

# Snohomish County Natural Yard Care Education Evaluation Report

Follow-up Evaluation to the Evaluation of the 2014 Program



Prepared for:  
Snohomish County

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Final Report



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# Background and Introduction

## Program History

In 2009, Snohomish County began developing an outreach program on “yard care practices protective of water quality” in response to a requirement in its 2007–2013 NPDES permit. Snohomish County’s pilot program was based on the successful King County and Seattle models, which the County used with permission. Because these models had been developed for urban areas, Snohomish County adapted them for residents of suburban and rural areas. They were (and are) focused on reaching residents of detached single-family homes on properties sized less than one acre.

In 2010, Snohomish County piloted lecture workshops after developing supporting resources, including a County webpage, locally appropriate versions of the Natural Lawn and Garden Guides (originally developed by the City of Seattle), and a regional website (in coordination with King County).

Snohomish County used social marketing techniques to refine the program’s target audience, logistics, and program elements. The workshops were fully implemented in 2012, with additional refinements in 2013.

In 2014, Snohomish County continued the education effort by holding seven series of workshops (each series consisting of three workshops) and conducted an in-depth evaluation to assess their effectiveness and identify recommendations for further refinements.<sup>1</sup> Several Phase II permittees joined in this effort to meet their 2007-2013 NPDES Permit requirements under S5.C.1.ii.c. The evaluation assessed behavior change by comparing participants’ self-reported yard care practices before the workshops and their practices six to twelve months after the workshops. The evaluation also included surveys of selected residents who did not attend workshops and of participants in a more intensive natural lawn care program conducted in Thurston County at the same time.

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<sup>1</sup> Cascadia Consulting Group. *North and South Sound Natural Yard Care Education Evaluation Report*. Prepared for Snohomish County and City of Olympia. 2015.

In 2018-2019, Snohomish County, in partnership with Edmonds, Everett, Marysville, Monroe, and Mukilteo and Washington State University Snohomish County Extension Master Gardeners (WSU), held three workshop series (listed as Mukilteo, Marysville, and Everett – which corresponds to the three venue locations) and enhanced the program with new program elements to address recommendations from the 2014 evaluation. (The term “Snohomish County” used throughout this document also includes the partnering organizations.) These program enhancements focused on providing more interactive, visual, and up-close learning opportunities including more demonstrations during workshop lectures, new tabletop displays on view before and after workshops and during workshop breaks, and a Lawn and Garden Fair event with demonstration sessions and booths.

## Program Model

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### Base Lecture Workshops in 2014



In 2014, Snohomish County provided up to six hours of natural yard care education through three, two-hour lecture workshops held on weekday evenings (once per week over three

weeks). Workshops accommodated up to 75 participants per workshop and included the following elements:

- Just under one hour of lecture (with visual demonstrations) on each of six topics (two topics per workshop):
  - Natural Lawn Care: sheet mulching
  - Smart Watering: no demonstration
  - Right Plant, Right Place: plant showcase
  - Natural Pest, Weed & Disease Control: crop rotation
  - Growing Healthy Soil: what's in soil
  - Sustainable Landscape Design: soil jar shake test
- Diagnostic and identification technical assistance from Washington State University (WSU) Master Gardeners before and after workshop and at breaks
- Small products that encourage participant use of natural yard care best practices offered to participants for attending lectures and completing surveys

## Enhanced Workshops in 2018–2019

In 2018–2019, Snohomish County continued and enhanced the lecture workshops with additional visual demonstrations during lectures and tabletop displays staffed by yard care experts during workshop breaks. Workshops also lasted half an hour longer for a total of 2.5 hours of education each.

Visual demonstrations conducted by presenters during lectures were:

- Natural Lawn Care
  - Apply lime to lawns (video)
- Smart Watering
  - Smart watering methods (video)
- Right Plant, Right Place
  - Plant and water in new plants (live demonstration)
- Natural Pest, Weed, & Disease Control
  - Use the “Grow Smart, Grow Safe” website and “Stop Before You Spray” good bug guide (online resources)
  - Create a crop-rotation plan for a food garden (hands-on demonstration)
- Growing Healthy Soil
  - Use compost or mulch on existing plants or gardens (live demonstration)
- Sustainable Landscape Design
  - Use King County’s online native plant guide (online resource)
  - Convert lawn to garden by sheet mulching (live demonstration)

Tabletop displays presented the following practices and were displayed at one or more workshops related to each practice:

- **Mulch Matters:** choose and apply mulch
- **Improving Soil Health:** perform soil test
- **Lawn Aeration:** aerate and top-dress lawn
- **Diagnosing Plant Problems:** identify and control plant problems with least-toxic methods
- **Matching Plant to Place:** choose plants that match your garden's conditions
- **Planting Right:** plant properly, following all steps

## New Lawn and Garden Fair (2019)

In 2019, Snohomish County held a Lawn and Garden Fair to provide interactive demonstrations and give residents the opportunity to ask advice from natural yard care experts. The event was held at Thornton A. Sullivan Park on Saturday, June 22 from 9:00 a.m. to 12:30 p.m. The event featured 17 different hands-on demonstrations in six topic areas, with demonstrations starting at half-hour intervals (Table 1).

At the end of each demonstration, the presenter asked a question on the key point of the session. One person per demonstration who answered correctly received a garden product related to the practice, such as a hand lens with an LED light for the Problem Pests and Natural Controls demonstration and a soil test for Managing Moss demonstration.



The event also included booths for Master Gardeners as another opportunity for participants to ask questions. WSU's Snohomish County Master Gardener volunteers receive in-depth training on best gardening practices, including those protective of water quality. They are a local trusted

resource trained to provide easily understood solutions to the gardening public through small group and one-on-one demonstrations.

**Table 1. Lawn and Garden Fair Demonstration Sessions**

Area Number & Topic Title	"How To" Demonstration	9:00	9:30	10:00	10:30	11:00	11:30	12:00
<b>1</b> Natural Yard Care	Crop Rotation Prevents Problems	✓	✓		✓		✓	
	Hand-Tool Sharpening	✓		✓		✓		✓
	Problem Diagnosis & Plant Identification	✓	✓	✓	✓	✓	✓	✓
<b>2</b> Think Twice Before Using Pesticides	Meet the Beneficials & Pollinators	✓		✓		✓		✓
	Problem Pests & Natural Controls		✓	✓	✓		✓	✓
<b>3</b> Practice Smart Watering	How Long to Water for 1-inch?		✓	✓	✓	✓	✓	
<b>4</b> Build Healthy Soil	Backyard Composting		✓		✓	✓		✓
	Get to Know Your Soil	✓	✓	✓	✓		✓	✓
	Mulch Matters	✓	✓	✓		✓	✓	✓
<b>5</b> Plant Right for Your Site	Matching Plant to Place	✓		✓	✓	✓		✓
	Native Plants	✓	✓	✓				✓
	Planting It Right		✓	✓	✓	✓	✓	✓
	Plants for Wet Soil		✓		✓	✓	✓	
<b>6</b> Practice Natural Lawn Care	Aerate & Overseed: A Healthier Lawn	✓	✓	✓	✓		✓	✓
	Fertilizer: How to Apply the Correct Amount	✓	✓		✓	✓	✓	✓
	Mowing Tips & Blade Sharpening		✓	✓	✓	✓	✓	✓
	Managing Moss	✓		✓	✓	✓	✓	✓

## Recruitment

### Workshops

Workshops in 2018–2019 were advertised primarily using postcards mailed to residents living near the workshop location. To personalize the mailers, they are printed with recipients' names. Due to an issue with the spring mailing list, first names were omitted on many of the spring postcards, reducing the level of personalization and registration rates. As a result, Snohomish County supplemented the postcards in spring 2019 with geographically focused social media posts and ads. After each spring workshop, the survey asked how participants learned about the workshop. Participants reported having learned of the workshop through the postcards (71% to 79%), friends or family (10% to 14%), or NextDoor or Facebook (6% to 15%). Many of the write-in responses mentioned a mailer, flyer, or other term that likely meant the postcard. Social media was a large source for participants at the Marysville workshops (19% to 28% of attendees), where registrations were especially low.

### Lawn and Garden Fair

The Lawn and Garden Fair was promoted through a direct mail postcard. Unlike previous similar events, the Lawn and Garden fair did not use social media, partner websites, or newspaper articles for recruitment.

## Evaluation Approach and Activities

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### Evaluation Goals

This evaluation has three goals:

- Understand whether behavior change created by natural yard care workshops was sustained in the long-term.
- Understand the value of new program elements implemented based on recommendations from the 2014 natural yard care workshop evaluation report.
- Meet new requirements in the NPDES Phase 1 Permit 2019–2024 (S5.C.11.a.iii) and NPDES Phase II Permit 2019-2024 S5.C.2.a.ii.(b).

**Per NPDES Phase 1 Permit 2019–2024 S5.C.11.a.iii:** No later than July 1, 2020, each Permittee shall conduct a new evaluation of the effectiveness of the ongoing behavior change program

(required under S5.C.10.a.ii of the 2013 Permit). Permittees shall document lessons learned and recommendations for which option to select from S5.C.11.a.iv.

**Per NPDES Phase II Permit 2019–2024 S5.C.2.a.ii.(b):** No later than July 1, 2020, each Permittee shall conduct a new evaluation of the effectiveness of an ongoing behavior change campaign (required under S5.C.1.a.ii and S5.C.1.c. of the 2013 Permit). Permittees shall document lessons learned and recommendations for which option to select from S5.C.2.a.ii.(c).

## Evaluation Activities

This evaluation addressed lecture workshops and the Lawn and Garden Fair. Separate evaluations were conducted for participants in the 2014 program (called the “2014 cohort”), participants in the 2018–2019 workshops (called the “2018–2019 cohort”), and attendees to the 2019 Lawn and Garden Fair.

### Workshop Evaluation

The 2014 program evaluation was designed to assess the education program in a statistically valid manner. The 2018–2019 program evaluation was designed to be comparable to the 2014 evaluation but did not include statistical analysis. Participants in both programs completed surveys before and after participating in the programs. In 2014, surveys were also administered to randomly selected non-participating households to measure whether they made changes during the same time period without participating in one of the programs.

Workshop participants completed surveys at three or four points during their participation:

- **Baseline survey** to assess participants’ use of natural yard care best practices before they received education. These web-based surveys were incorporated into registration forms.
- **Immediate post-outreach surveys**, conducted at the workshops directly after receiving education, to assess workshop quality. These paper surveys addressed program feedback and intended actions (after each workshop).
- **Medium-term post-outreach survey**, conducted six to twelve months after receiving education to assess behavior change and participants’ use of natural yard care best practices after they received education. This paper and web-based survey also addressed social diffusion and program feedback.
- **Long-term post-outreach survey** (2014 cohort only) conducted five years after receiving education to assess whether changes in participants’ use of natural yard care best practices were sustained. This paper and web-based survey also addressed social diffusion and other changes since the workshops.

Table 2 on page 13 summarizes the participation rates, survey activities, and response rates for each of the cohorts.

Additional details on evaluation methods and results are presented in the following appendices.

- Appendix A —Survey data summary tables
- Appendix B—Survey instruments

## Lawn and Garden Fair Evaluation

Snohomish County staff estimated that 114 people attended the fair. Attendance was likely reduced due to limited marketing and the unseasonably cold temperatures on the day of the event.

The Lawn and Garden Fair was evaluated using a survey that participants filled out and returned during the event. A total of 53 surveys were returned, for a response rate of approximately 46%. Participants who completed surveys were offered small products that encourage use of natural yard care best practices: bag of compost, gauge rule to measure lawn watering, and a 15% off coupon for compost. They were also entered into a drawing for a grand prize consisting of a collection of natural yard care products including a soil test, a bag of organic fertilizer, a bag of lime, a compost thermometer, a hose-end irrigation timer, a hand lens, a pair of gardening gloves, a laminated *Mac's Field Guide to Good Garden Bugs of the Pacific Northwest*, and three books (*The Maritime Northwest Garden Guide*, *Month-by-Month Gardening in the Pacific Northwest*, and *Grow Your Own Native Landscape*).

**Table 2. 2014 and 2018–2019 Respondents and Response Rates**

Evaluation Elements	2014 Cohort	2018–2019 Cohort
<b>Baseline survey</b>	Total attending households: 451 Survey respondents: 457, of which between 383 and 417 attended a workshop Response rate: 85–92%	Total attending households: 228 Survey respondents: 221 Response rate: 97%
<b>Immediate post-outreach surveys</b>	<b>Workshop 1 (Lawn Care/Smart Watering)</b> Attending households: 334 Survey respondents: 288 Response rate: 86% <i>In 2014, responses were limited to one per household.</i> <b>Workshop 2 (Right Plant/Healthy Soil)</b> Attending households: 314 Survey respondents: 303 Response rate: 96%	<b>Workshop 1 (Lawn Care/Smart Watering)</b> Attending households: 148 Attending individuals: 204 Survey respondents: 162 Response rate per household: 109%* Response rate per individual: 79% <b>Workshop 2 (fall – Design/Pest &amp; Weed Control; spring – Pest &amp; Weed Control/Healthy Soil)</b> Attending households: 158 Attending individuals: 211 Survey respondents: 166 Response rate per household: 105%* Response rate per individual: 79% <b>Workshop 3 (Design/Pest &amp; Weed Control)</b> Attending households: 297 Survey respondents: 287 Response rate: 97%
<b>Medium-term post-outreach survey</b>	Participating households: 451 Survey respondents: 284 Response rate: 63% Timing: May–September 2015	Participating households: 228 Survey respondents: 121 Response rate: 53% Timing: September–October 2019
<b>Long-term post-outreach survey</b>	Participating households: 401 (after removing households that moved out of Western Washington and undeliverable addresses) Survey respondents: 237 Response rate: 59% <b>Timing: February–July 2019</b>	Not applicable

\* Response rates per household are higher than 100% because more than one person per household completed a survey.

