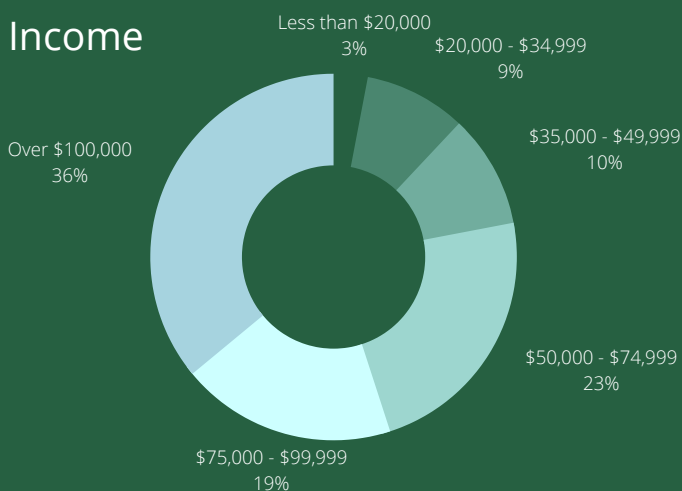


% New to Property

13

(Attendee has been living in their home for less than a year)

Income



91% Homeowners



Attended Previous Audubon Event



Habitat Hero Certified



Attendees vs. Non-Attendees

(those who registered for a workshop but did not attend)

Age: Attendees were older than non-attendees

Gender: Attendees were more likely to identify as female

Education Level: Attendees were more likely to have a bachelor's degree or higher

Ethnicity: Attendees were more likely to identify as non-Hispanic/Latinx

Social Norms about Native Plant Gardening: Attendees were more likely than non-attendees to believe that people would support them planting native plants

Social Norms about Native Plant Outreach: Attendees were more likely than non-attendees to believe that people would *not* disapprove of them reaching out to others about native plant gardening

Previous Engagement: Attendees were more likely than non-attendees to have attended a previous Audubon Rockies event

Control vs. Intervention Group

(No significant demographic differences between the two workshop groups)

