

FALLEN FRUIT AND ALTERNATIVE FOODWAYS:  
AN ANALYSIS OF URBAN FORAGING COMMUNITIES  
AND THE FIGHT FOR FOOD JUSTICE

by

ELLE SULLIVAN

A THESIS

Presented to the Department of Environmental Studies  
and the Robert D. Clark Honors College  
in partial fulfillment of the requirements for the degree of  
Bachelor of Science

March 2018

## **An Abstract of the Thesis of**

Elle Sullivan for the degree of Bachelor of Science  
in the Department of Environmental Studies to be taken March 2018

Title: Fallen Fruit and Alternative Foodways:  
An Analysis of Urban Foraging Communities and the Fight for Food Justice

Approved: \_\_\_\_\_

Dr. Kathryn Lynch

The frameworks of political ecology and food justice guide my inquiry into the sociopolitical dynamics between urban food gatherers, urban vegetation management employees, and City of Eugene officials. Fostering community resilience, improving household food security, and mitigating environmental damage are the primary factors motivating Eugene residents to forage for and grow food in urban green spaces. Environmental hazards, interpersonal conflicts with landowners, and time constraints are the most significant challenges to individuals and organizations wishing to procure more of their food from the urban environment. Additionally, City of Eugene employees and public figures identify differing urban green space management paradigms and operational logistics as barriers to their full support of urban food production efforts. However, there is general consensus amongst urban harvesters, gardeners, and City employees that as Eugene enters its next stage of development, an emphasis on more accessible food systems and improved community food security is critical.

The sociopolitical climate in Eugene is currently uniquely receptive to community input regarding the management of urban green space, as the decades-old Urban Forest Management Plan comes under revision and River Road and Santa Clara neighborhoods develop a new Neighborhood Plan. The rising threat of a global food security crisis is compelling this community to respond with innovative and collaborative visions for a resilient local food system. While serious limitations and considerations must be addressed before successfully implementing any solutions, initiatives that entail education about alternative foodways and collaborative development of re-localized food systems have the potential to transform Eugene into a city at the leading edge of community food security planning.

## **Acknowledgements**

Thank you first and foremost to the gatherers and gardeners who shared their stories of hunger, poverty, resilience, and hope with me, a stranger in their lives and tight-knit communities. Thank you to the City of Eugene employees and public figures who welcomed my probing questions with enthusiasm for potential solutions and honesty about existing obstacles.

Thank you to Dr. Kathryn Lynch for helping to guide and redirect my scattered and excitable self toward a precise set of research questions. Thank you to Professor Jason Schreiner for connecting me to the delightful cast of characters that is Eugene's permaculture community. Thank you to Professor Casey Shoop for being the first professor in my college career to make me consider switching from marine biology to a major that would more readily accommodate my love of environmental writing.

Finally, thank you to my innumerable family, friends, and friends who are essentially family. You all sat through many cycles of excitement, stress, elation, despair, motivation, frustration, and ultimately, exhausted relief. You all kept me steady during this year-long process.

## Table of Contents

Introduction	1
Research Questions	2
Guiding Frameworks	2
Research Design	6
Study Populations	6
Study Design	9
Participant Recruitment	11
Literature Review	13
Food Insecurity	13
Defining Food Security and Food Insecurity	13
Food Insecurity in the United States	15
Consequences of Food Insecurity	18
Food Assistance	20
Federal Assistance Policies	20
Nutritional Inadequacy of Food Assistance	23
Barriers to Food Access	24
Informal Food Assistance	26
Oregon Food Insecurity and Food Assistance	28
Alternative Foodways	30
Results	37
Defining the Community of Practice	37
Motivations	41
1.1 Building Community Resiliency and Social Connection	43
1.2 Supporting Household Food Security	49
1.3 & 1.5 Mitigating Unnecessary Waste & Utilizing Local Abundance	53
1.4 Ensuring Nutrition and Food Safety	55
1.7 Experiencing Individual Emotional Benefits	56
Challenges	57
2.1 Environmental Issues	59
2.2 Landowner Interactions	62
2.3 Time	65

2.4 Access to Equipment and Storage	67
2.6 Personal Safety: Polluted Foods	68
2.7 Politics of Urban Green Space	70
2.10 (The Lack of) Social Stigma	86
Community-Identified Solutions	89
Limitations in My Study	94
Discussion	97
Appendix A: Gatherer Interview Questions	102
Appendix B: Gatherer Survey Form	103
Appendix C: City of Eugene Employee Questions	105
Bibliography	106

## List of Figures

Figure 1: Food Insecurity Indicators by Food Security Status, 2016 (Coleman-Jensen et al. 2017b)	17
Figure 2: Gatherer-Cultivator Continuum (Poe <i>et al.</i> 2013)	33
Figure 3: Stacked Bar Graph of Gleaner Survey Responses (Agree-Disagree Likert Scale)	40
Figure 4: Stacked Bar Graph of Gleaner Survey Responses (Always-Never Likert Scale)	41
Figure 5: Backyard blackberries traded for extra tomatoes (Shannon Cooper 2017)	47
Figure 6: Filbert Grove restoration progress (Jan Spencer 2011, 2013)	70

## **List of Tables**

Table 1: Harvester Categorization and Characterization (Jones and Lynch 2002)	34
Table 2: Motivations for Gleaning and Gardening in Eugene	42
Table 3: Challenges to Gathering in Eugene	58



## List of Abbreviations

ASTL	Approved Street Tree List
CDC	Centers for Disease Control and Prevention
CEAP	Climate and Energy Action Plan
CFS	community food security
CFSM	Core Food Security Module
CIPDP	Citizen Initiated Parks Development Process
EAG	Eugene Area Gleaners
EBT	Electronic Benefit Transfer
FFLC	FOOD For Lane County
FFTP	Friendly Fruit Tree Project
FOT	Friends of Trees Eugene
FPL	federal poverty level
FSP	food stamp program
FSS	Food Security Scale
HHFKA	Healthy, Hunger-Free Kids Act
NAS	National Academy of Sciences
NSLP	National School Lunch Program
NTFP	non-timber forest product
OFB	Oregon Food Bank
ROW	right-of-way
RRCO	River Road Community Organization
SBP	School Breakfast Program
SFSP	Summer Food Service Program
SNAP	Supplemental Nutrition Assistance Program
TFP	Thrifty Food Plan
UFMP	Urban Forest Management Plan
UGF	urban-gathered food
uNTFP	urban non-timber forest product
UPE	urban political ecology
USDA	United States Department of Agriculture
WIC	Special Supplemental Nutrition Program for Women, Infants and Children

## Introduction

Along the West Bank of the Ruth Bascom Riverbank Path, the riparian ecosystem of cottonwood trees and remnant oak prairie transition into a grove of fig, apple, mulberry, and persimmon trees. Beneath the scattered shade of their branches, a pathway pushes through a dense collection of secondary shrubs: raspberry, currants, and Oregon grape. Rosemary, lemon balm, mint, and yarrow send their scents up through the tangles of greenery. Aster, borage, and clover lure bees and butterflies down the trails, and below the flowers is the final layer in this ecosystem: a groundcover of plantain, dandelion, and strawberries. Eugene's foragers and gardeners share a vision of this food forest, hosted on public park land and maintained by community volunteers, providing access to edible and medicinal plants and representing a sea change in urban vegetation management and food security solutions.

A food security crisis is not just inevitable, it is immediate: Volatile food prices, plummeting biodiversity, anticipated fuel shortages, and spreading pest outbreaks in crop fields all have concerning implications for the stability of national and global food systems (e.g. Sonnino and Hanmer 2016; Easterling and Apps 2005; Takle *et al.* 2013; Nordahl 2014). The threat of a food security crisis is particularly relevant in Oregon. The state has the 14<sup>th</sup> highest rate of food insecurity in the country, and in Lane County, a fifth of all residents experience food insecurity and over 50% of school children qualify for food assistance ("Map" n.d.; Partners 2010; "Hunger" 2016). As climate change and its consequences reveal the fragility of global and national food distribution, community initiatives to increase local access to healthy and affordable food could be a

critical tool to combat a food insecurity crisis (Easterling and Apps 2005; Takle *et al.* 2013; Biel 2014; Clark and Nicholas 2013).

### **Research Questions**

Considering the precipitous nature of food security today, I sought to answer the following three questions in my research: What alternative foodways do Eugene residents develop in order to provide themselves with fresh, local, and affordable produce? Why do people harvest food in Eugene’s urban green spaces, and how do the perceptions of and relationships between harvesters and City of Eugene employees affect access to local harvestable foods? How can the City of Eugene adapt its policies and procedures regarding urban vegetation management in order to better support urban harvesters and thereby promote increased food security and food sovereignty in the community? My research in Eugene will contribute to the literature by describing a range of gathering practices in a relatively small urban area.

### **Guiding Frameworks**

My investigation into community food security initiatives is predicated upon the frameworks of food justice and political ecology. Food justice, having developed from environmental justice theory and activism in rural and urban communities of color, concerns itself primarily with the “distributional outcomes” of food policy and prioritizes ecological sustainability and social justice (Agyeman and McEntee 2014: 219; Alkon and Agyeman 2011; Cadieux and Slocum 2015). The food justice movement emphasizes an “equitable, ecologically viable alternative” to the dominant industrial food system, but it is food sovereignty that is more operationally developed

(Cadieux and Slocum 2015: 2). Food sovereignty arose out of food justice and differs from the original movement because it emphasizes self-determination of food systems rather than just distributional equity of food resources (e.g. La Via Campesina 2011; Alkon and Agyeman 2011). Food sovereignty by necessity operates within a human rights framework, which Chilton and Rose (2009) define as a three-part framework: respecting, protecting, and fulfilling a community's right to food:

To *respect* the right to food is to not interfere with one's ability to acquire food. To *protect* the right to food is to make sure that others do not interfere with access to food. To *fulfill* the right to food has 2 components: to facilitate or create social and economic environments that foster human development, and to provide food to people in an emergency or in circumstances when self-provisioning is beyond their control (1203-1204).

The United States voiced support for United Nations' efforts to affirm the human right to food in 2011 but has so far failed to join the Human Rights Council resolution (Anderson 2013). While federal food and nutrition assistance expenditures have only declined slightly since the historical high of \$101.9 billion dollars in fiscal year 2016, recent budget proposals from the Trump administration cast serious doubts on the long-term financial stability of federal food and nutrition programs (USDA 2017; Hunzinger *et al.* 2018; "What Trump" 2018). Therefore, food justice and sovereignty scholars see the most effective change happening at the intimate community level (Cadieux and Slocum 2015). Galt *et al.* (2014) assert that food security is best practiced "within the locality," where more communal and collaborative relationships are better equipped to deal with inadequate food economies (137). Unlike top-down food assistance programs that reinforce "inequities and injustices of the food system and society," food sovereignty emphasizes community-catalyzed and community-run

initiatives that improve the local food environment through self-determination (Vitiello *et al.* 2015).

Building new food systems and green space management strategies necessitates an understanding of political ecology (Cadieux and Slocum 2015). The political ecology framework recognizes that decisions regarding communities' access to and management of natural resources are made in the context of specific political mechanisms, interpersonal relations, group dynamics, and ecological systems (eg. Poe *et al.* 2013; Agyeman and McEntee 2014; Stoll 2014; Hurley *et al.* 2015). Literature examining community gathering practices and relationships to natural resources draws upon the political ecology framework to demonstrate the complex interdisciplinary causes and effects of political and environmental change (e.g. Moragues-Faus 2017; Poe *et al.* 2014; Jones and Lynch 2002). Political ecology must adjust to account for land management strategies and people-nature relationships unique to urban areas, necessitating the development of urban political ecology (UPE) (Agyeman and McEntee 2014). Because "cities represent a relatively new landscape" in food production systems, UPE's focus on urban sociopolitical and ecological relationships is better adapted to understanding how the management and maintenance of green space affects urban food gatherers (e.g. Moragues-Faus and Marsden 2017: 283; McLain *et al.* 2014; Biel 2014).

Food justice and urban political ecology provide the theoretical frameworks that guide this research. Calling food justice a "string in the bow of urban political ecology," Agyeman and McEntee (2014) acknowledge that neither framework alone is in and of itself the best lens through which to analyze emerging urban foraging practices. Food

justice contributes the historical understanding of racial and class effects on food access, while UPE highlights the sociopolitical factors and structural processes that result in food inequity in urban spaces (219). Approaching the project entirely from a food justice perspective would require an in-depth analysis of the distributional outcomes of Eugene's green space management, a level of analysis beyond the scope of this thesis. Instead, I will instead focus on the Eugene foraging community's progress toward food sovereignty through their efforts to define their own foodways in private and public green spaces (La Via Campesina 2011, Cadieux and Slocum 2015). By observing the local sociopolitical factors that affect Eugene's urban foraging population, I will draw upon UPE to map the unique relationships and conversations regarding the management and access of Eugene's urban green spaces and their potential as food producing spaces.

## Research Design

### Study Populations

My primary study population consists of City of Eugene residents who gather edible foods, primarily fruits and some nuts and vegetables, from public and private green spaces within city limits. The community members I interviewed who collect food from urban spaces variously identify as gleaners, harvesters, foragers, and gardeners.

Gleaning has historically been the practice of passing through fields after harvest to collect the left-behind produce, but in the current urban context extends to include harvesting from private backyards, gardens, and other sources (e.g. Poe *et al.* 2014; Vitiello *et al.* 2015; Johnson 2007). Foraging and harvesting practices are typically associated with non-agricultural and publicly-owned lands, although the term harvester sometimes connotes a more commercial pursuit than does forager (e.g. Jones and Lynch 2007; Gianotti and Hurley 2016; McLain *et al.* 2014). While some harvesters may informally manage sites for productivity (e.g. Jones and Lynch 2002; Jones and Lynch 2007; McLain *et al.* 2014), gardeners cultivating food on their own land are engaged in a distinctly different food and land management practice than gleaners, foragers, and harvesters (Sonnino and Hanmer 2016; Galt *et al.* 2014). Gleaners, harvesters, and foragers practice extensive strategies, utilizing already existing food-producing landscapes, while gardeners engage in an intensive practice when developing and maintaining a food-producing space (Galt *et al.* 2014). I recognize that these terms represent groups with different histories, practices, and characteristics.

However, I chose to address them as a unified group because they comprise a community interested in re-localizing their food system.

Throughout my research, I refer to gleaners, foragers, harvesters, and gardeners collectively as gatherers, although when referencing individuals, I will use term they used to identify themselves during the interview. I use the first three terms to refer specifically to anyone who primarily gathers food from land they are not cultivating themselves. The term gardener refers to anyone who intentionally manages a space for food production as their main source of urban food. Some gleaners, foragers, and harvesters also cultivate private gardens. Gatherers range in age from children accompanying their parents to people well into their 70s. Their professions vary widely as do their incomes, from stay-at-home mothers and college students, to retirees and University of Oregon employees. Some make value-added goods with the urban gathered foods, such as jams, pickles, or cider. While some participants have gardened or harvested in liminal spaces since childhood, others are new to the practice. Some gatherers, but not all, receive governmental food assistance, and some, but not all, also rely upon farmers markets' produce incentive programs and food banks for affordable produce. Many gatherers harvest foods in locations beyond the City of Eugene limits, traveling to national forests for commercial mushrooms or to farms in Salem for imperfect produce left behind after harvest.

Gatherers do work independently or only with family and close friends, but many are members of various larger gleaning groups that organize harvests. Eight of fifteen interviewees are members of the Eugene Area Gleaners (EAG), a 501c3 non-profit organization that aims to “bridge the gap between growers with surplus food and



hungry families” (*Eugene* n.d.). The Eugene Area Gleaners does not require members to fall within a specific income bracket or demonstrate need in any way in order to participate. The Eugene Area Gleaners operates primarily as an email list and a Facebook page, through which glean leaders post gleans that occur in backyards and on local farms. Members sign up for gleans, volunteering in groups as small as three people and as large as a few dozen people, depending on the location and the amount of available food. The EAG community also uses Facebook to support members’ other needs, offering donated bread at various pick-up locations, advice and recipes for storing and cooking gleaned produce, and a lending library of food processing equipment. I also interviewed participants in the the Friendly Fruit Tree Project (FFTP). FFTP operates solely in the Friendly Neighborhood and connects willing harvesters with tree owners who have food to share through door-to-door outreach and neighborhood events (*Friendly* 2018).

Additional interviewees participate in community organizations that are tangentially related to gleaning, such as the center for sustainable living practices Dharmalaya and the urban gardening activism group Eugene Avant-Gardeners. Dharmalaya is a center in the River Road Neighborhood that in part “demonstrate[s], in an urban environment, a way of life that has low impact on the earth” by teaching permaculture techniques and organic gardening (“Dharmalaya” 2016). The Eugene Avant-Gardeners design front yard and backyard gardens to promote sustainable and resilient food networks in neighborhoods (“Find” 2017). Participants in these groups shared with me contacts for gatherers who are not members of any organized associations related to gleaning, some of whom are students or commercial harvesters.

My second study population consisted of City of Eugene employees managing urban forests and vegetation. These participants work within the Public Works Department in Parks and Open Space and are involved in urban green space maintenance and analysis. In addition to City employees, I interviewed Erik Burke, the director of Friends of Trees Eugene (FOT), a non-profit organization that works closely with both private citizens and public employees to coordinate the planting and maintenance of trees across the city. I also spoke with Lane County Commissioner Pat Farr, representing North Eugene since 2013, whose previous positions include Eugene City Councilor from 1995 to 2003 and Executive Director of FOOD For Lane County (FFLC) from 2003 to 2007. This group of interviewees represents many of the departments and individuals with whom gleaners have worked in the past and must work in the future to shape Eugene's urban vegetation management strategy.

### **Study Design**

My research in Eugene investigates the motivations driving people to gather food in urban spaces and the challenges this community faces when gathering in urban spaces. Additionally, I assess the relationships between these communities and city workers involved in vegetation management and how the City of Eugene can better support community initiatives to increase food security. My study involved three days of participant observation, conducting 15 semi-structured interviews with gatherers and 7 interviews with vegetation management employees, and administering 14 Likert scale surveys, methods informed by Bernard's *Research Methods in Anthropology* (2011).

Participant observation is a particular application of fieldwork that involves “experiencing the lives of the people you are studying as much as you can, ... establishing rapport and learning to act so that people go about their business as usual when you show up” (Bernard 2011: 276-277). Participant observation occurred during three gleanings organized by the Eugene Area Gleaners. Observation days took place in September and October 2017, and they lasted between 45 minutes and two hours. After receiving verbal consent from all gleaners, I had informal conversations with participants about their efforts, taking notes on the environmental conditions, social aspects, and processes of each glean. During the course of my study, the River Road Community Organization (RRCO) invited me to attend a neighborhood planning process meeting in February 2018, presenting an additional opportunity for participant observation.

The individual interviews followed a semi-structured and conversational format that began with a general script and allowed for unplanned discussions of participants’ lived experiences (Bernard 2011). My research ended with the administration of a survey using a series of Likert-type scales: five-point scale questions that follow Agree-Disagree and Always-Never formats, although I did not score responses for statistical analysis. I interviewed 15 urban gatherers, conducting semi-structured interviews from September 2017 through January 2018. Although I used a standard set of guiding questions that was consistent for all gatherer interviews (Appendix A), I also allowed for a natural conversation to take place, and individual participants often brought up unique topics throughout the interviews. All but one of the 15 participants completed a survey about household demographic information and gleaning habits after the

interview (Appendix B). Because many participants reflected upon the survey questions aloud, explaining their answers or commenting on ideas the survey sparked, I recorded participants while they completed the surveys.

I also interviewed seven City of Eugene employees and local non-profit employees involved in vegetation management and community services. These semi-structured conversational interviews began with a list of questions but evolved to include other lines of inquiry depending on the participants' roles and experiences regarding urban vegetation management (Appendix C). These interviews did not include a survey portion.

Before interviews of both gatherers and City employees, all participants provided informed consent. Interviews lasted between thirty minutes and an hour and half and were digitally recorded and transcribed by the researcher. Participants were not compensated for their involvement. To maintain privacy of gatherers, tapes were saved with anonymous identification codes (G01-G15), while City of Eugene employees' non-confidential interviews were saved under their names. All digital recordings were saved on the researcher's personal password-protected computer, transcribed within one week of the interview, and deleted immediately. This study was approved by the University of Oregon Institutional Review Board.

### **Participant Recruitment**

Through outreach within the Eugene Area Gleaners, I identified and recruited an initial group of gatherers. I posted a call for interviewees on the EAG Facebook page and directly contacted gleaners I met during participant observation. I also recruited

participants through the Eugene Avant-Gardeners Facebook page after multiple EAG members suggested that community as a potential source of interviewees. Through word-of-mouth and referrals, I continued to identify organizations to contact, such as FFTP and Dharmalaya, as well as individual gatherers to interview.

I recruited City of Eugene employees who work primarily on urban forestry, vegetation management, and neighborhood and community services. These participants were determined in part through the City of Eugene directory and in part based on suggestions from gleaners and gardeners who had previously worked with City employees on various projects. I continued to recruit and interview gatherers and City employees until no new themes arose during interviews. Because I used snowball sampling, a technique that involves identifying future participants based on recommendations from past interviewees, the demographic information of my study group cannot be applied to the entirety of the gleaning community in Eugene.

## Literature Review

### Food Insecurity

#### *Defining Food Security and Food Insecurity*

Food security requires “consistent access to enough food for active, healthy living” and is defined along a spectrum: High food security indicates absolutely no issues of access or adequacy, while marginal food security suggests some anxiety regarding food sufficiency and availability (Coleman-Jensen 2015: n.p.; Coleman-Jensen *et al.* 2017a). Low food security indicates a “reduced quality, variety, or desirability of diet” but “little to no indication of reduced food intake” while very low food security signifies “multiple indications of disrupted eating patterns and reduced food intake” (Coleman-Jensen *et al.* 2017a). The two lower levels of food security are the current USDA definitions for food insecurity. These four household levels of food access are determined with the 18-question Food Security Scale (FSS), administered annually since 1995 and renamed the Core Food Security Module (CFSM) in 2001 (e.g. Coleman-Jensen 2010; Cook and Jeng 2009). The current definitions of food security and food insecurity intend to ensure that the language used regarding these issues can “convey useful and relevant information to policy officials and the public” (e.g. Coleman-Jensen *et al.* 2017a: n.p.; Himmelgreen and Romero-Daza 2010). These clear delineations are in contrast to historical ambiguity in this field. For much of the 20<sup>th</sup> century, measurements of poverty stood as approximations of the extent of hunger in the country and hunger itself was not clearly defined as either physiological or socioeconomic (e.g. Himmelgreen and Romero-Daza 2010; Cook and Jeng 2009).

