

Local Meat for Local Meals:

**An Assessment of Demand for a Mobile Slaughtering Unit in Pierce,
King, Kitsap and Thurston Counties, for the Puget Sound Meat
Producers Cooperative**

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Executive Summary

The Puget Sound Meat Producers Cooperative has proposed a Mobile Slaughtering Unit (MSU) to serve beef, pork, sheep/lamb, and goat producers in a six-county region of southern Puget Sound: King, Kitsap, Lewis, Mason, Pierce and Thurston Counties. To help determine the market demand for the unit and how that demand might grow during the first five years of the MSU's operation, I surveyed producers in Pierce, King, Thurston, and Kitsap Counties who owned cattle, pigs, sheep, goats, or fryers/broilers. The Puget Sound Meat Producers Cooperative will combine the demand data produced in this survey with financial data, to help determine whether or not the unit will be a financially sustainable asset.

In addition to questions about demand, the survey asked questions concerning producers' current production, slaughtering and marketing practices, as well as specifics to help the Puget Sound Meat Producers Cooperative identify which characteristics of service delivery will make the MSU most appealing to producers. Finally, I examined several secondary data sources to support my survey conclusions and investigate some of the cooperative's underlying assumptions regarding the MSU.

Observed Demand for the Mobile Slaughtering Unit's Services

Out of 1,901 surveys that were distributed, I received 395 responses from within the survey counties, a response rate of 20.7%. I also received 29 online responses from producers in other counties who had heard about the survey through online announcements or from friends and colleagues. The majority of producers in all counties who answered the survey expressed interest in using the MSU.

Producers who said they will or might use the MSU during its first five years of operation

County	Total Number of Producers Interested in Using the MSU	Number of Relevant Survey Responses
Pierce	67	85
King	96	109
Kitsap	35	39
Thurston	55	70
Total	254	309

Producers plan an aggressive expansion of their use of the MSU between the first and the fifth years of operation. In Year 5, producers plan to slaughter 77% more beef, 67% more pork 139% more sheep, and 94% more goat. This projected increase is all the more striking given that it will occur against a backdrop of a long-term decline in livestock populations in all four survey counties.

Predicted use of the MSU

	Year 1 (2009)					Year 5 (2014)				
County	Beef	Pork	Sheep/ Lambs	Goats	Poultry	Beef	Pork	Sheep/ Lambs	Goats	Poultry
King	368	240	505	277	1398	1107	195	472	619	5176
Kitsap	56	108	51	4	770	92	345	145	10	2985
Pierce	208	54	111	48	980	352	80	231	92	2305
Thurston	509	185	90	181	1143	453	179	191	262	2225
Total	1141	587	757	510	4291	2004	799	1039	983	12,691

It is important to remember that survey respondents are likely not representative of the entire population of livestock producers. Although it is certain that there are many producers who would use the MSU who did not respond to the survey, the group of people who responded to the survey are more likely to be interested in the MSU than those who did not respond. Therefore, results cannot be used to predict the level of demand within the entire population. They should instead be seen as a “floor,” predicting minimum demand for the MSU’s services.

Over and above the demand expressed in the survey counties, an additional 12 producers in Lewis and Mason Counties expressed interest in using the MSU during its first five years of its operation. This adds to the overall demand for the MSU’s services.

Additional predicted use of the MSU within the service area (Lewis and Mason Counties)

	Year 1 (2009)					Year 5 (2014)				
County	Beef	Pork	Sheep/ Lambs	Goats	Poultry	Beef	Pork	Sheep/ Lambs	Goats	Poultry
Total	125	0	130	130	400	297	0	302	183	2420

The figures above significantly underestimate existing demand in Lewis and Mason Counties, because outreach was limited to word of mouth and email announcements distributed through agricultural list serves. Existing USDA data suggests that Lewis County has livestock populations that are higher than any of the surveyed counties and it is therefore expected that this county will have significant demand. Mason County, on the other hand, has relatively small numbers of livestock, similar to Kitsap County. It will therefore likely have relatively low levels of demand.

Other Evidence in Support of the Need for a Mobile Slaughtering Unit

Most producers are marketing differentiated products that are highly suitable for those markets that require USDA-inspected meats, such as farmers’ markets, Community Supported Agriculture (CSAs), and restaurants. More than half (54%) of producers surveyed are producing “grass-fed” meat, while over a third are producing meat that is “local” (43%), “antibiotic- and hormone-free” (41%), or “natural” (38%). However, very few producers market through channels requiring USDA-inspected slaughter: only 5.8%

direct market their products through outlets that require USDA inspection, and 2.8% sell USDA-inspected meat wholesale.

Instead, most producers surveyed (56%) sell animals live, or “on the hoof,” to customers who purchase at least a quarter of an animal. Animals that are sold in this way may be slaughtered in facilities licensed under the WSDA Custom Exempt program. This consumer market is much smaller, however, and prices per pound of meat are lower than in outlets open to USDA-inspected meats.

Evidence gathered through the survey also supports the Puget Sound Meat Producers’ sense that there are currently no USDA facilities able to meet new demand for USDA-inspected meat slaughtering. Of the five facilities producers currently use for USDA-inspected slaughtering, two are not accepting new business from small independent producers, one is widely understood to be for sale (and offers only pork slaughtering), and two are quite a distance away from the producers in need of their services, warranting a round trip of 325 to 400 miles.

I also gathered significant secondary evidence that there are a growing number of consumers in Western Washington willing to pay premium prices for products which are local, natural, grass fed, humanely-raised, antibiotic- and hormone- free, and organic, if they are available. The 2007 Washington Beef Demand Index Study, a yearly study of consumers in the Seattle/Tacoma Metropolitan Statistical Area (MSA)¹ found that 28% of consumers reported buying locally-raised beef in the past six months, versus 21% in the national study (Pelegrin Gray Research, Inc., 2007).²

Farmers’ market representatives, food co-op leaders, and chef groups have each told the Puget Sound Meat Producers Cooperative that they do not have access to adequate amounts of locally-produced meat, and that they are therefore unable to satisfy existing market demand. Each of them stated that demand continues to grow; for example, shopper counts and total farmer sales have increased between 12% and 24% every year since the first Seattle farmers’ market opened in the U-District in 1993.³

By direct marketing USDA-inspected meats, producers will capture the margins (normally 50%) currently going to middlemen in the marketing chain (Fanatico, 2006). The Island Grown Cooperative, a Mobile Slaughtering Unit and cut and wrap facility in Northwest Washington, estimates that the retail value of meat slaughtered and processed in their unit was 1.04 million dollars in 2007; this same meat would have been worth \$480,000 if it were sold live (Dunlop, 2008).

¹ The Seattle Tacoma MSA covers the core of western Washington’s consumer population, including Snohomish, King, Pierce, Kitsap, and north Thurston Counties and the Sound.

² The surveyors found that some consumers may have been confused about what they are actually buying; for example, some consumers assumed that since they were buying at a local butcher shop that they were buying locally-raised beef. However, even if consumers were mistaken, more than 1 in 4 consumers cared enough about local sourcing to act upon it when purchasing food.

³ Letter from Chris Curtis, Director, Neighborhood Farmers’ Market Alliance, March 31, 2008 to Cheryl Ouellette, Project Coordinator, Puget Sound Meat Producers’ Cooperative.

Producers also have the potential to earn more if consumers are willing to pay a higher price for specialty products. The available evidence suggests that many consumers are willing to spend up to 25% more for meat that is local or comes from humanely-treated animals (Jassaume et al., 2004; Rauch and Sharp, 2005; Smith et al., 2006), and at least 50% more for meat that is organic (Fresh Research Exposes Rapid Growth, 2008). Consumers are also willing to pay \$5.65 for the health benefits of grass-fed beef, which contains “a low level of fat and calories” (McCluskey et al., 2005).

MSU Service Design

The survey results suggest that several characteristics of the MSU may make producers more likely to use the unit to slaughter their animals. Producers prefer not to travel; between 38% and 50% of producers, representing about 28% of the livestock volume, say they would not use the unit if it did not travel to their farm.⁴ Quite a few producers commented that they would, however, be willing to partner with nearby farmers to achieve a minimum volume in order to help the MSU work efficiently.