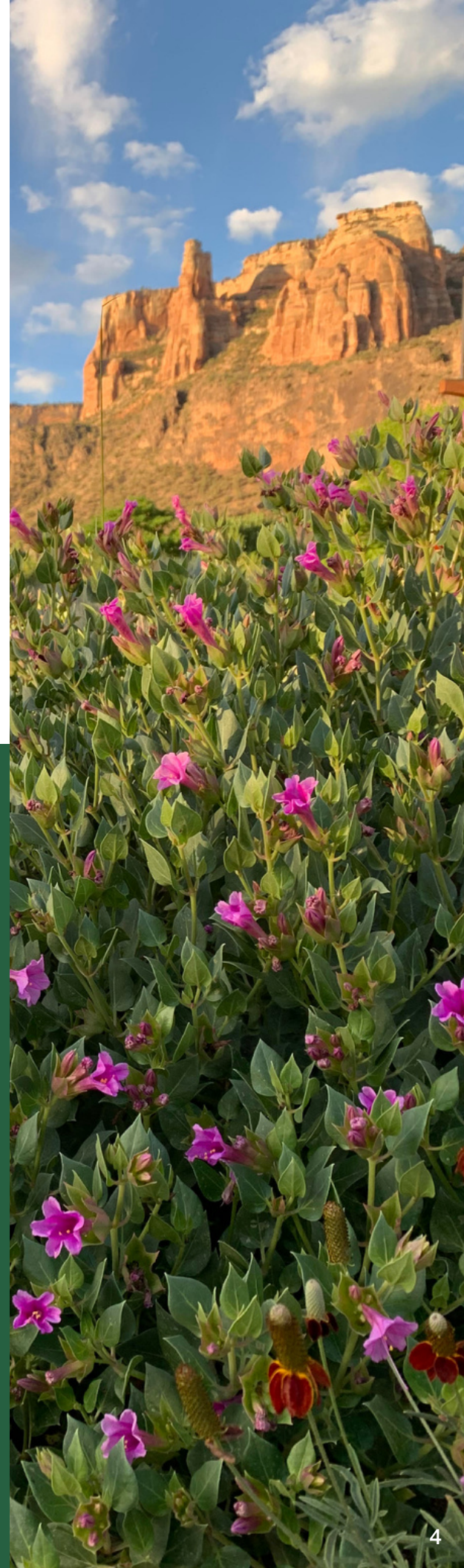
**12
Workshops**

Control

Providing information about native plant gardening and outreach

Intervention

Providing information about native plant gardening and outreach
+
Strategies to *increase confidence and perceptions of supportive norms*



WE USED 11 STRATEGIES* TO INCREASE...

CONFIDENCE (EFFICACY)

Social Modeling: Sharing a five-minute story about a real-life Habitat Hero role model

Mastery Experiences : Creating an opportunity for attendees to practice sharing coupons with each other in breakout groups

Short-term Goal-setting: Allowing attendees to set goals for native plant gardening and outreach

Social Persuasion: Regularly reminding attendees that the organizers believe in their ability to effectively garden with native plants and encourage others to do likewise

Knowledge-based Interventions: Sharing specific information about exactly how to plant native plants and reach out to others

Providing Feedback on Positive Impacts: Sharing stories and research to highlight the positive social and environmental impacts of native plant gardening and outreach

PERCEPTIONS OF SUPPORTIVE NORMS

Normative Messaging: Sharing normative information about the topic, including messages about how native plant gardening actions are happening in the local community, are becoming increasingly popular, and are well-supported

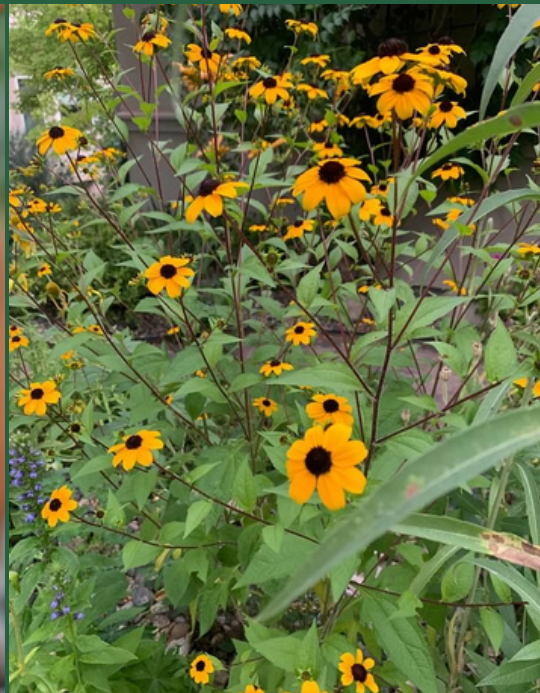
Public-Commitment Making: Inviting attendees to share one goal publicly with the rest of the workshop attendees to increase accountability

Addressing Reputational Concerns: Acknowledging concerns about what other people will think and encouraging attendees to reach out to audiences who are likely to be receptive

Addressing Pluralistic Ignorance: Explaining pluralistic ignorance (an incorrect perception of how other people are thinking/feeling) and how it can lead people to "self-silence" even when their audience shares the same interest or belief

Facilitating Group Communication and Expectation Setting: Providing time for attendees to share their past experiences, discuss their goals, and build a sense of how confident the group is about sharing coupons and designing native plant gardens

*In the Intervention Workshop



Control vs Intervention Workshops

Using and Sharing Coupons: our study found **no statistically significant differences** between those who received only the traditional information about native plant gardening and outreach (control group) and those who received this information plus our 11 additional strategies (intervention group)



Directly after the workshop, compared to control workshop attendees, **intervention workshop attendees were...**



more likely to believe that other people are participating in native plant outreach



more confident that reaching out to others would effectively influence others to plant native plants



less confident in their ability to plant a native plant



Breakout Rooms

Attendees who participated in breakout groups were more likely to...