Critics of these definitions point out various shortcomings yet to be addressed in food security theory. The United Nations has called for a stronger focus on human rights, suggesting that the definition of food security be expanded to require adequate “physical, social and economic access to sufficient, safe and nutritious food” to meet “dietary needs and food preferences for an active and healthy life” (Chilton and Rose 2009: 1204; Anderson 2013). A 2006 National Academy of Sciences (NAS) report recommended analyzing food insecurity at the individual level, which would allow for the possibility of some household members being food secure while others forfeit adequate food, a complexity previously underrepresented in literature regarding domestic food security (NAS 2006; Hamelin *et al.* 1999). Alternatively, Hamm and Bellows (2003) propose widening the scope of food security by suggesting that the most poignant solutions to this crisis establish community food security (CFS) “through a sustainable food system that maximizes community self-reliance and social justice” (37).

Additionally, food insecure households do not necessarily experience food insecurity all the time, and in particular, very low food insecurity tends to occur episodically rather than chronically (Coleman-Jensen *et al.* 2017b). This inconsistency may reflect a household’s needs to occasionally “make trade-offs between important basic needs, such as housing or medical bills, and purchasing nutritionally adequate foods” (“Map the Meal Gap” n.d.; Poppendieck 2000). Other items non-essential to physical survival such as computers and cell phones are becoming critical purchases if consumers wish to be full participants in “the information economy,” causing additional economic and social stress in food insecure households (Poppendieck 2000: 653).

Perhaps most concerning is a growing critique of the methods determining the distinction between food security and food insecurity, and one study suggests that if the USDA used slightly less restrictive definitions, measured rates of food insecurity would increase by 70% (Coleman-Jensen 2010).

### *Food Insecurity in the United States*

Nationwide statistics describing the prevalence of food insecurity in the United States are only available after the introduction of the CFSM in 1995, but anecdotal evidence demonstrates widespread food insecurity since at least the early 1900s (e.g. Coleman-Jensen 2010; Poppendieck 2014; Landers 2007). Since the Great Depression, domestic journalists and researchers have recognized the contradiction between America's food production capacity and its chronically underfed and malnourished masses, calling the problem the "paradox of want amid hunger" (e.g. Poppendieck 2014: 14; Himmelgreen and Romero-Daza 2010; Popkin 2017). Although the federal government repeatedly denied the crisis existed, reports of increased "behavioral indices of hunger" such as "scavenging and begging" became increasingly frequent through the 1930s and 1940s (Poppendieck 2014: 254; Smith and Walch 2004; Landers 2007). The economic boom brought on by World War II likely obscured the true extent of food insecurity, and the myth of nationwide prosperity thrived throughout the 1950s (Poppendieck 2014; Himmelgreen and Romero-Daza 2010). An "unprecedented bounty" of processed foods suggested only issues of "too much to eat rather than too little" (Levine 2008: 98).

By the 1960s, a "dramatic rediscovery" of widespread domestic hunger occurred in academic and political circles, but economic setbacks and imprecise definitions



continued to obscure research efforts (e.g. Poppendieck 1998: 128; Himmelgreen and Romero-Daza 2010; NAS 2006). Statistics from this era are sparse, but studies from the mid-1960s indicate that up to 95 million citizens were suffering from inadequate food access, and low-income communities experienced higher rates of “hunger, stunting, underweight and poor neonatal outcomes” (Kerr 1990; Kennedy 1999: 326). The recession of the 1980s, a growing wealth gap, and aggressive cuts to welfare contributed to a “severe domestic hunger problem” by the end of the decade, sending more and more families to emergency food aid (Landers 2007: 1947; Himmelgreen and Romero-Daza 2010; Poppendieck 1998). The introduction of the CSFM finally made possible national surveys and trend analysis. From 1995 to 1999, household food insecurity declined from 10.3% to 8.7%, although childhood food insecurity remained high, declining from 17.4% to 14.9% (Gundersen and Ziliak 2014; Andrews *et al.* 2000).

The trends in the new millennium indicate that rates of food insecurity have remained essentially unchanged since 2012 except for a slight decrease in 2014 (Coleman-Jensen *et al.* 2017b). The sharpest increase in food insecurity since nationwide measurement began occurred in conjunction with the 2007-2009 recession and was reflected in a surge in federal food assistance program participation that lasted until 2012 (e.g. Coleman-Jensen *et al.* 2016; Vaudrin *et al.* 2018; Coleman-Jensen 2015). The national rate of food insecurity in 2016, the most recent annual data available, remained at a relatively high 12.3%, meaning roughly one in eight Americans experienced food insecurity at some point during the year (Coleman-Jensen *et al.* 2016; Coleman-Jensen *et al.* 2017b). Figure 1, from the 2016 Household Food Security in the

United States report, demonstrates the tangible ways in which various levels of food insecurity manifest themselves in households (Coleman-Jensen *et al.* 2017b):

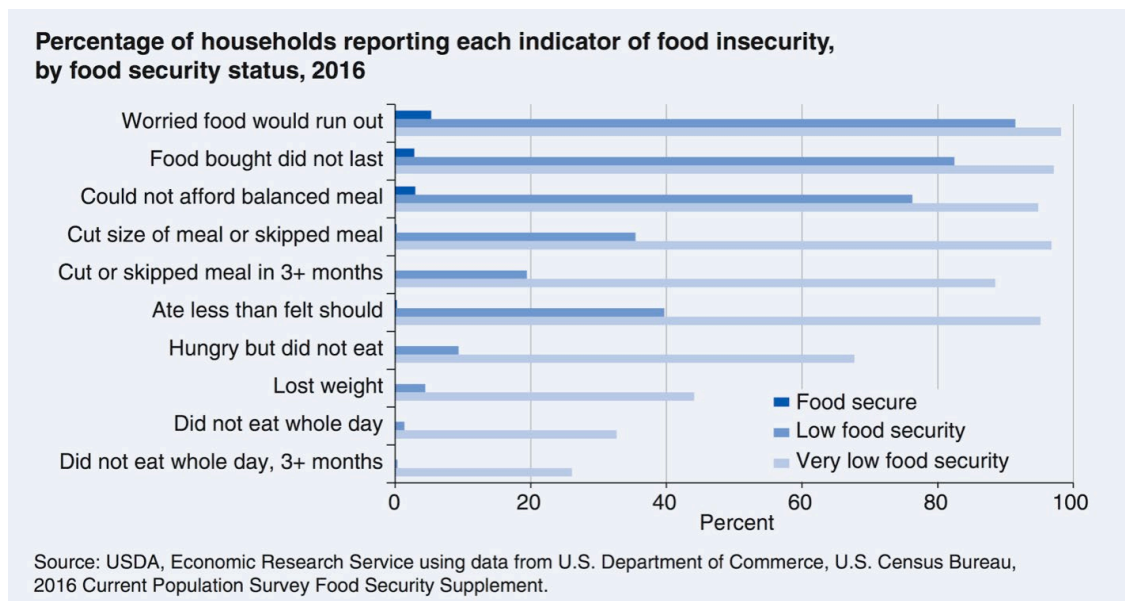


Figure 1: Food Insecurity Indicators by Food Security Status, 2016 (Coleman-Jensen *et al.* 2017b)

Members of already vulnerable communities are more likely to experience food insecurity, with people of color, people with disabilities, single-mother households, and people with mental health concerns consistently experiencing higher rates of food insecurity (e.g. Gundersen and Ziliak 2014; Himmelgreen and Romero-Daza 2010; NAS 2006). Urban areas experience the highest rates of food insecurity while suburban households are least likely to be food insecure, and various studies suggest that people of color are between 53% and 200% more likely to experience food insecurity compared to white households (e.g. Himmelgreen and Romero-Daza 2010; Coleman-Jensen 2010; Cook and Jeng 2009). Female-headed households experience food

insecurity at three times the national average (e.g. Chilton and Rose 2009; Andrews *et al.* 2000; Coleman-Jensen *et al.* 2017b).

Households with children are more likely to experience food insecurity than households of only adults. In 2016, 16.5% of households with children experienced food insecurity in 2016, while only compared to only 10.5% of households without any children (e.g. NAS 2006; Cook and Jeng 2009; Andrews *et al.* 2000; Coleman-Jensen *et al.* 2017b). In early stages of food insecurity, adults tend to reduce their food intake in order to shield children from disrupted eating patterns, although children's nutritional intake is usually negatively affected (e.g. Coleman-Jensen 2015; Cook and Jeng 2009; Hamelin *et al.* 1999). Children are particularly vulnerable to food insecurity during summer months when the National School Lunch Program (NSLP) and the School Breakfast Program (SBP) are suspended. Bridge programs such as the Summer Food Service Program (SFSP) intend to alleviate these increased stressors but reach less than one-fifth of students participating in the NSLP and SBP, so most households absorb the burden of paying for children's meals or rely on federal benefits (e.g. Huang *et al.* 2015; Almada and McCarthy 2017; Huang and Barnidge 2015).

### *Consequences of Food Insecurity*

Regardless of demographics or identities, experiencing food insecurity has negative physical, mental, and social consequences that are compounded when the problem becomes chronic (e.g. Coleman-Jensen 2010; Himmelgreen and Romero-Daza 2010; Hamelin *et al.* 1999). The differences in health effects between skipping a meal due to a busy day and “hunger that is externally imposed and of unpredictable duration” are vast (Poppendieck 1998: 128). Food insecurity can lead to emotional distress and

depression, physical discomforts such as hunger and weakness, and a reduced capacity for learning and high-level functioning (e.g. NAS 2006; Cook and Jeng 2009; Coleman-Jensen *et al.* 2017b). Children are particularly susceptible to adverse effects of chronic food insecurity, suffering from poorer health, decreased school performance, and increasingly strained relationships with peers and parents (e.g. Coleman-Jensen 2010; Cook and Jeng 2010; Hamelin *et al.* 1999).

A study conducted by Hamelin *et al.* in 1999 demonstrates the adverse effects of food insecurity at three levels, expanding analysis beyond the consequences experienced by food insecure individuals to consider household and societal implications as well. Although this study was conducted within a fairly homogenous and culturally distinct community in Québec, the suggestions of disrupted societal interactions and development are compelling, and warrant further study with a more representative and heterogeneous sample. As nutrition sciences and sociopolitical analyses converge, this field of study will likely continue to draw connections between household food insecurity and overall community health.

Myriad studies demonstrate the crucial health benefits afforded by eating adequate amounts of fruits and vegetables. Meeting the recommended levels of consumption is associated with decreased risk of chronic diseases and some cancers (e.g. McCormack *et al.* 2010; Jonson 2016). Centers for Disease Control and Prevention (CDC) research also suggests a correlation between insufficient produce consumption and increased rates of obesity (CDC 2016). However, as of 2010, numerous studies indicate that Americans consistently consume less than 10% of the recommended daily servings of fruits and vegetables, and low-income consumers are even less likely to

consume recommended amounts (McCormack *et al.* 2010). Instead, adults experiencing food insecurity may over-consume energy-dense but nutrient-poor foods when available in anticipation of “future food scarcity” (Nguyen *et al.* 2015: 1455).

## **Food Assistance**

### *Federal Assistance Policies*

Federal food aid evolved from haphazard community efforts into pilot programs that combined hunger relief efforts with surplus commodity distribution initiatives (e.g. Poppendieck 2014; “Food” 2013). A pilot food stamp program (FSP) ran from 1939 to 1943, operating primarily as a USDA commodity distribution system (e.g. “A Short History” 2014; Landers 2007). After initial attempts at distributing agricultural surpluses into school cafeterias, the 1946 National School Lunch Act established the NSLP “to safeguard the health and well-being of the Nation’s children and to encourage the domestic consumption of nutritious agricultural commodities” (Rutledge 2015: 200; Levine 2008). In 1961, President Kennedy reinstated the FSP pilot program, and President Johnson signed the Food Stamp Act in 1964 to make permanent the federal FSP (e.g. “A Short History 2014”; Landers 2007; Himmelgreen and Romero-Daza 2010).

Social reform in the 1960s and a growing awareness of federal program inefficiencies and inequalities along racial, socioeconomic, and gendered lines led to additional governmental and community initiatives, such as the Black Panther Party’s Free Breakfast for School Children and People’s Free Food Programs (e.g. Poppendieck 2014; Potorti 2017; Kerr 1990; Levine 2008). The popularity of the Black Panther

Party's programs contributed to the congressional decision to permanently fund the SBP beginning in 1975 (e.g. Kennedy 1999; Heynen 2009; Hopkins and Gunther 2015).

After a two-year pilot program beginning in 1972, the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) was also formalized, granting priority allotment of federal food assistance benefits to single mothers and young children (e.g. Kennedy 1999; Himmelgreen and Romero-Daza 2010; "Food" 2013). In 1977, the federal FSP expanded food stamp eligibility to those experiencing homelessness, and in 1979, over 20 million people received aid (e.g. Landers 2007; "A Short History" 2014; Popkin 2017).

After two decades of significant expansion, economic factors led to program cuts throughout the 1980s and 1990s, despite studies documenting the positive effects of federal food assistance, particularly for low-income households and people of color (e.g. Himmelgreen and Romero-Daza 2010; Kennedy 1999; Levine 2008). Food assistance shifted somewhat to the discretion of individual states due to the 2002 Farm Bill, meaning implementation of benefits is far less uniform today than during the majority of the program's history (Klerman and Danielson 2011; "A Short History" 2014). In 2008, the FSP was renamed the Supplemental Nutrition Assistance Program (SNAP), replacing "food stamps" with "SNAP benefits" (Yu *et al.* 2010; Coleman-Jensen *et al.* 2017b).

Today's eligibility requirements for federal food assistance are set to capture households that are likely experiencing food insecurity or marginal food security. SNAP benefits are allocated based on net income relative to the federal poverty level (FPL), which is dependent upon the number of people in the household (Coleman-Jensen *et al.*

2017b). In general, household income cannot exceed 185% of the FPL and household assets cannot exceed a certain threshold, but specific requirements vary from state to state (e.g. Almada and McCarthy 2017; Landers 2007, “A Short History” 2014). Children from households at or below 130% of the FPL are eligible for free meals through the NSLP and SBP, while those in households earning between 130% and 185% of the FPL are eligible for reduced-price meals (Huang and Barnidge 2015). In some school systems, community eligibility expands access to free breakfasts and lunches for all children in a school if more than 40% of students already qualify for assistance (Vaudrin *et al.* 2018; Huang *et al.* 2015). Low-income women who are pregnant or postpartum with children under the age of five are eligible for WIC if they demonstrate risk for malnutrition (Landers 2007; Coleman-Jensen *et al.* 2017b).

However, eligibility does not guarantee participation. Barriers such as a lack of knowledge about available programs, a daunting and time-consuming application process, and stigma associated with participation contribute to underutilized programs (e.g. Huang *et al.* 2015; Gundersen and Oliveira 2001; Jensen 2002). The 1996 introduction of Electronic Benefit Transfer (EBT) cards in place of paper vouchers has eased some stigma, but the cards are not accepted everywhere, in particular at farmers’ markets and other non-traditional vendors (Haynes-Maslow *et al.* 2015; Klerman and Danielson 2011). Coleman-Jensen *et al.* (2017b) provide a succinct review of the current scope of SNAP, NSLP, and WIC in 2016: 44.2 million people (approximately 14% of the population) received some degree of SNAP benefits, and the average allotment was \$126 per person per month. NSLP provided an average of 30.3 million federally-subsidized lunches to children each day, 66% of which were free and 7% of

which were offered at reduced prices. Nearly eight million WIC participants a month received an average of \$43 per person in food vouchers, in addition to access to healthcare and nutrition programs (2017b: 29). Considering that in the month prior to the 2016 nationwide survey only 59% of food-insecure households participated in SNAP, WIC, and the NSLP (Coleman-Jensen *et al.* 2017b), it is clear that federal food aid is not reaching every household need, leaving millions of Americans at risk of experiencing malnutrition and food insecurity.

### *Nutritional Inadequacy of Food Assistance*

Although federal food assistance programs nominally prioritize combating malnutrition in low-income households, policies do not guarantee access to fresh and healthy foods for those on food assistance. Despite early and ongoing efforts to implement nutrition-based purchasing restrictions, the only limits in place today prohibit the use of SNAP benefits to purchase such items as alcoholic beverages, cigarettes and tobacco, food eaten in-store, and hot prepared foods, although households can use food stamps to purchase seeds and plants to grow their own food (Landers 2007; “What Can” 2017). Lobbying efforts by “food and beverage producers and processors, food service industries, and agribusinesses,” all significant funders of federal food assistance programs, have prevented the implementation of purchasing restrictions on unhealthy foods (Popkin 2017: S107). A recent proposal from the Trump administration suggests replacing half of a household’s SNAP benefits with a USDA-issued food box containing uniform commodity products, eliminating the freedom of consumer choice from SNAP (“What Trump” 2018; Hunzinger *et al.* 2018).



Instead, the USDA's nutrition policy is primarily education-based, proposing and occasionally incentivizing healthy alternatives rather than restricting unhealthy food choices. Recent initiatives such as the Senior Farmers' Market Nutrition Program try to connect food insecure communities with fresh, local produce (e.g. Yu *et al.* 2010; Klerman and Danielson 2011; Griffin 2010). The 2010 Healthy, Hunger-Free Kids Act (HHFKA) altered the NSLP and SBP requirements to better align with federal dietary guidelines, increasing fruit, vegetables and whole grains in school meal programs, although unpublished data suggests that less than one-fifth of schools actually meet NSLP dietary guidelines (Vaudrin *et al.* 2018; Hopkins and Gunther 2015). Nonprofit organizations are also contributing to the effort to promote healthier choices. The Fair Food Network's Double Up Food Bucks program doubles the purchasing power of SNAP benefits when used toward produce at participating farmers markets and grocery stores in 20 states, including Oregon (*Double Up* n.d.).

### *Barriers to Food Access*

Price is a significant barrier to purchasing healthy foods and is frequently cited as the first or second reason a low-income consumer would choose one product over a healthier option (e.g. Andreyeva *et al.* 2011; Haynes-Maslow *et al.* 2015). Historically, the academic community has disagreed on whether or not healthier diets are more expensive, with some researchers suggesting "that such cost barriers are perceived rather than real" (Drewnowski and Darmon 2005: 901). However, the research now trends toward confirming actual price differences between unhealthy but calorie-dense foods and healthy but calorie-poor foods, validating anecdotal evidence from low-income households (e.g. Drewnowski and Darmon 2005; Lombe *et al.* 2009; Rose

2007). SNAP recipients report that their allotments do not adequately supplement their incomes enough to meet minimum food spending needs each month, let alone allow them to purchase produce they view as expensive, time consuming to prepare, and likely to spoil (e.g. Jensen 2002; Haynes-Maslow *et al.* 2015; Wetherill and Grey 2014).

Because food prices are rising and federal allotments remain relatively unchanged, the purchasing power of SNAP benefits and other forms of food assistance is decreasing, reducing participants' abilities to buy USDA-recommended nutritious foods (e.g. Himmelgreen and Romero-Daza 2010; Mulik and Haynes-Maslow 2017; Anderson 2013). The Thrifty Food Plan (TFP), the lowest on a four-tiered set of USDA meal plan recommendations ranging from "economy" to "liberal" cost levels, "provides the basis for inflation adjustments to the monthly allotments" of food stamps and was last updated in 2006 (Rose 2007: 226, 227; Poppendieck 2000). As of December 2017, the calculated TFP costs range from \$558.90 to \$641.00 for a family of four, between four and half and five times the average monthly allotment in 2016 (USDA 2018; Coleman-Jensen *et al.* 2017b). However, the USDA updated its federal dietary recommendations from the Food Pyramid to MyPlate in 2010, and the TFP does not factor in food cost differences related to variability in "region, urbanization, [or] availability of supermarkets," meaning the TFP monthly cost calculations likely do not reflect the "actual cost" of food (Mulik and Haynes-Maslow 2017; Poppendieck 2000: 652; Anderson 2013). Additionally, new research has introduced methods to measure the monetary cost of the time needed to prepare healthy foods from fresh ingredients, suggesting that the cost of time further increases the inaccessibility of fresh foods (e.g. Davis and You 2011; Mulik and Haynes-Maslow 2017).

Studies about dietary choices for low-income consumers also focus on proximity to food retailers (e.g. McDermot *et al.* 2016; Gustat *et al.* 2015; Jonson 2016). Various studies demonstrate the link between neighborhood supermarket access and more affordable healthy foods and fresh produce, but residents of low-income neighborhoods are less likely to have access to supermarkets and other large food suppliers (e.g. Rose 2010; Jetter and Cassady 2006). There is a higher density of cheap fast-food restaurants and convenience stores in low-income areas, and healthier options are often more scattered and expensive (Andreyeva *et al.* 2011). Areas demonstrating this distributional inequity are referred to as food deserts, where residents must travel more than a mile to access a grocery store (e.g. Agyeman and McEntee 2014; McDermot *et al.* 2016). Longer distances to food suppliers reduce consumers' ability to purchase fresh produce often enough that it can be consumed before spoiling (Gustat *et al.* 2015). Additionally, people do not always shop at stores that are closest to their homes, due to such factors as access to transportation, store hours, or cultural acceptability, and low-income consumers often prioritize economically affordable and culturally appropriate foods over geographically convenient foods (McDermot *et al.* 2016; Jonson 2016). Although residents may have theoretical geographic access to food retailers, they “lack the economic or cultural means to take advantage” of this proximity, a circumstance identified as a “food mirage” (Jonson 2016: 2; McDermot *et al.* 2016).

### *Informal Food Assistance*

Although nearly 90% of food aid originates in governmental programs, critiques of federal aid insufficiencies have led to the “formalization, facilitation, and coordination” of a robust informal emergency food system dominated by charitable

organizations such as food banks, pantries, and soup kitchens (Sonnino and Hanmer 2016: 213; Anderson 2013). While no precise count of these organizations exists, their presence is undeniable. 50,000 food banks are registered with the national network America's Second Harvest (Poppendieck 2000: 652). Communities are becoming increasingly reliant on these emergency food sources, prompting concerns among food justice advocates that the "widespread social and political acceptance" of this dependency will prevent any meaningful attempts to address the structural issues contributing to food insecurity (e.g. Sonnino and Hanmer 2016: 213; Moragues-Faus and Marsden 2017; Nordahl 2014). When charitable organizations invoke the term "food justice", activists' criticisms can be particularly vehement: "[W]e wonder whether lipstick in the shade of justice is being put on the pig of charity" (Cadieux and Slocum 2015: 8). Although Vitiello *et al.* (2015) identifies some food pantry initiatives that do support food justice, these efforts seem to be few and far between. Despite these concerns, emergency food sources are entrenched in the United States' food system.