As expected, between 77% and 87% of producers who will use the MSU will also use USDA-inspected cut and wrap services if they are available. In addition, between 47% and 60% of producers would use marketing assistance to help individual farm businesses promote their products to farmers’ markets, farm stands, or CSAs, while 40% to 53% would utilize marketing assistance available to help their businesses sell to restaurants.⁵ This is consistent with the fact that few producers are currently marketing through these outlets.

Although many producers mentioned price as an important factor in their decision to use an MSU, about 65 to 75% were willing to pay a premium of up to 30% on top of standard WSDA Custom Exempt slaughter charges to receive USDA inspection of slaughter. This willingness to pay is logical, as producers can charge a higher price at outlets that are open to USDA-inspected meats, such as farmers’ markets, restaurants, and retail outlets.

This study does not tell the Puget Sound Meat Producers Cooperative whether or not it should move ahead with purchasing the MSU. In particular, the demand projected in this study will need to be combined with data regarding other expenses as well as prices charged for service in order to determine whether or not the unit will ultimately be financially sustainable. In general, however, the evidence gathered through this study supports the Puget Sound Meat Producers Cooperative’s underlying conjecture that providing USDA-inspected slaughtering services to local producers will fill a “missing link” between livestock farmers and consumers. Thus, if successfully implemented, the MSU will contribute to an increased number of successful and sustainable farm businesses in the southern Puget Sound region, preserving and augmenting the acreage being used as productive farmland throughout the area.

⁴ 95% confidence interval

⁵ 95% confidence intervals

Section I: Introduction

In November 2007, John Wise, Mayor of the City of Enumclaw, hosted an Agriculture Summit to develop strategies for reconnecting agriculture on the Enumclaw Plateau and surrounding southern Puget Sound area. During the meeting, producers identified a key barrier to viable livestock farming: the lack of USDA-inspected slaughtering facilities for large animals. Without USDA inspected slaughter, producers can only market animals live, “on the hoof,” to the relatively small group of consumers willing to purchase a quarter animal or more. USDA-inspection will allow producers to sell meat through farmers’ markets, groceries, and restaurants, to the many consumers who want local products and are willing to pay premium prices. This, in turn, will help small farms to remain a viable part of the South Puget Sound landscape.

Within a few months of that initial meeting, a group of producers formed the Puget Sound Meat Producers’ Cooperative, whose goal is to provide and strengthen the infrastructure needed to allow local farmers to market local USDA meat to Puget Sound consumers. The group covers six counties in the South Puget Sound Region: Mason, Kitsap, Thurston, Lewis, Pierce, and King Counties, and includes producers, butchers, restaurateurs, and other interested parties. As its initial project, the group is working to establish a mobile slaughtering unit that will provide USDA-inspected slaughtering services to producers. The group believes that a mobile unit will provide high quality services at a smaller scale, higher flexibility, lower capital cost, and with less neighbor opposition than a fixed slaughtering facility.

This study, a survey of livestock producers in Pierce, King, Kitsap, and Thurston Counties, is designed to support the work of the Puget Sound Meat Producers Cooperative by answering two primary questions:

1. What levels of demand exist currently for USDA-inspected slaughtering of beef, pork, sheep/lamb, and goat?
2. What might be the growth in demand over the first 5 years?

In addition to these two primary questions, the survey gathered information about producers’ current livestock slaughtering practices and marketing methods. It also asked questions about how the slaughtering services should be offered. Results from the survey, presented in the following report, will be used to complete a feasibility study that will determine whether or not the mobile slaughtering unit is realistic and financially sustainable. It will also give members of the Puget Sound Meat Producers’ Cooperative feedback from a pool of potential users about how to best design the services.

Section II: Loss of Slaughtering and Processing Facilities in Western Washington Reflects National Trends

USDA-inspected slaughtering and processing facilities have gone out of business over the last thirty years in Washington State

Over the last thirty years, many USDA-inspected meat slaughtering facilities have closed, and have not been replaced. Unfortunately, the USDA does not provide historical information about the numbers of slaughtering facilities in specific states. However, the loss has been documented by Martin and Lawson (2005), who mapped existing and closed meat slaughtering and processing facilities (see Figure 2.1).⁶

In a survey of Oregon and Washington livestock producers, Martin and Lawson (2005) found that 60% said they needed improved access to a USDA-inspected processing facility. In addition, 29% of producers cited a scarcity of USDA inspected facilities as a challenge to their business. This problem has also been documented anecdotally in the south Puget Sound region. For example, over the 35 years that Lee Markholt has been providing locally-produced beef through The Meat Shop on Vickery Avenue East in Summit, he has seen the USDA-inspected slaughtering plants in Lewis County and Sumner close. Currently, he has to make a 326-mile round trip journey to Sandy, Oregon, which adds significant labor and diesel costs to his product (Roberts, 2008).

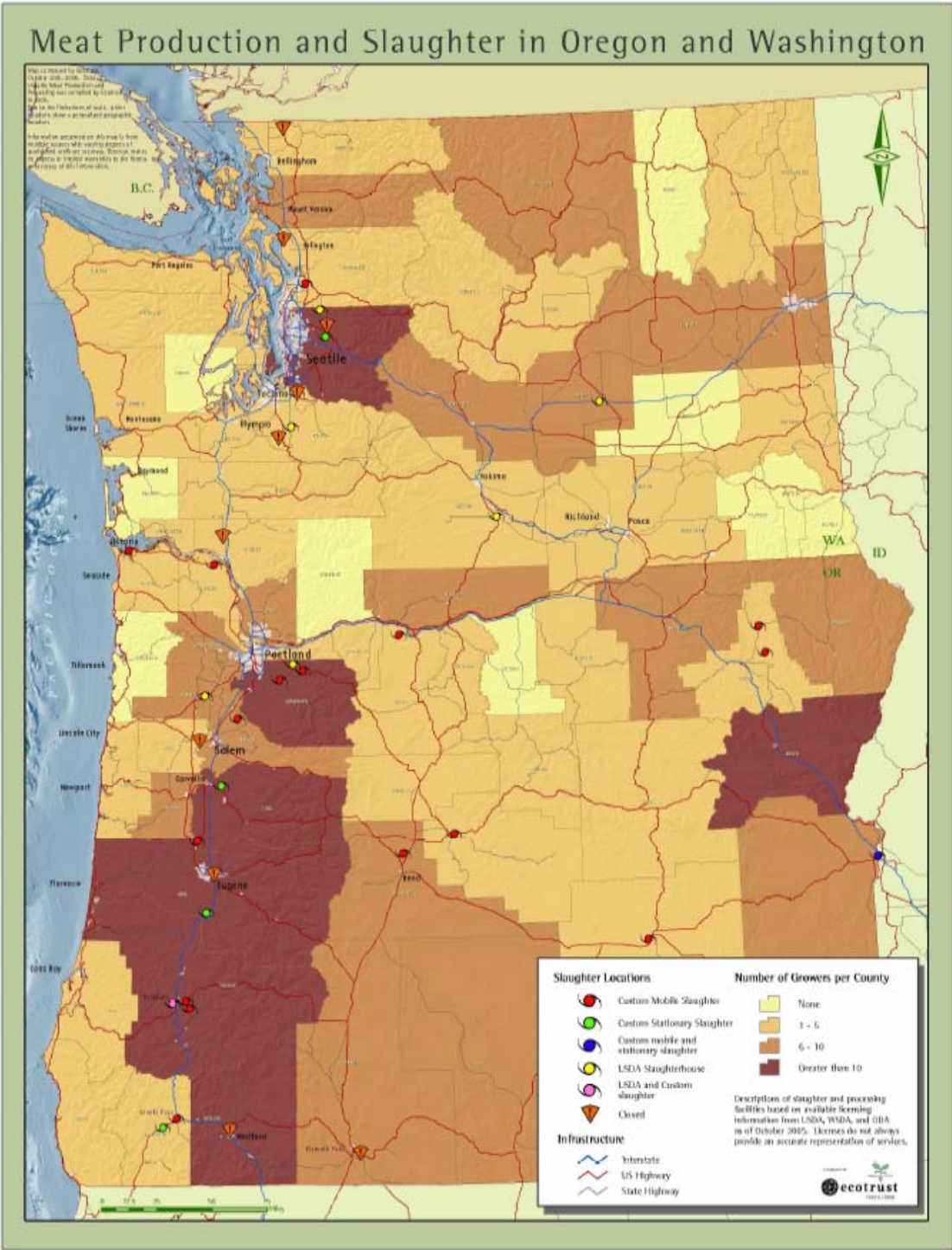
Meat processing normally happens in two distinct steps: the animal is first slaughtered. Afterwards, beef, goat, and sheep meat may be “aged,” meaning that it is held at refrigeration temperatures to improve taste and tenderness, before it is broken down into retail cuts (McMillan and Brock, 2005). The average industry time for aging beef is about seven days, but full flavor takes about 11 days to develop (Epley, 2008). Pork and lamb are not normally aged, though they may be chilled for two to five days. After chilling and/or aging, retail pieces of meat are cut and packaged, a step called the “cut and wrap.”