- Rate the workshop as more enjoyable
- Rate the workshop as more helpful
- Recommend the workshop to a friend

Overall Workshop Impacts

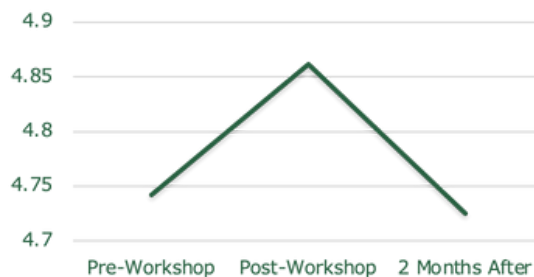
Combined results of all workshops



Intentions

Significant *initial* increase in intention to plant a native plant. Increase in intention to encourage others to plant native plants over time, though not significant.

Likelihood of Planting a Native Plant



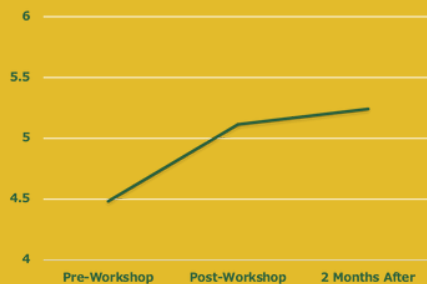
Likelihood of Encouraging Others to Plant Native Plants



Native Plant Gardening Confidence



Native Plant Outreach Confidence



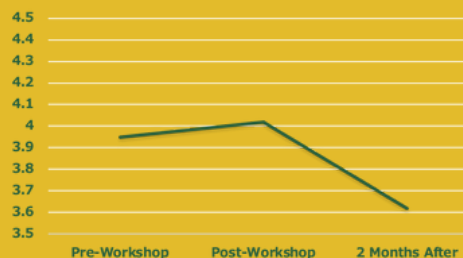
Confidence (Self-efficacy)

Significant increases in native plant gardening and native plant outreach confidence over time

Native Plant Gardening Social Norm Perception



Native Plant Outreach Social Norm Perception



Social Norms

Significant *initial* increases in perceptions that other people are participating in native plant gardening. Significant decreases in social norm perceptions after two months.



Most Popular Native Plant Species

1. *Aquilegia caerulea* (Rocky Mountain Columbine)
2. *Callirhoe involucrata* (Poppy Mallow)
3. *Symphyotrichum laeve* (Smooth Blue Aster)
4. *Linum lewisii* (Blue Flax)
5. *Penstemon virgatus* (Upright Blue Beardtongue)
6. *Monarda fistulosa* (Bee Balm)
7. *Eustoma grandiflorum* (Tulip Gentian)
8. *Aquilegia chrysantha* (Yellow Columbine)
9. *Echinacea purpurea* (Purple Coneflower)
10. *Gaillardia aristata* (Blanket Flower)

Most Popular Native Plant Types

1. Penstemons (*Penstemon* spp.)
2. Coneflowers (*Echinacea* & *Ratibida* spp.)
3. Milkweeds (*Asclepias* spp.)
4. Columbines (*Aquilegia* spp.)
5. Hyssops (*Agastache* spp.)
6. Blazing Stars (*Liatris* spp.)
7. Rudbeckias (e.g., Black-Eyed Susan)
8. Goldenrods (*Solidago* spp.)
9. Asters (*Symphyotrichum* spp.)
10. Poppy mallows (*Callirhoe* spp.)

785 native plants from High Country Gardens
2,003 native plants from High Plains
Environmental Center

= 2,788 plants purchased!

Attendees participated in other native plant outreach actions besides sharing coupons...