The critiques against food banks, food pantries, and other charitable food provision organizations often echo those of formal food assistance, namely "insufficiency, inappropriateness, nutritional inadequacy, instability, inaccessibility, inefficiency, and indignity" (Vitiello *et al.* 2015: 420). Charitable programs are susceptible to the "lure of hunger-as-the-problem" rather than hunger as a symptom of structural inequalities (Poppendieck 1998: 127), and informal food assistance programs may "deflect attention" from the government's responsibility to ensure proper nutrition for everyone (Anderson 2013: 115; Sonnino and Hanmer 2016; Agyeman and McEntee 2014). Charity-based services are vulnerable to economic downturns, as donations

decrease just as more households are in need of assistance (Clark and Nicholas 2013; Sonnino and Hanmer 2016). Formal and informal food assistance programs, which tend to “individualize food poverty,” can easily stigmatize participants and reduce their willingness to utilize services (e.g. Haynes-Maslow *et al.* 2015; Gundersen and Oliveira 2001).

### **Oregon Food Insecurity and Food Assistance**

Oregon has a history of food insecurity rates consistently higher than the national average. From 1999 to 2001, 6% of Oregon residents experienced very low food insecurity (then called “food insecure with hunger”), the highest rate in the nation (Bernell 2006: 194). Based on the 2014-2016 average, Oregon now has the 14<sup>th</sup>-highest rate of low food insecurity (14.6%) and the 11<sup>th</sup>-highest rate of very low food insecurity (6.2%) in the nation (Coleman-Jensen *et al.* 2017b). One-third of food insecure Oregonians are children (“Hunger” 2016). Although unemployment has decreased since the 2008 recession, Oregon Food Bank (OFB) recipients report that stagnant wages and high living expenses have prevented similar declines in household food insecurity (Oregon 2016). Lane County residents experience even higher rates of food insecurity. According to 2015 data, over 16% of households were unable to access adequate amounts of nutritious foods at some point in the year, and 17% of these households did not qualify for federal food assistance through SNAP (“Map the Meal Gap” n.d.). Recent data suggests that more than 25% of Oregonians who are eligible for SNAP benefits do not receive them (Oregon 2016).

Many of Oregon’s food insecure households rely on the network of 21 OFB locations and 970 OFB partner organizations to access supplementary food (Oregon

2016; “Hunger” 2016). Approximately 270,000 people receive aid from OFB pantries every month (“Hunger” 2016). More than half of all households utilizing OFB assistance report that the high cost of produce prevents them from eating more fruits and vegetables, with 15% and 14% citing limited food storage and limited availability, respectively, as other obstacles (Oregon 2016). According to recent CDC research, over 60% of Oregon residents are overweight or obese, and only 32% and 15% of Oregon adults report eating one or more fruits and vegetables a day, respectively (CDC 2013; CDC 2016).

In their 2013 State Indicator Report on Fruits and Vegetables, the CDC documents Oregon’s inconsistent track record with regard to healthy food initiatives. Oregon has no state-level healthy food retail policy, no statewide child care regulations that promote national fruit and vegetable consumption standards, and no state-level food policy council. However, local initiatives are promising. The 4J Eugene School District provides “unlimited fruits and vegetables” with every meal, free breakfast and lunch for students who qualify for any form of food assistance, and free summer breakfasts and lunches for all children regardless of food assistance qualifications (“Nutrition” 2018; “Summer” 2018). The Bethel School District, also serving Eugene, has a robust Farm to School program and in 2016 built a 3.5-acre farm located on school grounds that provides produce and educational opportunities to the school community (*Bethel* n.d.).

Farmers markets in the state and county are also increasing access to healthy food. Over 45% of Oregon farmers markets accept SNAP benefits and nearly 50% accept WIC Farmers Market Nutrition Program coupons, rates twice the national average (CDC 2013). While ten of Lane County’s 16 farmers markets are located in

Eugene and all are accessible via bus routes, only three participate in Double Up Food Bucks and two markets do not accept any form of federal food assistance benefits or coupons (Willamette 2017b). Additionally, these markets are not geographically distributed across Eugene, and very few are located within neighborhoods identified as lower-income (City 2011). However, since its introduction in 2016, the Double Up Food Bucks program has been successful at the Lane County Farmers Market, the largest market serving Eugene. 88% of SNAP recipients who participated in the Double Up program at the market indicated that the program heavily influenced their decision to shop there, and 92% reported an increase in the amount of produce they purchase (Willamette 2017a).

### **Alternative Foodways**

Communities tend to create alternative foodways in response to insufficient formal and informal food assistance networks (e.g. Biel 2014; Moragues-Faus and Marsden 2017; Lafontaine-Messier *et al.* 2016). Some alternative networks, such as farmers markets and community gardens, are fairly well-established supplementary foodways (e.g. Griffin 2010, Vitiello *et al.* 2015; Sonnino and Hanmer 2016). Other alternative foodways emerge in the “everyday landscapes” and liminal spaces of urban areas: unmanaged alleyways, vacant lots, and public right-of-way (ROW) strips between sidewalks and roads (e.g. Hurley *et al.* 2015; Nordahl 2014; McLain *et al.* 2012). These “subversive and interstitial food spaces” challenge paradigms of food production and green space management, which typically denote urban green spaces as “providers of services rather than producers of goods” and code nonnative species as invasive and problematic (Galt *et al.* 2014: 134; McLain *et al.* 2012: 188; Hurley *et al.*

2015). Some of these spaces become “de facto commons,” over which no one has complete management and which everyone can access (Poe *et al.* 2013).

Various historical practices inform these present-day alternative foodways. Gleaning originated as a Biblical law that allowed peasants to gather forgotten produce after fields were harvested, and has persisted as a primarily rural agricultural practice (Vitiello *et al.* 2015; Poppendieck 2014; Gianotti and Hurley 2016). However, contemporary urban gleaners have expanded the definition to include such practices as harvesting from untended fruit trees, asking farmers markets for unsold produce, and dumpster diving at grocery stores (e.g. *Eugene* n.d.; Johnson 2007; Vitiello *et al.* 2015). Foraging in non-agricultural spaces is also a historical practice that remains a vibrant activity in rural communities (Jones and Lynch 2002). However, as the population becomes increasingly concentrated in cities, urban food production is on the rise and so too are urban food gathering efforts (e.g. McLain *et al.* 2012; Gianotti and Hurley *et al.* 2016, Poe *et al.* 2014; McLain *et al.* 2014).

Urban food production and harvesting in liminal spaces remains a severely understudied subject. In an extensive review of literature, McLain *et al.* (2014) identified fewer than ten published studies on urban foraging practices. However, initial studies in Seattle, Philadelphia, South Carolina, and Baltimore do indicate that urban harvesting is a well-established practice in cities across the United States (e.g. McLain *et al.* 2012; Hurley *et al.* 2015; Gianotti and Hurley 2016). Most of these studies were conducted in large metropolitan areas covering multiple counties, while a few others focused specifically on the harvest of a particular species. In the last two decades, urban fruit tree “planting, mapping, and/or harvesting” initiatives have also increased quickly



(Clark and Nicholas 2013: 1659; Nordahl 2014). Food forests are self-regulating ecosystems that utilize principles of permaculture and agroforestry in an edible woodland design, and they are becoming increasingly intriguing to advocates for local food systems (e.g. McLain *et al.* 2012; Richardson and Moskal 2016; “Beacon” 2018). Although urban food gathering still exists on the fringe of social and legal acceptability, a more complete picture of the social, economic, and ecological benefits is emerging, as well as the barriers faced by communities engaged in this practice (e.g. McLain *et al.* 2014; Vitiello *et al.* 2015; Hurley *et al.* 2015). My research in Eugene will contribute to the literature by describing a range of gathering practices in a relatively small urban area.

Galt *et al.* (2014) differentiates these “extensive” gathering practices, which occur in already “existing edible landscapes”, from the “intensive” practice of gardening, which necessitates creation and development (136). Similarly, Poe *et al.* (2013) propose a spectrum of intensity ranging from the casual gathering of materials to the intentional and long-term cultivation of food-producing landscapes:

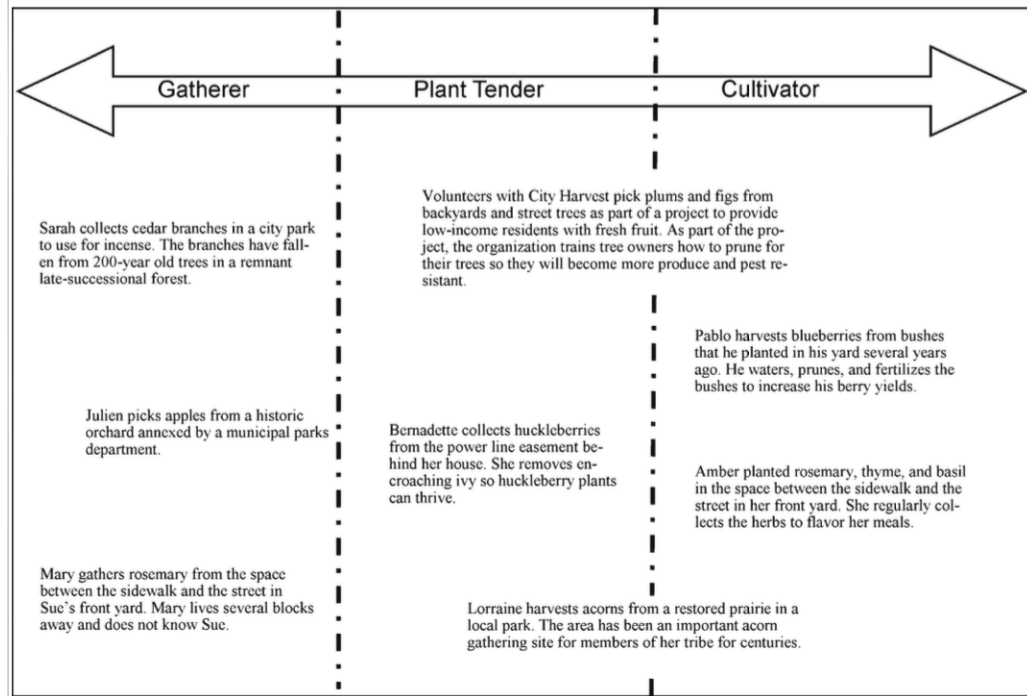


Figure 2: Gatherer-Cultivator Continuum (Poe *et al.* 2013)

Broadly, urban gatherers can be classified as participating in a recreational activity or “filling in the gaps in food needs” due to food insecurity (Galt *et al.* 2014: 140). In a comparative analysis involving urban forager studies throughout the United States, McLain *et al.* (2014) identified motivations such as supporting an insufficient food budget, enjoying the physical and emotional benefits of eating healthful wild foods, and fostering an environmental consciousness. In an analysis of rural foragers, Jones and Lynch (2002) described six harvester categories based upon motivations and economies related to different levels of harvesting, paraphrased in Table 1. The foragers in Jones and Lynch’s study gather non-timber forest products (NTFPs), any vegetation other than timber, on public land.

<b>Harvester Category</b>	<b>Defining Characteristics and Economic Aspects</b>
Subsistence	<ul style="list-style-type: none"> <li>- household consumption</li> <li>- food and nourishment</li> <li>- theoretically, no market exchange</li> <li>- in practice, often links with patterns of reciprocity</li> </ul>
Commercial	<ul style="list-style-type: none"> <li>- collection for trade, exchange, or payment</li> <li>- typically larger quantities and more economically valuable species harvested compared to subsistence</li> <li>- informal or formal economies and networks</li> </ul>
Recreational	<ul style="list-style-type: none"> <li>- participation for enjoyment or exercise</li> <li>- small quantities</li> <li>- can overlap with subsistence and commercial</li> </ul>
Spiritual	<ul style="list-style-type: none"> <li>- harvesting and/or the products viewed as sacred</li> <li>- frequently overlaps with subsistence, commercial, and recreational gathering</li> </ul>
Healer	<ul style="list-style-type: none"> <li>- NTFPs used for medicinal purposes</li> <li>- healing people and animals</li> </ul>
Scientific	<ul style="list-style-type: none"> <li>- collection/protection of resource areas for scientific observation</li> <li>- includes both formal and amateur scientists</li> </ul>

Table 1: Harvester Categorization and Characterization (Jones and Lynch 2002)

Defining the urban green spaces in which community members gather foods requires serious consideration of the different ecologies and land management strategies between rural forests and urban landscapes. Hurley *et al.* (2015) uses “uNTFP” to specify products harvested from the urban forest, which includes both contiguous forested areas and trees in backyards and lining streets (188). However, the 2017 canopy cover in Eugene was only 23%, and not all gathering spaces in Eugene are considered part of the urban forest (“Urban” 2017). Jahinge (qtd. in McLain *et al.* 2014) posits that in the urban context, the term NTFP can apply to “any plant, plant material, or fungus collected from urban street trees, yards, vacant lots, and landscaped areas, as

well as formal parks both large and small” (221). Following this definition, analysis of NTFP harvesting practices could reasonably be expanded to include products gathered from non-forested urban green spaces. However, the shift in geography from rural forest to urban green space requires a careful approach to ensure that the differing political ecologies between the two are taken into account.

The urban political ecology framework necessitates the consideration of different community definitions of the urban forest and urban green spaces. Inconsistencies between the City of Eugene and community members’ conceptualizations of the urban forest could impede discussions. Eugene’s Urban Forestry Management Plan (UFMP) considers the urban forest to be “all trees and associated vegetation within city limits,” including trees on both public and private property (1992: 1). However, a 2013 review of the Urban Forestry Program concerns itself only with “City-owned or –managed trees, including those along public streets, within developed parks and throughout natural areas” and associated “shrubs and other vegetation within natural areas”, excluding all private trees (1-2). However, gatherers advocating for a more food-productive urban forest explicitly include private lands in their designs and solutions, adhering to an urban forest definition more in line with Jahinge’s perspective (qtd. in McLain *et al.* 2014).

The array of products harvested from urban green space represents an additional deviation from the literature. In most studies, NTFPs and uNTFPs include vegetation harvested for purposes other than food, such as materials used as fibers and medicines (e.g. Hurley *et al.* 2015; Poe *et al.* 2013, McLain *et al.* 2014). Therefore, neither of these terms are entirely appropriate for my community of study. Thus, I propose the

concept of urban-gathered foods (UGF), a term which adopts Jahinge's expansion of areas from which uNTFPs are collected but focuses specifically on edible products gathered for the purposes of sustenance, nutrition, and creation of value-added goods. UGFs do not include uNTFPs harvested for the purposes of medicine, craft, or scientific study. Urban-gathered foods might be harvested serendipitously or cultivated in private or community gardens. Gatherers may search extensively for UGFs in areas beyond their private green spaces and might either collect them surreptitiously from private and public urban green spaces, or ask neighbors for access to a backyard apple tree or an abundant garden.

## Results

### Defining the Community of Practice

As suggested in Poe *et al.* (2013), the gleaners, harvesters, foragers, and gardeners of Eugene form a “community of practice” that is best defined by its members’ shared motivations, challenges, and visions for the future, rather than demographic distinctions (413). Eugene’s community of practice shares many of their characteristics with other communities of urban gatherers studied in the literature throughout the years (e.g. Jones and Lynch 2002; McLain *et al.* 2014; Hurley *et al.* 2015), although the sociopolitical challenges specific to Eugene will inform the most appropriate approaches to strengthening the community food security.

Four gatherers recalled early introductions to the fun of foraging, speaking of childhoods spent biking to cherry farms and apple orchards to catch fallen fruit or hiking through Michigan forests to find mushrooms beneath the leaf litter. For four other informants, however, their introductions to foraging were practical rather than playful:

*I have been gleaning since I was a very small child. It was just part of my lifestyle. I was raised by my grandparents, and they were part of a gleaning group in Coburg. ... I did grow up in a house that traditionally preserved foods, because we had to.*

Two respondents reported that growing up in food insecure households influenced them to glean as adults, even though they had never participated in foraging before joining EAG:

*I grew up in Kansas, the youngest of nine kids. We didn't have a lot of money, so seeing things wasted, somehow that's just against my principles.*

*I grew up on that poor level, so it's hard, you eat what you get and you don't throw a fit. And now, I'm still kind of in that same bracket, but I'm trying to make better decisions.*

Three EAG members who process much of their harvested food into value-added goods grew up with parents, grandparents, and other relatives who imparted values of household food production and preservation. Two informants said that while these practices were commonplace for their grandparents' generation, they now face judgement from family members for continuing to preserve their own food.

*It goes back to my grandmothers and my great-aunts. That's what they did to survive, it's part of being a farmer ... [it's] from my family's history. They did everything: You juiced things, you canned things, you dried it, jerky, everything, the whole deal.*

Preserving food for use during winter months is a critical component to participation in urban food foraging and production. Seven gatherers reported taking classes or asking other group members for advice on how to better preserve and store gleaned foods for use in leaner times.

Gatherers harvest on a variety of land types, including their own private properties, private property owned by others, and public green space. Two of the 15 informants reported harvesting on both urban and rural public lands, while seven other interviewees simply gathered opportunistically from urban parks and greenways. All 15 gatherers reported collecting UGFs on privately-owned land, whether the property was theirs, a friend's, or a stranger's. Gianotti and Hurley (2016) find that urban and

suburban foragers in Massachusetts gather from private lands more frequently than from public lands, noting that this may be due to suburban and urban foragers managing for natural resources in their backyards. This higher rate of harvesting on private land held true in my study population. Five gatherers reported that they primarily harvest from gardens and food forests on their private property, while five of the ten gatherers who primarily foraged on land that is not their own also tend fruit trees and gardens on their properties.

The demographic data collected via the surveys does not generalize to the entire Eugene foraging community. I interviewed seven men and eight women. Nine of 15 participants were supporting children younger than 18 years of age. Two of the six households without minors were single-person households. All but two participants identified as “white/Caucasian.” One woman identified as both “white/Caucasian” and “Latino/Chicano,” while one male respondent identified as “Other: Jewish.” Other studies indicate that foraging communities are ethnically and racially diverse (e.g. McLain *et al.* 2014; Hurley *et al.* 2015; Poe *et al.* 2013). Recent U.S. Census data shows that nearly 20% of Eugene’s population identifies as a race or ethnicity other than white (“Race” 2015), and a more thorough analysis might reveal that Eugene’s gathering community more accurately reflects the demographics of the larger population. More interesting is analyzing the distributional data in the surveys, displayed here in a stacked bar chart showing the total responses out of 14 returned surveys for the 12 Likert-scale questions included in the survey:



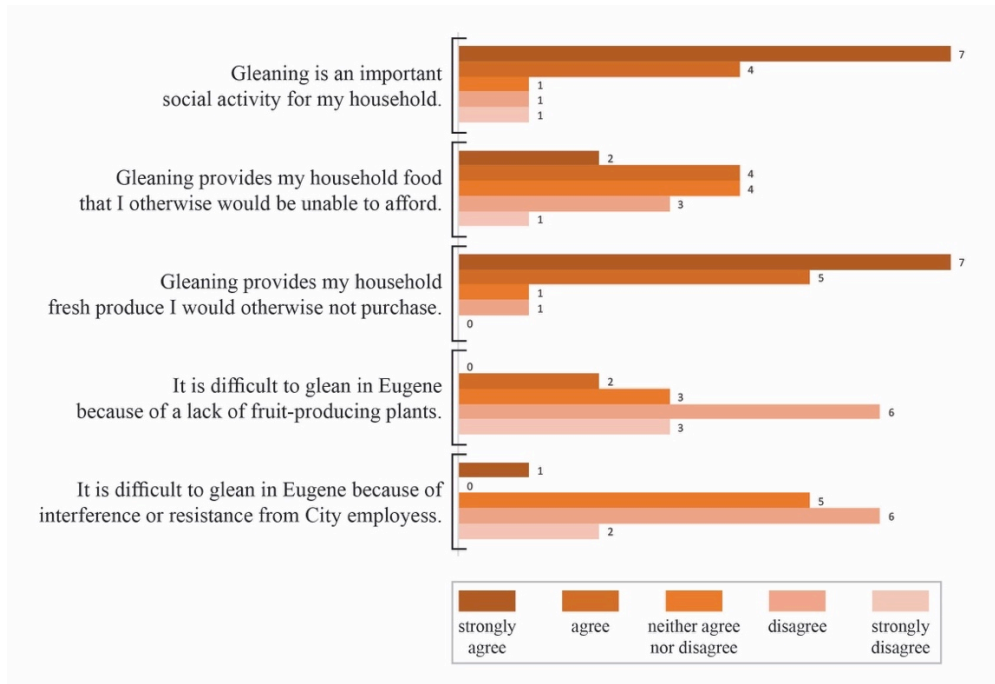


Figure 3: Stacked Bar Graph of Gleaner Survey Responses (Agree-Disagree Likert Scale)

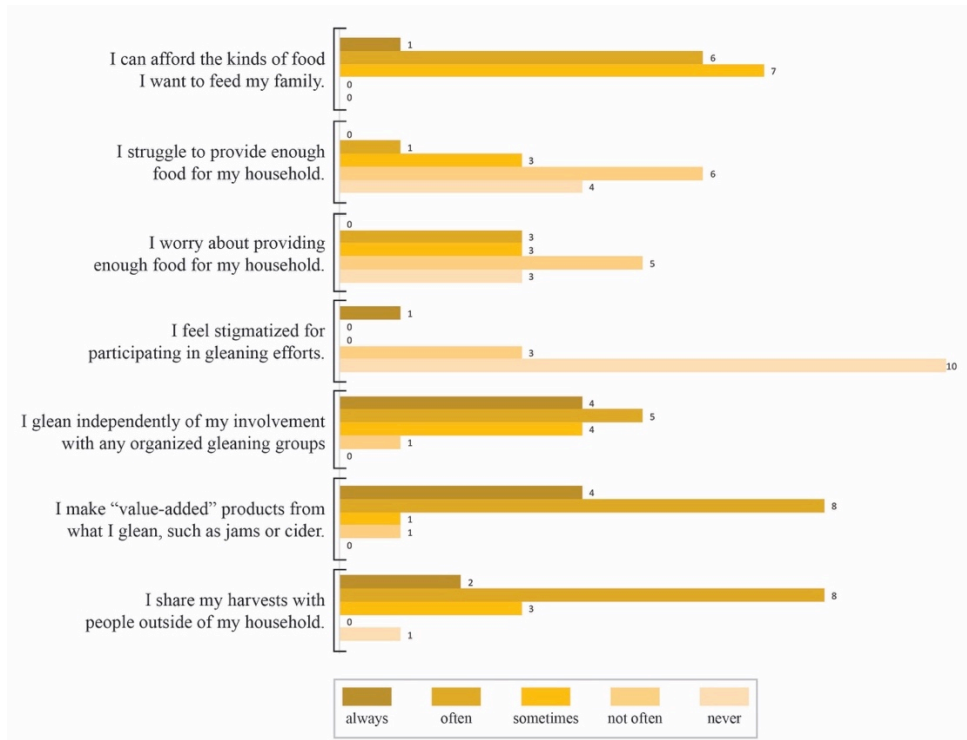


Figure 4: Stacked Bar Graph of Gleaner Survey Responses (Always-Never Likert Scale)