In Washington State, processing of meat from cattle, swine, sheep, and goats is regulated by the Washington State Department of Agriculture (WSDA) and, depending on the type of sale, by the USDA as well (Zenz, Sanger, and Wides, 2006). The WSDA Custom Exempt Meat program licenses persons that slaughter or process “un-inspected meat food animals” including cattle, sheep, goats, and swine, for “the sole consumption of the owner (WSDA, 2008a). Three license categories are included:

- Custom Farm Slaughterers: mobile slaughter units licensed by WSDA to slaughter meat food animals for the owner. The slaughtering is done on the owner’s farm or at an approved site.

⁶ This map combines information from several sources, and does not include all USDA facilities where producers told us they have had slaughtering done in the past year. It also does not assess the ability of existing facilities to take on additional business. We therefore followed up on this work by including questions about USDA facilities producers used in our survey. See Section VI for these results.

Figure 2.1. Existing and defunct meat slaughter and production facilities in Washington and Oregon.



Source: Ecotrust (from Martin and Lawson, 2005)

- Custom Slaughter Establishment: a fixed slaughter facility licensed by WSDA to slaughter meat food animals for the owner.
- Custom Meat Facilities: licensed facilities that process un-inspected meat food animals or inspected meat for the sole consumption of the owner.

To comply with the requirement that WSDA-licensed facilities slaughter and process meat for consumption by the owner, producers sell livestock by live weight to the end consumer. The end consumer (or sometimes, the producer) then contracts with a custom slaughterer, whose facility must be licensed by the WSDA. While the facility is licensed, the meat is considered “un-inspected,” and therefore it cannot be resold. The end consumer may cut and wrap his or her own meat, or may contract with a WSDA-licensed custom meat-processing facility for this service. This end consumer may not re-sell the meat, and therefore, may not be a restaurant or grocery. These requirements also complicate sales to individuals, as regulations require that they buy at least a quarter of an animal (such as half a cow or pig) (Martin and Lawson, 2005). It also creates some difficulties in pricing the product for consumers.⁷ Therefore, producers using this process can only access a small amount of the available market share for locally-produced meat (Fred Berman, personal communication).⁸ Significantly, producers who have their meat slaughtered and processed in a facility which has only a WSDA license cannot sell their products to grocery stores, restaurants, CSA (Community Supported Agriculture) customers, or at farmers’ markets.

Producers who wish to sell meat products by the pound or to retail sellers must have the animals slaughtered and processed in a USDA-inspected facility (Zenz et al, 2006). Large USDA-inspected plants will generally not process for small producers, because they can’t keep track of small batches, and because they don’t make profits on smaller volume orders (Fanatico, 2003). In Washington State, many of the few USDA-inspected facilities that remain have minimum head requirements or work only on contract, and many process only beef. These restrictions, combined with the loss in total numbers of slaughtering and processing facilities, have made it difficult for small to mid-size farms to access USDA-inspected slaughtering and processing services.

There is one exception to the requirement for processing at a USDA-inspected facility; WSDA-licensed custom meat facilities may purchase USDA-inspected carcasses, and process them under WSDA licensing for sale directly to end-consumers. This meat cannot be sold to groceries or restaurants, nor can it be given back to producers for sale at farmers’ markets. While this does not represent a large volume of meat, it is important for understanding how meat may reach end-consumers in Washington State.

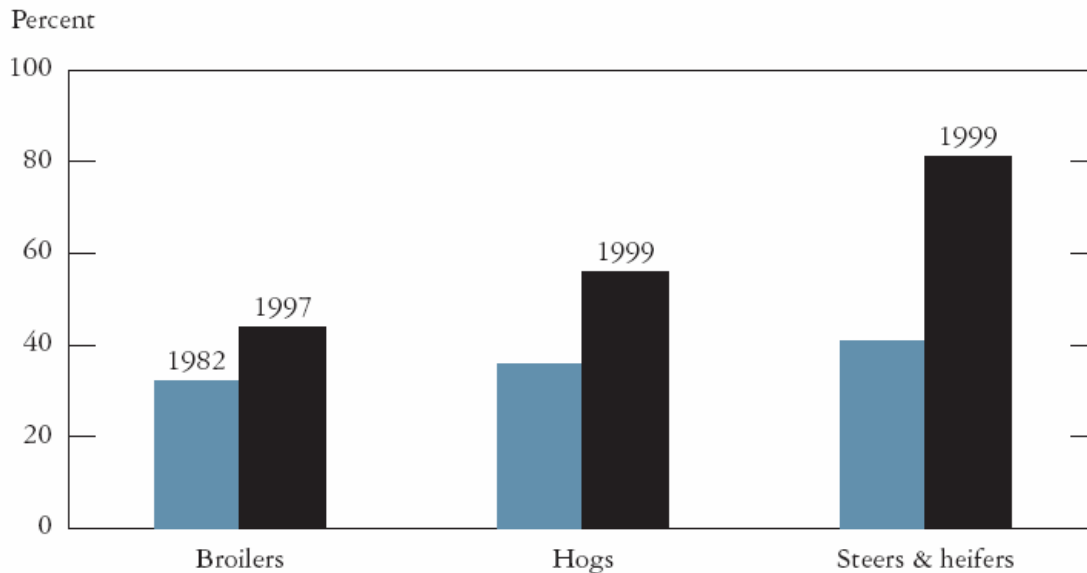
⁷ For example, cattle must be sold by the head or live weight. Live weight is heavier than “hanging weight,” the weight of the carcass. And then roughly a third of a beef front or hind quarter is lost as bone, fat, or trimmings. For pork, 11% is lost as bone, fat, and trimmings, while an additional 20% is lard (WSDAb, 2008). More importantly from the perspective of pricing for customers, these averages mask wide variations in dress-out percentages between animals (Fanatico, 2006).

⁸ Fred Berman, Small Farm and Direct Marketing Program Coordinator. Telephone interview January 23, 2008.

National meat production

Trends such as those experienced in Washington State have occurred throughout the United States. Over the last thirty years, the meat slaughtering and processing industries have become highly consolidated. From 1980-1999, the number of slaughter plants in the U.S. plunged from more than 600 to about 170 for cattle, and from 500 to about 180 for hogs (Barkema, Drabenstott, and Novack, 2001), the numbers have remained low since that time (Gurion-Sherman, 2008). Over the same time period, the market share captured by the top four firms has increased drastically (see Figure 2.2). The U.S. Department of Justice ranks the beef processing industry as “highly concentrated” (the highest ranking available) and the pork processing industry as “moderately concentrated” (Barkema et al., 2001).

Figure 2.2. Market share of top four meat processing firms.



Source: USDA (from Barkema, et al, 2001)

Even these numbers understate the effect on small farmers, such as those in Western Washington, because large facilities do not generally serve small processors. In the past ten years alone, approximately 10% of small meat processing companies nationwide have ceased operations (Natural Animal Products, 2005), continuing a trend that has been occurring since the 1980's. Consolidation has contributed to reduced profits for small and mid-size farmers, because with fewer plants to choose from, farmers have little negotiating power and must take the prices offered to them (Martin and Lawson, 2005).

Because of their position as price-takers, farmers realize far less of the profits generated by the food industry today than they did in years past. In general, the percentage of their income that Americans spend on food has fallen steadily over the last century (Economic

Research Service, USDA, as cited by Americans Spend Less, 2006).⁹ Over the last 50 years, a decreasing share of consumers' food dollars has gone to producers, and an increasing share has gone to processing, packaging, and transportation. Reduced prices, combined with increased competition very small profit margins, means that even small efficiency gains by larger processors cause bigger companies to win.