# Behavior Change Results

Figures in this report are rounded to the nearest percentage point. As a result, the sum of “baseline” and “change” figures may not appear to equal the “post-outreach” and “long-term” figures, but each figure is independently the most accurate rounded amount.

In the narrative findings, two icons indicate the **level of behavior change** (H, M, or L) from baseline to the long-term post-outreach survey and the **long-term and medium-term use** (✓, ▲, ●) as follows:

Behavior Change		Post-Outreach Use	
H	High behavior change 20 or more percentage points	✓	High post-outreach/long-term use 70% or more for preferred practices 25% or less for harmful practices
M	Moderate behavior change 10 to 19 percentage points	▲	Moderate post-outreach/long-term use 40% to 69% for preferred practices 26% to 60% for harmful practices
L	Low behavior change Less than 10 percentage points	●	Low post-outreach/long-term use Less than 40% for preferred practices More than 60% for harmful practices

Additional details on results are presented in Appendix B—Survey Data Summary Tables.

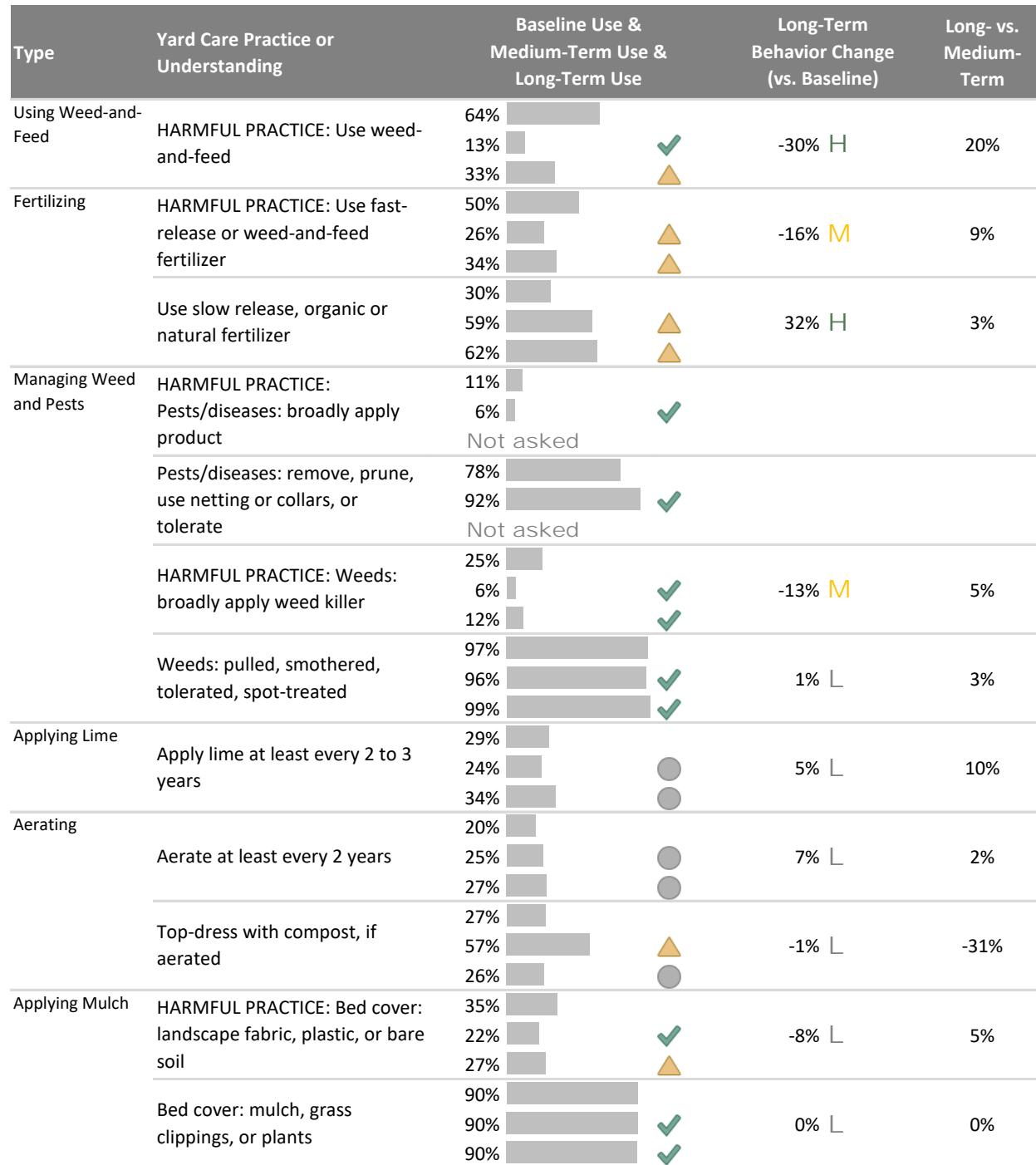
## 2014 Cohort Results

### Summary of Behavior Change (2014 Cohort)

Table 3 summarizes the behavior change outcomes for participants from 2014 (called the “2014 cohort”), including self-reported use of practices from the baseline, medium-term, and long-term surveys as well as the change in usage between baseline and long-term surveys and between medium-term and long-term surveys.

**Snohomish County Natural Yard Care Education Evaluation 2019**  
**Behavior Change Results: 2014 Cohort Results**

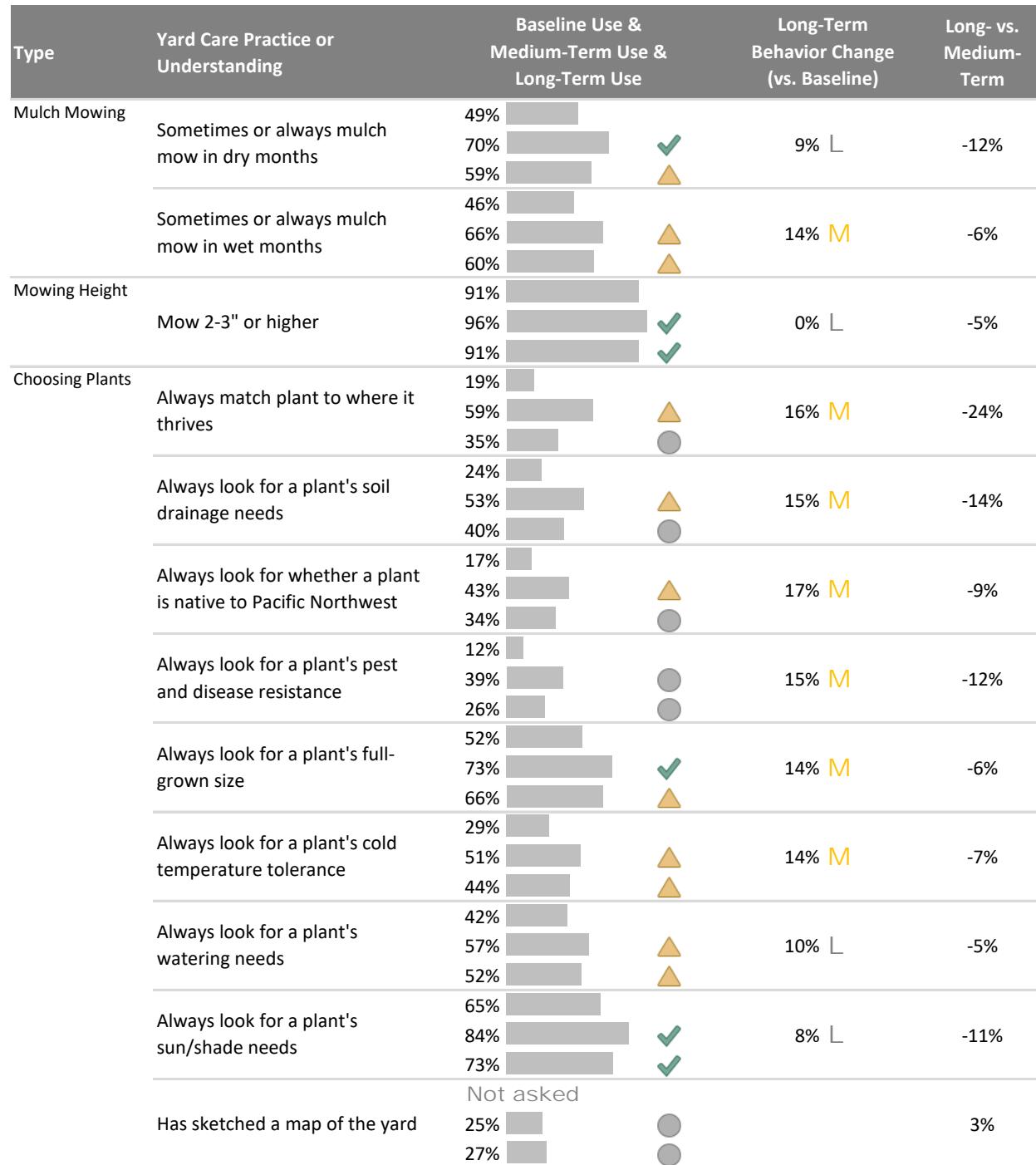
**Table 3. Yard Care Practices (2014 Cohort)**



*Continued on next page*

**Snohomish County Natural Yard Care Education Evaluation 2019**  
**Behavior Change Results: 2014 Cohort Results**

**Table 3. Yard Care Practices (2014 Cohort), continued**



*Continued on next page*

**Table 3. Yard Care Practices (2014 Cohort), continued**

Type	Yard Care Practice or Understanding	Baseline Use & Medium-Term Use & Long-Term Use	Long-Term Behavior Change (vs. Baseline)	Long- vs. Medium-Term
Preparing Soil	Know to prepare soil with compost	67%		
		92%  ✓		
Watering	Not asked			
	Know to mix materials into soil 6-8 inches deep	24%		
		38%	●	
		Not asked		
	Measure sprinkler watering rate (tuna can test), if waters	29%		
		36%  ●	4% ↓	-3%
		32%  ●		
	Water lawn once a week or less	69%		
		64%  ▲		
		Not asked		
	ACCEPTABLE PRACTICE: Water lawn two to three times per week	25%		
		31%  ●	Not asked	
	HARMFUL PRACTICE: Water lawn daily or every other day	6%		
		5%  ✓	Not asked	

## Long-Term Behavior Change (2014 Cohort)

### Practices that Protect Water Quality

In the long term, 2014 participants continued using several key practices that directly protect water quality, as shown in Table 4, but with some backsliding compared to the medium term. Despite backsliding, participants from 2014 retained a high level of behavior change in no longer using weed-and-feed (long-term adoption level of 67%, down from 87% in the medium term).

*In this report, the term “backsliding” is used to indicate when participants initially increased their use of natural yard care practices after the workshop, but the behavior change was not retained in the long term.*

With backsliding, participants from 2014 also retained moderate behavior change in not using quick-release fertilizer (66%, down from 74%) and not broadly applying weed killer (88%, down from 94%). Backsliding decreased long-term behavior change from moderate to low levels for not leaving beds bare or covered in landscape fabrics or plastics (73%, down from 78%).

Backsliding entirely erased gains in top-dressing lawns with compost after aerating (26%, down from 57%). While gains in aerating were retained (27%, up from 25%), those behavior changes had been low in the medium term (5%).

As described below, the program also achieved varying levels of long-term behavior change in practices that support a healthy yard and reduce the weed, pest, and disease reasons people use toxic yard care products.

**Table 4. Adoption of Practices that Protect Water Quality (2014 Cohort)**

Long-Term	Medium-Term	Practice
H	H	Avoiding weed-and-feed use
M	H	Avoiding fast-release fertilizer use
M	H	Avoiding broad application of weed killer
L	M	Not leaving beds bare or covered in landscape fabric or plastics
L	H	Top-dressing lawns with compost after aerating
L	L	Aerating every two to three years

## Where the Program Worked Effectively in the Long Term

### H Substantial change with room for additional improvement

- Not using weed-and-feed (*backsliding of 20 percentage points*)
- Using slow-release, organic, or natural fertilizer

Long-term behavior change was high for the practices, but final adoption levels for these practices indicate opportunities to further increase adoption. For weed-and-feed, substantial backsliding indicates that reminders or refreshers may be needed. Participants retained changes in using recommended fertilizers, but incentives may be needed to increase adoption of this practice.

### M Moderate change resulting in high long-term use

- Not broadly applying weed killer

In the long term, the percentage of respondents who said they do not broadly apply weed killers increased by 13 percentage points.



### Little change because of high adoption levels before the workshops

- Non-toxic weed control: pulling, smothering, tolerating, or spot-treating weeds
- Mowing two to three inches or higher
- Covering plant beds with mulch, grass clippings, or plants
- Always looking for a plant's sunlight and shade needs (*backsliding of 11 percentage points*)

High baseline adoption resulted in little behavior change or backsliding for non-toxic weed control, mowing height, and covering plant beds with suitable materials. As with several other plant choice practices, backsliding reduced the behavior change gains in the long term for choosing plants based on light needs.

## Where the Program Created Moderate Long-Term Change



### Moderate changes with moderate long-term use

- Not using fast-release fertilizer
- Mulch mowing in wet months
- Always matching a plant to where it thrives (*backsliding of 24 percentage points*)
- Always looking for a plant's:
  - Full-grown size
  - Cold temperature tolerance
  - Watering needs

Due to backsliding (between 5 and 9 percentage points except where noted), respondents retained moderate (rather than high) long-term behavior change for these practices, resulting in moderate final adoption levels. Matching a plant to where it thrives experienced a particularly large decrease between the medium- and long-term surveys. Reminders or refreshers may be needed for all these practices as well as incentives to purchase recommended fertilizers.