## Motivations

Harvesters in Eugene engage in urban gleaning and gardening in order to enjoy myriad benefits and fulfill various goals, thus I chose to code statements regarding the motivations for gleaning based upon those results. I identified nine sub-themes of motivation, ranked by how many participants mentioned each category:

<b>Code</b>	<b>Motivation Sub-Theme</b>	<b>Description and Components</b>	<b>Unique Participants</b>	<b>Total Unique Mentions</b>
1.1	Building Social Connection and Community Resiliency	<ul style="list-style-type: none"> <li>- Strengthening community relationships</li> <li>- Preparing the community for food crises</li> <li>- Developing informal trading/lending networks</li> </ul>	15	80
1.2	Supporting Household Food Security and Stability	<ul style="list-style-type: none"> <li>- Supplementing insufficient formal and informal food aid</li> <li>- Reducing the cost of healthy produce</li> <li>- Ensuring access to produce throughout winter</li> </ul>	14	30
1.3	Mitigating Unnecessary Waste	<ul style="list-style-type: none"> <li>- Using fallen fruit that would otherwise rot</li> <li>- Utilizing disregarded edible plants</li> </ul>	13	26
1.4	Ensuring Nutrition and Food Safety	<ul style="list-style-type: none"> <li>- Providing children with healthier and seasonally appropriate foods</li> <li>- Controlling exposure to toxins, allergens, and additives</li> <li>- Supplementing nutritionally poor food aid</li> </ul>	12	23
1.5	Utilizing Local Abundance	<ul style="list-style-type: none"> <li>- Appreciating the agricultural history and potential of the area</li> <li>- Accessing nearby food sources via bike</li> </ul>	12	20
1.6	Making Value-Added Goods	<ul style="list-style-type: none"> <li>- Learning how to extend produce access through food preservation techniques</li> <li>- Making food products as gifts or for fun</li> </ul>	11	22
1.7	Experiencing Individual Emotional Benefits	<ul style="list-style-type: none"> <li>- Finding personal fulfillment by contributing to the community</li> <li>- Avoiding the stigma sometimes associated with receiving food aid</li> <li>- Experiencing spiritual fulfillment</li> <li>- Developing connection to and appreciation for the land</li> </ul>	10	33
1.8	Responding to Environmental Concerns	<ul style="list-style-type: none"> <li>- Preparing for food crises brought on by climate change</li> <li>- Reducing environmental costs of household food consumption</li> </ul>	5	16
1.9	Supporting Non-Food Uses	<ul style="list-style-type: none"> <li>- Using inedible food as livestock feed</li> <li>- Putting inedible food into compost</li> </ul>	3	3

Table 2: Motivations for Gleaning and Gardening in Eugene

At the onset of my research, I outlined different motivation categories based upon previous literature, but during the interview and coding process adapted the sub-

theme names and descriptions to reflect the language my interviewees used. For example, some participants who gather food in urban spaces for subsistence purposes also harvest other products commercially in rural areas, but spoke of both practices as means of supporting their household food security. Therefore, I categorize those comments under sub-heading 1.2. Similarly, what Jones and Lynch (2002) distinguish as recreational and spiritual motivations, I categorize together as sub-theme 1.7, Experiencing Individual Emotional Benefits. During the course of my research, I found various emergent themes, such as Responding to Environmental Concerns and Utilizing Local Abundance. I differentiate between Mitigating Unnecessary Waste and Responding to Environmental Concerns, which could conceivably be combined into one category, due to the differences in scope. Harvesters mentioned alleviating personal feelings of unease or guilt when referring to food waste prevention, while environmental concerns prompted a more national or global perspective. None of my informants reported harvesting for medicinal or scientific purposes, although a more thorough analysis of gleaning motivations in Eugene may reveal that those preferences do exist in the community. Below, I highlight the three most significant motivations driving urban food gathering, as well as a selection of other notable factors that contribute to its presence in Eugene.

### *1.1 Building Community Resiliency and Social Connection*

Overwhelmingly, interviewees cited a strengthened social fabric as the primary benefit for participating in urban food gathering, and 11 of 14 survey respondents identified gathering as a social activity. Rural foragers' preference for solitude or socializing while harvesting is related to ethnic and gender identity (Jones and Lynch

2002; Jones and Lynch 2007), but my study did not include a wide enough array of identities to draw similar conclusions. In the urban context, gatherers predominantly appreciated the social aspect of participation:

*I would say that's been a big benefit of gleaning over the years, the people that I've made relationships with. They know that I'm gonna show up right around that time. Some of them even call me now and let me know that their tree is ready. Making those social relationships over the years has been really good, I think it's important. Gleaning is a way we can build strong communities.*

*We're big into trying to use the garden as the gathering point for building a better world and growing a better world. That's our community organizing nexus.*

As one gatherer stated, food becomes a bridge between strangers. On a walk through her neighborhood, she pointed out the various gardens and backyard food forests she frequently visits and discussed her network of neighbors:

*It's really about having the intention of building relationship with them and then seeing if they want to engage beyond their private property. ... How do we break down that individualization of society? And food is one of the means for that because everybody has a relationship to it. It's an equalizer.*

Most gleaners seem undaunted by the task of approaching a neighbor with a ripening apple tree or a hedgerow of raspberries to request the chance to participate in the harvest:

*If I see an apple tree that's full, I'm going to knock. ... I'm definitely that person that will be like, "Hey, you got a tree, I want some!" I think about it as I'm driving through town.*

*It's about just making relationships with who you're gleaning from. I personally have no problem going up to somebody's door if I see that*

*they have a ton of whatever it is going to waste. I'll just ask, and say "This is my experience with gleaners, I'd really like to come and take what you have so it doesn't just spoil."*

Some gleaners even use the presence of a fruit tree in a neighbor's yard to engage in outreach and group recruitment:

*They'll have trees or food or something themselves and they don't know what to do with it. .... What can gleaners do to facilitate that community knowledge? [EAG] has flyers available, so if you see a house and you can see that maybe they aren't taking care of their fruit trees or they're not picking them, you can leave them a flyer.*

Many respondents spoke about the time and energy they put towards cultivating these relationships over many seasons, "developing a network, being conscious of the network, [and] attending to the network." Foragers fostered initial connections into decade-long friendships:

*The first time I came over here [to a corner property with a fig tree], my daughter was a year [old], or less. It was another young family [living] there, we got to talking, [and] they had a son that was just a little younger than my daughter. We've since become friends and they've long since moved from there, but we still stay in touch with each other and see each other some 14 or 15 years later.*

One EAG member noted how participating in a group glean breaks social barriers:

*When people are gleaning, it's really community-building. People are laughing, they're telling stories about their day, they're connecting with their neighbors. ... You see a lot of long-term friendships build out of that where folks just connect. They start talking about their families, they start talking about their personal lives, and really find where they all connect.*

In the few academic surveys of foraging communities, very little is said about the bonds within this community of practice. When other researchers analyze relationships in

foraging practices, they speak primarily of people-plant relationships and conflict-based relationships between foragers and urban land managers (e.g. McLain *et al.* 2014; Hurley *et al.* 2015; Poe *et al.* 2014), although Poe *et al.* (2013) does diagram the intangible socio-cultural benefits of foraging. Overall, however, the literature thus far has given relatively little attention to the social benefits and bonds within urban gathering communities.

By building relationships on the premise of sharing food with one another, gatherers are working toward a vision of food security based upon “community self-reliance” (Hamm and Bellows 2003). Consistent with the literature (e.g. Poe *et al.* 2013; McLain *et al.* 2014), informal trading networks have developed between gatherers in Eugene. Ten of 14 survey respondents reported sharing harvests with people outside their households. One forager trades his commercially-harvested chanterelles with a neighbor who allows him access to her persimmon tree. After moving to a new property and leaving behind her old garden, one harvester picked “gallons of bags” of blackberries and traded them for friends’ extra garden produce. A group of gatherers associated with Dharmalaya eats communal meals made with UGFs. For the Eugene Area Gleaners, providing for community food security involves not just urban harvesting, but also using their nonprofit status to coordinate bread and seed donations that are made available to their members. These informal trades further support the developing local food system by spreading a diversity of foods throughout the community in place of the purchase of commercially-grown products.



Figure 5: Backyard blackberries traded for extra tomatoes (Shannon Cooper 2017)

Informants involved in gleaning groups frequently pointed out that the benefits of UGFs extend beyond the immediate community of practice. Both EAG and FFTP donate portions of their harvests to relief organizations. EAG's policy is to split half of each harvest between the participating group members, then allow the property owner to decide whether to keep the second half or donate it to FFLC (*Eugene* n.d.). Similarly, approximately one-third of each FFTP harvest is kept by neighborhood families, and the remaining two-thirds is typically split between a half-dozen local relief groups (*Friendly* 2018). Various respondents spoke to the resiliency of neighborhood-level connections and support in the face of potential economic, political, and environmental chaos:

*[In the current political context], we're much more likely to see our system break down much more quickly. I'm not a doomsayer, but just watching what's actually happening, that seems to be what's going on.*

*I'm in this Citizens Emergency Response Team, CERT, so it's good to know where food might be available, if we needed it. I have noted in our neighborhood where there's trees and people that grow food. It is sort of a community resilience kind of thing.*



Seven of the 15 gatherers I interviewed worry about global food system instability (e.g. Easterling and Apps 2005; Nordahl 2014; Clark and Nicholas 2013), and they are motivated to build resilient neighborhood systems because they lack trust in the long-term viability of global and national systems. As one gardener and community activist said,

*There is a growing fragility of our situation on the planet. ... We are going to hit a crunch point at some point. ... Climate change is creating instability, and economically, there is also inherent instability. The greed of the few has created very precarious conditions. So the need for resiliency will only grow, and most fundamental to this is food and water. So, planning for different ways that people might get food, other than through emergency food distribution systems, I think becomes important.*

This community support was evident in both the interviews and the participant observation I conducted. During one glean, participants discussed at length ways in which they have supported each other within EAG. One member frequently hosts food preparation nights during which she teaches attendees how to make “freezer meals,” while others discussed the merits of the equipment lending library and how experienced canners often help newer group members learn to preserve foods.

In addition to bolstering community food security, gatherers appreciate the general feeling of safety that accompanies strong relationships with neighbors. One forager promotes the reassurance of knowing one’s neighbors as a reason to garden, explaining that when people are frequently working in their yards and interacting with neighbors, the neighborhood feels safer.

## 1.2 Supporting Household Food Security

All but one of the 15 informants report using UGFs to support household food security. Seven gatherers noted the rising costs of food and the physical inaccessibility of affordable but healthy grocery stores, barriers discussed in the literature review (e.g. Drewnowski and Darmon 2005; Rose 2010). An organizer in EAG who previously lived in a low-income neighborhood noticed how her neighbors struggled to access affordable foods:

*Food stamps only go so far, and food prices are climbing, they're not going down. We lived over by Fred Meyer and it's one of the more expensive grocery stores. But if these people can't afford food, they can't afford transportation, they can't go to other grocery stores that are less expensive.*

One forager who recently lost access to most of his food processing equipment could no longer process as much food as he had in the past, a limitation that was particularly noticeable when food costs rose:

*I would do a lot of drying ... of dried apples, dried pears, dried Asian pears and dried persimmons. I mean several gallons each. I would have to store all that stuff and mark it so no one ate it beforehand, and once we got to February, March, April, and May, which are the most expensive times for fruit, we would just rehydrate that. ... That's when they really just raise the prices up. We were able to largely get through that cycle.*

During participant observation and interviews, gatherers mentioned the stress of trying to fill a freezer or cupboard with enough food to last the winter and the relief of returning from a particularly bountiful harvest.

Of the nine gatherers who support children, seven reported using UGFs to ensure their kids eat enough fruits and vegetables. Half of the survey respondents

indicated that gathering provides food they would otherwise be unable to afford, and 12 respondents said the practice provides produce they otherwise would not purchase.

Parents used UGFs to compensate for insufficient SNAP benefits and to ease the burden of increased food demand during summers, when their children could not receive NSLP meals (e.g. Huang *et al.* 2015, Almada and McCarthy 2017):

*We have four kids in the house, between six and 10 [years old], but they're going to get bigger, and they're going to eat more, and our food budget is currently small. ... Going on the gleans helps cover some of that gap that I'm missing. We're on food stamps, but you can still only buy so much, and then you have this middle ground. We get free and reduced lunch, but all summer [their childcare service] didn't provide lunch, so I had to provide lunch.*

As one EAG member pointed out, “Food boxes and the lunch programs, the summer lunch programs, they just don’t have a whole lot of fresh fruit,” although the 2010 introduction of HHFKA has marginally increased the amounts of fruits and vegetables provided in child meal programs (e.g. Vaudrin *et al.* 2018; Hopkins and Gunther 2015). One forager in his 70s has received federal food assistance for nearly his entire life but criticizes the inadequate nutritional value of SNAP benefits:

*Sure, you can buy a soda now with it, and call it good, but it's not comprehensive enough. ... The worst thing about food stamps is that you can go buy crappy food, that crap that you call food.*

For low-income families dissatisfied with federal food assistance, informal food aid often does not adequately supplement their diets either:

*The apartment complex that we're living in right now, they have what they call the Second Helpings Pantry. They pick out a lot of food from FFLC and they deliver it to the complex. ... The problem is that in transporting that produce, since it's already expired by the time it gets there, I can't feed it to the kids. It's not worth it. Right now, the only*

*thing that we get from Second Helpings is potatoes, but everything else is not appropriate to eat.*

This concern contradicts the claim from former FFLC Executive Director Pat Farr that FFLC “doesn’t distribute food that is on the verge of spoil.” However, urban foragers also critique the shelf-stable foods available through food pantries. One gardener who teaches cooking classes for low-income community members believes that the donated food available through informal food assistance does not encourage healthy meal preparation:

*How we donate food isn’t the most useful. Like heavy cans of random stuff, that’s hard to plan meals around. Let’s exchange that for cabbage and rutabagas and stuff like that.*

Overall, the gatherers’ criticisms reaffirm conclusions in the literature of the “insufficiency, inappropriateness, nutritional inadequacy” and inaccessibility of emergency food aid and federal food assistance (e.g. Vitiello *et al.* 2015: 420; Mulik and Haynes-Maslow 2017).

In addition to supplementing food assistance, two gleaners report using UGFs and the value-added goods made from them as a means of preventing the need to receive formal food aid. While answering the survey prompt “I struggle to provide enough food for my household,” a single mother providing for three children answered “Never,” clarifying that only through intensive gleaning efforts is she able to keep her family well-fed. One forager fears that as his family is priced out of affordable housing and loses access to processing equipment and food storage space,

*[W]e become even more of a public liability, because then food stamps become a necessity. Gleaning and having food available for the public good actually makes a huge difference.*

The degree to which gatherers depend upon UGFs varies widely and influences the efforts gleaners will make to access harvesting opportunities. Just as some food insecure households will occasionally give up other needs in order to purchase enough food (“Map the Meal Gap” n.d.; Poppendieck 2000), so too will urban gatherers make compromises:

*In those harvesting months, there might be days where I decide calling in sick to my job is worth it, or saying I’m coming in two hours late, because I know that this glean is going to fill our freezer the way that we need.*

One mother who experienced a period of homelessness with her young daughter used to depend upon gleaned food, but no longer needs that support:

*[F]inancially, I’m not in a place where I need it anymore, and it feels like taking up a space where somebody who does need it could be going in, is really wrong. ... Right now, we’re okay, we’re doing really well. We’re more secure. ... I’m looking at these questions, “I struggle to provide enough food for my household.” Not anymore!*

Other foragers recognize that their habits are more incidental and fall under the recreational category:

*Sometimes it’s just like, “I want to make apple pie.” It’s fall, so instead of going to the store, I know four apple trees around the block. ... You make an activity out of it. Sometimes I get really excited and I pick stuff, and then I figure out what to do with it. Or sometimes, I’ll know there’s cherries around, so I’ll go to the cherry tree and get a bunch of cherries and make jam.*

*It’s not like it took care of even 50% of your needs. It doesn’t. It’s just a plaything that you’re willing to focus on and notice when it’s happening. Very seasonal, of course.*

Informants who self-identified as relatively food secure tended to classify their gathering practices as a hobby or social activity, while informants who reported experiencing food insecurity spoke about gathering as though it were a job or responsibility to accomplish for the household, a spectrum discussed in the literature (e.g. Jones and Lynch 2002; Galt *et al.* 2014).

### *1.3 & 1.5 Mitigating Unnecessary Waste & Utilizing Local Abundance*

The third most common motivation addressed in my study population is the drive to prevent and reduce food waste, as discussed in the literature (e.g. Johnson 2007; Poe *et al.* 2013). This motivation was often expressed in conjunction with utilizing the local abundance of foods in Eugene's green spaces. Of the 15 total informants in my study, 13 cited mitigating waste as a motivation and 12 cited the local abundance in Eugene's green spaces as an inspiration to gather food. While some gatherers happened upon abandoned fruit trees, others sought out under-utilized food producing spaces:

*I ... noticed immediately that there's a lot of fruit trees in neighbors' yards and down alleys, and a lot of them didn't look very well cared for, or it didn't look like the fruit was being used. ... I came at it from a perspective that there's a lot of food that's getting wasted, and wanted to put it to good use.*

*When I moved here, I would just go on bike rides to get to know Eugene, and there's so much fruit and herbs and vegetables that are just out in the weird space of grass in between the sidewalk and the street. ... I saw it going bad, and it rots and nobody eats it. It's just unwanted, unwanted fresh produce that's free!*

One EAG member, a Master Recycler who works at a material recovery facility in Eugene, sees gleaning as a component of recycling: “[T]he less we keep out of the landfill or off the ground and not waste, the better.”

Gatherers recognize that a lack of awareness and acceptance of gleaned food contributes to the amount of wasted food in urban green spaces. Three gatherers specifically look for fruit trees near rentals and student housing because “it seems a little like they don’t know they have these delicious [fruits].” Gatherers spoke with fondness and delight of the disregarded plants which produce food most people do not recognize:

*In Eugene, a lot of stuff is obvious because they’re cultivars. It’s things like apples and pears, figs and plums. Those are the most common ones, actually. There’s a few other things like medlars, persimmons, which are less common but it’s just a matter of learning the fruits and being inquisitive.*

*I have focused on acorns a lot in the last five years. I started to really focus on it because I could see they weren’t being regarded. ... Acorns have become the staple because there are so many of them. This resource just gobsmacks me.*

This appreciation of underutilized food sources is a common theme throughout the literature (e.g. Poe *et al.* 2013; McLain *et al.* 2014). In addition to knowing what to harvest, practiced gatherers understand that waste prevention requires adaptive strategies and an acceptance of imperfect produce:

*There’s so much food that ends up on the ground here. Some of these folks are just afraid to cut out a little bit of codling moth from the center of an apple or cut out a bruised spot.*

Many harvesters report similar strategies for adjusting to damaged foods, including cutting out “bad” parts of vegetables before freezing them, pressing bruised apples into cider, and in general adapting to “a certain mindset” of flexibility and resourcefulness. As one forager explained, “A lot of it has to do with a mindset of ‘What I need is available from the Earth. What I need is available from the land around me.’”

#### *1.4 Ensuring Nutrition and Food Safety*

Although not the most prevalent motivation, 12 of 15 urban gatherers spoke about the nutritional benefits they enjoy from UGFs, similar to responses cited in McLain *et al.* (2014). As one gardener stated, “All the weird additives and synthetic ingredients derived to put into pre-processed food, that’s not healthy and that’s not sustainable.” Similarly, EAG members praised the freshness and cleanliness of their harvests:

*I don’t have to go to the store and pay for food that I don’t know what’s in it, and these days, with all the recalls and stuff, it’s kind of sad to go to the store and buy fruits and vegetables, because I’m afraid to.*

*I like to buy things in season, just in general. I wouldn’t go buy tomatoes in the winter. There’s a time for tomatoes, when they’re fresh. For me, the freshness of this, just to pick it on your own, is really nice.*

For a mother whose children suffer from serious allergies, feeding her kids applesauce and other products made from UGFs allows her to better control the safety of their foods. For households particularly dependent on UGFs, the practice has inspired an entire dietary shift toward local, seasonal eating:

*Going to the store now, I very much know what’s in season because I pick it, so if it’s not in season, I have to question, is it really ripe sitting in a grocery store and do I want to feed it to my kids? Since gleaning, we*



*very much eat the seasons, and that has been really healthy for our family.*

Gatherers reported that their involvement in gleaning and harvesting groups awakened them to the potential health consequences of store-bought foods. Three members of EAG spoke of the feeling of reassurance that accompanies eating food they harvested themselves from properties they know are not using pesticides.

### *1.7 Experiencing Individual Emotional Benefits*

Informants also report strong emotional benefits, often stemming from a more intentional connection to their local environment and gratitude for the abundance of foods they can find, a response typical for urban foraging (e.g. Hurley *et al.* 2015; McLain *et al.* 2014). For one harvester, his recreational participation in urban gathering fosters an appreciation for his environment:

*When I'm picking blackberries, it's another way of enjoying the park. ... You've gotta have a bigger appreciation for what the space provides. You'll never find a fisherman who doesn't appreciate the river. It's hard to find someone who likes to pick a lot of fruit who doesn't appreciate green spaces and parks and the things that these places provide.*

One woman who joined EAG after losing her job found a sense of belonging and personal pride:

*When you're in transition with anything, it's really easy to doubt yourself, second-guess your place in things. When you are involved and you have that community and you're giving back, it kind of safeguards you against that. It was something that I was doing consciously. During that time [of joblessness], I was making sure that I was still being functional. It's definitely part of who I am.*

A forager spoke at length about the spiritual connections he experiences when gathering:

*Gleaning is part of this whole bigger picture of our relationship with life and our relationship with food. ... Gleaning all comes within that context of our relationship with nature, our relationship with the forces that are greater than us, that make all this thing work. It all goes together.*

Overall, every gatherer expressed some degree of joy, community bonding, family ritual, or personal achievement as a result of urban foraging, even those informants who participate primarily for subsistence purposes.