Integrated supply chains

Concentration at the slaughter, processing, and retail levels tends to encourage consolidation at the producer level as well, as large meat processors to exert considerable economic control over livestock producers, in the form of production contracts and animal ownership. The livestock industry is being transformed by integrated "supply chains," a tightly orchestrated production, processing, and marketing arrangement, stretching from genetics to grocery. In these types of arrangements, producers usually contract directly with processing organizations, bypassing more traditional commodity markets. Today, most of the poultry in the U.S. is produced through supply chain arrangements, and since the 1980's, similar transformation took place within hog production, with more than 80% of hogs sold under a contractual arrangement in 2000 (Barkema et al, 2001). Supply chains are somewhat less prevalent in the cattle industry; although the share of cattle marketed under supply chains doubled from about 10% in 1980 to more than 20% in 1998 (Barkema et al, 2001).

These types of arrangements have led to fewer, larger livestock production operations, and an increase in Confined Animal Feeding Operations (CAFOs), operations containing at least 1,000 large animals such as beef cows, or tens of thousands of smaller animals such as chickens. Many operations are much larger than this, with tens of thousands of beef cows or hogs, and hundreds of thousands of chickens. While these operations make up only about 5% of all U.S. animal operations, they now produce more than 50% of our food animals (Gurion-Sherman, 2008). Operations are also geographically concentrated, with large swine operations in Iowa and North Carolina (Key and McBride, 2007), and large broiler chicken operations in the Southeast, Delta, and Appalachian regions (Perry, Banker, and Green, 1999).

⁹ In 1933, American consumers spent more than 25% of their income on food. This fell to 20% in the post World War II years, to 15% in 1976, 12% in 1996, and 9.9% in 2005. These latest figures are up slightly from a low of 9.7% in 2004 (United States Department of Agriculture, Economic Research Service, as cited in Americans Spend Less, 2006).

Section III: Why Should the Public Care About Preserving Meat Slaughtering and Processing Infrastructure in Western Washington?

The general public often assumes that large livestock operations have flourished because they are more efficient; if this is the case, it may be argued, then why interfere with a system that gives Western Washington's consumers plentiful meat at low prices? However, economies of scale have often been exaggerated; for example, a review of several studies by McBride and Key (2003) found that small, efficient hog operations can compete on a cost basis, and that size of operation is not the dominant factor to remaining competitive. More generally, researchers have found that comparing farm size within crops indicates no clear relationship between yield per acre and farm size, meaning that large farms do not do a better job producing food to feed our population, and are often less profitable per acre (Peterson, 1997). Instead, a policy environment that favors large producers has created the consolidated landscape we see today.

These policies have concentrated livestock production in areas outside of Washington State, and made it more difficult for smaller farms, such as the small and mid-sized farms characteristic of Western Washington, to survive. Voters and legislators in Washington State have committed to preserving farmland because of the contributions that farms make to the economy, the environment, and the quality of life for all Washingtonians; legislation includes the Growth Management Act of 1990, and the legislation passed May 8, 2007, that established an Office of Farmland Preservation and a Farmland Preservation Task Force within the Washington State Conservation Commission. In order for land preservation efforts to work, there also have to be conditions that allow for farms to be profitable within our state. One of these conditions is the processing infrastructure for livestock and meat processing.

Huge CAFO operations do not generally cause immediate concerns for Washington residents, because most of these operations are elsewhere in the United States. However, these operations raise health and environmental issues, many of which reach across state borders, in the form of antibiotic resistance, water pollution, and greenhouse gas emissions. Even when the problems are more localized, most consumers would like to know that the food they eat is not causing harm to the communities where it is produced.

Loss of meat slaughtering and processing facilities threatens to contribute to farm loss in Western Washington

The loss of smaller USDA-inspected slaughter and processing facilities in Western Washington has made it particularly difficult for small to mid-size farms, such as those that characterize Western Washington, to maintain economic viability. Both total farmed acreage, and farms, have been lost in Western Washington during each five year period from 1987 through 2002. From 2002 to 2006, the National Agricultural Statistics Service (2007) estimates that Washington State lost 2,000 farms and 250 thousand acres of farmland.

This has a direct impact on the state's economy; in 2003 agriculture directly contributed approximately \$28 billion dollars in the state economy, while food processing contributed an additional \$9 billion (Value Added Agriculture, 2008). The Washington State Agricultural Statistical Service estimated that in 2003, for every dollar paid to the farmer, an additional \$4-6 was contributed to the state economy for processing, distribution, and marketing (2007 Washington Fact Sheet, 2007). The agriculture and food processing sectors also employs more people than any other sector, 173,000 people in 2003 (Value-Added Agriculture, 2008).

However, the negative impacts of farm loss go beyond the economic, as farms can provide social, environmental and natural resources benefits. Family-owned farms such as those that characterize Western Washington can help preserve high quality of life for rural citizens. Locally-owned and managed farms generate and distribute wealth more evenly throughout the rural sector than corporate farms, providing greater economic vitality and opportunities for rural residents (Mullnix and Warner, 2005). And farms also provide more intangible benefits; a review of U.S. valuation and preference survey studies for farmland found that citizens living in both urban and rural areas stressed "farmland heritage," "scenic beauty," "protecting family farms," and "preserving rural character" as important reasons for protecting farmland (Hall, McVittie, and Moran, 2004).

Farms have the potential to contribute to healthy ecosystem functions, including improved water quality through reduced runoff and improved water filtering before it enters groundwater, rivers, and the Puget Sound (Fact Sheet: Why Save Agriculture?, 2003). They also have the potential to protect and manage open space, conserve biodiversity, serve as wildlife migration corridors, and preserve critical riparian, wetland, and forest habitat (Maier and Shobayashi, 2001). While these services are not an automatic outcome of farming (and in fact, many farms are significant polluters) farms have the potential to provide these services at a lower cost to taxpayers than adding to public conservation lands, whereas other uses, such as housing developments, do not. In Western Washington, many environmental groups have stated that farmers have been more responsive partners in riparian protection efforts than developers (see for example Canty and Wiley, 2004).

Finally, Washington State has rich soils, diverse climates, and good irrigation, and thus represents one of the more productive growing regions of the world (WSDA, as cited by About WSDA, 2008). Worldwide, highly productive soils and climates are finite, and many of these lands are in areas that, like Washington, are endangered by urban development. In the U.S., 86% of the nation's fruits and vegetables, and 63% of dairy products come from farms near urban areas (Vallianatos, Gottlieb, and Haase, 2004). Farmland in Western Washington should be preserved so that it can continue to produce food for future generations. Once developed, farmland cannot be re-created, because the development process destroys the topsoil on which farming depends, and it takes an estimated 500 years per inch to create new soil through natural processes (Fact Sheet: Why Save Farmland, 2003).

Although global food shortages are unlikely in the short term, expanding global populations, increased global purchasing power (particularly in China and India), and biofuels technology are all creating increased demand for global food supply (Von Braum, 2007). Rising food prices have contributed to political instability in countries as diverse as Haiti, Egypt, the Philippines, and Indonesia (Weisman, 2008). In 2006, for the first time, the value of food imported into the U.S. exceeded the value of food exported from the U.S. (USDA Foreign Agricultural Service, as cited by American Planning Association, 2008). In the long run, given a limited supply of agriculturally productive land, it may therefore be important for Washington to be able to contribute to global food production.

Large, consolidated slaughtering and processing facilities raise health concerns

Increasingly, the public is raising health concerns about large industrial slaughtering and processing facilities. Although most of these facilities are in other states, these facilities provide the majority of the meat sold in most Washington State markets. Several high profile concerns have emerged in the last 10 years that have raised fears about the safety of food, particularly safety in large, industrial meat-packing facilities. Most recently, in February of 2008, the USDA announced the largest beef recall in its history, of 143 million pounds of raw and frozen beef. The recall was issued after the Humane Society of the United States released a video showing workers at the plant using electric prods, forklifts and water hoses to rouse cattle too weak to walk, despite the presence of USDA inspectors, and in violation of USDA rules.¹⁰ Animals who are sick are at greater risk of carrying *E. coli*, salmonella bacteria and bovine spongiform encephalopathy, a fatal neurological disorder known as mad cow disease (Gaouette, 2008).

While it is possible for small slaughterhouses to engage in such behavior, many of the high profile cases have occurred at large facilities, where mixing of meat makes tracking difficult. During the February recall, USDA officials said it was difficult to estimate the total effect of the recall, because beef from many companies is routinely mixed during a complex processing chain (Kim and Landsberg, 2008). This makes it impossible for consumers to know where their meat came from, complicating the protection of public health. Smaller facilities generally have a higher cost to the taxpayer (because each inspector inspects fewer “kills”), but the meat is be traceable back to its source.