### Moderate changes with low long-term use or understanding levels

- Always looking for a plant's:
  - Soil drainage needs (*backsliding of 14 percentage points*)
  - Status as native to the Pacific Northwest
  - Pest and disease resistance (*backsliding of 12 percentage points*)

Again, due to backsliding, behavior change in plant choices decreased from high in the medium-term to moderate in the long-term, resulting in low final adoption levels (26% to nearly 40%).

## Where the Program Achieved Little Long-Term Change



### Little change with moderate post-outreach use

- Not leaving beds bare or covered in landscape fabric or plastics
- Mulch mowing in dry months (*backsliding of 12 percentage points*)



### Little change with low post-outreach use

- Applying lime (*growth of 10 percentage points*)
- Aerating
- Top-dressing with compost after aerating (*backsliding of 31 percentage points*)
- Measuring sprinkler watering rate

In the long term, low behavior change was achieved for several lawn, soil, and mulch-related practices as well as measuring sprinkler watering rates. Backsliding reduced previous behavior change gains in mulch mowing in dry months and top-dressing after aerating. While use of aerating did not change, more respondents reported applying lime in the long-term than in the medium-term, although the total long-term behavior change was a low 5 percentage points.

## Long-Term Retention of Behavior Changes

For practices where the program achieved moderate or high behavior changes in the medium term, Cascadia analyzed retention of those behavior changes in the long term. Percentage point differences compare adoption levels between the medium-term and long-term surveys.

Practices where backsliding occurred may require reminders, refreshers, or other additional interventions to increase retention.

### ↑ Adoption increased between medium and long term

- Apply lime (+10 percentage points)

### ↔ Behavior changes achieved after workshop were retained between medium and long term (change less than 5 percentage points)

- Use slow release, organic or natural fertilizer (+3 points)

↓ Adoption decreased between medium and long by 5 to 10 percentage points

- Always look for a plant's:
  - Status as native to Pacific Northwest (-9 points)
  - Cold temperature tolerance (-7 points)
  - Full-grown size (-6 points)
  - Watering needs (-5 points)
- Not using fast-release fertilizer (-9 points)
- Sometimes or always mulch mow in wet months (-6 points)
- Mow 2-3" or higher (-5 points)
- Not broadly applying weed killer (-5 points)

↓↓ Adoption decreased between medium and long term by 10 percentage points or more

- Not using weed-and-feed (-20 points)
- Top-dressing with compost after aerating (-31 points)
- Always matching a plant to where it thrives (-24 points)
- Always looking for a plant's:
  - Soil drainage needs (-14 points)
  - Pest and disease resistance (-12 points)
  - Sunlight and shade needs (-11 points)
- Mulch mowing in dry months (-12 points)

## Major Changes to Yard Care or in Yard (2014 Cohort)

On the long-term survey, respondents were asked whether they had made any major changes in their yard or how they care for it in the past few years. About half of respondents (49%) reported making major changes. Respondents were asked open-ended questions to describe those changes and why they had made them. Responses were categorized into themes shown in Table 5. Responses most commonly related to adding or moving plants, using mulch or mulch mowing, and using natural lawn care. The overall tone of the comments seemed optimistic, and people listed more than one action taken, sometimes up to five or six significant activities. Only one person reported that the action they took did not last.

Reasons for making changes are listed in Table 6.

**Table 5. Types of Changes Made (2014 Cohort)**

Type of Change Made	Percent	Number of Respondents
Added or moved plants, gardens, and/or fixtures	16%	37
Applied mulch or grass clippings	11%	26
Applied natural lawn care	10%	24
Applied Right Plant, Right Place principles	8%	18
Adjusted watering system, pattern, or drainage	7%	16
Decreased lawn size	7%	16
Reduced or eliminated chemical fertilizer, pesticides, and herbicides	7%	16
Made or applied compost	6%	14
Planted native, drought-tolerant, or weather-appropriate plants	3%	8
Re-sodded or re-sowed lawn	3%	6
Planted new ground cover/reduced bare soil	2%	5
Hired a professional	2%	5
Applied weed, pest, or disease best management practices	2%	5
Removed dying or invasive species	2%	4
Undesirable change	6%	14
Neutral change	6%	13
No major change	2%	5
Other changes	1%	2
<b>Total number of respondents</b>		<b>234</b>

**Table 6. Reasons for Making Changes (2014 Cohort)**

Reasons for Making Changes	Percent	Number of Respondents
Easier maintenance	13%	20
To make general improvements and add/change plants and features	12%	18
To address specific problems	12%	18
To address environmental concerns	11%	17
To implement lessons learned from the workshop	10%	16
To improve appearance and functionality of yard	10%	16
To improve soil and plant health	7%	11
To conserve water and/or reduce runoff	6%	10
To grow food	5%	7
To be hospitable to birds/bugs	4%	6
Other reason	10%	16
<b>Total number of respondents</b>		<b>155</b>

## Social Diffusion (2014 Cohort)

Respondents from the 2014 program were asked in the long-term post-outreach survey whether they shared information about natural yard care with others. Over half of survey respondents (52%, or 118 participating households) reported sharing information. As shown in Table 7, participants most frequently shared information on natural lawn care (16%); choosing and installing plants (15%); weeds, pests, and diseases (15%); and mulching or ground cover (12%).

**Table 7. Topics Shared (2014 Cohort)**

Topics Shared	Percent	Number of Respondents
Natural lawn care	16%	34
Right plant, right place; choosing and planting plants	15%	31
Weed, pest, and disease management, prevention, and tolerance	15%	31
Mulching practices and ground cover	12%	24
Smart watering or general watering practices	9%	19
Soil improvements and care	8%	16
Making or using compost	5%	11
Tips for pruning and best practices	4%	8
Growing food	3%	7
Unspecified lawn care, gardening, or workshop information	11%	23
Other topics	1%	3
<b>Total number of respondents</b>		<b>207</b>

## Respondent Demographics (2014 Cohort)

To identify whether respondents experienced major changes in demographics that may have affected their yard care behaviors, the long-term survey included questions on three key characteristics. Comparing survey responses indicated no major differences:

- **Residence:** about 7% of respondents reported moving in 2015 or later.
- **Home ownership:** 96% of respondents reported owning their home at baseline compared to 98% on the long-term survey.
- **Who performs yard care:** responses were largely similar for mowing, fertilizing, controlling weeds, applying mulch, and installing new plants. Responses differed for:
  - **Controlling pests or applying pesticides:** more households say “no one” controls pests or applies pesticides (from 22% in at baseline to 33% at long-term) while fewer households affirmed pesticide application (from 72% at baseline to 53% at long-term).

## 2018–2019 Cohort Results

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This section describes the medium-term behavior change outcomes for participants from 2018–2019 workshops (called the “2018–2019 cohort”), including final adoption levels of natural yard care practices and change in usage between baseline and medium-term surveys. When comparing results to the 2014 cohort, it is important to note some meaningful differences in baseline use of practices.

At baseline, more of the 2018–2019 cohort reported using the following practices:

- **Do not use weed-and-feed:** 59% of the 2018–2019 cohort did not report using the product compared to 36% of 2014 cohort.
- **Do not apply weed killer broadly:** 85% of the 2018–2019 cohort did not report applying weed killer broadly compared to 75% of 2014 cohort.

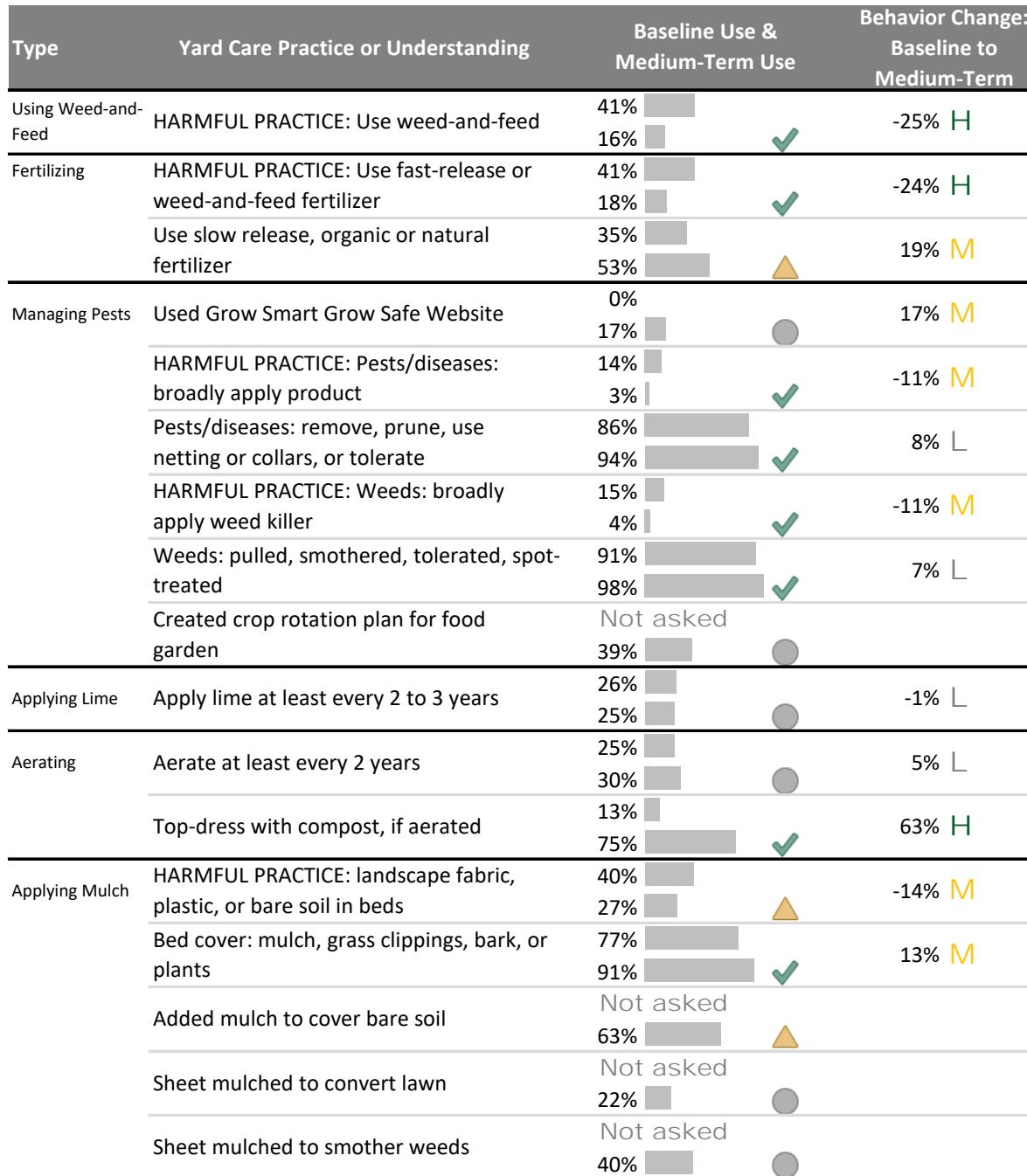
At baseline, fewer of the 2018–2019 cohort reported using the following practices:

- **Measure sprinkler watering rate:** 13% of the 2018–2019 cohort versus 29% of the 2014 cohort.
- **Top-dress with compost after aerating:** 13% of the 2018–2019 cohort versus 27% of the 2014 cohort.
- **Cover beds with mulch, grass clippings, plants, or bark:** 77% of the 2018–2019 cohort versus 90% of the 2014 cohort.
- **Know to prepare soil with compost:** 56% of the 2018–2019 cohort versus 67% of the 2014 cohort.

## Summary of Behavior Change (2018–2019 Cohort)

Table 8 summarizes the behavior change outcomes including self-reported use of practices from the baseline and medium-term as well as the change in usage between the two surveys.

**Table 8. Yard Care Practices (2018–2019 Cohort)**



*Table continued on next page*

Snohomish County Natural Yard Care Education Evaluation 2019  
 Behavior Change Results: 2018–2019 Cohort Results

**Table 8. Yard Care Practices (2018–2019 Cohort), continued**

Type	Yard Care Practice or Understanding	Baseline Use & Medium-Term Use	Behavior Change: Baseline to Medium-Term
Mulch Mowing	Sometimes or always mulch mow in dry months	41%  Not asked	
	Sometimes or always mulch mow in wet months	37%  Not asked	
Mowing Height	Mow 2-3" or higher	91%  Not asked	
Choosing Plants	Always match plant to where it thrives	14%  Not asked	
	Always look for a plant's soil drainage needs	25%  26% 	1%  L
	Always look for whether a plant is native to Pacific Northwest	17%  25% 	8%  L
	Always look for a plant's pest and disease resistance	14%  22% 	7%  L
	Always look for a plant's full-grown size	49%  40% 	-9%  L
	Always look for a plant's cold temperature tolerance	25%  35% 	10%  M
	Always look for a plant's watering needs	38%  36% 	-1%  L
	Always look for a plant's sun/shade needs	64%  53% 	-11%  L
	Has sketched a map of the yard	Not asked 23% 	
			
Preparing Soil	Know to prepare soil with compost	56%  81% 	25%  H
	Know to mix materials into soil 6-8 inches deep	17%  32% 	15%  M
	Had soil tested	Not asked 19% 	
	Used soil test results	Not asked 78% 	
Watering	Measure sprinkler watering rate (tuna can test), if waters	13%  32% 	19%  M
	Started using smart watering techniques	Not asked 69% 	

## Medium-Term Behavior Change (2018–2019 Cohort)

### Practices that Protect Water Quality

After the program, participants were using several key practices that directly protect water quality, as shown in Table 9. The program achieved a high level of behavior change in reducing weed-and-feed and fast release fertilizer use—the share of participants who used these harmful products decreased from 41% to 16%. The program also achieved a high level of behavior change for top-dressing lawns with composting after aerating, increasing from 13% to 75%. The program also saw high post-outreach use for five of the six areas that protect water quality. As described below, the program also achieved varying levels of behavior change in practices that support a healthy yard and reduce the weed, pest, and disease reasons people use toxic yard care products.