### **Challenges**

I used gatherers' responses to develop ten categories of obstacles to urban foraging, ranked in order of how many participants mentioned each challenge:

Code	Challenge Sub-Theme	Description and Components	Unique Participants	Total Unique Mentions
2.1	Environmental Aspects	- Irregular, unpredictable seasons and weather - Natural disasters and disruptions, such as wildfires and ice storms	15	28
2.2	Landowner Interactions	- Hesitations regarding liability and privacy - Conflicts between property owner requests and gleaner behavior	14	29
2.3	Time	- Balancing time commitments between work, school, childcare, and gleaning - Time required to process and prepare foods	14	27
2.4	Access to Equipment	- Expensive equipment for processing and preserving gleaned food - Inadequate space to store equipment and food	11	17
2.5	Interpersonal and Group Conflict	- Broad spectrum of professionalism and conduct - Burnout and lack of follow-through on large and long-term projects	10	22
2.6	Personal Safety	- Fear of chemicals from pesticides and pollution contaminating gleaned foods - Physical ability to use harvesting equipment	10	16
2.7	Politics of Urban Green Space	- Interactions between local nonprofits - Perception of City regulations inhibiting community projects - Fundamental differences between City and community visions for future development - Lack of funding for community projects	9	30
2.8	Knowledge	- General unfamiliarity with the process of growing and preserving food - Lack of knowledge regarding cooking and preserving food can inhibit desire to glean or garden	9	18
2.9	Physical Access	- Reduced diversity of food producing species - Lack of food producing plants in urban areas - Difficulty accessing glean locations due to transportation needs	7	14
2.10	Social Stigma	- Guilt or embarrassment for receiving food aid - Judgement from others due to misconceptions about gleaned food	4	8

Table 3: Challenges to Gathering in Eugene

The results from my interviews with urban food gatherers suggest that the four most significant challenges to developing thriving alternative foodways in Eugene are environmental issues, negative landowner interactions, inadequate time, and a lack of equipment and storage. These findings contradict what I expected to identify as the largest challenge. Most of the literature describing the political ecologies of harvesting communities cite conflicts with governmental regulations and differing visions of urban green space management as the most significant obstacles to urban foragers (e.g. McLain *et al.* 2012). While gatherers who have tried to work with the City of Eugene to develop public food spaces feel that there are significant barriers to access, backyard gatherers refer to Eugene as “a world of abundance,” an “incredible environment where there’s food growing everywhere,” and “paradisiacal.” Below, I highlight the four most frequently mentioned challenges facing urban gatherers in Eugene, as well as a selection of obstacles that have particular relevance in the development of community food security.

### *2.1 Environmental Issues*

According to my study population, the most alarming obstacle is the increasing frequency and intensity of environmental stressors affecting both the harvesters and the food. All 15 gatherers interviewed cited environmental incidents, such as irregularly timed food arrivals and escalating degrees of severe weather, as having an effect on their ability to access UGFs. Harvesters in rural areas report that they have an intimate knowledge of the land from which they gather, tracking the changing production patterns and experimenting with small adjustments to improve yields (Jones and Lynch 2007). In urban areas, environmental changes are also noticeable to gatherers who rely

on the predictability of fruit seasons, especially when weather events have long-lasting effects on the productivity of food-producing plants:

*I could go nettling today! It's that warm. ... Usually it'd be the second week of February and your nettles would be this high [indicates a height of about six inches], but no, they're that high today on the last day of January. Last year it was probably the opposite because it was cold and really rough. I don't remember getting nettle last year.*

*The previous winter we had a nasty ice storm, and I think that might have had something to do with this last season, where most of the trees didn't have fruit at all. There was really low production this last summer, last season. This last season, there were a bunch of people who stepped up to help, but then there wasn't a whole lot of fruit.*

While these fluctuations might be simply annoying or inconvenient to some gatherers, one mother of four children who harvests much of the family's produce experiences more serious consequences, saying "I'm very well aware of when we're having a bad year, because our freezer doesn't get full." Many EAG members mentioned the effect of recent summer wildfires on gleaning activities:

*On one of the gleans this year, the air was so terribly smoky, it was hard to breathe, so it was a little hazardous to your health to be outside, which was pretty disturbing.*

*[The smoke did deter me from gleaning] a couple of times, actually. Those days where it was 400 [Air Quality Index], it was extremely hazardous to be outside. We had the masks and we probably could've done it still, but gleaning is labor intensive, so you're having to work already for air, and then the smoke, it just wasn't worth the risk.*

*[The wildfire smoke] did affect the fact that nobody really wanted to schedule gleans, because nobody wanted to put others at risk.*

*We have a database of over four hundred clients that have called us out to come glean. And there's less this year, due to the smoke, due to the heat.*

In addition to preventing gleaners from feeling safe while harvesting, informants report noticing altered harvesting seasons and affected fruits:

*It's just been a weird year. We've had the wildfires of course, so it was too smoky. It was unseasonably hot, so the fruit that we did get -- it was smaller. It was a shorter season. It came on earlier, but it was shorter.*

*Not just the ability to glean, but the actual produce itself was affected. We had a lot of scorch marks from the sun because it was just a really weird year. The apples especially were not good, we didn't get any apples this year. And even peaches were kind of -- the texture of them was different.*

The heat waves and smoky skies that characterized the 2017 summer in the Willamette Valley were products of wildfires across the West and high-pressure systems that caused temperatures to soar (Belles 2017; Roemeling 2017). These unnatural and alarming environmental conditions could have resulted in biased findings regarding the primary concerns facing Eugene gatherers. Had this summer's weather been less dramatic, it is possible that environmental issues would not have been the gathering community's biggest challenge. However, research suggests that human-driven climate change is a "key driver" in the rise in frequency and intensity of forest fires and their consequences, such as more airborne particulate matter, trends that are expected to worsen in the coming years (e.g. Harvey 2016: 11649; Easterling and Apps 2005; "Community" 2010). Thus, these seemingly abnormal environmental concerns may become a permanent obstacle to urban food gathering.

Not all gleaners and gardeners connected their personal observations with the large-scale effects climate change has on agricultural production, but informants who did recognize the connection stressed the need for resilient local food systems:

*Gardeners are definitely on the front lines of observing climate change. Not the only people on the front lines, but they're certainly some of the people, because you're constantly interacting with nature.*

*There's a movement towards regenerating some of this [lost] food production capacity. I think it needs to accelerate. Humans are just making too big of a footprint and we need to quit messing the planet so much. ... It's a way of thinking about resilience and future generations.*

*It's just increasingly obvious that we need to be growing as much food as we can, wherever we can, all over the place. Climate change, earthquakes, economic downslopes, all these kinds of reasons.*

*There is a growing fragility of our situation on the planet. ... We are going to hit a crunch point at some point. ... Under such conditions, there is need for resiliency, and having a diversity of food sources becomes helpful.*

These gatherers' fears are not unfounded. Climate change is predicted to have detrimental effects on the long-term stability of global food systems, particularly due to altered precipitation levels, more dramatic weather events, and quickly degrading soils, all of which researchers anticipate will cause food prices to rise (Easterling and Apps 2005; Takle *et al.* 2013). As abnormal weather events increase in frequency and intensity and global food systems lose stability, communities are both challenged and inspired to re-localize and stabilize their foodways.

## *2.2 Landowner Interactions*

Although this obstacle applies only to gatherers wishing to collect food on private lands, 14 out of 15 informants expressed some experience with landowner conflicts or hesitations to gather due to a fear of conflict. These clashes can be generally

categorized as having to do with privacy, liability, and interpersonal concerns. Seven gatherers cited landowners' privacy as a deterrent to harvesting:

*[E]verything is encompassed in this private property, and our whole society is designed [around that]. ... Not everybody is interested in being community-focused. They want their life and their private space, and you've got to respect that.*

Although one gatherer suggested that she occasionally picks foods from neighbors' front yards without asking permission, all other gatherers who collect food in private spaces expressed that they always ask for the landowner's permission before harvesting. Gatherers use cues such as yard signs, bird netting on trees, or obvious indications of pruning and tending to determine if a food-producing plant was maintained or abandoned.

Four members of EAG identified liability concerns as a significant barrier to gathering unwanted foods. The Bill Emerson Good Samaritan Food Donation Act has protected food donors such as landowners, farmers, organizations, and nonprofits from being liable for any ill health effects resulting from donated food since 1996 (Vogliano and Brown 2016; Public 2013). However, gatherers and landowners alike were sometimes unfamiliar with these protections:

*We did have [landowners] who are obviously very concerned about liability, even though you've explained to them that you are protected under these laws. They're still concerned.*

*A lot of people are worried about being liable for it. But there's statutes in the Good Samaritan law that allow for people to come gather from their yards and stuff. And if somebody gets hurt, they're not liable for it.*



However, while the Food Donation Act protects landowners from liability if a gatherer were to become sick after eating gleaned food, the Act does not cover injuries or property damage sustained during the gathering process, a distinction that has affected EAG:

*We thought it was really cut and dry with the Bill Emerson Act, but come to find out, it only covers the food, it doesn't cover the act of obtaining the food. So when a homeowner has us out, there's this amazing amount of trust, because they have to trust that we won't sue them, and we have to trust that they aren't going to sue us for any damages to property.*

As a nonprofit organization, the Eugene Area Gleaners has insurance to protect its members during gleans. Independent gatherers, on the other hand, do not have this reassurance.

Gatherers, and in particular members of EAG, felt that interpersonal conflicts with landowners also hindered access to food-producing spaces. Four gleaners mentioned that issues of professionalism and class differences contributed to negative interactions with property owners during gleans:

*When you're working with so many different kinds of people, you're going to have negative things happen. We have had farms ask us to not come back because gleaners were loud or rude or took too much produce.*

One EAG member recalled a glean at a “ridiculously manicured backyard,” describing the clash of personalities and socioeconomic levels between the property owners and the EAG volunteers:

*[Landowners] are working with folks across that [socioeconomic] spectrum ... and how they present themselves. Are [gleaners] professional? Maybe not. ... We're definitely experiencing that class*

*difference. ... You have somebody who doesn't look like they're economically upwardly mobile, and you have folks that are.*

In my survey of recent studies on urban foraging communities (e.g. Gianotti and Hurley 2016; McLain *et al.* 2014; Hurley *et al.* 2015), I found no mention of this theme, although Poe *et al.* (2014) did reference cultural judgments within the Seattle foraging community. Whether this obstacle is unique to Eugene gatherers or not, miscommunication between private landowners and gatherers is clearly hindering access to foraged foods.

### 2.3 Time

All but one participant mentioned time and scheduling conflicts as a barrier to participation in gleaning. For one member of FFTP who self-identifies as food secure, finding the time to harvest fruit is simply a matter of making trade-offs between food gathering and other hobbies:

*It's not just fruit that ripens [in late summer], it's tomatoes, all of our peppers and other stuff we're growing then. And of course, that's prime backpacking season. It's a busy time of year. That's when we want to go up in the mountains, when there's not snow. How do I do it? I don't know, we just make it work.*

One gatherer who has used permaculture design to develop his yard into a food-producing space believes there is “a whole culture of making time” to gather food. However, the gatherers who cited time constraints frequently tended to be parents who worked full-time or multiple part-time jobs in addition to the time spent gleaning:

*Mobilizing a volunteer force to come out [to a gleaning site] when it's convenient for somebody else is really difficult because oftentimes that's when people are working. In the last couple of years, a lot of our gleans*

*are happening during business hours. I'm just not in a position to take off [from work] whenever I want to.*

*One of the big issues in neighborhood food production is labor. When you work a full-time job, you don't have time to be a gleaner, or a gardener. There's a lot of physical labor that not everybody can do.*

Gleans organized by the Eugene Area Gleaners sometimes excluded children from attending due to property owner concerns. One parent reflected on the increased food insufficiency her family experienced when work schedules and childcare needs interfered with gleaning participation:

*The last two years, my husband's job was very much not flexible, and we did miss out on a lot of gleans because I couldn't take four kids with me. A lot of the gleans we go on are absolutely no children welcome, just because of insurance purposes, and so we did go without a lot, and those years were hard.*

One gatherer described the informal reciprocal childcare system between EAG members, explaining how gleaners would coordinate to rotate between caring for multiple members' kids while other participants gathered enough food to distribute between multiple families. Another forager missed out on opportunities to gather foods because he is currently looking for housing.

While urban gatherers may spend time finding neighbors with untended fruit trees or pesticide-free parks with blackberry patches, half of the participants specifically feel limited by the time it takes to process or cook gathered foods:

*I now have to make time to process all of these [gathered foods] too. I now have to make time to make sure I peel them, cut them, can them, or dehydrate them. ... Especially if you don't know what to do, and you have to learn it, it's even more time consuming.*

When gatherers are unable to collect or process food for their households due to long and inflexible work hours or the need to find affordable housing, time becomes a structural barrier to food access. Commissioner Farr recognizes that in contrast to the time it takes to go harvest food or shop at a farmers market, “It’s very convenient to slip on down to Albertson’s or Winco and get whatever’s on the shelf and not even care where it came from.” Just as new research is highlighting the need to consider time as a factor in the cost of healthy meals for SNAP recipients (e.g. Davis and You 2011; Mulik and Haynes-Maslow 2017), this anecdotal evidence suggests that time is also a cost factor in procuring healthy produce.

I did not anticipate time limitations being such a universal challenge to my study population, as previous literature on urban gathering communities did not cite time constraints associated with harvesting and processing practices as a significant obstacle. While Jones and Lynch (2007) do acknowledge the time investment rural foragers make when scouting gathering sites, the unique time constraints urban gatherers face offer rich opportunities for further investigation. With larger study populations, the connections between food insecurity, gathering practices, and identity characteristics such as ethnicity, head-of-household gender, and family structure in urban communities could become more clear.

#### *2.4 Access to Equipment and Storage*

Many gatherers reported the costs of accumulating food processing equipment and maintaining storage space for preserved foods as prohibitive. Low-income gatherers face an additional set of challenges in that they often do not have enough space to store

processing equipment or preserved foods. One forager explained that after being priced out of affordable housing,

*I have not had my own home in a year and 16 months now, so I don't have my stuff and my place to store things. ... The amount of gleaning I do now is definitely less, because I don't have my place to store stuff. When I want a picking bag or a food dryer, that stuff's not there.*

Similarly, one family of six cannot store the amount of gleaned food needed to adequately feed their four children:

*I do feel that we could use more than [what we harvest], but it does come down to freezer space. You only have so much room that you can preserve, and you only have so many cans that you can use in your cabinets.*

To combat high equipment prices and storage challenges, urban food gatherers reported a variety of solutions from do-it-yourself building projects to in-ground storage.

Alternatively, EAG and FFTP amassed communal collections of harvesting and preservation equipment in a “lending library” of books, ladders, fruit pickers, steam juicers, cider presses, pressure canners, and more.

## *2.6 Personal Safety: Polluted Foods*

Ten of 15 respondents fear harvesting and consuming polluted UGFs, citing both roadside pollution from vehicles and intentionally applied pesticides as potential hazards they have to navigate:

*One of my biggest frustration points with green spaces right now is that there are trees that can be harvested, there are blackberries everywhere, but I don't know what chemicals are on them. So I can't glean them to give to my kids because it's not worth the risk.*

*[T]here are banks [of blackberries] that have been poisoned and you know because they're yellow and withered, and I hope the people who pick them know that, that they're poisoned when they look like that.*

*Sometimes I worry. I won't pick berries near roads or whatnot, because there's car exhaust that goes by them every day, so that bothers me.*

One forager avoids plants that he knows to be particularly susceptible to toxin accumulation, playing the “game” of collecting UGFs while avoiding pollution specific to urban areas, a precaution other gleaners also take (Poe *et al.* 2013):

*I'm a dandelion person, so I don't really go into backyards. ... The dandelion is prone to toxicity, it accumulates. ... You stay away from the railroad tracks. It's mostly the toxic story, trying to game that a little bit because it is an urban environment. Dandelions are actually pretty hard to flush out because they love the roadways, but they're accumulating [toxins], and until I do further analysis, I gotta avoid those guys.*

Some urban food gatherers are determined to ensure their foraging spaces remain pesticide-free. Informants involved with the restoration of a legacy filbert grove along the Ruth Bascom Riverbank Path reached an agreement with the City of Eugene Parks and Open Space staff to take responsibility for invasive species removal in place of City-applied pesticides.



Figure 6: Filbert Grove restoration progress (Jan Spencer 2011, 2013)

Due to this type of feedback, the City of Eugene has begun to incorporate pesticide reduction programs into its green space management strategies, but pesticide-free parks remain uncommon, according to Parks and Open Space Operations Manager Scott Milovich. Only ten out of more than 100 parks in Eugene are certified to be pesticide-free (“Pesticide-Free” n.d.). Milovich emphasized that City policy promotes pesticide use only when deemed necessary, and City employees are required to post notices before and after pesticide application. However, gatherers also express concern regarding lingering hazards, such as potential railroad contaminants in certain neighborhoods, but data regarding local soil pollution is difficult to find. Overall, gatherers’ fears of pollutants affecting UGFs stem predominantly from a lack of knowledge regarding what urban landscaping practices and protective measures currently exist.

### *2.7 Politics of Urban Green Space*

Although only nine of 15 respondents cited governmental barriers as an obstacle to urban gathering, issues related to City management and the politics of food rescue received more unique mentions (30) than any other challenge. Those gatherers who feel neutral or positively about the City’s attitudes toward urban foraging tend to be engaged

primarily in backyard gleaning and gathering on private lands for individual use. Eight survey respondents feel that the City of Eugene does not significantly inhibit gathering efforts.

For gatherer groups working predominantly on private spaces, a lack of community resources and experience presented significant challenges. Two EAG board members described the process of becoming a 501c3 nonprofit organization and bemoaned the lack of support from FFLC, who they hoped would offer guidance and mentorship through the process:

*I just want to be connecting people to food that would otherwise be going to waste and be thrown away. That's it. It would be beneficial to us to have those sorts of resources in experience, legal resources, mentorship in running a volunteer organization. ... [T]he benefit we could provide to an organization would be ... help with their grant-writing [and] help in procuring funding. There are so many ways that it could be mutually beneficial.*

*I wish we had an umbrella or a backing of a larger nonprofit to help us. ... [The nonprofit application] process is huge, it's very prohibitive, and there are fees involved. [FFLC] work[s] with other food security groups. Why not us? I've got the infrastructure, I've got a proven set-up, we've donated thousands of pounds every year. Why not us? [The FFLC volunteer coordinator] didn't offer to mentor [us] anymore. She didn't want anything more to do with us.*

*The people who were coming to us were people who weren't receiving from FFLC, for whatever reason were choosing not to. I think that is the value of it. Here's an entire pool of people that aren't coming to [FFLC], that are coming to [EAG], and that [EAG] is serving, and there's obviously need there. How do we partner to be able to capture that need and still make it equitable for everybody?*



Although he left the position of Executive Director before EAG tried to work with FFLC, Commissioner Farr thought the lack of support was primarily due to the liability issues FFLC must avoid:

*FFLC's mainly distribution. That is to say, the food that we distribute, we have to be able to certify it. Consequently, gleaning doesn't work with FFLC, because if you get a pick-up [truck] load of apples, FFLC needs to be able to distribute it to our distribution sites and not worry about any form of contamination.*

The organization is dedicated to preventing any potential food sickness issues and delivering relatively shelf-stable produce. While FFLC can readily accept donations of gleaned food from certified farms, it is more cautious regarding food harvested from unregulated backyards. Past experiences with other gleaning groups also contributes to FFLC's reticence to work closely with EAG:

*[T]hey see gleaning as one lump, and there have been different groups that rise and fall, and come and go. It's just like any community, where you have a couple of folks become the face. ... So for some of the folks at FFLC, they'd been down this road before. They'd already done it, it wasn't really worth their time and effort to be partnering, and I think that was the challenge that [EAG members] kept coming up against.*

EAG also tried garnering support from the City of Eugene but found that experience equally unproductive:

*I kind of dipped my toe in the water. ... It was very lip-service. It's exhausting. It's exhausting and disheartening. I did talk with somebody else, and they treated me like I was trying to usurp FFLC. ... [N]o, they don't, there is a need for this, we're filling a niche.*

Overall, EAG members felt dismissed and ignored in these interactions, leading to a sense of disillusionment. As one organizing member said,

*What we're finding is that there are a lot of politics that go in with food rescue and that's a lot of what we're hitting our head on. It should be as simple as connecting people with food that nobody wants. Hungry people with food. It should be easy. We're not trying to be a food bank, we're not trying to be a food box place. We're just trying to coordinate people with the opportunities.*

Left to muddle through the local politics on their own, Eugene Area Gleaners members convey a sense of weary resignation and responsibility to continue with their efforts, despite their frustrations.

Gathering groups in Eugene also struggle with conflicts within their organizations, due primarily to participant burn-out and interpersonal disagreements. EAG organizers complain of inactive group members who are “riding on whatever freebies they can get” without contributing volunteer hours. Organizers frequently post pleading messages on Facebook requesting assistance with various tasks, but the bulk of the work rests on a small contingent of members. As one EAG leader admits,

*I know that I don't have the education, financial backing, or resources to really be doing the job that somebody could be doing at this. But I mean, nobody else is stepping up. ... It's really hard to even delegate, knowing that I don't have anything to offer them, no payment.*

The Eugene Avant-Gardeners group has also struggled to ensure long-term engagement from members, some of whom seem content to reap the community benefits of urban food production without contributing to those efforts:

*Our whole idea when we started Avant-Gardeners was you go to a work party and you go help somebody turn their lawn into a garden, and then hopefully you see them at a future work party. What we tended to find was most people wanted us to just do stuff for them for free, and then they would be reluctant to go to other people's work parties.*

These and other in-group politics and interpersonal conflicts distract gathering groups from the work they are trying to accomplish.

Other gatherer organizations have experienced mixed success after attempts to procure financial and developmental support from the City of Eugene. After several years as a single person's neighborhood project, FFTP received a Neighborhood Matching Grant in 2014 that gave the group the financial boost it needed to become more effective:

*In exchange for the hours [of labor], the City pays for things that you ask for in the grant. I got some ladders, some fruit pickers, money for a website, some other tools like buckets. I think it was only \$2,000 or so ... but that was enough to get things started. Each year, I wrapped in more people and more locations, and we've been collecting more and more each year.*

Since receiving the initial grant, FFTP members feel that the City has supported the group and encouraged the organizing members to assist other neighborhoods with similar projects. However, permaculture advocates in the River Road neighborhood envision a more ambitious project. Neighborhood members met with City staff and led multiple neighborhood working groups in order to create a public food forest on Maynard Park, an undeveloped extension of the green belt along the Willamette River. The neighborhood first began to pursue this initiative nearly a decade ago and intended to secure funding through the Citizen Initiated Parks Development Process (CIPDP). As one active member in this initiative explained,

*We've got all the paperwork, got all ready to do that, and then it turns out the guy who managed it was retiring and they [the City] didn't have money to replace him, so the whole [program] was closed, so therefore we couldn't do this, because we didn't have permission from a defunct [program]. Talk about City obstacles.*

After this setback, gatherers in the River Road neighborhood “realized it was going to be a dead-end with the City” and decided to halt efforts to develop a public food forest until the City reinstated the CIPDP process and the community found someone willing to spearhead the project.