Beyond these concerns about disease, animals who are raised and slaughtered in huge confined-animal feeding operations (CAFOs) routinely receive hormones, steroids antibiotics. The Food and Drug Administration, which is responsible for ensuring that food from animals treated with drugs and medicated feeds is safe for humans to eat, states that the amounts of drugs and hormones is low, and does not have any adverse human health impacts (U. S. Food and Drug Administration, 2002). However, the European Commission has banned the use of hormones in beef production, citing concerns raised by the European Union’s Scientific Committee on Veterinary Measures Relating to

¹⁰ On March 12, 2008, the president of the Westland/Hallmark meatpacking plant admitted that crippled cows probably entered the food supply at his company (Gaouette, 2008).

Public Health that six growth hormones used in beef production¹¹ may contribute to developmental problems, reproductive disruption (including early onset of puberty), or cancers of the breast, prostate, and colon (European Commission, 1999).

Antibiotic use in animals doesn't directly impact human health, but it greatly contributes to the development of antibiotic-resistant pathogens that are more difficult to treat. Recent evidence strongly suggests that some methicillin-resistant *Staphylococcus aureus* (MRSA) and uropathogenic *E. coli* infections may have come from animal sources. These pathogens collectively cause tens of millions of infections and many thousands of hospitalizations and deaths every year (Gurion-Sherman, 2008). Antibiotics are less commonly used in smaller operations, because of lower risk of disease when fewer animals are being raised, a desire to save on the costs of drugs, and consumer demand for antibiotic- and hormone-free meat.

Consolidated livestock facilities cause environmental problems

The sheer scale of waste at large livestock production facilities creates significant environmental problems, with a negative impact that is much greater than the combined effects of many smaller operations. When used as a fertilizer, livestock and poultry manure can provide valuable organic material and nutrients for crop and pasture growth (Ribaud et al, 2003). However, large concentrated animal operations have fewer acres of cropland per animal, and therefore may apply manure at a rate that results in excess application of nitrogen and phosphorus. Excess concentration, known as the "land application rate" is thought to be the single most important manure management variable causing nutrient run-off, which creates the potential for water resource contamination (Ribaud et al, 2003). Very big operations generate the largest share of nutrients that are in excess of crop needs (Golleson et al, 2001),¹² and large operators tend to view manure as a waste rather than a resource (Ribaud et al, 2003).

It has been estimated that the U.S. taxpayers' costs of pollution avoidance, and of air and water pollution experienced, from CAFOs, is \$1.16 billion a year, including \$125 million per year in direct subsidies through USDA's EQIP program (Gurion-Sherman, 2008). Thus, this type of factory farming is 'optimal' only as long as these operations can avoid paying for their pollution. By allowing the public to pay for these costs, operations keep their costs low, and thus can out-compete smaller operations (Bittman, 2008).

Large operations also consume enormous amounts of energy, and require ever-increasing amounts of corn, soy, and other grains, which has contributed to the destruction of tropical rain forests (Bittman, 2008). Large operations generally house animals in temperature-controlled facilities, and normally rely exclusively on feeding, whereas smaller producers generally pasture their animals, finishing on grain. Thus, large

¹¹ Oestradiol, Progesterone, and Testosterone (all naturally occurring) and Seranol, Trenbolone, and Mlengestrol (artificial)

¹² The 2% of farms in the large size class (over 1,000 animal units) produced almost half of the excess manure nitrogen and more than half of the excess manure phosphorus.

operations have historically benefited from low prices of feed crops, driven by subsidies of the grain and soybean industries. These subsidies have kept costs for large poultry and hog producers an estimated 13% lower than they would otherwise have been and also lowered costs for producing beef cows (Starmer, Witteman, and Wise, 2006). This is despite the fact that properly managed pastures require less maintenance and energy than feed crops, trap more carbon dioxide, and can be used to produce animals at similar or lower costs (Gurion-Sherman, 2008).

Finally, recent concern about global warming has led to increased awareness about “food miles,” the distance that food travels before it reaches a consumers’ plate. These miles result in additional fossil fuels burned, and therefore contribute to carbon emissions. Worldwide, almost 18% of *total* global greenhouse gas emissions are attributed to livestock production, including transport of livestock and feed (McMichael, Powles, Butler, and Uauy, 2007). Locally produced livestock generate less greenhouse gasses because they are transported shorter distances to market, and because they are usually fed more grass and less grain than their industrially-produced counterparts.

Section IV: The History of the Puget Sound Meat Producers Cooperative, and the Current Proposal for a Mobile Meat Slaughtering Facility

In November 2007, John Wise, Mayor of the City of Enumclaw, hosted an agricultural summit for producers and others involved in agriculture, to brainstorm strategies for reconnecting agriculture on the Enumclaw Plateau. At this meeting, a number of farmers formed a group, initially called the “meat group” to provide and strengthen the infrastructure for USDA-inspected meat slaughtering and processing in the southern Puget Sound. This group was headed by Cheryl Ouellette, a mixed livestock and produce farmer from Pierce County. Based on conversations with other producers in Washington State, the group quickly headed in the direction of proposing a mobile slaughtering facility, because of the smaller scale, high quality services, flexibility, lower capital costs, and the appeal (compared to a fixed facility) for neighbors.

Following their initial meetings, Cheryl Ouellette approached the Pierce Conservation District, among others, as a possible supporter. The Pierce Conservation District responded enthusiastically, and was able to provide funding for some limited staffing and other planning costs. They also pledged to purchase a mobile unit, if the group would commit to a regional effort (covering King, Kitsap, Lewis, Mason, Pierce, and Thurston Counties), and as long as the group was able to complete the legal, financial, marketing, food safety, and training plans needed to successfully and sustainably operate the unit over time.

Other governmental partners involved in initial planning, including the City of Enumclaw, King County Department of Natural Resources, and King County Conservation District also asked the group to squarely address the question of whether there was adequate demand for the slaughtering services the group would provide to allow the unit to be financially self-sustaining.

The meat group subsequently acquired legal status as an agricultural cooperative in Washington State, under the name Puget Sound Meat Producers’ Cooperative. As a preliminary step to writing a full feasibility study, they asked me to investigate two research questions:

1. What levels of demand exist currently for USDA-inspected slaughtering of beef, pork, sheep/lamb, and goat?
2. What might be the growth in demand over the first 5 years?

Following the methodology used in most other feasibility studies, partners agreed that the most reliable way to get at this question was to survey producers to find out whether they would use the services provided by the mobile slaughtering unit (MSU), and how many animals they expected to slaughter.

These questions about demand for services were embedded within a set of assumptions that underlie the expectation that the MSU will be successful. To further refine the research question, I completed a logic model for the program. The goal of this exercise was to identify assumptions as clearly as possible, and to determine which of the assumptions could be tested in a producer survey.

Section V: Identifying Key Assumptions Through a Logic Model

As Figure 5.1, a logic model for the proposed MSU, shows, the slaughtering facility will provide services that address only a few of the steps that are required to take animals from production to successful marketing. While the MSU will provide USDA-inspected slaughtering of animals, the meat will still need to be cut, processed, and packaged in a USDA-inspected facility, and the meat will need to be successfully sold to profitable markets, by consumers who are willing to pay a premium for locally-produced products.

Using the logic model, and working together with project partners, I identified five key assumptions underlying successful operation of the MSU:

1. Producers have the skills and resources they need to successfully produce animals for the mobile slaughtering unit.
2. Once running, the mobile slaughtering unit will break even.
3. Existing cut and wrap facilities will be willing and able to upgrade to provide USDA-inspected cut and wrap services, at the times of year, and in the volumes, that the mobile unit will demand.
4. Producers will know how to access new markets that are open to them with USDA inspection.
5. There is existing unmet customer demand for USDA-inspected, locally-raised meat.

Four of these key assumptions were partially or fully assessed through the survey:

1. The assumption that *producers have the skills and resources they need to successfully produce animals* was assessed through survey questions related to their predicted demand for a facility to slaughter animals under USDA inspection.
2. The assumption that *the mobile slaughtering unit will break even* was not assessed in this survey. However, data derived from questions about producers' willingness to pay for USDA-inspected slaughter, and through questions about initial demand and demand after five years, will be used to drive financial models that will be developed during the feasibility study.
3. An initial list of facilities licensed under the existing WSDA Custom Meat program, and used by meat producers in the 6-county service region, was generated through survey questions. However, the survey did not determine *whether these facilities will be willing and able to provide USDA-inspected cut and wrap services*.