**Table 9. Adoption of Practices that Protect Water Quality (2018–2019 Cohort)**

H ✓	Avoiding weed-and-feed use
H ✓	Avoiding fast-release fertilizer use
M ✓	Avoiding broad application of weed killer
M ✓	Avoiding broad application of pesticides
M ✓	Not leaving beds bare or covered in landscape fabric or plastics
H ✓	Top-dressing lawns with compost after aerating
L ●	Aerating every two to three years

### Where the Program Worked Effectively

- H ✓ Substantial change resulting in high post-outreach use**
- Not using weed-and-feed
  - Not using fast-release fertilizer
  - Knowing to prepare the soil with compost
  - Top-dressing lawns with compost after aerating

After the program, more than 80% of respondents said they did not use weed-and-feed or fast-release fertilizer, a substantial decrease. Three-quarters of respondents reported top-dressing compost after aerating, although only 30% reported having aerated at all. Over 80% of participants reported knowing to prepare soil with compost for planting.

**M ✓ Moderate change resulting in high post-outreach use**

- Not broadly applying weed killer
- Not broadly applying products for managing pests and diseases
- Covering beds with mulch, grass clippings, plants, or bark

More than 95% of respondents reported that they do not broadly apply weed killer or products for managing pests and diseases, a change of about 11 percentage points compared to the baseline. In total, 91% of respondents reported that beds are covered with mulch, grass clippings, bark, or plants; excluding bark from this list would reduce final adoption levels to 72%.

**L ✓ Little change because of high adoption levels before the workshops**

- Using at least one least-toxic weed management technique (pulling, smothering, tolerating, or spot-treating)
- Using at least one least-toxic pest or disease management technique (removing, pruning, using netting or collars, or tolerating)

Due to high baseline levels, more than 90% of participants reported using at least one non-toxic weed, pest, or disease management technique despite low levels of behavior change.

**M ▲ Substantial change with room for additional improvement**

- Not leaving beds bare or covered in landscape fabric or plastics

Despite a moderate change in behavior, after the program over a quarter of respondents reported having bare soil or using landscape fabric or plastics in garden beds.

**H -- Substantial changes to start using new practices (not asked on baseline survey)**

- Started using at least one smart watering technique
- Added mulch to cover bare soil
- Sheet mulched to smother weeds
- Created a crop rotation plan for a food garden
- Sketched a map of the yard noting growing conditions
- Sheet mulched to convert lawn to other uses

While no comparison to baseline is available, between 20% and 63% of respondents reported that they used practices relating to smart watering, mulching, crop rotation plans, and sketching a yard map.

## Where the Program Achieved Moderate Change with Room for Improvement

### M Moderate changes with moderate post-outreach use

- Using slow release, organic, or natural fertilizer

After the program, 53% of respondents said they use recommended fertilizers, an increase of 19 percentage points.

### M Moderate changes with low post-outreach use or understanding levels

- Measuring their sprinkler watering rate
- Using the Grow Smart Grow Safe Website
- Knowing to mix materials six to eight inches deep in soil when planting
- Always looking for a plant's cold temperature tolerance

After the program, 17% of respondents reported using the Grow Smart Grow Safe website, while around one-third of respondents reported using the other practices listed above.

### M -- Moderate changes to start using new practices (not asked on baseline survey)

- Had soil tested (of which 78% used the soil test results)

While no comparison to baseline is available, 19% of respondents said they had a soil test, yielding moderate behavior change but overall low adoption.

## Where the Program Achieved Little Change

### L Little change with moderate post-outreach use

- Always looking for a plant's full-grown size
- Always looking for a plant's sun/shade needs

Despite unexpected decreases in usage, after the workshop more than 40% of respondents reported always looking for full-grown size while 53% said they always look for sun/shade needs.

### L Little change with low post-outreach use

- Aerating
- Applying lime
- Always looking for a plant's soil drainage and watering need, pest and disease resistance, and whether a plant is native to the Pacific Northwest

No or low behavior change was seen in two soil-related lawn care practices, resulting in 25% reporting having applied lime and 30% reporting having aerated since the workshop. Between 22% and 36% of respondents reported looking for key plant characteristics when planting a new plant.

## Comparison Between 2018–2019 and 2014 Cohorts

Levels of behavior change achieved with the 2018–2019 cohort varied compared to those achieved with the 2014 cohort, but differences did not consistently relate to new workshop elements. In many cases, they stemmed from differences in baseline starting points, with both cohorts achieving similar final levels of adoption.

Improvements in behavior change occurred in top-dressing with compost, covering beds with mulch and plants, and smart watering. Unexpectedly, large decreases occurred in practices related to choosing plants.

↑↑ For the following practices, the 2018–2019 workshops achieved better results (defined as a change in use that is 10 percentage points greater than in 2014).

- Top dressing with compost after aerating lawns: +32 points (final adoption: +18 points)
  - *However, there was no difference in behavior change levels for aerating (with or without top-dressing).*
- Covering beds with mulch, grass clippings, plants, or bark: +13 points
  - *However, the post-outreach use for both groups was very high and similar due to an approximately 13-point difference between the baselines for the cohorts.*
- Measuring sprinkler watering rate: +12 points

↑ For the following practices, the 2018–2019 workshops may have achieved better results (defined as a change in use that is 5 percentage points greater than in 2014).

- Not broadly applying products for managing pests and diseases: +6 points
  - *However, the post-outreach use for both groups was very high and similar.*
- Using at least one least-toxic weed management technique (pulling, smothering, tolerating, or spot-treating): +8 points
  - *However, the post-outreach use for both groups was very high and similar.*

↓ For the following practices, the 2018–2019 workshops may have achieved worse results (defined as a change in use that is 5 percentage points lower than in 2014).

- Use at least one non-toxic pest and disease control method (removing, pruning, using netting or collars, or tolerating): -6 points
  - *However, the post-outreach use for both groups was very high and similar.*

- The change in not broadly applying weed killer: -8 points
  - *However, the post-outreach use for both groups was very high and similar.*

↓↓ For the following practices, the 2018–2019 workshops achieved worse results (defined as a change in use that is 10 percentage points lower than in 2014).

- Not using weed-and-feed: -26 points
  - *However, the post-outreach use for both cohorts was nonetheless high and similar because at baseline fewer members of the 2018–2019 cohort used weed-and-feed compared to the 2014 cohort.*
- Always look for key plant characteristics (*cohorts started with similar baselines*):
  - Full-grown size: -30 points
  - Sun/shade needs: -30 points
  - Soil drainage needs: -28 points
  - Pest and disease resistance: -19 points
  - Native to Pacific Northwest: -18 points
  - Watering needs: -16 points
  - Cold temperature tolerance: -11 points
- Using slow release, organic, or natural fertilizer: -10 points
  - *However, the post-outreach use for both groups was similar but moderate.*

## Most Useful Things Learned (2018–2019 Cohort)

In an open-ended question on the medium-term survey, respondents were asked to describe the most useful things they learned from the workshop (Table 10). Respondents most commonly mentioned natural lawn care (15%), smart watering (13%), and mulching or ground cover (12%).

**Table 10. Most Useful Things Learned (2018–2019 Cohort)**

Most Useful Things Learned	Percent	Number of Respondents
Natural lawn care	15%	29
Water conservation and best watering practices	13%	25
Importance of ground cover and mulch	12%	22
Right Plant, Right Place; Choosing and Planting Plants	9%	17
Weed/pest/disease management or acceptance	7%	14
Soil improvements and care	7%	14
Using or making compost	6%	12
Fertilizer choices or techniques	5%	9
Better understanding impacts of fertilizers/pesticides/weed killers	4%	8
Planting rotation and timeline	4%	8
Found the workshop generally useful	4%	7
Learned something new (unspecified)	4%	7
Other	9%	18
<b>Total number of respondents</b>		<b>190</b>

## Social Diffusion (2018–2019 Cohort)

The 2018–2019 workshops reached a total of 228 households, with an average of 1.4 attendants per household. Participating households were asked in the medium-term post-outreach survey whether they shared information about natural yard care with others. Four-fifths of survey respondents (79%, or 93 participating households) reported sharing information. They most frequently shared information with friends (72%), neighbors (61%), and family (60%). Among these respondents, 84 estimated how many people they shared information with, ranging from one to fifty, with an average of five. In total, participants reported reaching more than 420 additional people.

Respondents most frequently shared information on lawn care (66%) and smart watering (54%), as shown in Table 11. Participants also reported sharing information on soil preparation (36%), planting (33%), and/or plant choice (31%).

**Table 11. Topics Shared with Others (2018–2019 Cohort)**

Topics Shared with Others	Percent	Number of Respondents
Lawn care tips	66%	59
Smart watering tips	54%	48
Soil preparation tips	36%	32
Planting tips	33%	29
Plant choice tips	31%	28
Pest and disease management tips	27%	24
Other (please describe)	11%	10
<b>Total number of respondents</b>		<b>89</b>

## Resources Used (2018–2019 Cohort)

Nearly half (45%) of survey respondents said they have not had pest or disease problems since the workshops (Table 12). One-quarter of respondents (24%) said they used Master Gardeners as a resource to help diagnose pests and diseases. Other resources mentioned by respondents included the County extension office, WSU Plant Clinic, other online resources, and local nurseries.

**Table 12. Resources Used to Diagnose Pests and Diseases (2018–2019 Cohort)**

Resources Used to Diagnose Pests and Diseases	Percent	Number of Respondents
Have not had pest or disease problems	45%	54
Master Gardener	24%	28
“Stop Before You Spray” good bug guide	10%	12
<a href="http://www.GrowSmartGrowSafe.org">www.GrowSmartGrowSafe.org</a>	7%	8
Another method	14%	17
Other (please describe)	18%	21
<b>Total number of respondents</b>		<b>119</b>

The most commonly reported resource people said they used when trying new natural yard care techniques were program brochures and handouts (81%), followed by notes from the training (67%), as shown in Table 13. Approximately one-third reported using Master Gardeners

as a resource (34%) or their local nurseries (31%). Compared to what the 2014 cohort reported in their medium-term survey, more 2018–2019 respondents reported using program brochures and handouts (81% versus 68%) and Master Gardeners (34% versus 18%)

**Table 13. Resources Used when Trying New Techniques (2018–2019 Cohort)**

Resources Used when Trying New Techniques	Percent	Number of Respondents
Program brochures and handouts	81%	96
Notes from the training	67%	79
Internet search	42%	50
Master Gardener	34%	40
Advice from local nursery	31%	37
King County's online Native Plant Guide	25%	29
Other websites or hotlines provided by the program	19%	23
<a href="http://www.GrowSmartGrowSafe.org">www.GrowSmartGrowSafe.org</a>	17%	20
“Stop Before You Spray” good bug guide	16%	19
Other (please explain)	8%	10
<b>Total number of respondents</b>		<b>118</b>

# Evaluation of Program Enhancements

## New Workshop Elements (2018–2019 Cohort)

This section evaluates the new workshop elements that enhanced the 2018–2019 program, including new live demonstrations and videos used by presenters and new tabletop displays available before and after the presentations and during the workshop breaks.

### New Live Demonstrations and Videos

#### Respondent Demonstration Ratings

Respondents rated most workshop demonstrations highly, with nearly three-quarters or more saying they were very or extremely helpful (Table 14). Three demonstrations received lower ratings, indicating an opportunity to improve them:

- **Planting and watering in a new plant** (Right Plant, Right Place): respondents indicate this demonstration was difficult to see.
- **Smart watering video** (Smart Watering): no suggestions on the video were requested from participants.
- **Online Native Plant Guide** (Sustainable Garden Design): respondents wanted better slides or a printed copy of slides as well as more plant suggestions.

More information on respondent suggestions for improving demonstrations are presented in the next subsection.

Respondent ratings were similar in fall 2018 and spring 2019 workshops for all demonstrations, with the following exceptions:

- **Crop rotation:** more Marysville respondents rated it highly (92% rated as very or extremely helpful, shown in Table 15)
- **Sheet mulching:** more Mukilteo respondents rated it highly (85%)
- **Online native plant guide:** fewer Marysville respondents rated it highly (54%)

- **Plant and water in new plant:** fewer respondents rated it highly from Marysville (38%) or Everett (43%).