Urban vegetation and green space today is typically heavily modified and managed, a condition predicated on the historical divide between acceptable rural and urban land use practices, as discussed in the literature review (e.g. Galt *et al.* 2014; McLain *et al.* 2012, McLain *et al.* 2014). Repeated attempts to develop alternative green space management strategies that center urban food production in the local economy have left gatherer activists feeling disillusioned, dismissed, and cynical:

*When they [the City] are discussing their topics, it's traffic, it's economic development, it's open spaces, it's affordable housing. They've got a lot of good topics but food security is not one of their topics. ... The wellbeing, in their minds, of the economy is more important than public health.*

*I've kind of backed away from working with the City myself because it makes me cynical and angry. They're all good-intentioned people, but their mission isn't into change the world and to stop climate change and to feed the hungry. Their mission is to balance the interests of the developers and to bring economic growth and house the homeless at the same time.*

Gatherers recognize the conventional urban green space management approach as a significant barrier to their efforts. As two informants explained,

*Certainly, we still have a development mentality on City Council, I would say. That kind of is related to our overall mainstream culture. Meaning, open space isn't as valued as much as potential commercial real estate space.*

*After having lived in New York City, having been to many big cities in the world, as much as Eugene says it, there's really not a lot ... The value of public spaces and open public spaces and making them available for people is surprisingly low for their reputation.*

Erik Burke, director of Friends of Trees (FOT) Eugene, agrees that urban design has failed to prioritize productive green space, calling the incorporation of vegetation in urban areas an “afterthought”:

*[W]e've organized our cities around driving and maximizing the throughput of money through the system. So houses, commerce, buying and spending, that's what we care about and focus on.*

During the interview process, gatherers attempting to incorporate re-localized food production into urban green spaces repeatedly identified City of Eugene management strategies as counterproductive to their efforts.

The predominant management paradigm treats urban green spaces as “providers of services rather than producers of goods,” (McLain *et al.* 2012: 188; Hurley *et al.* 2015; Clark and Nicholas 2013), and the City of Eugene Urban Forestry Management staff echo this framework. Within the public right-of-way (ROW), the strip of ground between sidewalks and streets, trees that perform ecological services are preferred (Mills *et al.* 2016), as Lead Arborist Eric DeBord explains:

*[W]e do absolutely want trees [in the public ROW], because they really are part of the street infrastructure. First and foremost, I'd say that they do have a very necessary function as far as storm water mitigation, carbon sequestration, [and] in some cases they'll actually reduce driving speeds. ... They're storm water mitigation powerhouses and ecological service powerhouses that can be great.*

Because “trees lower storm water bills, clean our air and water, [and] cool our cities,” Burke says that FOT and the City of Eugene prioritize the species that perform these

services well. Urban foresters prefer trees with large canopies because leaf size and area are strongly associated with improved “ecological, social, and economic benefits” (Millward and Sabir 2010: 2216). Most management strategies prioritize active and passive recreational uses, such as dog walking or bird watching, but make little mention of consumptive uses such as gathering (Gianotti and Hurley 2016). For example, in a recent review of 30 urban forest management plans (UFMP) across the country, Clark and Nicholas (2013) found that while 77% of UFMPs listed wildlife habitat as an urban forest priority, only 13% mentioned human food insecurity as an objective.

An urban forestry design that prioritizes ecological services does not often include food production on the list of street tree benefits. The City of Eugene Approved Street Trees List (ASTL), which was recently updated to include approximately 250 tree species, provides property owners and developers with ROW tree guidelines and does not include any fruit-bearing trees. Burke has spent 20 years advocating for the admittance of fruit trees onto the ASTL, pitching various adaptive species, but recognizes the physical limitations of that space, calling the ROW the worst place in the urban environment for tree plantings. Urban Forestry Management employees are also frustrated with the demands placed on public ROWs, spaces DeBord explains are often inappropriate for trees due to inadequate size, compacted soils, and conflicting management objectives. Because ROW trees in narrow planting strips must clear the sidewalk by nine feet and the street by 15 feet, Urban Forestry staff prune the branches to extend upward. DeBord believes that because trees in ROWs must meet these clearance requirements, any fruit produced would be inaccessible:

*My theory on fruit trees is, if you have to get on a ladder, they're probably too tall. If you can't do the pruning with a pull-pruner and a*

*pull-saw, and you can't gather the fruit with a fruit picker, you're probably doing something wrong. They don't need to be that tall. ... [The clearance requirement is] completely opposite of what you want for a fruit tree, so we have these competing interests now.*

DeBord, Burke, and Urban Forestry Manager Chris Gerard have thought through ways in which narrow ROWs could accommodate fruit trees, mentioning dwarf varieties or espaliered trees, but neither of these alternatives allow for the same degree of ecological services, as Burke explained:

*Bigger trees provide more benefits, smaller trees provide smaller amounts of benefits. ... If you're planting those food trees, you're not going to get the same cleaning of the air and water, many times you won't even get the habitat benefits, even though most fruit trees are good for pollinators.*

DeBord clarifies that although technically against code, edible landscaping in the ROW primarily is enforced on a complaint-driven basis or in cases where edible vegetation in the ROW threatens street tree health or visibility from the sidewalk to the street.

Michelle Parkins, the Urban Forestry Management staff in charge of enforcing ROW regulations, also supports edible landscaping in this space but emphasizes that low-growing plants are most appropriate.

In addition to reduced ecological services, urban foresters are concerned with potential maintenance requirements and safety issues associated with food-producing trees in both ROWs and public parks. Public employees in the literature frequently cite maintenance issues such as rotting fruit, increased presence of stinging insects, and tripping hazards as the primary disincentives to promoting food-producing plants in public green space (e.g. McLain *et al.* 2012; McLain *et al.* 2014). Every City of Eugene employee interviewed echoed these concerns and added others, referencing more

frequent pruning cycles, increased rodent attraction, and the possibility of introduced species becoming invasive. As Urban Forestry Management Analyst Scott Altenhoff admits,

*There is a definite bias against fruit trees by agencies, and our agency is not alone. ... The liabilities and the downsides, whether it's maintenance or fruits which can be slipped upon or attract stinging insects or just be unsightly or smells and so forth, can outweigh the benefits that those trees provide.*

Burke confirmed these complaints and said he hears them often from City of Eugene urban foresters when advocating for adding food-producing plants to the ASTL. All five Urban Forestry Management staff expressed concerns about the potential draw a public food forest could be to people experiencing homelessness, citing the accompanying illegal activities as reasons neighbors may not appreciate a public food forest in a park. According to Milovich, dense vegetation such as blackberry thickets create “visibility issues” that lead to encampments in parks along the Willamette River. Milovich is concerned that developing a food forest would attract people experiencing homelessness to the area. Mitigating the negative consequences of homelessness in Eugene parks is already a significant drain on Parks and Open Space staff, as Altenhoff explains:

*[A]s more people are being displaced and not being able to afford housing and all their costs, they're finding themselves homeless and without community resources so they're occupying our parks. Our Parks staff people spend a lot of their time picking up [those campsites].*

Urban Forestry Program manager Chris Girard also worries about potential theft and vandalism incidents based on his experience managing the City of Eugene community gardens program:



*That utopian point of view, that everybody has the best intentions to do the best thing? It really isn't reality. We also had a lot of theft in some of the gardens. ... There was an interesting dynamic between the people who were growing food and the people who needed food. They would steal it. ... There just might be some dystopian things that are created.*

Girard suspects that theft and vandalism could easily occur in future urban food producing spaces and questions how the City or another managing organization would determine who has the right to access those areas and the UGFs within them.

In addition to these obstacles, City employees expressed doubts that the individuals and groups advocating for food production on public land would follow through on projects that may take years or decades to become established. Altenhoff believes that “public safety is probably overblown” when discussing the logistical barriers to food trees on public land and instead sees food tree abandonment and the resultant shift of responsibility from homeowner to City as the most significant obstacle:

*I've seen so many well-intentioned folks plant trees and then maybe they move away and the tree is there. I call them arboreal orphans. They're underutilized and move from what should be a community asset into the liability status.*

Burke agrees, citing a variety of factors he believes contribute to tree abandonment:

*As I've watched human behavior around trees, what I've come to think is most fruit trees are abandoned by the people who plant them. Most trees. People are going to move, get bored, get burned out, get too busy, die, get a different job. So I feel pretty solid that most people will abandon fruit trees if they plant them. If you really want to establish them, it shouldn't be on an individualistic basis.*

Similarly, Milovich has little faith that community groups proposing projects on public land will see the process through to its completion:

*Our experience with a lot of things in developed parks or an idea is there's enthusiasm for a short period of time. ... But the life-cycle of those plants is going to be longer than the life cycle of the people who are interested in it. ... It's a difficult, labor-intensive thing over years to produce not much. It's many years before you're producing anything at all. So in my mind, I'm seeing this running out of gas before it gets started.*

Due to these concerns, urban foresters predominantly encourage food production on private land and tend to characterize proposals for public food forests as unrealistic and utopian. Milovich believes that the City of Eugene does “encourage people’s ability to grow food on their lots” but doubts the success of a edible landscaping on a “grand public scale.” Girard says his experiences with interpersonal conflict in the community gardens program have left him distrustful of public food production, referencing the exhausting effort he exerted to enforce community garden regulations. When considering the possibility of a public food forest, Milovich expressed concern that personal opinions on management styles would limit the project’s success, saying “We see this in a lot of our areas, where we don’t have agreement on how something is supposed to be managed, so then it doesn’t get managed.”

Of the seven public figures and City employees I interviewed, only Burke and Altenhoff had clear visions of successful public food-producing spaces. Altenhoff believes that “a park would be an ideal spot for fruit trees, in a lot of cases,” although he admits that he is an outlier in City staff. Overall, when I presented City of Eugene Urban Forestry Management staff with a hypothetical proposal for a public food forest, most stated that while they support the theory of re-localized food production, they fear the maintenance burden that a public food space could create. All staff excluding

Altenhoff agree that food production on private land is their favored approach to promoting community food security.

The legality of public food harvesting can also hinder gathering efforts. Harvesting on public land in Eugene without permission is illegal according to City code, although not all gatherers are aware of this regulation:

*[I'm not worried about] the legality of [gleaning] in a public space. ... I've never really thought about the legality of picking it from a park. To me, it's like, this is a park, it's free, it's public, and it's just going on the floor and getting thrown away anyways, or getting mushed up or whatnot, so it's available.*

A 2017 Administrative Order for the Public Works Department of the City of Eugene states: “Wood, flowers, seeds, or other vegetation, may not be picked, cut, mutilated, or removed from any park or open space area without written permission from the City” (33). Only two EAG members mentioned that they have received permission from the City to harvest in the parks:

*One of our gleaners recognized that there was a cherry tree ... fruit dropping to the ground, attracting bees, and it was a problem. So we reached out and it took quite a few tries to get to the right person that could even say yes, and it was the public parks, Parks and Rec, that said, “Yeah, you can be there on this day between this hour and this hour.”*

Many other cities have regulations that prohibit gathering of foods and other vegetation on urban public lands but as in Eugene, enforcement of these rules is inconsistent (e.g. Hurley *et al.* 2015; McLain *et al.* 2014; Poe *et al.* 2014).

The gatherers I interviewed are by no means unaware of the concerns of City staff, but they believe that the logistical challenges of a public food forest are worth addressing. As one gardener says,

*[We] need to have a bigger vision than what most City employees have now. That's not a put-down, because most City employees love this stuff. [But] they're confined by what their rules and regulations let them do.*

Another gatherer suggested that better collaboration and understanding between City staff and community members could result in more successful projects:

*How would it be to have people converse with each other and create dialogue, create conversation around this? I'm gonna guess that there's some really valid concerns from folks in the City about if they were to put fruit trees in public spaces. I think it would really take a citizen and government co-effort to make it work out well.*

These gatherers are not convinced that simply encouraging private food production is sufficient enough to guarantee community food security. Of the fifteen gatherers in my study, eleven stated that food producing plants on their private land already provide some or all of their household's needed produce. Four gatherers are engaged in outreach efforts to increase backyard and front yard gardening. However, they are asking for more.

Gatherers are advocating for a radical shift in the urban green space management paradigm. Six of the fifteen gatherers advocate for the adoption of a "commons" framework in order to increase community access to food production, a paradigm that confronts the City's preference for food production on private land. As discussed in the literature review, emerging "subversive and interstitial spaces" such as vacant lots and alleyways allow communities to adopt a commons approach to management and access, in which no one has complete leadership, everyone contributes, and everyone benefits (Galt *et al.* 2014: 133; Hurley *et al.* 2015; Poe *et al.*

2013). As one gatherer pitched this open-access vision, he recognized how dissonant it is with the dominant paradigm:

*What are the underlying cultural memes that we're really supporting in the ways that we do things? And that may not even be conscious, because our form of capitalism and endless-growth economics is so embedded now in all the living generations that it's kind of seldom that people can even think outside of that box and think about concepts like the commons or concepts like the common good.*

In response to repeated denials from the City regarding development of public food production space, one gatherer diagnosed the issue as “a cultural disconnect there about how we exchange energy with our environment.” To gatherers attempting to ensure long-term food security at the community level, the ideological divide between these two paradigms causes the structural barriers to urban food forest development. Gatherers who envision a public food forest conceptualize management much differently than City of Eugene staff. Gatherers advocating for a food forest believe that an intentionally-designed landscape in which low-maintenance components support one another requires less intensive management than a conventional orchard:

*Now, when you're talking about something like a food forest, [City of Eugene staff are] like, “Well if you're not doing anything for it in five years, we'll just plow it under.” And we're like, “Unclear on the concept, dude!” Forests are self-managing ecosystems, you know? It was so interesting how ignorant they were about ecosystems.*

As one gatherer said,

*A lot of the rules and regulations inhibit people taking action to respond to conditions that the City is ill-equipped to deal with. ... They say, “Who's going to clean up the mess?” They have a point, but the rules and regulations are a little bit lagging [in] history and what's happening in the world today.*

One gatherer understood the City's concern regarding people harvesting without permission because her neighbor has caught people stealing from her garden:

*[S]he has a whole bee thing down on the end of Maynard Park, and she has a big garden there, mostly to support her bees, and there's also a lot of homeless people there. So she's always trying to deal with the homeless people stealing her food. She's very generous, but it's like, "Hey, this is my garden, this is what I eat. If you want something, you should ask for it."*

However, this gatherer uses this anecdote to advocate for a food forest specifically dedicated to open-access harvesting:

*The notion behind the food forest is to create a public community food source that anybody can use and anybody can glean from. ... People always say, "Aren't you afraid people are going to steal the food?" and the answer is "Well, no, we're not afraid, we hope they do!"*

Despite this optimistic vision of inclusion, gatherers offered few tangible means of preventing the potential vandalism, exploitation, and management conflicts mentioned by City of Eugene staff. Throughout our conversations, community members acknowledged that they had few successful precedents upon which they could base their designs.

In recognition of this challenging transformation in urban green space management, gatherers predominantly want permission to experiment with these projects, rather than City oversight and ownership of the projects:

*We don't need a government program, we just need to be allowed to do this. We're ready to take on the spaces, if they allow us to do it. We're not begging them. We really need them to become part of the food security [effort], allow us to become a big part of the food security future.*

One gatherer pointed to the Filbert Grove project as an example of a successful collaboration between the City of Eugene and the gathering community. Gatherers asked for the right to self-determine the rehabilitation of that space, agreeing to control the invasive species present with routine labor in place of City staff applying pesticides. Parks and Open Space staff assisted in recruiting volunteer laborers and supported the effort by lending tools and providing refreshments during work parties. One gatherer active in that collaboration said,

*This is really, in a tangential kind of way, what a city ought to do. It's not to go out and set up gleaning and all that kind of stuff, but to make it possible and to encourage people in the community to do this.*

Although only nine of the fifteen gatherers in this study believe that the City of Eugene should be more actively engaged in developing public food spaces, this paradigm shift ultimately affects all community members involved with urban foraging. Any attempts to build a long-term green space management strategy that prioritizes community food security must be predicated on a complete understanding of the sociopolitical obstacles that have historically hindered these efforts.

### *2.10 (The Lack of) Social Stigma*

It is critical to address the challenge that this community of practice overwhelmingly says it does *not* face. For food insecure households, gleaning and gardening offer a version of food assistance that subverts the stigma typically associated with receiving SNAP benefits or going to food banks (e.g. Haynes-Maslow *et al.* 2015; Gundersen and Oliveira 2001). Multiple participants in EAG expressed how they hope

that gleaning can ease the shame families receiving food assistance sometimes experience:

*People feel like they're begging, and it's like, no, dude, you are helping this homeowner not have rotten apples. You're providing for the rest of the group. It's not something dirty or something to be embarrassed or ashamed about.*

*[T]he ability to be working as part of it and to not necessarily be part of an organization that is a charity to you, but you're giving to others, even though you're still receiving, it really bridged that stigma. So you see a lot of working families who are struggling, you see a lot of unemployed [people], you see a lot of students. You see just a lot of folks who have need, but also want to give.*

Informants were asked in the survey to identify how frequently they experience stigma because of their participation in gathering. Some participants did notice when others were judging their involvement, but tended to dismiss those judgments as uninformed:

*When I tell certain types of people [that I organize gleans], they kind of look at me like I'm going to hit them up for something. Or [ask me], "Do you still do that gleaning thing?" I'm not dumpster diving, I'm picking apples. I'm connecting people to food resources, yes I still organize that. I still do that, I am still a huge proponent of doing that. I think that there needs to be a better understanding, there needs to be a resurgence that this is okay.*

One gleaner noted that people in her extended family make stigmatizing comments about her foraging activities, but reports that she does not let these comments embarrass or otherwise affect her. Similarly, in response to being asked if he experiences judgment when gathering in public spaces, one urban forager said, "I'm not capable of feeling that. ... Stigma in general, are you kidding? I feel sorry for *them!*"

Gatherers call themselves "resourceful" and "creative," explaining the unique methods and recipes they have devised throughout the years to build do-it-yourself



processing equipment or to make use of unfamiliar ingredients. One gleaner who was still learning food preservation techniques proudly described her incorporation of quince and pear into homemade applesauce, while another forager gifted me a jar of fermented acorn “miso” he had developed after seasons of experimentation, eager for my opinion on its taste and texture. For those who had built their properties into permaculture-inspired gardens, they were particularly proud of the variety of available foods and design strategies:

*When I bought this place 17 years ago, the intention from the start was to do a permaculture makeover. ... [T]he whole intention here was to take a way better than average quarter-acre suburban property and put it to good use. ... This is not usual for Eugene but it shows what you can do if you want to.*

One forager took me on a walk through his neighborhood, recounting stories of the decade and a half he and his family have spent developing relationships with fruit trees and the families moving in and out of the properties with those trees:

*Over time, I got to know different trees. I've moved several times since I've been here, but have maintained relationships with a lot of the same trees, sometimes the same people, but oftentimes the people move too. The trees have roots, but people don't seem to have roots so we go here and there, but the trees have roots and they stay put. We have relationships with lots of trees that I still go back to. There are trees now that I've had a relationship with for more than a decade.*

The informants I met were proud of more than the number of pounds they harvested each year or the permaculture systems they had built in their backyards. Gatherers emphasized the energy they put into growing relationships with their neighbors and fostering community connections.

## **Community-Identified Solutions**

Overwhelmingly, the gatherers I interviewed are not passively accepting of the status quo regarding urban green space and its uses. Often without prompting, informants described their visions for how to make Eugene's public and private green spaces more food-productive. These community members, particularly those who self-identify as food insecure, are actively developing networks with other organizations, engaging in their neighborhood associations, and approaching City of Eugene staff with ideas and project proposals. Their efforts have the potential to dramatically affect the City of Eugene's future green space, just as McLain *et al.* (2012) and Poe *et al.* (2013) documented the significant role urban foraging individuals and organizations had in changing management practices in Seattle. Similarly, Nordahl (2014) demonstrates the sea change occurring in urban green space management with examples of progressive food production initiatives across the country.

The overarching vision guiding Eugene gatherers' proposals and community projects is a re-localized food system, in which the community reclaims the food production system from planting and harvesting, to processing and distributing. A gardener and community organizer clarified that developing a local food system does not replace existing national and global systems, but rather serves as a more tangible and self-determined foodway. Community members differ on their conceptualizations of an appropriate alternative foodway. Gatherers involved in EAG live in various neighborhoods across Eugene and often travel beyond city limits to harvest on nearby farms. These gatherers may consider a re-localized foodway to include UGFs collected

on land within a few hours' drive from Eugene. However, others believe foodways organized at the neighborhood level offer the most useful opportunities for change:

*[We] recognize there needs to be an articulated system in which food security is being supported at different levels. One level is the neighborhood. When you get into higher levels, then the coordination typically occurs through governmental agencies, though non-governmental groups can inspire the activity of the public sector. We want to demonstrate building resiliency at a neighborhood level.*

An organizer of FFTP has deliberately kept the project focused within the Friendly Area Neighborhood boundaries for the purposes of maintaining a manageable and well-connected community. A community organizer in the River Road area explains the various components of a re-localized food system a neighborhood working group developed:

*At a neighborhood level, we've talked about an integrated food production system. ... [W]e were working with seed genetics ... getting varieties that were highly adapted to this place. ... And then, food preservation, setting up facilities where we could collectively preserve food. ... There's this whole integration to it, how to ... effectively utilize your surplus, and we kind of had it all mapped out.*

Thus, even within the Eugene gatherer community, personal definitions of and intentions for a re-localized foodway differ. Before a concerted and united effort to develop local foodways can be successful, the various subgroups within Eugene's gatherer community must reconcile these definitions and goals.

Despite community enthusiasm for local food production, gatherers spearheading these conversations also recognize that this vision is unattainable unless large-scale re-education occurs:

*If we want to re-localize production, we would have all different kinds of plants that we're growing for all different kinds of uses, and we'd have to regrow the skills on a community level to grow those [plants], care for those, harvest those, process those.*

To build systems that move beyond individual harvesting, gatherers need to educate community members about urban food production and the development of food forests. The Eugene Avant-Gardeners group has distributed seed starts and fruit tree scions to households in order to promote neighborhood food propagation and diversity. Permaculture advocates in the River Road neighborhood also held events to distribute locally-adapted fruit tree varieties and vegetable starts. However, other gardeners argue that because much of modern society has lost the knowledge necessary to grow food, simply distributing food production materials is inadequate. Advocates for re-localized foodways must also train communities on building soil health, constructing irrigation systems, and other practical aspects of long-term food system maintenance. More fundamentally, gatherers realize that people must be reacquainted with whole and healthy foods:

*[P]eople don't know where their food comes from. They think that [gleaned food is] dirty, that something bad will happen, that if they eat it they'll get sick, because that knowledge that has allowed us to survive as humans for so long is disappearing. ... My guess is that as people undo that story and recognize that actually we are part of this whole amazing thing that they'll be more thankful for the bounty that's there in front of us and that is available for free.*

By re-localizing the food system, gatherers in Eugene hope to also restore an awareness of and appreciation for the origins of the community's food. To the activists and organizers spearheading these conversations, to reinstate a local foodway will have both

tangible and intangible effects on community members by allowing them the sovereignty to determine how and what their families eat.