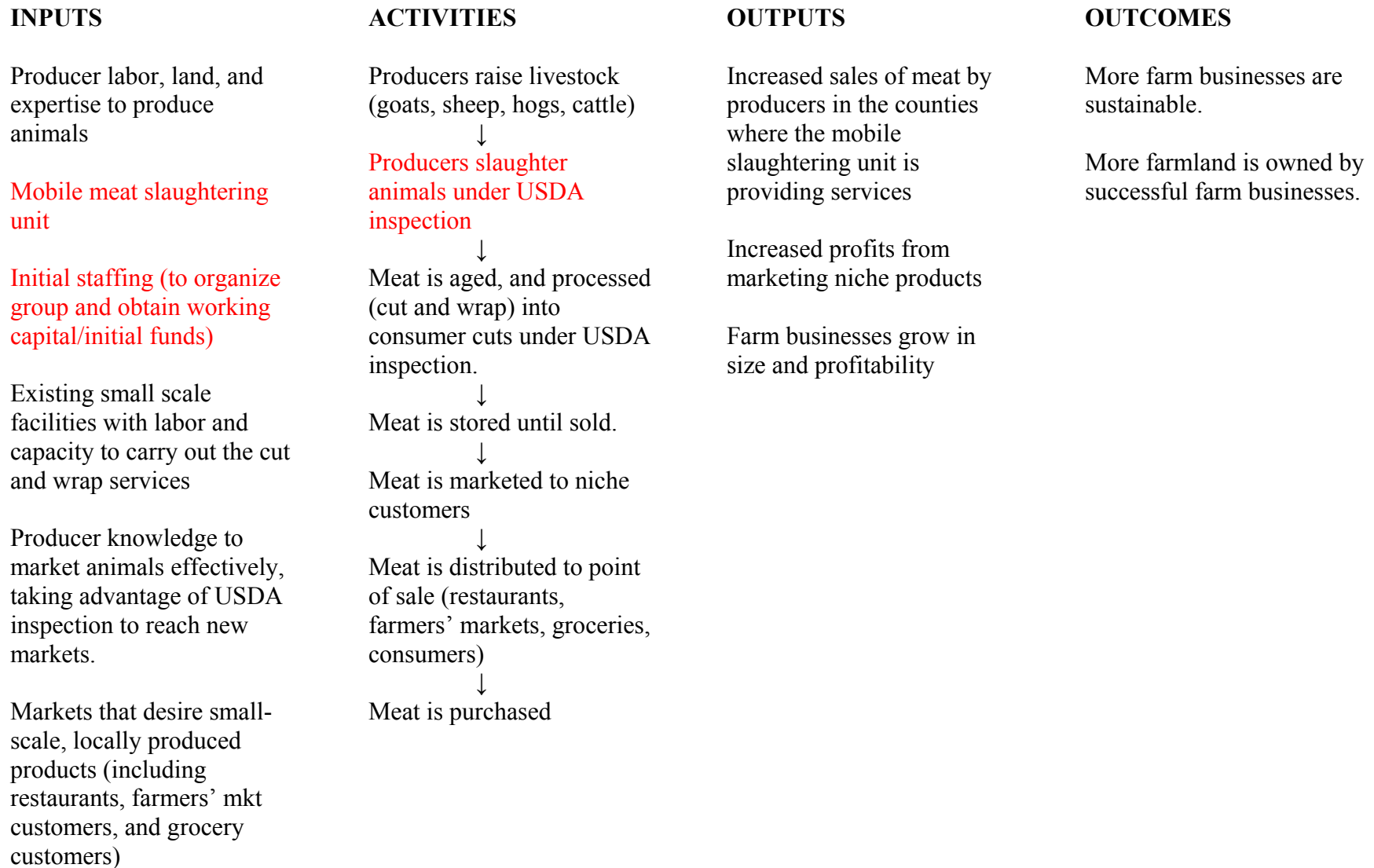
4. The assumption that *producers will know how to access new markets that are open to them with USDA inspection* was assessed with questions about current value-added marketing practices, and about whether producers felt that they needed additional services, beyond the USDA-inspected MSU, to be successful.
5. The assumption that *there is existing unmet customer demand for USDA-inspected, locally-raised meat* was not tested in this survey.

In addition, two key assumptions were partially or fully tested within this study using secondary data:

1. Survey data projecting initial demand was be cross-checked using USDA data about the numbers of livestock in the 6-county service area. This provides more confidence for the numbers that will later be used to drive financial models, to determine whether *the mobile slaughtering unit will break even*.
2. The assumption that *there is existing unmet consumer demand for USDA-inspected, locally-raised meat* was assessed through a variety of existing secondary data illustrating trends in consumer preferences in Western Washington.

Meanwhile, the financial models used to determine whether the MSU is a financially sustainable asset, and an assessment of current cut and wrap facilities are outside the scope of this study, and will have to be performed as part of the full feasibility study.

Figure 5.1. Logic model for the proposed mobile slaughtering unit.



Section VI: Survey Methods

A survey of potential users is a tool that has been widely to assess demand for services in similar feasibility studies¹³, as is the use of existing data about consumer preferences and demands (when available). Analysis of existing USDA data is less common, but it has also been used (Shepstone Management Company, 2006).

I generated survey questions from a combination of the logic model, a review of relevant questions included in other surveys (Fisher et al., 2004; Shepstone Management Company, 2000b; and Shepstone Management Company, 2006) and input from project partners, including governmental agricultural specialists, economic development specialists, and producers. I also incorporated advice on question wording and survey design from Dillman (2000) and Salant and Dillman (1994).

Producers who attended an informational meeting on February 19, 2008 tested a preliminary version of the survey, available in Appendix A. A second group of producers (the steering committee for the project) field-tested the final version of the survey before it was mailed, to ensure that questions were clear and easily understood. This final survey is available in Appendix B.

We chose to do a mail survey because of the relatively low cost and staffing needs, and to allow the survey to be distributed to the widest possible group of livestock producers. The King County Department of Natural Resources and the Pierce County Conservation District provided funding for the purchase of the list, copying, and mailing costs. Mailing addresses were obtained through the National Agricultural Statistical Services (NASS) of the United States Department of Agriculture (USDA). The survey was mailed to 1901 households, including all producers in King, Pierce, Thurston, and Kitsap Counties who owned one or more broiler or fryer (but excluding pullets or layers), turkey, goat, sheep, hog, or cattle (including cow/calf operations, dairy, or cattle operations).¹⁴ Although there are some concerns that the NASS list is incomplete, as well as concerns that it includes many people no longer farming, the group of agencies funding the survey chose to use this list after determining that it was the most complete available list. Unfortunately, we were only able to survey producers within four of the six counties which the MSU anticipates serving; Mason and Lewis Counties were not surveyed, although the USDA data presented in Section XI gives some indication of possible demand in these counties.

The survey was sent on April 3, 2008, with a reminder postcard sent on April 15, 2008, following suggestions that reminders would increase response rate, particularly when sent 1-2 weeks after the survey (Salant and Dillman, 1994). On April 18-22, we also emailed reminders through list serves of producers in the area.¹⁵ Producers were asked to provide their own stamp when mailing back the survey. However, all respondents were given the option of filling out the survey on line.

¹³ Feasibility studies reviewed included Fisher, Bennage, Dunlop, Rose, and Elwood (2004); Knudson and Peterson (2007); Ohio Cooperative Development Center (2002); Shepstone Management Company (2000a); Shepstone Management Company (2006); and Wold, Horn, Norder, and Weybright (2005).

¹⁴ The survey included 1408 cattle producers, 244 hog producers, 316 sheep producers, 403 goat producers, 13 broiler producers, and 69 turkey producers. (Note that this does not add to 1901, because some operations have more than one type of livestock.)

¹⁵ Email lists and list serves that carried the reminder included Puget Sound Fresh, Washington Farm Bureau (all six counties), Tilth Producers (Sno-Valley Tilth), WSU Small Farms Team, WA Cattlemens' Association, WA Family Farmer Resource, Small Farms list-serve, and office directors, chairs, and agriculture faculty for Washington State University Cooperative Extension (in the six target counties).