**Table 14. Helpfulness of Workshop Demonstrations (2018–2019 Cohort)**

Presentation Demonstration	Not at all	Slightly	Moderately	Very	Extremely	Very + Extremely	Total Respondents
Crop rotation (Pest & Weed Control)	2%	5%	13%	61%	19%	80%	161
Lime video (Natural Lawn Care)	0%	6%	18%	65%	11%	76%	159
Use compost and mulch on existing garden (Soil & Composting)	0%	6%	19%	48%	27%	75%	158
Convert lawn using sheet mulching (Sustainable Garden Design)	1%	6%	18%	57%	18%	75%	163
Grow Smart, Grow Safe & Stop Before You Spray (Pest & Weed Control)	0%	7%	19%	62%	12%	74%	162
Online Native Plant Guide (Sustainable Garden Design)	0%	7%	26%	59%	9%	67%	164
Smart watering video (Smart Watering)	1%	5%	29%	56%	9%	65%	160
Plant and water in a new plant (Right Plant, Right Place)	3%	14%	32%	44%	8%	51%	156

**Table 15. Percent of Respondents Rating Workshop Demonstrations Very or Extremely Helpful (2018–2019 Cohort)**

Presentation Demonstration	Marysville	Everett	Mukilteo	All
Crop rotation (Pest & Weed Control)	73%	84%	79%	80%
Lime video (Natural Lawn Care)	75%	79%	74%	76%
Use compost and mulch on existing garden (Soil & Composting)	92%	75%	68%	75%
Convert lawn using sheet mulching (Sustainable Garden Design)	64%	70%	85%	75%
Grow Smart, Grow Safe & Stop Before You Spray (Pest & Weed Control)	85%	69%	75%	74%
Online Native Plant Guide (Sustainable Garden Design)	54%	69%	70%	67%
Smart watering video (Smart Watering)	65%	65%	65%	65%
Plant and water in a new plant (Right Plant, Right Place)	38%	43%	66%	51%

## Respondent Demonstration Suggestions

Respondent suggestions for improving demonstrations were categorized into the following themes. Appendix B presents all comments provided by respondents.

### Sustainable Garden Design: Convert lawn using sheet mulching and Use Online Native Plant Guide

- Wanted better slides or a printed copy of the slides (5 people)
- Wanted more time or noted that the speaker went too fast (4 people)
- Wanted more plant suggestions or details on plant names (3 people)
- Suggestions from one person each:
  - Logistics: microphone holder for the presenter
  - Topic: acid soil base needs of plants
  - Topic: “Xeriscaping” or dry gardening
  - Question: Cardboard as a sheet mulch option

### Pest & Weed Control: Crop rotation; “Grow Smart, Grow Safe”; and “Stop Before You Spray”

- Wanted additional time and/or presenter moved too quickly (5 people)
- Wanted in-depth or additional topics (4 people)
- Suggestions from one person each:
  - Logistics: Wanted printed handout of the presentation
  - Logistics: Wanted movable mic and elevated stage for presenter

### Right Plant, Right Place: Plant and water in a new plant

- Difficult to see hands-on demonstration (9 people)
  - Wanted video camera to show the demonstration onscreen (3 people)
  - Wanted smaller groups/event (1 person)

### Soil & Composting: Use compost and mulch on existing garden

- Wanted a way to more easily see hands-on demonstration (4 people)
- Wanted more time (5 people)
- Wanted more detail or additional topic (3 people)
  - Requested topics: additives, worm bin, more compost detail
- Suggestions from one person each:
  - Logistics: Wanted to buy the presenter’s book or learn more about where to purchase it
  - Logistics: Wanted speaker to be at a lower volume

## New Tabletop Displays

### Respondent Tabletop Display Ratings

Between 47% and 68% of respondents rated the tabletop displays either very or extremely effective. Some displays were shown multiple times, so ratings are presented for each workshop. For the mulch display, respondent ratings changed over the course of the workshops. Respondent ratings were similar across all three workshops for all tabletop displays (see Table 16 and Table 17), with the following exceptions:



- **Improve Soil Health** (how to perform a soil test): Mukilteo participants rated this display higher.
- **Planting Right** (how to plant properly): Marysville participants rated this display lower.
- **Matching Plant to Place** (how to choose plants): Marysville participants rated this display much lower.
- **Diagnosing Plant Problems** (how to identify and control plant problems): Everett participants rated this display lower.

Respondent suggestions for improving tabletop displays are presented in the next subsection.

**Table 16. Effectiveness of Tabletop Displays (2018–2019 Cohort)**

Tabletop Display	Not at all	Slightly	Moderately	Very	Extremely	Very + Extremely	Total Respondents
Mulch Matters (workshop #1)	1%	5%	38%	43%	14%	<b>57%</b>	152
Mulch Matters (workshop #2)	0%	3%	29%	54%	14%	<b>68%</b>	149
Mulch Matters (workshop #3)	1%	4%	28%	52%	15%	<b>67%</b>	144
Improving Soil Health (workshop #2)	1%	11%	37%	43%	8%	<b>51%</b>	143
Improving Soil Health (workshop #3)	3%	11%	39%	39%	8%	<b>47%</b>	138
Diagnosing Plant Problems	0%	6%	34%	50%	10%	<b>59%</b>	145
Planting Right	0%	5%	36%	52%	6%	<b>58%</b>	148
Lawn Aeration	1%	8%	35%	46%	10%	<b>56%</b>	154
Matching Plant to Place	1%	9%	42%	43%	5%	<b>48%</b>	148

**Table 17. Percent of Respondents Rating Tabletop Displays Very or Extremely Effective (2018–2019 Cohort)**

Presentation Demonstration	Marysville	Everett	Mukilteo	All
Mulch Matters (workshop #1)	58%	56%	58%	57%
Mulch Matters (workshop #2)	77%	67%	67%	68%
Mulch Matters (workshop #3)	57%	62%	75%	67%
Improving Soil Health (workshop #2)	45%	41%	62%	51%
Improving Soil Health (workshop #3)	40%	43%	53%	47%
Diagnosing Plant Problems	68%	50%	65%	59%
Planting Right	43%	57%	65%	58%
Lawn Aeration	58%	57%	56%	56%
Matching Plant to Place	24%	55%	51%	48%

### Respondent Tabletop Display Suggestions

When asked for suggestions, several respondents (14 people) provided praise instead. Respondent suggestions for improving tabletop displays were categorized into the following themes. Appendix B presents all comments provided by respondents.

#### Wanted more space or better visibility

- Larger displays or more spacing between displays to reduce crowding (5 people)
- Elevate displays (2 people)
- Increase visibility in general (1 person)

Wanted displays to be staffed or to have more time to view displays

- Provide more time to learn from displays (2 people)
- Have a staff person to answer questions (1 person)

Wanted a list of resources or source and cost information

- Provide handouts with contact information for soil test companies and instructions on taking a soil test (2 people)
- Provide information on cost of renting and difficulty of operating an aerator (1 person)
- Provide sources of mulch (1 person)
- Don't hide logos or brands of products (1 person)
- Offer help explaining practices to the yard care company (1 person)

Wanted more information on specific topics

- Information on automated irrigation sprinkler systems (1 person)
- More information on how to do soil test (1 person)
- More information on about controlling pests, bugs, and weeds (1 person)
- Show plugs on aerating displays (1 person)

## General Workshop Quality (2018–2019 Cohort)

### Knowledge Provided by Sessions

Nearly all respondents (98% to 100%) at all workshops said they had enough information to use the new practices, although some marked that they had a few questions. Table 18 shows the percentage who said “yes, I know what to do” when asked whether they had enough information. Participants were most confident about their knowledge of smart watering and natural lawn care. The largest share of respondents said they had a few questions about Sustainable Garden Design; Right Plant, Right Place; and Natural Pest, Weed, and Disease Control.

**Table 18. Percent of Respondents Who Had Enough Knowledge to Use the Practices (2018–2019 Cohort)**

Workshop	Marysville	Everett	Mukilteo	Workshops Overall
Natural Lawn Care	75%	79%	68%	73%
Smart Watering	85%	81%	71%	76%
Natural Pest, Weed, and Disease Control	54%	60%	61%	59%
Soil and Composting	85%	74%	58%	69%
Sustainable Garden Design	38%	34%	65%	48%
Right Plant, Right Place	48%	43%	61%	51%

### Would They Recommend Workshops?

Nearly all respondents (98% to 100%) at all workshops said they would probably or definitely recommend the workshop to others. Table 19 shows the percentage that would definitely recommend each workshop. Everett participants rated the workshops higher than Marysville participants. Topics for the second and third workshops were paired differently the fall 2018 workshops held in Mukilteo and the spring 2019 workshops held in Marysville and Everett.

**Table 19. Percent of Respondents Who Would Definitely Recommend Workshop (2018–2019 Cohort)**

Workshop	Marysville	Everett	Mukilteo	Workshops Overall
Lawn Care and Watering (spring and fall)	60%	83%	67%	72%
Pest Control and Soil/Composting (spring)	64%	70%	NA	68%
Garden Design and Pest Control (fall)	NA	NA	63%	63%
Garden Design and Planting (spring)	50%	75%	NA	68%
Planting and Soil/Composting (fall)	NA	NA	80%	80%

## Respondent Workshop Suggestions

Respondent suggestions for improving workshops were categorized into the following themes. Appendix B presents all comments provided by respondents.

### Workshops overall (from post-outreach survey)

- Provided general praise and/or requested more workshops (20 people)
- Would change or add additional content (7 people)
- Wanted individual instruction and/or help finding the right tools or products (3 people)
- Would improve workshop logistics (7 people)
  - Allow more time
  - Do demonstrations on stage
  - Invite Cisco Morris to be a presenter
  - Let people know the chairs are uncomfortable so they can bring a cushion
  - Provide name tags for participants and invite them to meet the people sitting next to them
  - Schedule workshops on different times and days to reach more people
  - Shorten the class to two hours
- Requested online materials and transcripts (2 people)

### Natural Lawn Care + Smart Watering (all locations)

- Wanted slower or a different pointer (2 people)
- Wanted resource handout and/or summary sheet (2 people)

### Sustainable Garden Design + Natural Pest, Weed, & Disease Control (Mukilteo)

- No suggestions provided

### Right Plant, Right Place + Growing Healthy Soil and Composting (Mukilteo)

- Wanted more information on pruning (2 people)
- Wanted information on plants (especially native) for specific situations, such as in deep shade or in areas to prevent erosion (1 person)

### Natural Pest, Weed, & Disease Control + Growing Healthy Soil and Composting (Marysville & Everett)

- Wanted longer workshop (2 people)
- Wanted presenter to have a lapel microphone (1 person)

**Sustainable Garden Design + Right Plant, Right Place (Marysville & Everett)**

- Wanted less repetition of slides and content (2 people)
- Wanted additional workshops throughout the year (1 person)

## Lawn and Garden Fair (2019)



This section evaluated the new Lawn and Garden Fair held in June 2019, after the 2018–2019 workshops were completed. The event was open to the public but intended to supplement workshops by providing a hands-on opportunity to see natural yard care practices up close and to ask questions of experts. The evaluation primarily uses feedback from a survey of attendees distributed and collected during the event. It also includes feedback that workshop participants from the 2018–2019 cohort provided on the medium-term follow-up survey.

## Lawn and Garden Fair Attendees (2019)

Of Lawn and Garden Fair attendees who completed the onsite survey at the event, one-third (32%) had previously attended a workshop (Table 20). About 8% (10 people) of 2018–2019 workshop participants who responded to the medium-term survey said they attended the Lawn and Garden Fair, corresponding to the results of the Lawn and Garden Fair survey.

**Table 20. Prior Workshop Attendance of Lawn and Garden Fair Attendees (2019)**

	Percent	Number of Respondents
Previous workshop attendants	32%	15
<i>Spring or fall 2014</i>	11%	5
<i>Fall 2018</i>	13%	6
<i>Spring 2019</i>	9%	4
Had not attended any workshop	72%	34
<b>Total number of respondents</b>		<b>47</b>

## Overall Assessment of the Lawn and Garden Fair (2019)

All 53 people who responded to the Lawn and Garden Fair survey said they would definitely recommend (91%) or probably recommend (9%) the Lawn and Garden Fair (Table 21). When asked why they would recommend the Lawn and Garden Fair, respondents most frequently mentioned:

- It was very informative and useful information was provided.
- They liked the presenter, using phrases including “knowledgeable,” “friendly,” and “dynamic.”
- They liked the hands-on demonstrations or opportunity to ask questions.

Appendix B presents all comments provided by respondents.

**Table 21. Percent of Attendees Who Would Recommend the Lawn and Garden Fair (2019)**

Would you recommend the Lawn and Garden Fair?	Percent	Number of Respondents
Definitely yes	91%	48
Probably yes	9%	5
Not sure	0%	0
Probably not	0%	0
Definitely not	0%	0
<b>Total number of respondents</b>	<b>100%</b>	<b>53</b>

Among the ten members of the 2018–2019 workshop group who both took the medium-term survey and attended the Lawn and Garden Fair, nine people said the Fair added to what they learned in the workshops to a moderate (three people) or great (six people) extent (Table 22).

**Table 22. Extent to Which the Lawn and Garden Fair Added to Workshops (2018–2019 Cohort)**

To what extent did the Lawn and Garden Fair add to workshops?	Number of Respondents
To a great extent	6
To a moderate extent	3
To a small extent	1
Not at all	0
<b>Total number of respondents</b>	<b>10</b>

## Learning at the Lawn and Garden Fair (2019)

### Most Useful Things Learned (2019)

In an open-ended question, Lawn and Garden Fair attendees were asked to describe the most useful things they learned from the event. Responses were categorized into the following themes.

- **Soil, Mulch, Composting (24 people)**
  - Make and use mulch (13 people)
  - About compost or how to properly compost (9 people)
    - Soil and how composting impacts overall health. One respondent noted, “composting was absolutely a valuable lesson.”
- **Lawn Care (18 people)**
  - Overall lawn care, seeding, moss control, and use of lime. (One person mentioned aeration demo.)
- **Plants & Planting (14 people)**
  - How to select, place, and care for existing and new plants
- **Tool & Equipment Care and Use (11 people)**
  - Blade and tool sharpening guidance written explicitly in all comments in this category
- **Pests, Beneficials, Disease, Weed ID & Control (11 people)**
- **Fertilizing (5 people)**
  - Appropriate amount of fertilizer to use and timing for application (3 people)
  - Identify if a plant needs fertilizer (2 people)
- **Reliable Resources to use (4 people)**
  - Resource books and websites and tips learned at the events.