The gatherers who envision a public food forest following a commons model do not expect the City of Eugene to manage the space. Rather, they see this project as a collaboration between the people who have the knowledge and time to maintain a food forest and the community members who are in need of food support:

*I do a little bit of labor in the garden, we have work parties occasionally, but I don't do a lot. But I contribute to the community in other ways, so it's not freeloading for me to come get food, so it's not a direct exchange, it's an indirect circle of energy. ... What are you giving to the community? It's not about you paying me, it's about our contributions to the community and to the greater good.*

In this collaborative process, gatherers have occasionally been stymied by competing design and management strategies. Girard likened the potential conflicts in vision to the arguments he observed in the community gardens program. He proposed that instead of developing a food system in which everyone had ownership over small parcels, food forest proponents could predetermine the production goals for a system and reward volunteers with portions of the harvest. This approach reflects the FFLC GrassRoots Garden model, in which garden managers decide which crops to plant in order to avoid the time-consuming process of allowing all participants to contribute to the garden design.

When considering the design and management of new and existing urban edible landscapes, emerging green infrastructure approaches recognize that both native and nonnative plant species offer valuable services to ecosystems. As discussed in the literature review, the dominant ecological management paradigm favors native species

only and codes nonnative species as unilaterally detrimental to healthy landscapes (Hurley *et al.* 2015; Poe *et al.* 2014), an attitude widely held in current Eugene green space management strategies (“A Community” 2010; Parks 2018; City 2013). Like urban vegetation managers in Seattle (Poe *et al.* 2013; McLain *et al.* 2014), City of Eugene employees spend considerable effort and resources on controlling the spread of nonnative plant species, according to Milovich. However, urban foraging communities oftentimes target nonnative and invasive species, harvesting them in large quantities as a “sort of stewardship act” (Poe *et al.* 2014: 912; Hurley *et al.* 2015, McLain *et al.* 2014). Eugene gatherers are no different, harvesting Himalayan blackberry, various introduced fruit and nut trees, and plantain weed. Eugene’s Urban Forest Management Plan (UFMP) acknowledges that nonnative trees can be appropriate in urban landscapes because they might be better adapted to certain environmental stressors such as limited root zones and recommends that the City encourage an urban forest of native and nonnative species (City 1992).

Revising the UFMP could provide an opportunity to codify community interest in developing edible urban forest landscapes. This document is nearly 30 years out-of-date and is now unable to adequately guide Eugene’s urban forest development. The 2010 Climate and Energy Action Plan (CEAP) specifically calls for an updated UFMP and recommends that urban trees be managed for multiple uses and resources (“A Community” 2010; City 2013). Altenhoff recently proposed a revision process and is anticipating that a new draft will be completed in the fall of 2018. In order to convince the City of Eugene to support urban fruit tree plantings, Altenhoff believed that a small “case study” of a linear edible arboretum could successfully demonstrate the benefits.

Ultimately, Altenhoff seemed confident that if communities approach the design of public food forests slowly, methodically, and with reserve, they have a strong chance of succeeding:

*As with anything, pick the area where you have the highest chance of success and start small. That's how you get things done in a bureaucracy, you start small, set realistic expectations, don't over-promise and under-deliver, and say, "See, we've had no complaints, we've had community accolades, it's been very cost-effective, and they love it."*

### **Limitations in My Study**

By focusing on the opinions of community members already engaged in urban food production and gathering, this thesis presents a set of relatively homogeneous opinions. The City employees offered some perspective on the challenges of urban edible landscaping, but they also alerted me to the considerable community opposition regarding urban edible landscaping. As Milovich explains,

*[Public food production is] an aesthetic or a notion that not everyone agrees with. There's not an overwhelming call for that. There's probably as much opposition to it and what it brings as there is support for it, so we try to balance all that. ... We try to manage lands for everyone and everything, multiple objectives. For any issue we do, we get both sides. We don't have a unanimous community.*

During a River Road and Santa Clara neighborhood planning event in February 2018, working group members questioned whether or not public parks are an appropriate space for food security initiatives. One attendee voiced strong opposition to food-producing plants in parks. Although some community members may simply be uninformed about potential benefits of food-producing urban landscapes, others may have valid reasons for opposing the introduction of food plants in public green spaces.

Additionally, when considering this research in the context of food justice, the geographic locations of neighborhood-level initiatives affect whether or not the benefits of community-level foodways are distributed equitably. Nearly all of the gatherers I interviewed live in the River Road, Santa Clara, and Friendly Area neighborhoods, which is possibly due to the snowball sampling process I used. These neighborhoods, which have higher-than-average median household and family incomes compared to the rest of Eugene, also contain a significant portion of the urban forest and public green space. In contrast, neighborhoods such as Trainsong have some of the lowest median incomes in the City and little to no public green space (City 2011). As DeBord explains,

*People tend to think that there's just trees everywhere, and there are, but the overall canopy coverage for the city is actually below most similar sized cities. I would not have guessed that, but when you start doing canopy analysis ... South Eugene has an incredibly high much higher than average canopy coverage, but West Eugene is like a desert as far as canopy coverage.*

Considering the positive health benefits associated with urban vegetation and canopy cover (Mills *et al.* 2016), the distributional inequity of urban green space suggests that neighborhoods in West Eugene are suffering environmental injustices. According to Altenhoff, the City of Eugene is guilty of perpetuating this inequality:

*Historically, we've focused a lot of resources and time and effort on wealthier areas, and the reality is, it's the folks who are disenfranchised and those disadvantaged areas--Trainsong neighborhood and other areas--that would really benefit.*



Altenhoff believes that part of a city's role in supporting food security is to foster the emergence of leaders in areas where they do not yet exist. If this responsibility does indeed fall on the City of Eugene, it provides yet another factor to consider in future research regarding urban food system development and community food security.

## Discussion

Eugene's gathering community is motivated primarily by the rich social connections and community resiliency fostered in urban food gathering places and practices. Gatherers frequently use urban food harvesting as a means of improving both household and self-reliant community food security. These findings hold true for gatherers who report little to no financial need for gleaned produce as well as gatherers who rely upon urban foodways to ensure their families are well-nourished. In part influenced by growing concerns about global food system instability and increasing economic, political, and environmental chaos, Eugene residents recognize that household food security is not guaranteed if community food security is unstable. Federal food assistance and informal food assistance efforts are consistently found to be inadequate in ensuring an equitable distribution of benefits, leaving many community members vulnerable to food insecurity and its individual and societal consequences. Developing, maintaining, and easing access to alternative urban foodways can have aggregate benefits for the entire community, beyond those engaged in urban foraging or those in need of food. The 15 Eugene gatherers I interviewed are ready to move beyond serendipitous utilization of existing food producing plants, and to instead incorporate extensive and intensive food production methods into green space management and future development.

Analysis of the structural barriers hindering alternative foodway development must consider the urban political ecology of Eugene's green spaces, dependent upon the interpersonal relationships, local ecological systems, and political dynamics at play in the city. Gatherers in Eugene come from myriad backgrounds. Like any heterogeneous

community, members experience conflict due to varying levels of professionalism, time spent contributing to communal efforts, different guiding visions for the future of urban foraging, and identity characteristics like class, race, and ethnicity. Some of the gatherers in Eugene are focused on the availability of backyard fruit trees and want simply to receive financial and logistical support from the City of Eugene and local nonprofit organizations. While some gatherers harvest almost exclusively from introduced cultivars and other nonnative species, others are attempting to adapt community eating preferences to incorporate the abundant but underutilized native food sources. Gatherers who are dedicated to developing an alternative community foodway are asking for resources to increase home gardening efforts and expand food production from private to public green spaces. Community members who do not gather food from urban spaces fear that prioritizing food-producing landscapes will distract from native habitat restoration and pollinator habitat protection. City employees and elected officials nominally recognize the need to bolster and re-localize Eugene's food systems, but attempts to integrate food production into urban forest management plans have been slow to take hold.

Urban Forestry Management employees are concerned about the logistical issues involved, and City green space management policy reflects these reservations. Although the 1992 UFMP advocates for the incorporation of food-producing landscapes into urban green space design, this concept has not resurfaced in more recent urban forestry program and park system documents. Most Urban Forestry Management staff are hesitant to embrace community proposals for urban food production initiatives, although self-identified outliers on staff suggest that the department is moving toward

adopting a more progressive management paradigm. City staff have expressed that they are willing, and some are even enthusiastic, to consider food security initiatives in the upcoming UFMP revision process. However, awareness of the food production benefits of urban forests is low, and other community members oppose the adoption of food security as a priority in public green space management. These various partnerships and conflicts were apparent during the February 2018 River Road and Santa Clara neighborhood planning process and in the frustrations expressed throughout my interviews with both urban gatherers and City staff.

While some gatherers understand the concerns of Urban Forestry Management staff, many feel that a radical reimagining of the role of urban green space is of critical importance. In the last decade, efforts in other urban areas have begun to demonstrate the outcomes possible when communities rethink urban forest management and normalize edible landscapes. In Seattle, a neighborhood initiative that began a decade ago has culminated in the five-acre community-run Beacon Food Forest, which incorporates an edible arboretum, berry patch, nut grove, community garden space, gathering plaza, and an educational kids' play area ("Beacon" 2018). For over a decade, the Philadelphia Orchard Project (POP) has targeted liminal spaces in low-income neighborhoods, where community organizations sponsor and maintain food forests with design, materials, and training assistance from the POP. As of 2016, POP supported nearly 60 community orchards ("About" n.d.). In 2009, San Francisco Mayor Gavin Newsom directed all City departments having jurisdiction over properties to analyze those parcels for food production capacity, and the City of Calgary began a five-year research project to determine the viability of orchards on public lands (Nordahl 2014).

Each of these projects and various other municipal-level initiatives is informed by the specific UPE of the community. However, they all respond to the dominant urban green space management paradigm with bold, community-driven, equity-focused visions.

The City of Eugene is entering a unique period of long-term planning and development. The Urban Forestry Management team is preparing to revise the decades-old UFMP, and outreach to community members and stakeholders will begin soon. The River Road and Santa Clara neighborhood planning process is collecting input on community values and goals for what residents hope will become the Garden District of Eugene. The 2010 Climate and Energy Action Plan and the 2010 City of Eugene Food Security Scoping and Resource Plan both recognize the growing urgency to develop food systems that support community-level food security. After years of small successes and frustrating setbacks, Eugene gatherers seem ready to rekindle conversations with City staff. Now, the community is hoping to build long-term projects that address the structural barriers inhibiting households from achieving food insecurity rather than simply alleviating the symptoms of socioeconomic and environmental inequality.

My research in Eugene, Oregon indicates various aspects of urban foraging that have thus far remained understudied in the literature. As an analysis of gathering practices in a relatively small urban area, this study contributes to the urban political ecology literature of gathering, which has previously focused on either large cities or rural communities. The peri-urban aspects of Eugene offer the potential to study human-nature interactions in a less dense urban environment. In the relatively large private green spaces in Eugene, tensions emerge between gatherers and property owners. Such conflicts suggest the influence of class differences on community access

to urban-gathered foods (UGF). Additionally, my results indicate time constraints as a significant obstacle for urban gatherers. This challenge in particular could contribute to the growing body of research analyzing the external costs of food production and consumption that contribute to food insecurity. Finally, my research demonstrates the social bonds within urban gatherer communities. Informal trading networks, equipment loans and lending libraries, and skill sharing initiatives reveal how gatherers support one another in the framework of community food security. Although my study population was small and each of these findings deserves significantly more consideration and analysis, this research offers valuable perspectives on the motivations driving urban foragers, the obstacles preventing the success of alternative foodways, and the growing visions for just and equitable community food systems to combat food insecurity.

## **Appendix A: Gatherer Interview Questions**

1. Can you tell me about urban foraging? How long have you foraged?
2. What is the history of your involvement with any semi-formal gleaning groups?
3. Do you gather edible plants or plant parts beyond your involvement with any formal or semi-structured group?
4. Why do you glean? How do you know where and what to harvest?
5. How friendly toward gathering do you perceive Eugene's infrastructure and policies/policy enforcers to be?
6. What challenges have you faced while foraging?
7. How do you or your household benefit from gleaning?

# Appendix B: Gatherer Survey

## Form

*For interviewer use only:*

Date: \_\_\_\_\_ Respondent ID #: \_\_\_\_\_

### Appendix D: Data Collection Materials: Gleaner Survey Form

#### Demographics

1. What is your gender? *circle one*      male      female      other \_\_\_\_\_
2. How many people, *including yourself*, are in your household? \_\_\_\_\_
  - a. How many adults, *18 years or older*, are in your household? \_\_\_\_\_
  - b. How many children, *younger than 18 years*, are in your household? \_\_\_\_\_
3. How do you identify? *circle all that apply*      white/Caucasian      black/African American  
Asian/Pacific Islander      Native/Indigenous  
Latino/Chicano      other \_\_\_\_\_

---

For the following statements, check the circle that indicates how the statement applies to you.

1. Gleaning is an important social activity for my household.

—————  —————  —————  —————   
strongly agree      agree      neither agree nor disagree      disagree      strongly disagree

2. Gleaning provides my household food that I otherwise would be unable to afford.

—————  —————  —————  —————   
strongly agree      agree      neither agree nor disagree      disagree      strongly disagree

3. Gleaning provides my household fresh produce I would otherwise not purchase.

—————  —————  —————  —————   
strongly agree      agree      neither agree nor disagree      disagree      strongly disagree

4. It is difficult to glean in Eugene because of a lack of fruit-producing plants.

—————  —————  —————  —————   
strongly agree      agree      neither agree nor disagree      disagree      strongly disagree



5. It is difficult to glean in Eugene because of interference or resistance from City officials.

—————  —————  —————  —————

strongly agree      agree      neither agree nor disagree      disagree      strongly disagree

6. I can afford the kind of foods I want to feed my household.

—————  —————  —————  —————

always      often      sometimes      not often      never

7. I struggle to provide enough food for my household.

—————  —————  —————  —————

always      often      sometimes      not often      never

8. I worry about providing enough food for my household.

—————  —————  —————  —————

always      often      sometimes      not often      never

9. I feel stigmatized for participating in gleaning efforts.

—————  —————  —————  —————

always      often      sometimes      not often      never

10. I glean independently of my involvement with any organized gleaning groups.

—————  —————  —————  —————

always      often      sometimes      not often      never

11. I make “value-added” products from what I glean, such as jams or cider.

—————  —————  —————  —————

always      often      sometimes      not often      never

12. I share my harvests with people outside of my household.

—————  —————  —————  —————

always      often      sometimes      not often      never

## **Appendix C: City of Eugene Employee Questions**

1. Can you give me a brief description of your job responsibilities?
2. How does your job relate to the development and/or enforcement of Eugene's urban forest management plan?
3. Can you tell me what you know about urban foraging, and more specifically, gleaning?
4. Can you tell me about any gleaning or urban foraging groups you know of in Eugene?
5. Have you had any interaction with foraging groups in your professional work?
6. What is your opinion on the incorporation of harvestable plants in Eugene's green spaces?
7. Do you see any current/potential benefits to increasing access to edible plants in Eugene's green spaces?
8. Do you see any current/potential drawbacks to increasing the number of edible plants in Eugene's green spaces?

## Bibliography

- Abatzoglou, John T. and A. Park Williams. (2016) "Impact of anthropogenic climate change on wildfire across western US forests." *Proceedings of the National Academy of Sciences* 113.42: 11770-11775.
- "About POP" (n.d.) *Philadelphia Orchard Project*, [www.phillyorchards.org/about\\_pop/the-organization/](http://www.phillyorchards.org/about_pop/the-organization/). Accessed 18 Feb. 2018.
- "ADMINISTRATIVE ORDER NO. 58-17-07-F." (2017) Public Works Department, City of Eugene, Oregon. [coeapps.eugene-or.gov/CMOWeblink/0/doc/1901401/Page1.aspx](http://coeapps.eugene-or.gov/CMOWeblink/0/doc/1901401/Page1.aspx). PDF.
- Agyeman, Julian and Jesse McEntee. (2014) "Moving the Field of Food Justice Forward Through the Lens of Urban Political Ecology." *Geography Compass* 8.3: 211-220.
- Alkon, Alison Hope and Julian Agyeman, editors. (2011) *Cultivating Food Justice: Race, Class, and Sustainability*. The MIT Press.
- Almada, Lorenzo and Ian M. McCarthy. (2017) "It's a cruel summer: Household responses to reductions in government nutrition assistance." *Journal of Economic Behavior and Organization* 143: 45-57.
- Anderson, Molly. (2013) "Beyond food security to realizing food rights in the US." *Journal of Rural Studies* vol. 29: 113-122.
- Andrews, Margaret, Mark Nord, Gary Bickel, and Steven Carlson. (2000) "Household Food Security in the United States." *Food Assistance and Nutrition Research Report No. 8*. Food and Rural Economics Division, Economic Research Service, USDA. [www.ers.usda.gov/webdocs/publications/46897/32500\\_fanrr8\\_002.pdf?v=41479](http://www.ers.usda.gov/webdocs/publications/46897/32500_fanrr8_002.pdf?v=41479). PDF.
- Andreyeva, Tatiana, Ann E. Middleton, Michael W. Long, Joerg Luedicke, and Marlene B. Schwartz. (2011) "Food retailer practices, attitudes and beliefs about the supply of healthy foods." *Public Health Nutrition* 14.6: 1024-1031.
- "Beacon Food Forest Permaculture Project." (2018) Beacon Food Forest. [beaconfoodforest.org](http://beaconfoodforest.org). Accessed 6 Dec. 2017.
- Belles, Johnathan. (2017) "Western Heat Wave Breaks Record Highs in Oregon and Washington." *The Weather Channel*, 4 Aug. 2017, [weather.com/forecast/regional/news/record-heat-west-early-august-2017](http://weather.com/forecast/regional/news/record-heat-west-early-august-2017). Accessed 16 Feb. 2018.
- Bernard, H. Russell. (2011) *Research Methods in Anthropology*. 5<sup>th</sup> ed, AltaMira Press.

- Bernell, Stephanie L., Bruce A. Weber, and Mark Evan Edwards. (2006) "Restricted Opportunities, Personal Choices, Ineffective Policies: What Explains Food Insecurity in Oregon?" *Journal of Agricultural and Resource Economics* 31.2: 193-211.
- The Bethel Farm*. (n.d.) Kalapuya High School, [blogs.bethel.k12.or.us/thebethelfarm/contact-us/](http://blogs.bethel.k12.or.us/thebethelfarm/contact-us/). Accessed 15 Feb. 2018.
- Biel, Robert. (2014) "Visioning a Sustainable Energy Future: The Case of Urban Food-Growing." *Theory, Culture & Society* 31.5: 183-202.
- Cadieux, Kirsten Valentine and Rachel Slocum. (2015) "What does it mean to *do* food justice?" *Journal of Political Ecology* 22: 1-26.
- Centers for Disease Control and Prevention. (2016) "Nutrition, Physical Activity, and Obesity: Data, Trends and Maps." National Center for Chronic Disease Prevention and Health Promotion. [www.cdc.gov/nccdphp/dnpao/data-trends-maps/index.html](http://www.cdc.gov/nccdphp/dnpao/data-trends-maps/index.html). Accessed 4 February 2018.
- Chilton, Mariana and Donald Rose. (2009) "A Rights-Based Approach to Food Insecurity in the United States." *American Journal of Public Health* 99.7: 1203-1211.
- "City of Eugene Food Security Scoping and Resource Plan." (2010) City of Eugene Planning and Development Department.
- City of Eugene Neighborhood Services. (2011) "2011 Neighborhood Analysis." [www.eugene-or.gov/DocumentCenter/View/3220](http://www.eugene-or.gov/DocumentCenter/View/3220). PDF.
- City of Eugene Urban Forest Management Plan. (1992) 1992 Eugene Tree Commission, Public Works Department. [scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/9600/Eugene\\_Urban\\_Forest\\_Management\\_Plan\\_1992.pdf?sequence=1](http://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/9600/Eugene_Urban_Forest_Management_Plan_1992.pdf?sequence=1). PDF.
- City of Eugene Urban Forestry Program Review. (2013) City of Eugene Parks and Open Space Division. PDF.
- Clark, Kyle H. and Nicholas, Kimberly A. (2013) "Introducing urban food forestry: a multifunctional approach to increase food security and provide ecosystem services." *Landscape Ecology* 28.9: 1649-1669.
- Coleman-Jensen, Alisha. (2015) "Commemorating 20 Years of U.S. Food Security Measurement." *United States Department of Agriculture Economic Research Service*, 5 Oct. 2015, [www.ers.usda.gov/amber-waves/2015/october/commemorating-20-years-of-us-food-security-measurement/](http://www.ers.usda.gov/amber-waves/2015/october/commemorating-20-years-of-us-food-security-measurement/). Accessed 23 Nov. 2017.