We received a total of 395 replies from within the four survey counties, for a response rate of 20.7%. This response rate compares favorably with response rates for other similar surveys (Dennis Koong, Deputy Director, National Agricultural Statistical Service, United States Department of Agriculture, *personal communication*). However, 59 of these replies were from individuals who do not currently own livestock, who were excluded from the analysis. A breakdown of responses by county is presented in Table 6.1. We received an additional 29 responses from producers who were outside the four survey counties. For clarity, most survey analysis is limited to producers who identified themselves as living in King, Pierce, Thurston, and Kitsap Counties. In Section VIII, which reports on demand, a separate subsection reports additional demand for the MSU within the proposed service area (in Lewis and Mason Counties), and outside the proposed service area (all other counties in Washington).

Table 6.1. Responses by county.

County	Number of Responses	Number of Surveys Sent	Response Rate by County
Pierce	114	618	18.4 %
King	140	533	26.3 %
Kitsap	47	209	22.5 %
Thurston	88	541	16.3 %
Anonymous	6	-	NA
Total, 4 Survey Counties:	395	1901	20.7 %
Lewis	9	-	NA
Mason	5	-	NA
Total, Lewis and Mason Counties:	14	-	N/A
Total, Other Counties	15	-	N/A

*Other Counties included Whatcom (1), Skagit (3), Snohomish (3), Okanogan (2), Kittitas (1), Franklin (1), Jefferson (2), and Clark (1).

It is important to remember that survey respondents are likely not representative of the entire population of livestock producers. Although it is certain that there are many producers who would use the MSU who did not respond to the survey, the group of people who responded to the survey are more likely to be interested in the MSU than those who did not respond. Therefore, results cannot be used to predict the level of demand within the entire population. The results presented below should instead be seen as a “floor,” predicting minimum demand for the MSU’s services.

However, it is possible to use the survey results to make predictions about the entire population of producers who want to use the MSU, despite the fact that not all interested individuals answered the survey. I have not come across any evidence that this assumption is flawed, and the Puget Sound Meat Producers’ Cooperative should feel confident assuming that by meeting the needs of survey respondents in designing the MSU’s services, they will be meeting the needs of most producers who will use the MSU.

Section VII: A General Description of Survey Respondents

The numbers of producers who slaughtered large livestock in 2007, and the total number of animals they slaughtered in the four county region is presented in Table 7.1, with breakdowns by animal and by county.

Table 7.1. The number of producers who slaughtered animals, and the number of animals slaughtered, in 2007.

County	Number of Producers who Slaughtered Animals			
	Beef	Pork	Sheep	Goat
Pierce	43	10	15	7
King	52	14	14	6
Kitsap	15	12	5	1
Thurston	36	11	11	5
Total	146	47	45	19

County	Number of Animals Slaughtered			
	Beef	Pork	Sheep	Goat
Pierce	132	46	42	214
King	291	544	257	357
Kitsap	34	1	181	48
Thurston	43	55	134	205
Total	500	646	614	824

Producers sold their animals through a variety of marketing outlets in 2007, and many producers used more than one outlet. A majority of producers, 56.3%, direct marketed under the WSDA Custom Exempt program, where animals are technically sold live “on the hoof”, and almost half marketed their animals live through auctions. Very few producers marketed through channels that required USDA-inspected slaughter: only 5.8% direct marketed with USDA inspection (including farmers’ markets, farm stands, food buying clubs, CSA’s, restaurants, and groceries), and 2.8% sold meat wholesale (see Figure 7.1). Consistent with this, the number of animals slaughtered under USDA inspection in 2007 was also very small (see Table 7.2).

Figure 7.1. Marketing outlets used by producers in 2007.

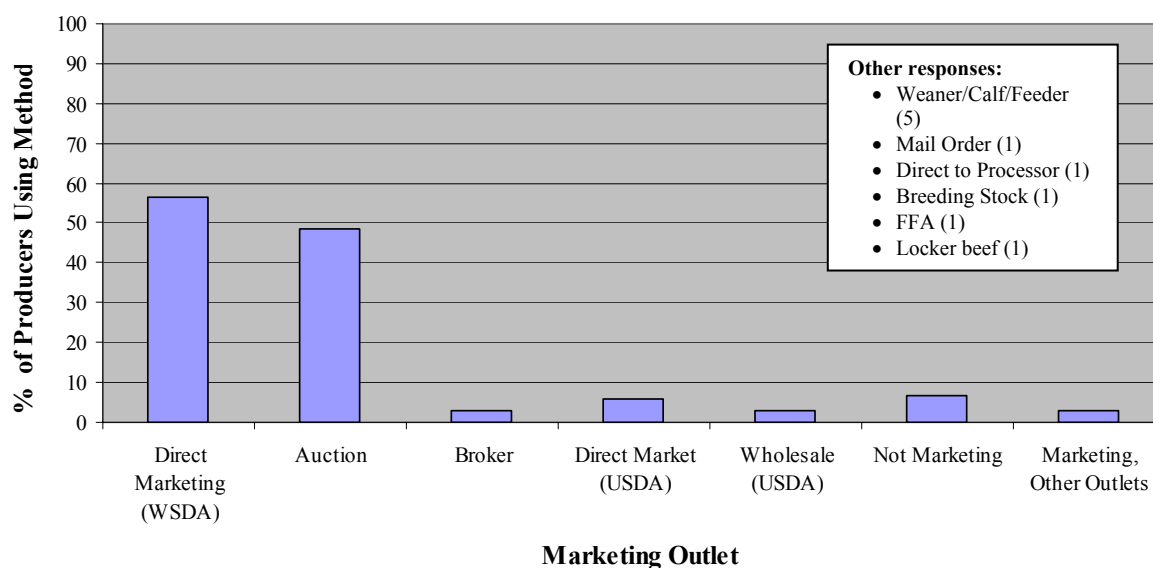


Table 7.2. Number of animals slaughtered under USDA inspection by producers in 2007.

	Beef	Pork	Sheep/lamb	Goat
Pierce	132	46	42	214
King	291	544	257	357
Kitsap	34	1	181	48
Thurston	43	55	134	205
Total	500	646	614	824

The actual volumes slaughtered under USDA inspection are likely significantly lower than this. Producers who said they were slaughtering under USDA inspection identified 15 facilities they used for these services. However, I could only confirm that six of these facilities offer USDA-inspected slaughtering services: five were in the current USDA directory of inspected facilities, and one transports animals to a USDA-inspected facility for slaughtering. The other facilities were either licensed under the WSDA program, or in one case, a closed USDA facility.

In order to assess whether these existing USDA facilities could serve the demand for USDA-inspected slaughtering, a qualitative follow-up was carried out, by calling the facilities and/or discussing the facilities with local producers. None of these facilities is capable of handling a significant additional volume from small independent producers (see Table 7.3). This supports the assertion of the Puget Sound Meat Producers Cooperative, that there may be an unmet need for USDA-inspected slaughtering services in the Southern Puget Sound area.

Table 7.3. USDA-inspected facilities listed by producers, that were confirmed by the USDA