- **Vegetables (2 people)**
  - One person noted that they found crop rotation and another about how pollination helps food grow “most useful.”
- **Smart Watering (3 people)**
  - Watering advice and guidance on how to water.

## How Workshop Attendees used Fair Information (2018–2019 Cohort)

On the medium-term survey, participants in the 2018–2019 workshops were asked how they used what they learned at the Fair. Respondents said they maintained or added trees (2 people), started composting (2), performed tool care (1), avoided chemical weed killer (1), and improved watering practices (1).

## Session Popularity and Ratings (2019)

### Respondent Lawn and Garden Fair Session Ratings (2019)

Based on the number of respondents who rated each session (see Table 23), the following sessions seemed to be the most well-attended:

- Hand-Tool Sharpening (21 respondents)
- How Long to Water for 1-inch? (16 respondents)
- Mulch Matters (15 respondents)
- Problem Pests & Natural Controls (14 respondents)

In general, most respondents said the sessions gave them enough information to use practices on their own. However, one or two respondents said they still had a lot of questions after the following sessions:

- Problem Diagnosis and Plant Identification
- Hand-tool Sharpening
- Meet the Beneficials & Pollinators
- Problem Pests & Natural Controls
- Backyard Composting
- Get to Know Your Soil

Respondent suggestions for improving Lawn and Garden Fair sessions are presented in the next subsection.

**Table 23. Effectiveness of Lawn and Garden Fair Sessions (2019)**

*Did the session give you enough information to use the practices on your own?*

	A lot of questions	Several questions	Question or two	Yes	Number of Respondents*
<b>Natural Yard Care</b>					
Crop Rotation Prevents Problems	--	--	4	5	9
Hand-Tool Sharpening	1	1	2	17	21
Problem Diagnosis & Plant Identification	2	1	--	5	7
<b>Think Twice Before Using Pesticides</b>					
Meet the Beneficials & Pollinators	1	--	2	9	11
Problem Pests & Natural Controls	1	1	3	9	14
<b>Practice Smart Watering</b>					
How Long to Water for 1-inch?	--	1	--	16	16
<b>Build Healthy Soil</b>					
Backyard Composting	1	--	--	8	9
Get to Know Your Soil	1	--	--	10	11
Mulch Matters	--	1	2	12	15
<b>Plant Right for Your Site</b>					
Matching Plant to Place	--	2	1	9	12
Native Plants	--	--	--	9	9
Planting It Right	--	1	1	8	10
Plants for Wet Soil	--	--	--	5	6
<b>Practice Natural Lawn Care</b>					
Aerate & Overseed: A Healthier Lawn	--	1	1	9	10
Fertilizer: How to Apply the Correct Amount	--	1	1	6	8
Mowing Tips & Blade Sharpening	--	--	1	7	8
Managing Moss	--	1	1	11	11

\* Note: some respondents marked multiple responses.

## Respondent Lawn and Garden Fair Session Suggestions (2019)

When asked for suggestions to improve individual Lawn and Garden Fair sessions, most respondents provided praise instead. For those who provided suggestions, their comments were categorized into the following themes. Appendix B contains all comments provided by respondents.

## Natural Yard Care

### Problem Diagnosis & Plant Identification

- Location: Hold session in McCollum Park
- Topic: Invasive plants

### Think Twice Before Using Pesticides

### Meet the Beneficials & Pollinators

- Topic: differences between bees
- Topic: beneficial plants for beneficial insects and pollinators

### Problem Pests & Natural Controls

- Topic: actions and how to take them

## Practice Smart Watering

### How Long to Water for 1-inch?

- Topic: how to take a faucet apart (watering infrastructure)

## Plant Right for Your Site

### Planting It Right

- Topic: how deep to plant

## Practice Natural Lawn Care

### Fertilizer: How to Apply the Correct Amount

- Content: session was difficult to understand

## No Suggestions Provided

Attendees provided no suggestions for the following sessions:

### Practice Natural Yard Care

- Crop Rotation Prevents Problems
- Hand-Tool Sharpening

### Build Healthy Soil

- Backyard Composting
- Get to Know Your Soil
- Mulch Matters

### Plant Right for Your Site

- Matching Plant to Place
- Native Plants
- Plants for Wet Soil

### Practice Natural Lawn Care

- Aerate & Overseed: A Healthier Lawn
- Mowing Tips & Blade Sharpening
- Managing Moss

## Reasons for not Attending Fair (2018–2019 Cohort)

The most common reasons among 2018–2019 workshop respondents to the medium-term survey for not attending the Lawn and Garden Fair were schedule conflicts (54%) and lack of awareness about the event in time to attend (32%), as shown in Table 24. Write-in responses primarily related to time or schedule constraints (4 people) or being out of town (5 people).

**Table 24. Reasons 2018–2019 Cohort Members Did Not Attend the Lawn and Garden Fair**

Reasons to Not Attend Lawn and Garden Fair	Percent	Number of Respondents
Had a schedule conflict	54%	58
Did not know in time to attend	32%	35
Already learned everything at the workshops	6%	7
Not interested in the topics	2%	2
Preferred a different format or event type	1%	1
Another reason	11%	12
<b>Total number of respondents</b>		<b>108</b>

Respondent suggestions for improving Lawn and Garden Fair sessions to address these reasons were categorized into the following themes.

What topic would you be interested in?

Six people who did not attend the Lawn and Garden Fair provided suggestions for topics.

- Lawn and garden design, including the opportunity to bring in a photo of their lawn for an expert consultation
- Lawn and garden tips or information in general (4 people)
- Tree planting, particularly for privacy and near fences (1 person)

What days or times would you prefer for an event like this?

Respondents who did not attend the Lawn and Garden Fair prefer a variety of alternative days and times (Table 25). Saturday afternoons or evenings in late spring seemed the best for these respondents.

- **Weekend:** Saturday or no preference (8 people). One person noted they prefer Sunday.
- **Weekday:** afternoons or evenings (3 people) or no preference (3 people). At least two respondents noted working on the weekend.
- **Late spring** was the season four people identified as their preferred time of year.

**Table 25. Preference for Alternative Event Times (2018–2019 Cohort)**

Preferred Time	Weekday	Saturday	Sunday	Weekend	No Preference
No Preference	3	4	2	1	1
Morning		1			
Afternoon	1			2	
Evening	2				

What format or type of event would you prefer?

Eight people who did not attend the Lawn and Garden Fair provided input on the format or type of event they prefer instead of the Lawn and Garden Fair. Four people said they like the current format, although one person felt the content needed to be presented more simply for beginners. Other recommendations included a panel discussion with experts as well as elements already provided by the event: topic-specific booths or tables and hands-on displays supplementing speakers.

## Overall Suggestions for Lawn and Garden Fair (2019)

### Suggestions from Lawn and Garden Fair Attendees (2019)

Respondent suggestions for improving the Lawn and Garden Fair were categorized into the following themes. Appendix B presents all comments provided by respondents.

- Wants additional topics, more stalls, or pamphlets (5 people)
- Wants more or clearer marketing; website improvements (6 people)
- Wants a longer event (6 people)
- Wants to see the event continue or done more often (3 people)
- Wants warmer weather (3 people)
- Wants coffee, plants, or other items available for sale or free (4 people)
- Other individual suggestions were:
  - Wants the event to be more child friendly
  - Did not want to have a set schedule for the sessions

### Format Suggestions from Workshop Participants Who Did Attend (2018–2019 Cohort)

Four of the members of the 2018–2019 cohort who attended the Lawn and Garden Fair were asked on the medium-term survey for comments or suggestions on the format of the Fair.

Suggestions included holding the event in July for warmer weather, extending the length of the event, and demonstration how to identify and control noxious weeds without chemicals.

### Other Suggestions from Workshop Participants Who Did Not Attend (2018–2019 Cohort)

All respondents to the follow-up survey from 2018–2019 workshop were asked about what Snohomish County could offer besides the Lawn and Garden Fair to build on what participants learned in the workshops. Most either had no suggestions (12 people), praised the existing structure (7 people), and/or expressed a desire for the event to be held again in the future (10 people). Alternative options included a yearly refresher course and an opportunity to ask questions by phone or email.

Some individuals identified topics they want to learn about:

- Raised beds and crop rotation
- Composting examples
- Plants for specific conditions:
  - Native plants in general
  - Plants that both provide privacy and support wildlife
- How to safely use heavy or motorized tools
- How to protect plantings from excessive summer heat
- Water reclamation
- Garden structures

# Lessons Learned and Recommendations

This section presents lessons learned and recommendations to improve future workshops and events. Overall, the new elements appear to be helpful and appreciated by participants; however, connecting them directly to behavior change is difficult due to the differences in baseline usage and in presenters between the 2014 and the 2018–2019 programs.

## New Workshop Elements

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### Fertilizing and Avoiding Weed-and-Feed

The workshops did not include new elements focused on fertilizing, fertilizer choices, or avoiding weed-and-feed. Both the 2014 and 2018–2019 programs achieved high behavior change and similar final adoption levels related to avoiding fast-release fertilizer and weed-and-feed. However, only 53% of respondents from 2018–2019 who fertilize said they used recommended fertilizer, indicating more assistance is needed.

- **Add a fertilizer tabletop display** with empty bags of slow-release, organic, and natural fertilizers to show attendees how to identify them. The display could be combined with the lime tabletop display recommended below.

**Recommendations from the prior evaluation of the 2014 cohort to increase the use of recommended fertilizer included:**

- **Show participants how to identify and choose slow-release fertilizer**, including how to read the guaranteed analysis (NPK numbers) and how to identify words that signal the fertilizer contains slow-release nitrogen. Information could be provided in lectures, videos, and a webpage.
- **Offer a coupon with a discount** on slow-release fertilizer redeemable at stores that have agreed to promote this product. In addition to providing a discount, the coupon is intended to inform participants how to identify slow-release fertilizer and which stores carry the product. Consider asking retailers and manufacturers of slow-release fertilizer if they would fund the coupon values while the local jurisdiction funds the design, printing, and distribution costs. *Note: this and the following recommendation may not be feasible in Snohomish County because large chain stores typically do not partner with public agencies in this way, and only one independent nursery remains in the county at this time.*
- **Encourage stores to carry recommended fertilizers and publish a list of those that do.** Through a STORM natural yard care work group and in partnership with incorporated cities,

coordinate on a local level with individual stores and store managers to regularly stock and promote slow-release fertilizer—and list participating stores and fertilizer information on program webpages.

## Soil Testing

The program should continue using the soil test tabletop display. While 19% of 2018–2019 follow-up survey respondents had a soil test (and 78% of those households used the results), additional assistance may be needed to expand use. The program could consider implementing the recommendation from the prior evaluation of the 2014 cohort to:

- **Distribute the resource list of soil testing labs** that partners from Washington State University created in response to workshop participant requests.
- **Facilitate soil testing** through partnering with local agencies to offer a low-cost soil test in conjunction with the workshops and Lawn and Garden Fair. Kits should include detailed, graphics-heavy instructions on how to collect soil samples properly. Soil test results should include an easy to read report that provides detailed information on actions to take based on results.

## Aerating and Applying Lime

As in 2014, the program achieved little behavior change in aerating (presented in a tabletop display) and applying lime (presentation video) among 2018–2019 workshop participants. These practices were also presented in the Lawn and Garden Fair, but few participants from 2018–2019 workshops attended the event. Low behavior change may also be due to non-knowledge barriers such as the effort required to rent an aerator or and the timing of workshops (after the ideal time to aerate) and the follow-up survey (before the ideal time to aerate). Recommendations include:

- **Implement recommendations to increase participation in the Lawn and Garden Fair.** The Lawn and Garden Fair included live demonstration of aerating and applying lime.
- **Modify the aeration tabletop display to:**
  - **Add still images of someone using an aerator.** Continue to show the aeration video while adding still images of the practice in use for workshop attendees who do not stop to watch the video.
  - **Separate the video from the staffed display by a few feet.** This could allow more space for some participants to watch the video and whole others are able ask questions of the person staffing the display.
  - **Include samples of plugs.**

- **Implement recommendations to increase soil testing.** Of the 18 participants who used their soil test results, 12 people added lime.
- **Continue to emphasize the benefits of lime and communicate that it is as easy to apply as fertilizer** (which most participants already apply themselves).
- **Add a lime tabletop display** that includes stills from the lime video showing how to apply lime and connecting it to the already-used practice of fertilizing.
- **Implement recommendations from the prior evaluation of the 2014 cohort to:**
  - Encourage participants who live in the same neighborhood to coordinate on renting an aerator and compost top-dressing equipment.
  - Help participants hold an aeration day in which all participants in a neighborhood can jointly rent an aerator and top-dressing equipment (or can jointly hire a professional to aerate and top-dress).

## Applying Mulch

Education regarding applying mulch worked well. Overall 63% of respondents said they added mulch to cover bare soil, 40% said they used sheet mulching to smother weeds, and 22% used sheet mulching to convert lawns. In addition, 91% of respondents reported keeping beds covered with mulch or plants, an increase from 77% at baseline.

- **Continue to use the new workshop elements:**
  - Live demonstration on sheet mulching to convert a lawn.
  - Live demonstration on using mulch or compost on existing plants and gardens.
  - Tabletop display on choosing and applying mulch, including real samples of mulch types.
- **Continue to distribute a list of local suppliers of mulch.**

## Smart Watering

Education regarding smart watering worked relatively well: more respondents in 2018–2019 reported measuring sprinkler rates and starting to use at least one smart watering practice. However, opportunities remain to increase sprinkler measuring from the current level of 32%.

- **Continue to show the smart watering methods video.**
- **Distribute the rule gauge for measuring sprinkler output** that was given out at the Lawn and Garden Fair. The rule lists steps for measuring sprinkler output and the County's natural yard care website.
- **Implement recommendations to increase participation in the Lawn and Garden Fair.** The Lawn and Garden Fair included live demonstration of measuring sprinkler rates and using smart watering methods.