- Coleman-Jensen, Alisha Judith. (2010) "U.S. Food Insecurity Status: Toward a Refined Definition." *Social Indicators Research* 95.2: 215-230. Accessed 12 Apr. 2017.
- Coleman-Jensen, Alisha, Christina Gregory, and Matthew Rabbit. (2017a) "Definitions of Food Security." *United States Department of Agriculture Economic Research Service*, 4 Oct. 2017, [www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx](http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx). Accessed 4 Dec. 2017.
- . (2016) "Household Food Insecurity in the United States in 2015." United States Department of Agriculture Economic Research Service. PDF. Accessed 24 May 2017.
- Coleman-Jensen, Alisha, Matthew P. Rabbitt, Christian A. Gregory, and Anita Singh. (2017b) *Household Food Security in the United States in 2016*, ERR-237, U.S. Department of Agriculture, Economic Research Service. [www.ers.usda.gov/webdocs/publications/84973/err-237.pdf?v=42979](http://www.ers.usda.gov/webdocs/publications/84973/err-237.pdf?v=42979). PDF.
- "A Community Climate and Energy Action Plan for Eugene." (2010) The City of Eugene. [www.eugene-or.gov/Archive/ViewFile/Item/80](http://www.eugene-or.gov/Archive/ViewFile/Item/80). PDF.
- Cook, John and Karen Jeng. (2009) "Child Food Insecurity: The Economic Impact on our Nation." *Feeding America*. [www.issuelab.org/resource/child-food-insecurity-the-economic-impact-on-our-nation.html](http://www.issuelab.org/resource/child-food-insecurity-the-economic-impact-on-our-nation.html). PDF. Accessed 15 May 2017.
- Davis, George C. and Wen You. (2011) "Not enough money or not enough time to satisfy the Thrifty Food Plan? A cost difference approach for estimating a money-time threshold." *Food Policy* 36: 101-107.
- "Dharmalaya in USA." (2016) *PROUT Institute*, [www.proutinstitute.org/projects/dharmalaya/](http://www.proutinstitute.org/projects/dharmalaya/). Accessed 1 February 2018.
- Double Up Food Bucks*. (n.d.) The Fair Food Network, [www.doubleupfoodbucks.org/how-it-works/](http://www.doubleupfoodbucks.org/how-it-works/). Accessed 5 February 2018.
- Drewnowski, Adam and Nicole Darmon. (2005) "Food Choices and Diet Costs: an Economic Analysis." *The Journal of Nutrition* 135: 900-904.
- Easterling, William and Michael Apps. (2005) "Assessing the Consequences of Climate Change for Food and Forest Resources: A View from the IPCC." *Climatic Change* vol. 70: 165-189.
- Eugene Area Gleaners*. (n.d.) [eugeneareagleaners.wordpress.com](http://eugeneareagleaners.wordpress.com). Accessed 26 May 2017.
- "Find Your Family with Community Gardens." *YouTube*, uploaded by TEDx Talks, 6 July 2017, [www.youtube.com/watch?v=Ymc8U6ceAvk](http://www.youtube.com/watch?v=Ymc8U6ceAvk).

- “Food Distribution.” *USDA Food and Nutrition Service*. [www.fns.usda.gov/fdd/fdd-history-and-background1933\\_-\\_The\\_Commodity\\_Credit\\_Corporation\\_%28CCC%29\\_Charter\\_Act](http://www.fns.usda.gov/fdd/fdd-history-and-background1933_-_The_Commodity_Credit_Corporation_%28CCC%29_Charter_Act). Published 2013. Accessed 4 Dec. 2017
- The Friendly Fruit Tree Project*. (2018) The Friendly Fruit Tree Project, [friendlyfruittreeproject.org/](http://friendlyfruittreeproject.org/). Accessed 15 Jan. 2018.
- Galt, Ryan E., Leslie C. Gray, and Patrick Hurley. (2014) “Subversive and interstitial food spaces: transforming selves, societies, and society–environment relations through urban agriculture and foraging.” *Local Environment* 19.2: 133-146.
- Gianotti, Anne G. and Patrick T. Hurley. (2016) “Gathering plants and fungi along the urban-rural gradient: Uncovering differences in the attitudes and practices among urban, suburban, and rural landowners.” *Land Use Policy* 57: 555-563.
- Griffin, Timothy. (2010) “Invited Commentary: Linking agriculture and nutrition.” *Public Health Nutrition* 13.11: 1941-1944.
- Gundersen, Craig and James P. Ziliak. (2014) “Childhood Food Insecurity in the U.S.: Trends, Causes, and Policy Options.” *The Future of Children*, Princeton-Brookings. 1-19.
- Gundersen, Craig and Victor Oliveira. (2001) “The Food Stamp Program and Food Insufficiency.” *American Journal of Agricultural Economics* 83.4: 875-887.
- Gustat, Jeanette, Keelia O’Malley, Brian G. Luckett, and Carolyn C. Johnson. (2015) “Fresh produce consumption and the association between frequency of food shopping, car access, and distance to supermarkets.” *Preventive Medicine Reports* 2: 47-52.
- Hamelin, Anne-Marie, Jean-Pierre Habicht, and Micheline Beaudry. (1999) “Food Insecurity: Consequences for the Household and Broader Social Implications.” *The Journal of Nutrition* 129 (2S Supplement): 525S-528S.
- Hamm, Michael W. and Anne C. Bellows. (2003) “Community Food Security and Nutrition Educators.” *Journal of Nutrition Education and Behavior* 35.1: 37-43.
- Harvey, Brian J. (2016) “Human-caused climate change is now a key driver of forest fire activity in the western United States.” *Proceedings of the National Academy of Sciences* 113.42: 11649-11650.
- Haynes-Maslow, Lindsey, Lauriane Auvergne, Barbara Mark, Alice Ammerman, and Bryan J. Weiner. (2015) “Low-Income Individuals’ Perceptions About Fruit and Vegetable Access Programs: A Qualitative Study.” *Journal of Nutrition Education and Behavior* 47.5: 317-324.

- Heynen, Nik. (2009) "Bending the Bars of Empire from Every Ghetto for Survival: The Black Panther Party's Radical Antihunger Politics of Social Reproduction and Scale." *Annals of the Association of American Geographers* 99.2: 406-422.
- Himmelgreen, David A. and Nancy Romero-Daza. (2010) "Eliminating "Hunger" in the U.S.: Changes in Policy Regarding the Measurement of Food Security." *Food and Foodways* 18:1-2, 96-113.
- Hopkins, Laura C. and Carolyn Gunther. (2015) "A Historical Review of Changes in Nutrition Standards of USDA Child Meal Programs Relative to Research Findings on the Nutritional Adequacy of Program Meals and the Diet and Nutritional Health of Participants: Implications for Future Research and the Summer Food Service Program." *Nutrients* 7: 10145-10167.
- Huang, Jin and Ellen Barnidge. (2016) "Low-income Children's participation in the National School Lunch Program and household food insufficiency." *Social Science and Medicine* 150: 8-14.
- Huang, Jin, Ellen Barnidge, and Youngmi Kim. (2015) "Children Receiving Free or Reduced-Price School Lunch Have Higher Food Insufficiency Rates in Summer." *The Journal of Nutrition* 145: 2161-2168.
- "Hunger in Oregon." (2016) *Oregon Food Bank*, [www.oregonfoodbank.org/our-work/hunger-in-oregon/](http://www.oregonfoodbank.org/our-work/hunger-in-oregon/). Accessed 1 Feb. 2018.
- Hunzinger, Erica, Dan Charles, Maria Godoy, and Allison Aubrey. (2018) "Trump Administration Wants To Decide What Food SNAP Recipients Will Get." *The Salt*, 12 Feb. 2018, NPR. [www.npr.org/sections/thesalt/2018/02/12/585130274/trump-administration-wants-to-decide-what-food-snap-recipients-will-get](http://www.npr.org/sections/thesalt/2018/02/12/585130274/trump-administration-wants-to-decide-what-food-snap-recipients-will-get). Accessed 14 Feb. 2018.
- Hurley, Patrick T., Marla R. Emery, Rebecca McLain, Melissa Poe, Brian Grabbatin, and Cari Goetcheus. (2015) "Whose Urban Forest? The Political Ecology of Foraging Urban Nontimber Forest Products." *Sustainability in the Global City: Myth and Practice*, edited by Cindy Isenhour, Gary McDonogh, and Melissa Checker, Cambridge University Press. 187-212.
- Jensen, Helen H. (2002) "Food Insecurity and the Food Stamp Program." *American Journal of Agricultural Economics* 84.5: 1215-1228.
- Jetter, Karen M. and Diana L. Cassady. (2006) "The Availability and Cost of Healthier Food Alternatives." *American Journal of Preventive Medicine* 30.1: 38-44.
- Jones, Eric T. and Kathryn A. Lynch. (2007) "Nontimber forest products and biodiversity management in the Pacific Northwest." *Forest Ecology and Management* 246: 29-37.

- Jones, Eric T. and Kathryn Lynch. (2002) "The Relevance of Sociocultural Variables to Nontimber Forest Product Research, Policy, and Management." *Nontimber Forest Products in the United States*, edited by Eric T. Jones, Rebecca J. McLain, and James Weigand, University Press of Kansas. 26-51.
- Johnson, Mitchell. (2007) "Stocking Our Community Pantry: Here's How Activists in Seattle Glean Free Food ... The 'Urban Harvest' of the Future?" *Communities* 135: 52-55, 76-77.
- Jonson, Love. (2016) "Choosing and siting food access interventions: Food mirages and produce stands in Portland, Oregon." *Journal of Agriculture, Food Systems, and Community Development*. 1-16.
- Kennedy, Eileen. (1999) "Public policy in nutrition: the US nutrition safety net - past, present and future." *Food Policy* 24: 325-333.
- Kerr, Norwood Allen. (1990) "Drafted into the War on Poverty: USDA Food and Nutrition Programs, 1961-1969." *Agricultural History* 64.2: 154-166.
- Klerman, Jacob Alex and Caroline Danielson. (2011) "The Transformation of the Supplemental Nutrition Assistance Program." *Journal of Policy Analysis and Management* 30.4: 863-888.
- La Via Campesina. (2011) "Organisation." *La Via Campesina: International Peasant's Movement*, 9 February 2011. [viacampesina.org](http://viacampesina.org). Accessed 26 May 2017.
- Lafontaine-Messier, Mariève, Nancy Gélinas, and Alain Olivier. (2016) "Profitability of food trees planted in urban public green areas." *Urban Forestry and Urban Greening* 16: 197-207.
- Landers, Patti S. (2007) "The Food Stamp Program: History, Nutrition Education, and Impact." *Journal of the American Dietetic Association* 107.11: 1945-1951.
- Levine, Susan. (2008) *School Lunch Politics: The Surprising History of America's Favorite Welfare Program*, Princeton University Press. ProQuest Ebook Central, [ebookcentral-proquest-com.libproxy.uoregon.edu/lib/uoregon/detail.action?docID=803581](http://ebookcentral-proquest-com.libproxy.uoregon.edu/lib/uoregon/detail.action?docID=803581).
- Liu, Jia Coco, Loretta J. Mickley, Melissa P. Sulprizio, Francesca Dominici, Xu Yue, Keita Ebisu, Georgiana Brook Anderson, Rafi F. A. Khan, Mercedes A. Bravo, and Michelle L. Bell. (2016) "Particulate air pollution from wildfires in the Western US under climate change." *Climatic Change* 138: 655-666.
- Lombe, Margaret, ManSoo Yu, and Von E. Nebbitt. (2009) "Assessing Effects of Food Stamp Program Participation on Child Food Security in Vulnerable Households: Do Informal Supports Matter?" *Families in Society: The Journal of Contemporary Social Services* 90.4: 353-358.



- “Map the Meal Gap: Hunger and Poverty in Oregon.” (n.d.) *Feeding America*, [map.feedingamerica.org/county/2015/overall/oregon](http://map.feedingamerica.org/county/2015/overall/oregon). Accessed 10 Dec. 2017.
- McCormack, Lacey Arneson, Melissa Nelson Laska, Nicole I. Larson, and Mary Story. (2010) “Review of the Nutritional Implications of Farmers’ Markets and Community Gardens: A Call for Evaluation and Research Efforts.” *Journal of the American Dietetic Association* 110: 399-408.
- McDermot, Dennis, Bridget Igoe, and Mandy Stahre. (2016) “Assessment of Healthy Food Availability in Washington State—Questioning the Food Desert Paradigm.” *Journal of Nutrition Education and Behavior* 49.2: 130-136.
- McLain, Rebecca, Melissa Poe, Patrick T. Hurley, Joyce Lecompte-Mastenbrook, and Marla R. Emery. (2012) “Producing edible landscapes in Seattle’s urban forest.” *Urban Forestry & Urban Greening* 11.2: 187-194.
- McLain, Rebecca J., Patrick T. Hurley, Marla R. Emery, and Melissa R. Poe. (2014) “Gathering ‘wild’ food in the city: rethinking the role of foraging in urban ecosystem planning and management.” *Local Environment* 19.2: 220-240.
- Mills, John R., Patrick Cunningham, and Geoffrey H. Donovan. (2016) “Urban forests and social inequality in the Pacific Northwest.” *Urban Forestry and Urban Greening* 16: 188-196.
- Millward, Andrew A. and Senna Sabir. (2010) “Structure of a forested urban park: Implications for strategic management.” *Journal of Environmental Management* 91: 2215-2224.
- Moragues-Faus, Ana and Terry Marsden. (2017) “The political ecology of food: Carving ‘spaces of possibility’ in a new research agenda.” *Journal of Rural Studies* vol. 55: 275-288.
- Mulik, Kranti and Lindsey Haynes-Maslow. (2017) “The Affordability of MyPlate: An Analysis of SNAP Benefits and the Actual Cost of Eating According to the Dietary Guidelines.” *Journal of Nutrition Education and Behavior* 49.8: 623-631.
- National Academy of Sciences. Wunderlich, Gooloo S. and Janet L. Norwood, ed. (2006) *Food Insecurity and Hunger in the United States: An Assessment of the Measure*. The National Academies Press.
- Nguyen, Binh T., Kerem Shuval, Farryl Bertmann, and Amy L. Yaroch. (2015) “The Supplemental Nutrition Assistance Program, Food Insecurity, Dietary Quality, and Obesity Among US Adults.” *American Journal of Public Health* 105.7: 1453-1459.

- Nordahl, Darrin. (2014) *Public Produce: Cultivating Our Parks, Plazas, and Streets for Healthier Cities*. 2nd ed., Island Press.
- “Nutrition Services.” (2018) *4J Eugene School District*, [www.4j.lane.edu/nutrition/summermeals/](http://www.4j.lane.edu/nutrition/summermeals/). Accessed 15 Feb. 2018.
- Oregon Food Bank. (2016) “Hunger Factors 2015: Hunger and Poverty in Oregon and Clark County, WA.” Oregon Food Bank and the Oregon Food Bank Network. [www.oregonfoodbank.org/wp-content/uploads/2016/05/Hunger-Factors-FullRpt-v8-2.pdf](http://www.oregonfoodbank.org/wp-content/uploads/2016/05/Hunger-Factors-FullRpt-v8-2.pdf)
- Parks and Open Space. (2018) “Picture. Plan. Play. A Vision and Implementation Plan for Eugene’s Parks and Recreation System.” City of Eugene Public Works Department. [www.eugene-or.gov/2885/PARKS-RECreate-System-Plan-Update.PDF](http://www.eugene-or.gov/2885/PARKS-RECreate-System-Plan-Update.PDF).
- Partners for a Hunger-Free Oregon. (2010) “Lane County Oregon.” *2010 Addressing Hunger*. PDF. [www.oregonhunger.org](http://www.oregonhunger.org).
- Poe, Melissa R., Rebecca J. McLain, Marla Emery, and Patrick T. Hurley. (2013) “Urban Forest Justice and the Rights to Wild Foods, Medicines, and Materials in the City.” *Human Ecology* 41.3: 409-422.
- Poe, Melissa R., Joyce LeCompte, Rebecca McLain, and Patrick Hurley. (2014) “Urban foraging and the relational ecologies of belonging.” *Social & Cultural Geography* 15.8: 901-919.
- Popkin, Barry M. (2017) “The Challenge in Improving the Diets of Supplemental Nutrition Assistance Program Recipients: A Historical Commentary.” *American Journal of Preventive Medicine* 52.2S2: S106-S114.
- Poppendieck, Janet. (2014) *Breadlines Knee-Deep in Wheat: Food Assistance in the Great Depression*, University of California Press. ProQuest Ebook Central, [ebookcentral-proquest-com.libproxy.uoregon.edu/lib/uoregon/detail.action?docID=1686846](http://ebookcentral-proquest-com.libproxy.uoregon.edu/lib/uoregon/detail.action?docID=1686846). Accessed 27 Nov. 2017.
- Poppendieck, Janet. (2000) “Hunger In The United States: Policy Implications.” *Nutrition* 16.7-8: 651-653.
- Poppendieck, Janet. (1998) “Want Amid Plenty: From Hunger to Inequality.” *Monthly Review* 50.3: 125-136.
- Potorti, Mary. (2017) “‘Feeding the Revolution’: the Black Panther Party, Hunger, and Community Survival.” *Journal of African American Studies* 21: 85-110.

- Public Health Law Center. (2013) "Liability Protection for Food Donation." William Mitchell College of Law.  
[www.publichealthlawcenter.org/sites/default/files/resources/Liability%20Protection%20Food%20Donation.pdf](http://www.publichealthlawcenter.org/sites/default/files/resources/Liability%20Protection%20Food%20Donation.pdf). PDF.
- "Race and Ethnicity in Eugene, Oregon." (2015) Statistical Atlas, [statisticalatlas.com/place/Oregon/Eugene/Race-and-Ethnicity](http://statisticalatlas.com/place/Oregon/Eugene/Race-and-Ethnicity). Accessed 12 February 2018.
- Richardson, Jeffrey J. and L. Monika Moskal. (2016) "Urban food crop production capacity and competition with the urban forest." *Urban Forestry and Urban Greening* 15: 58-64.
- Roemeling, Alisha. (2017) "Air quality in Lane County expected to improve." *The Register Guard*, 30 Aug. 2017, [registerguard.com/rg/news/local/35905291-75/air-quality-in-lane-county-expected-to-improve.html.csp#](http://registerguard.com/rg/news/local/35905291-75/air-quality-in-lane-county-expected-to-improve.html.csp#). Accessed 16 Feb. 2018.
- Rose, Donald. (2010) "Access to Healthy Food: A Key Focus for Research on Domestic Food Insecurity." *The Journal of Nutrition* 140: 1167-1169.
- Rose, Donald. (2007) "Food Stamps, the Thrifty Food Plan, and Meal Preparation: The Importance of the Time Dimension for US Nutrition Policy." *Journal of Nutrition Education and Behavior* 39.4: 226-232.
- Rutledge, Jennifer Geist. (2015) "From charity to security: the emergence of the National School Lunch Program." *History of Education* 44.2: 187-206.
- "A Short History of SNAP." (2014) *Supplemental Nutrition Assistance Program*. United States Department of Agriculture, Food and Nutrition Service, 20 Nov. 2014, [www.fns.usda.gov/snap/short-history-snap](http://www.fns.usda.gov/snap/short-history-snap). Accessed 23 Nov. 2017.
- Smith, Richard Norton and Timothy Walch. (2004) "The Ordeal of Herbert Hoover." *Prologue Magazine*, 36.2, [www.archives.gov/publications/prologue/2004/summer/hoover-1.html](http://www.archives.gov/publications/prologue/2004/summer/hoover-1.html) . Accessed 4 Dec. 2017.
- Sonnino, Roberta and Owain Hanmer. (2016) "Beyond food provision: Understanding community growing in the context of food poverty." *Geoforum* vol. 74: 213-221.
- Stoll, Steven. (2014) "The Captured Garden: The Political Ecology of Subsistence under Capitalism." *International Labor and Working-Class History* vol. 85: 75-96.
- "Summer Meals." (2018) *4J Eugene School District*, [www.4j.lane.edu/nutrition/summermeals/](http://www.4j.lane.edu/nutrition/summermeals/). Accessed 15 Feb. 2018.

- Takle, Eugene S., David Gustafson, Roger Beachy, Gerald C. Nelson, Daniel Mason-D'Croz, and Amanda Palazzo. (2013) "US Food Security and Climate Change: Agricultural Futures." *Economics: The Open-Access, Open-Assessment E-Journal*, vol. 7 (2013-34): 1-41.
- United States Department of Agriculture. (2017) "Expenditures for USDA's food assistance programs down in 2016." *USDA Economic Research Service*. [www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=58388](http://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=58388)
- United States Department of Agriculture. (2018) "Official USDA Food Plans: Cost of Food at Home at Four Levels, U.S. Average, December 2017." [www.cnpp.usda.gov/sites/default/files/CostofFoodDec2017.pdf](http://www.cnpp.usda.gov/sites/default/files/CostofFoodDec2017.pdf)
- "Urban Forestry." (2017) City of Eugene Public Works Department, Parks and Open Space Division, [www.eugene-or.gov/3673/Urban-Forestry](http://www.eugene-or.gov/3673/Urban-Forestry). Accessed 15 Feb. 2018.
- Vaudrin, Nicole, Kristen Lloyd, Michael J. Yedidia, Michael Todd, and Punam Ohri-Vachaspati. (2018) "Impact of the 2010 US Healthy, Hunger-Free Kids Act on School Breakfast and Lunch Participation Rates Between 2008 and 2015." *American Journal of Public Health* 108: 84-86.
- Vitiello, Domenic, jeane Ann Grisso, K Leah Whiteside, and Rebecca Fischman. (2015). "From Commodity Surplus to Food Justice: Food Banks and Local Agriculture in the United States." *Agriculture and Human Values* 32.3: 419-30.
- Vogliano, Chris and Katie Brown. (2016) "The State of America's Wasted Food and Opportunities to Make a Difference." *Journal of the Academy of Nutrition and Dietetics* 116.7: 1199-1207.
- "What Trump proposed cutting in his 2019 budget." (2018) *The Washington Post*, 12 Feb. 2018. [www.washingtonpost.com/graphics/2018/politics/trump-budget-2019/?utm\\_term=.b63c15161d8b](http://www.washingtonpost.com/graphics/2018/politics/trump-budget-2019/?utm_term=.b63c15161d8b). Accessed 14 Feb. 2018.
- Wetherill, Marianna S. and Karen A. Gray. (2014) "Farmers' Markets and the Local Food Environment: Identifying Perceived Accessibility Barriers for SNAP Consumers Receiving Temporary Assistance for Needy Families (TANF) in an Urban Oklahoma Community." *Journal of Nutrition Education and Behavior* 47.2: 127-133.
- "What Can SNAP Buy?" (2017) *Supplemental Nutrition Assistance Program*. United States Department of Agriculture, Food and Nutrition Service, 17 Nov. 2017, [www.fns.usda.gov/snap/eligible-food-items](http://www.fns.usda.gov/snap/eligible-food-items). Accessed 20 Nov. 2017.

- Willamette Farm and Food Coalition. (2017a) “DOUBLE UP FOOD BUCKS at Lane County Farmers Market July - December 2016.”  
[willamettefarmandfood.org/wp-content/uploads/2017/04/Double-Up-results-flyer-July-Dec-2016-opt.pdf](http://willamettefarmandfood.org/wp-content/uploads/2017/04/Double-Up-results-flyer-July-Dec-2016-opt.pdf)
- Willamette Farm and Food Coalition. (2017b) “Ride the Bus to Farmers Markets (In Eugene and Springfield).” [willamettefarmandfood.org/wp-content/uploads/2017/04/BusMap.pdf](http://willamettefarmandfood.org/wp-content/uploads/2017/04/BusMap.pdf)
- Yu, ManSoo, Margaret Lombe, and Von E. Nebbitt. (2010) “Food stamp program participation, informal supports, household food security and child food security: A comparison of african american and caucasian households in poverty.” *Children and Youth Services Review* 32: 767-733.