258

attendees redeemed their own coupon

95

attendees shared a total of **138 coupons** with their friends, family, and their social networks



Participant Reflections

86% of attendees found the workshop to be at least moderately **helpful**

93% of attendees found the workshop to be at least moderately **enjoyable**

Quotes from Attendees

"I've set up a native plants gardening talk at my office - 10 people attended the 45 minute discussion!"

"I love this initiative! The class was amazing, would be interested in attending future classes."

"After I used my coupon, I went and bought even more native plants!"

"The program was very informative and have been using it in my garden. I hope to have a garden tour next year showing off and explaining what I did to create it and show types of plants."

"A school classroom grades 7-12 used our garden to identify and learn about native plants and made ceramic plant tags for the garden."

Recommendations for future workshops:

- More details on what to plant and plant care tips
- More photos of native plants and examples of yards
- Opportunities to connect with other native plant gardeners

Reflections from the Research Team

- Consider splitting apart trainings about *personal action*, like how to garden with native plants, and *diffusion action* targeting others, like how to do outreach about native plant gardening, to meet the needs of people at different levels.
- Keep webinars to an hour or less if possible
- Building action-specific confidence (i.e. self-efficacy) is important. If trying to encourage diffusion actions, people want to feel confident in their ability to reach out to others.
 - Hands-on practice can help increase confidence by giving people an opportunity to practice the action or observe someone else.
- Social norms are hard to create and change, this might require repeated engagement to build positive community surrounding actions.
 - However, the interventions mentioned above changed perceptions of norms around native plant outreach.



Questions for the Research Team?

Contact us at csunativeplants@gmail.com

Photo Credits

- Page 1 - Hooded Owlet Moth Caterpillar - **Elizabeth Tamagni**
Page 3 - Yard 1 - **Nancy Peterson**
Page 3 - Yard 2 - **Nancy Peterson**
Page 4 - Colorado Four O'Clock - **Susan Hess**
Page 5 - Hummingbirds - **Elizabeth Tamagni**
Page 5 - Black Eyed Susan - **Linda Hollingsed**
Page 5 - Boot with wildflowers - **Lin Wareham-Morris**
Page 6 - Pale Swallowtail Butterfly- **Elizabeth Tamagni**
Page 6 - Yard 3 - **Hannah Yaritz**
Page 7 - Showy Milkweed and Hummingbird - **Elizabeth Tamagni**
Page 7 - California Poppy - **Lucy Conklin**
Page 7 - Britton's Skullcap - **Elizabeth Tamagni**
Page 8 - Boulder Raspberry Flower - **Elizabeth Tamagni**
Page 9 - Seed Packets - **Lucy Conklin**
Page 9 - Keep Cats Indoors Mural - **Nancy Peterson**
Page 9 - Rocky Mountain Bee Plant - **Lucy Conklin**
Page 10 - Showy Milkweed and Hummingbird - **Elizabeth Tamagni**
Page 10 - Yard Transformation Photos (3) - **Catherine Goodwin**
Page 11 - Bush Sunflower - **Elizabeth Tamagni**

Research Team Literature

Champine, V., Jones, M. S., Niemiec, R. M. (In Prep). Encouraging Social Diffusion of Pro-Environmental Behavior through Webinar-based Efficacy and Norms Interventions

Champine, V., Niemiec, R. M., Jones, M. S., Lischka, S., & Vaske, J. (In Review). Understanding Individual and Diffusion Behaviors Related to Native Plant Gardening.

Jones, M. S., & Niemiec, R. M. (2020). Social-psychological correlates of personal-sphere and diffusion behavior for wildscape gardening. *Journal of Environmental Management*, 276, 111271. <https://doi.org/10.1016/j.jenvman.2020.111271>

Niemiec, R., Jones, M., Lischka, S., & Champine, V. (2021). Efficacy-based and normative interventions for facilitating the diffusion of conservation behavior through social networks. *Conservation Biology*, 35, 1–13. <https://doi.org/10.1111/cobi.13717>