## Choosing and Planting Plants

It is unclear why the level of behavior change in plant choices decreased substantially in 2018–2019 compared to 2014. In particular, it is counterintuitive that fewer participants from the 2018–2019 workshops would say they always look for sun/shade needs and full-grown size after attending the workshops compared to before they attended. Potential explanations may be that the quality of the presentation differed between the two programs, the time spent on demonstrating the online native plant guide reduced emphasis on the importance of other plant characteristics, or the discrepancy is due to sampling error.

Recommendations to improve plant choices include:

- **Refocus presentation demonstration on looking for key plant characteristics.** Walk participants through the *Choosing the Right Plants* guide, which includes a template with instructions on how to identify and sketch a map of wet versus dry, sunny versus shady, and heat sink areas of their yard. Also consider showing side-by-side picture of how well and poorly plants grow in right and wrong places.
- **Expand the matching plant to place tabletop display with a poster showcasing recommended plants** showing photos, plant names, and key characteristics (full-grown size, sun/shade needs, drainage and watering needs, pest/disease resistance, native status, and cold tolerance). The display would both provide plant names (requested by some participants) and emphasize the importance of looking for these characteristics. A laptop station next to the display could show and allow participants how to use King County's online native plant guide.

Recommendations to improve planting practices include:

- **Ensure participants can see the live demonstration** on how to plant and water in new plants by using a video or phone camera to project the live demonstration onto the presentation screen.
- **Expand the planting right** tabletop display with images and numbers for recommended compost depth and with containers showing live plants planted at correct and incorrect depths.

## Natural Pest, Weed, & Disease Control

Overall, the workshops worked as well as in 2014, but usage of the “Grow Smart, Grow Safe” website is still very low (17%) and creation of crop rotation plants is also somewhat low (39%). Recommendations include:

- **Continue using the new program elements:**
  - Demonstrate use of the “Grow Smart, Grow Safe” website and “Stop Before You Spray” good bug guide.
  - Demonstrate how to create a crop-rotation plan for a food garden.
  - Present a tabletop display on how to identify and control plant problems with least-toxic methods.
- **Add time to the lecture demonstrations** in response to participant comments that the presenter moved too quickly.
- **Email participants the day after the workshop with links to the online resources.** Consider creating a small, useful item that lists selected links, such as the “Grow Smart, Grow Safe” website, the County’s natural yard care website, and contact information for the local Washington State University extension. Potential items include a bookmark or a magnet.

## Long-Term Retention of Behavior Changes

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For several practices, backsliding indicates that reminders or refreshers may be needed. These practices include not using weed-and-feed or fast-release fertilizers, top-dressing with compost after aerating, mulch mowing, choosing appropriate plants for yard conditions, and not broadly applying weed killer.

Participants in the 2014 program previously expressed interest in obtaining follow-up assistance and continuing to participate in the program. Participants in the 2018–2019 program also request a way to ask follow-up questions.

Recommendations include:

- **Sending monthly or quarterly emails** with seasonal tips and updates, particularly mentioning fertilizer choices, top-dressing with compost and applying mulch, mulch mowing, and looking for key plant characteristics.
- **Sending one or two annual paper mailers** to past participants reminding them of these key practices.
- **Creating a one-page calendar** on waterproof paper and online that shows proper months, frequency, and reminders about key practices.

- **Providing a program contact email or phone number** for when participants have questions or need reminders.
- **Continuing to invite past participants** to the Lawn and Garden Fair.
- **Organizing one annual refresher workshop session** open to all past participants that features all the tabletop displays staffed by yard care experts to answer questions, a Master Gardener table, and possibly one presentation or panel discussion on a new or popular topic. Potential topics to expand on workshop lessons include rain gardens, plant choices for specific conditions, or additional time on weed and pest control.
- **Sending a dedicated invitation to past participants** to invite them to attend current workshop series if they want a refresher and encouraging them to refer their friends and family. One option is to include these events on the quarterly email sent by Snohomish County's Surface Water Management to people who opt in. Adding an opt-in option to the registration form could increase sign-ups.

## Lawn and Garden Fair

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Lawn and Garden Fair participants who provided feedback rated the workshop highly. All of them would recommend it to others, including 91% who said they would definitely recommend it. Among 2018–2019 participants who said they did not attend the event, only 6% said the reason was that they had already learned everything at the workshops.

Snohomish County should repeat the event, considering the following recommendations.

### Marketing and Logistics

- **Continue conducting extensive planning and partnering** before the event to ensure enough staffing and presenters as well as a smooth set-up and logistics during the event.
  - Partnership with jurisdictions and WSU Extension were vital to the event's success. Approximately two-thirds of presenters were Master Gardeners from the WSU Extension, and most partner agencies provided at least two staff to support the event.
  - Presenters commented positively on the level of pre-planning, clarity of instructions, and the pre-event walkthrough of the site.
- **Expand marketing** to increase attendance with the following elements:
  - Direct mail focused on people who moved to or within the County in the previous two years.
  - Improved webpage addressing participant comments related to clarity.
  - Promotions on social media, community event calendars, and partner websites.
  - Press release or other news media engagement.

- Street signs and/or a welcome tent next to the entrance to attract passersby.
- **Continue messaging that no prior gardening experience** is needed in event promotional materials. Presenters said that the communication materials and graphics were effective at attracting new gardeners.
- **Select the event date as early as possible** to be able to promote the event to workshop attendees on the registration form and at each workshop so they can save the date. Half (54%) of 2018–2019 workshop participants who said they did not attend the event cited schedule conflicts while one-third (32%) said they did not know about the event in time.
- **Start the event later** at 10 a.m. instead of 9 a.m. If possible, extend the length for the event to 4 p.m. so attendees who are interested can attend more sessions. A longer event would require recruitment of a food truck or other refreshment options.
- **Consider holding the event in autumn.** A September event might provide warmer weather, more participant interest in smart watering and drought-tolerant plants, and the opportunity to recruit a food truck. An autumn event would not have the lawn-use restrictions since the venue rental season is during the summer and not the autumn.
- **Explore alternative parks or reconfigure the layout to:**
  - Consider wind-tunnel effects lest the weather be windy and cold again.
  - Group all stations closely, ideally within sight of each other.
  - Instead of using picnic shelters, consider using tents arranged in rows similar to a farmer's market or street-fair.
- **Expand and better organize the information booth:**
  - Consider creating two separate booths: a welcome booth and a booth to fill out the exit survey.
  - Ensure the booth offers empty table space for filling out forms.

## Sessions and Topics

- **Continue the most popular sessions:**
  - Based on the event survey, the following sessions were highly attended: Hand-Tool Sharpening, How Long to Water for 1 Inch, Mulch Matters, and Problem Pests & Natural Controls.
  - Other well-attended sessions were Matching Plant to Place, Getting to Know Your Soil, Managing Moss, and Meet the Beneficials & Pollinators.
  - While the survey suggested lower attendance, program staff reported that Mowing Tips and Blade Sharpening were also very popular.
- **Provide more experts or opportunities to answer questions, particularly on weed, pest, and disease management.** One workshop attendee commented on the long line to talk to pest management experts. When asked why they would recommend the event, several participants commented on the ability to ask questions. Options include:

- Recruit more presenters or schedule sessions so each area has at least one person who is not presenting and can answer questions about the topic.
- Encourage presenters to present for only a portion of their session time, leaving substantial time for questions.
- Consider reducing the number of lecture-style sessions and replacing them with question-and-answer sessions on focused topics.
- To engage attendees, consider bringing the tabletop spinning wheel of questions that Snohomish County uses at other events. The wheel has natural yard care questions for attendees to answer, and the presenter has the list of correct answers.
- **Ensure presenters are prepared to be flexible regarding the schedule.** Many attendees did not follow the schedule. Instead, they moved between sessions at their own pace. As a result, most sessions did not stay on schedule as the presenters adapted their demonstration to accommodate attendees.
  - Consider encouraging presenters to create self-contained mini-modules that can be conducted in about 10 minutes so attendees do not need to follow a schedule in order to benefit from the sessions.
- **Reduce sessions in Plant Right for Your Site.** Plant choice sessions were less popular, although participants liked being able to ask questions. Event staff, including Master Gardeners, recommending reducing these sessions.
  - Keep the sessions Matching Plant to Place and Planting it Right.
  - Replace Native Plants and Plants for Wet Soil with a question and answer booth that includes information resources with photos. Consider creating a notes template that booth staff or participants can use to record plant recommendations that also emphasizes best practices. In addition to recording common and/or Latin plant names, the template should include space or checkboxes to record key plant characteristics (e.g., full-grown height, sun/shade needs, soil drainage needs, drought tolerant, pest-resistant). If space allows, include brief planting instructions (ideally using simple line drawings) on amending soil with compost, planting to the proper depth, and watering plants in.

- **Modify the aeration session if needed due to venue restrictions to keep all sessions groups closely.** Because the venue prohibited using the aerator on the main lawn during the event season, the lawn care area was located away from other areas; however, event staff report that participants did not generally choose to see the aerator operating. Showing the machine and plugs from elsewhere provides more location flexibility.
- **Provide a session on rain gardens,** given the current interest in them. While rain gardens are not a natural yard care topic and one session may not provide enough information to help someone install a rain garden, it could increase interest in the event. The session should connect rain gardens to natural yard care, such as a session on choosing the right plants for rain gardens with varying conditions (e.g., the bottom of the garden versus the top, rain gardens in sunny versus shady areas) or managing rain garden weeds and pests. Alternatively, the County could consider combining the Lawn and Garden Fair with its RainScaping Expo (focused on solutions that include rain gardens).

## Fair Evaluation

- **Conduct a follow-up survey of event participants** to learn what changes they made as a result of the event.
- **Revise the event evaluation form in the following ways:**
  - Place the session rating question next to each session by name and not time slot. Participants often did not write the session name or fill out the survey by time slot.
  - Remove the request for session-specific comments and suggestions. Most comments consisted of general praise. Instead ask event-wide questions about what questions they still have, what topics they would like to learn about, and/or what changes they would make to the sessions or event.
  - Consider asking a multiple-choice question about what elements of the event they value highly: demonstrations, booths, opportunity to ask questions, and other elements as appropriate.
  - Consider adding a “pledge” question asking for one action they plan to take as a result of what they learned.
- **Continue to offer small products that encourage participant use of natural yard care best practices** for participants who complete surveys and who answer questions at the end of the session, with some refinements:
  - Improve messaging to ensure participants understand they must complete the feedback form to receive products.
  - Consider offering a grand prize that consists of one large item instead of a collection of small items. Ideas from partners included plants or a rain barrel.

# List of Appendices

This report includes the following appendices.

## Appendix A. Survey Instruments

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### 2014 Workshop Forms

- 2014 baseline (integrated into registration form in 2014)
- 2014 immediate post-outreach (instruments for three workshops covering six topics distributed in 2014)
- 2014 medium-term term post-outreach (distributed in 2015)
- 2014 long-term term post-outreach (distributed in 2019)

### 2018–2019 Workshop Forms

- 2018–2019 baseline for fall 2018 (integrated into registration form in 2018)
- 2018–2019 baseline for spring 2019 (integrated into registration form in 2019)
- 2018–2019 immediate post-outreach for fall 2018 (instruments for three workshops covering six topics)
- 2018–2019 immediate post-outreach for spring 2019 (instruments for three workshops covering six topics)
- 2018–2019 medium-term term post-outreach (distributed in 2019)

### 2019 Lawn and Garden Fair Form

- 2019 Lawn and Garden Fair onsite survey (integrated into event map and schedule)

## Appendix B. Survey Data Summary Data

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Summary data are provided in Excel files. Note that data in these tables are presented for all respondents, while report tables comparing baseline to post-outreach use of natural yard care practices presented data only for participants who responded to both the baseline and post-outreach surveys.

### 2014 Workshop Data

- 2014 baseline data (all respondents)
- 2014 immediate post-outreach survey data
- 2014 medium-term data (all respondents)
- 2014 long-term data (all respondents)

### 2018–2019 Workshop Data

- 2018–2019 baseline data (all respondents)
- 2018–2019 immediate post-outreach survey data
- 2018–2019 medium-term data (all respondents)

### 2019 Lawn and Garden Fair Data

2019 Lawn and Garden Fair survey data

# Appendix C. Implementation Documents and Staff Debrief Summaries

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## 2018–2019 Workshop

### Marketing Materials for Spring 2019 Workshops

*Materials are presented on the following pages.*

## Photos from Visual Demonstrations at 2018-2019 Lecture Workshops



## Crop Rotation Exercise

### Your crops

3 – Cherry Tomato

3 – Broccoli

5 – Bush Bean

5 - Potato

Row of Chard

Row of Onion

Row of Carrot

Row of Lettuce

Row of Radish

Row of Beet

Row of Leek

Row of Peas

### Garden Space

Three metal feed troughs:

6 feet by 2 feet by 2 feet

One Whiskey Barrel

### Considerations:

- Plant families
- Seasonality of crops
- Sizes of mature plants
- Intervals between rotations
- Length of growing cycle

←North

East

South→

YEAR ONE

YEAR TWO

Tomato Tomato Tomato

Carrots -----→

Lettuce -----→

Peas -----→

Bush Beans Bush Beans Bush Beans

Onions and leeks-----→

Broccoli Broccoli Broccoli

Chard-----→

Beets-----→ Radishes-----→

Broccoli Broccoli Broccoli

Chard-----→

Beets-----→ Radishes-----→

Tomato Tomato Tomato

Carrots -----→

Lettuce -----→

Peas -----→

Bush Beans Bush Beans Bush Beans

Onions and leeks-----→



West

## How Do You Choose?

### Tools:

- ❖ Grow Smart, Grow Safe website

[www.growsmartgrowsafe.org](http://www.growsmartgrowsafe.org)



- ❖ OMRI labels

(Organic Materials Review Institute)



- ❖ Master Gardener Clinics

[www.snomgclinics.org](http://www.snomgclinics.org)

- ❖ WSU Educational Bulletins

## Tabletop Display Content

*Tabletop displays are presented on the following pages, followed by photographs of the displays as they were set up at workshops.*

## Snohomish County Natural Yard Care Education Evaluation 2019

List of Appendices: Appendix C. Implementation Documents and Staff Debrief Summaries

### Photos of Tabletop Displays at 2018-2019 Lecture Workshops



# Snohomish County Natural Yard Care Education Evaluation 2019

List of Appendices: Appendix C. Implementation Documents and Staff Debrief Summaries



# Snohomish County Natural Yard Care Education Evaluation 2019

## List of Appendices: Appendix C. Implementation Documents and Staff Debrief Summaries



## Lawn and Garden Fair

### Partner Debrief Meeting Notes

*This section reproduces notes from a debrief meeting held with event partners on July 18, 2019.*

#### What worked well?

- **Organization**, set-up and logistics ran smoothly
  - Roles and tasks were clear. Pre-planning paid off.
  - Signage and balloons were effective in helping attendees find stations.
  - Putting together boxes for each demonstration station, was super helpful for keeping the presenters' stations well-contained and easy to set-up.
- **Venue** worked well.
  - Each station had enough space.
  - Visually, it was easy to see and find everything.
  - Station spacing worked well to be able to hear each speaker.
  - Grateful for the flexibility of the city Parks department.
  - Mulch booth worked well at this venue due to proximity of City of Everett's mulch pile and available site at venue that needed mulching. If venue location changes, this demo may not work as well.
- **First-aid kit** was great to have on hand. Ended up needing the icepack.
- **Presenters:**
  - Were very well-prepared and briefed on the logistics as well in order to function autonomously.
  - Engaged well with the attendees.
  - Did not complain about the cold weather even though they were adversely impacted
  - Master Gardener (MG) presenters
  - Professional Landscaper presenters
- **WSU Extension** was vital to the event's success by providing Master Gardener (MG) presenters for several of the topics (2/3<sup>rds</sup> of all presenters were MGs).
  - Walk-through with the Master Gardeners was helpful in determining the layout and needs for rental equipment.
- **Info booth** worked well for attendees entering and we managed to motivate people to fill out the surveys.
  - It was helpful that the compost giveaways were set-up by the entrance to entice people to fill out the survey.
  - Carrying out the bags of compost helped provide an opportunity to engage with the attendees a bit more 1 on 1.
- **Networking** opportunities with elected officials.
- **Graphics** turned out great. Presenters felt that they seemed effective at attracting new gardeners. The communication materials made the event approachable to novice gardeners.

## What could be improved?

- **Turnout**
  - Probably influenced by the weather. Casual attendees may have been the most deterred.
  - Depends on if we're looking to attract the general public or not...
  - Targeted mailing limited attendee numbers
  - *Ideas* to increase turnout:
    - Street signs
    - Being able to see the tents from the road (depends on venue)
    - Later start time
    - Use social media, press release and other cost-effective marketing
- **Booth spacing**
  - Seemed a little too spaced out. You couldn't see all of the booths. There was a lot of blank space.
  - Lawn demos were remote and not visible from main area. Unable to locate them on field lawn due to Park's summertime use restrictions. But the Lawn demonstrations didn't actually go as planned either. The presenter only passed over the grass once with the aerator, for example. In which case, Parks may have allowed that after all.
  - *Ideas:*
    - Consider farmer's market/fair style with rows of tents
    - Put the Lawn demonstrations in the center
    - Put up a tent next to entrance from parking lot into the grounds to catch more attention.
- **Info Booth**
  - Looked messy and uninviting. Wasn't clear what people were to do.
  - There wasn't a lot of space to hang the banners. Made it closed off and seemed harder for the staff to talk to the attendees.
  - *Ideas for a more inviting Info Booth:*
    - Strategize how to best utilize the space for what we are asking people to do.
    - Less signage would be clearer, more approachable and eye-catching.
    - A big sign to draw the eye to the giveaways would have been helpful. Could have helped attract more general public attendees.
    - Two Info Booths would increase the real estate and offer space to include tables for attendees to fill out the surveys on exit. Check-in/check-out booth.
    - Need empty table space to allow attendees to fill out forms.
- **"Receive Products"** -- used to advertise practices and encourage turning in the Feedback Form
  - People didn't get that we wanted them to complete the Feedback Form. Staff had to figure out how to best encourage them to complete it and fill it out. Staff were able to say "if you'd like to receive products, please fill out the Feedback Form"
  - Grand prize wasn't flashy, as in it would be good to have one big prize and not a prize consisting of a lot of little things.
  - *Ideas:*
    - Need display, signs, and space to be visually clearer about completing the form to receive the products
    - Something flashier for grand prize. Plants? Rain barrel?

- **Survey form**

- Confusing for attendees. Mostly filled them out at the end upon exit not as they moved through the stations. So it was hard for them to remember the titles and times of the sessions they attended.
- The survey was designed around the more structured event experience which ended up not being the reality for most attendees.
- *Ideas:*
  - If using similar event handout, ditch the session time information. Instead spread the schedule and Feedback form across the inside pages (schedule on left side and feedback on right side). On the Feedback Form side of the page, list the demos again with the instruction to circle the topics attended. Include the Feedback Form questions as column headings.

- **Structured sessions**

- Planning was focused on a structured event. But that isn't how the attendees actually experienced it.
- People milling in and out of sessions. Didn't seem to negatively impact the attendees' experience, but did throw off the presenters a bit.
- 85% of the time the session time slots were not closely adhered to.
- Presenters couldn't stay on the track with the 20-minute slots with the way the audience was flowing. It required presenters to be more nimble.
- The lack of structure wasn't necessarily a bad thing though.
- Demonstration-based sessions facilitated more structured experience and adhesion to the schedule.
- *Ideas:*
  - Might be better for attendees to have the 1 on 1 experience opposed to the general lecture style while they have to sit through the whole talk for them to glean one relevant nugget.
  - Could restructure to booths and then a central stage with rotating speakers/topics.
  - Have a "Bring Your Questions" booth and schedule topics, such as 9:30 – Bugs, 10:00 Compost, 10:30 Lawn, etc.
  - More advance notice to attendees (post on website) of what to expect (schedule, topics, style of learning like a demo or Q&A, etc.)

- **Event Timing**

- Attendance was light from 9 to 10, yet started picking up at 10:00.
- Early summer timing impacted ability to secure any food truck vendors as well as limited where the lawn demos could be held at this particular site.
- *Ideas:*
  - 10am – 4pm could be a better timeframe for the event
  - Hold the event during September. Parks would likely allow use of the field for lawn demos.

- **Getting the word out**

- What was identified for improvement were known limitations before the event (advertisement and survey, etc.)

What might such an event look like in the future events?

- **Partnership**
  - All jurisdictions present voted they'd be willing to participate again next year
  - Partner again with County jurisdictions (plan it as regional event within Snohomish County)
  - If all the partners were advertising and getting the word out it might look more like the Home and Garden Show; which would change the event dynamics and venue selection, etc.
  - Municipalities could choose their own budget for advertising in their jurisdiction and partner to split costs evenly for the joint items e.g.) tents.
- **Plan / Coordinate**
  - Partners appreciated Snohomish County's planning and coordination.
  - Snohomish County willing to coordinate if partners can figure out a funding and partner mechanism that works (ILA, cost-share, etc.)
- **Getting the word out**
  - Use social media and mailers to broaden the reach across partnering jurisdictions
  - Connect to the benefits of natural lawn care/gardening and the relationship with municipal stormwater permitting
- **Logistics (venue, season, time of day, day of week)**
  - Hold event from 10AM to 4PM
  - Thornton-Sullivan venue worked well. Consider rotating venue to other areas of the county if that works
  - Consider Fall due to limitations on lawn demonstrations if power equipment is to be used
- **Implement (presenters, garden products, set up, staffing, etc.)**
  - Want to keep the demonstration aspect
  - Include Master Gardeners as presenters (at least 2/3<sup>rds</sup> of all presenters overall)
  - Use tents throughout rather than picnic shelters
  - Staffing (2 per partner agency) worked well. NOTE: two jurisdictions were unable to provide the required 2 staff, yet two others provided more than 2 which made the difference)
- **Other**
  - Food trucks (will be important for a longer event)

### Logistics Guide for Lawn and Garden Fair

*In 2020, Snohomish County will draft and attach a succinct logistics guide for the Lawn and Garden Fair.*

# Appendix D. Summary of 2014 Medium-Term to Baseline Behavior Changes

*This section presents the original evaluation findings regarding whether the natural yard care education created behavior change six to twelve months after the workshops.*

## Practices that Protect Water Quality (2014 Medium-Term)

After the program, at least 70% of participants were using several key practices that directly protect water quality, as shown in Table 26. Notably, the program achieved a high level of behavior change in reducing weed-and-feed use—the share of participants who used this harmful product decreased from 66% to 14%. As described below, the program also achieved varying levels of behavior change in practices that support a healthy yard and reduce the weed, pest, and disease reasons people use toxic yard care products.

**Table 26. Medium-Term Adoption of Practices that Protect Water Quality (2014 Cohort)**

H	Avoiding weed-and-feed use
H	Avoiding fast-release fertilizer use
L	Avoiding broad application of pesticides
M	Not leaving beds bare or covered in landscape fabric or plastics
H	Top-dressing lawns with compost after aerating
L	Aerating every two to three years

## Where the Program Worked Effectively (2014 Medium-Term to Baseline)

### Substantial change resulting in high post-outreach use

- Avoiding weed-and-feed
- Avoiding fast-release fertilizer
- Knowing to prepare the soil with compost

Whether asked about the fertilizers they use or asked directly about weed-and-feed, less than one-quarter of participants reported using harmful weed-and-feed or fast-release fertilizers after the workshop, a substantial decrease.

Interviewed participants also frequently mentioned using compost and composting when asked to name the most useful thing they learned in the workshops.

#### M Moderate change resulting in high post-outreach use

- Always looking for a plant's sunlight and shade needs and full-grown size

Both sunlight and shade needs and full-grown size are often listed on plant tags, enabling participants to find this information easily when choosing plants.

#### L Little change because of high adoption levels before the workshops

- Mowing two to three inches or higher
- Using at least one least-toxic weed management technique
- Not broadly applying pesticides

While most participants were using some least-toxic pest management techniques before and after the program, interviewed participants reported that they need more information and resources to manage weeds and pests. Including this information in the workshops is helpful for reinforcing preferred behaviors and strengthening the audience's understanding of how these behaviors contribute to a healthy yard and result in less need to manage weeds and pests.

#### H Substantial change with room for additional improvement

- Always matching a plant to where it thrives
- Always looking for a plant's soil drainage needs, pest and disease resistance, watering needs, cold temperature tolerance, and status as native to the Pacific Northwest
- Using slow-release, organic, or natural fertilizer

While participants frequently mentioned "Right Plant, Right Place" principles when asked to name the most useful thing they learned from the workshops, they may need more hands-on education or tools to help them apply these practices.

While more participants reported using slow-release, organic, or natural fertilizer, nearly half were not using this product after the workshops.

## Where the Program Achieved Moderate Change but Room for Improvement Remained (2014 Medium-Term to Baseline)

#### M Moderate changes with moderate post-outreach use

- Mulch mowing, especially in wet months
- Not leaving beds bare or covered in landscape fabric or plastics

After the program about two-thirds of participants reported mulch mowing at least sometimes (67% in dry months and 64% in wet months). Fewer reported that they always mulch mow (43% in dry months and 46% in wet months).

When asked why they did not always mulch mow, participants most frequently said they do not leave clippings when the grass is too long, they do not want to track grass clippings into the house, and they do not like lots of grass clippings on the lawn.

Participants may have multiple beds, some of which follow natural yard care practices and some of which do not.

#### **Moderate changes with low post-outreach use or understanding levels**

- Measuring their sprinkler watering rate
- Knowing to mix materials six to eight inches deep in soil when planting

Despite the unusually hot and dry year, many participants did not follow the important conservation practice of measuring their sprinkler watering rate. After the program, about 37% of participants selected the correct way to mix planting materials into the soil, although another 30% selected mixing in materials to a shallower depth of four to six inches deep.

## Where the Program Achieved Little Change (2014 Medium-Term to Baseline)

#### **Little change with moderate post-outreach use**

- Lawn watering frequency: participants did not reduce lawn watering frequency, with participants watering slightly more frequently after the workshop, potentially due to the unusually dry weather in 2015

Watering lessons may need to emphasize more that this practice results in healthier lawns. Education on proper watering and on other techniques to reduce the need to water (such as using mulch and top-dressing) during times of watering restrictions may be important given predictions that 2016 will also be unusually dry.

#### **Little change with low post-outreach use**

- Aerating: after the program 27% of participants reported having aerated, an increase of 8 percentage points compared to before the program
- Applying lime: after the program 26% of participants reported having applied lime, an increase of 4 percentage points compared to before the program

The change in implementation of these practices after the program were statistically significant but relatively small—as were the levels of post-outreach use. While a larger percentage of

participants say they plan to aerate (another 44% of respondents) and apply lime (another 44%), more education, hands-on demonstrations, or incentives may be needed to promote these practices. Although few participants aerated after the workshops, nearly half who did aerate said they also top-dressed with compost, an improvement from before the program (23% baseline and 48% post-outreach).