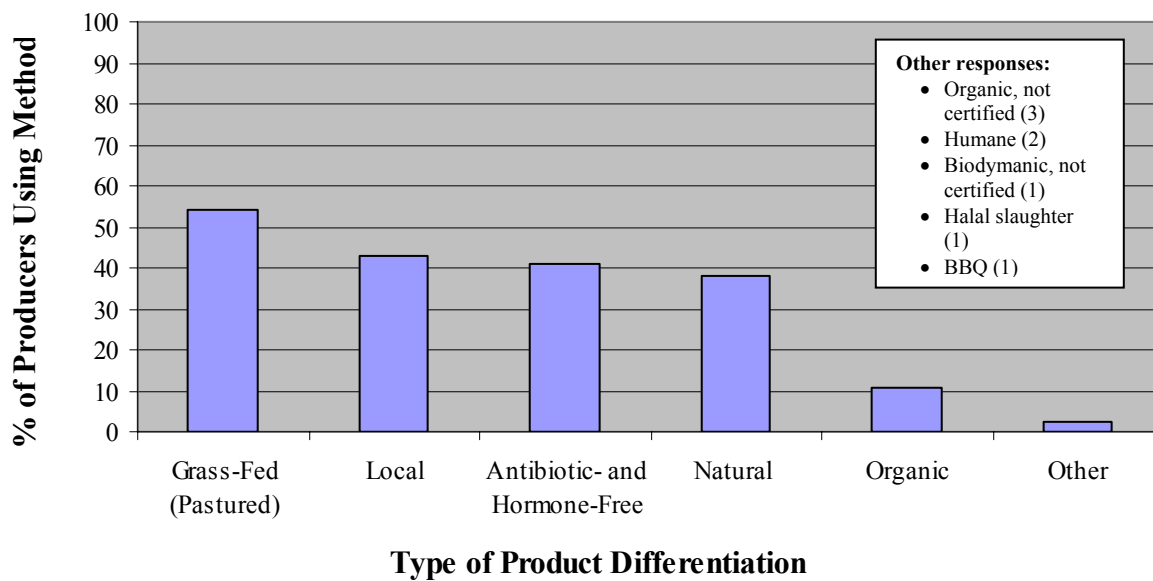
Facility Name	No. of Producers Using this Facility	Address/ Phone	Notes
Emmert Buxton Meat Co.	3	37101 SE Dunn Rd Sandy, OR 503-668-4838	USDA-inspected. 325 miles round trip. ¹⁶ Also able to process organically certified meats.
Kapowsin Meats	6	29401 118th Ave E Graham, WA 98338 253-847-1777	USDA-inspected pork slaughtering only. For sale. ¹⁷
Lampaert Meats, Inc	2	17658 W Snoqualmie River Rd NE, Duvall, WA 98019 425-788-1128	USDA-inspected. They say their business is cyclical (2-3 yr cycles). When they are slow, they serve new small independent producers, but when they are busy, they don't accept new business. Producers say they are not currently seeking new customers.
McCary's	1	6880 Route-170 Mesa, WA 99343 509-269-4488	USDA inspected. 400 miles round trip. Mostly beef and pork, but will take lamb and goat. No USDA smoking.
The Meat Shop of Tacoma	1	13419 Vickery Ave E Tacoma, WA 98446 253-537-4490	Not USDA-inspected, but will take animals to Emmert Buxton Meat Co. in Sandy, OR for USDA-inspected slaughter.
Walt's Meats	4	350 S Pekin Rd Woodland, WA 98674 360-225-8203	USDA inspected. 250 miles round trip. This facility is set to process large volumes of commercial boxed beef, and staff say that Walt's does not normally provide slaughtering for small producers who want meat returned to them. Producers say "only available on a special favor arrangement." Meat is fabricated immediately after slaughter, with no hanging or aging. Two producers noted that Walt's has very high prices because of the lack of competition.

¹⁶ Distances are calculated from the Pierce Conservation District Building, Puyallup, WA.

¹⁷ According to multiple producers.

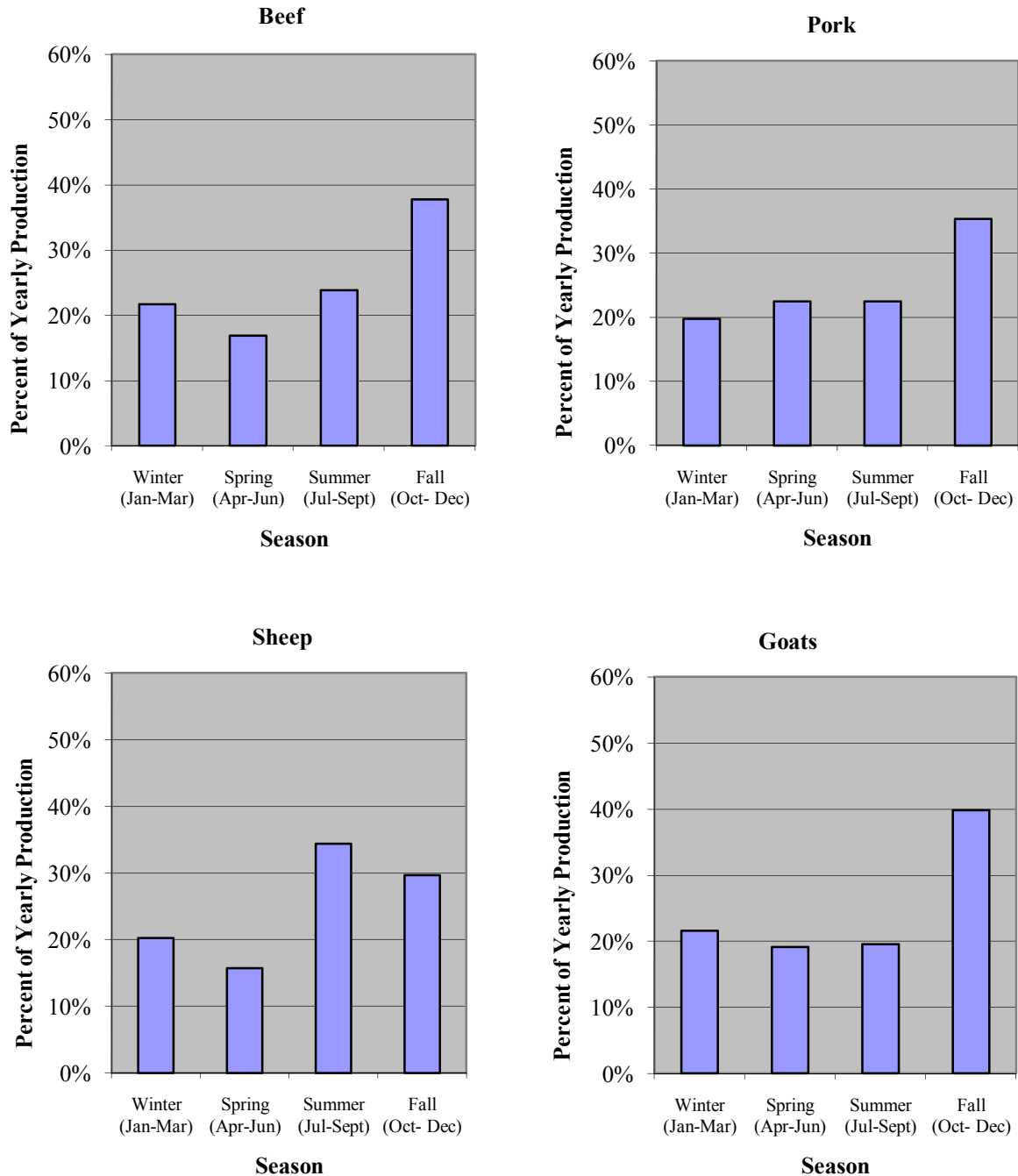
While most producers did not sell their meat through direct market outlets requiring USDA inspection, many producers were raising specialty meat that was differentiated through labels such as “grass-fed” or “pastured”, “antibiotic- and hormone-free”, “natural,” and “local” (see Figure 7.2). Thus, producers were producing the types of products for which there is a demand at restaurants, farmers’ markets, food cooperatives, and other similar outlets, and for which consumers are willing to pay a premium (See Section XII for a discussion of the evidence for demand for these products). While relatively few producers sold under the “organic” label, this is consistent with the marketing outlets being used. Direct marketing “on the hoof” is usually done to relatively few customers, often individuals or families that the producer knows well. In this situation, there is no need for organic labeling, and certification therefore represents an unneeded expense.

Figure 7.2. Types of product differentiation used by livestock producers in 2007.



Animal slaughtering was seasonal, with more animals slaughtered in the fall. The seasonal patterns vary somewhat by animal, with beef and goat production more highly seasonal than pork or sheep production (see Figure 7.3). One would expect the seasonal variation in demand for the MSU's services to be similar to these patterns.

Figure 7.3. Seasonal patterns of production in 2007.



Section VIII: Observed Demand for the Mobile Slaughtering Unit

Demand for the mobile slaughtering unit within the survey counties

The survey asked producers whether they will use the MSU during its first five years of operation. Producers were given the opportunity to answer “yes,” “maybe” or “no.” Together, the group of producers who said “yes” and “maybe” comprise the group of producers interested in using the MSU’s services. Producers in every surveyed county are interested in using the MSU (see Table 8.1). The pattern of demand, with the highest number of interested producers in King County, and the fewest in Kitsap County, mirrors the relative number of livestock and livestock producers in each county, as documented by existing USDA data. (For a further exploration of USDA livestock data, and a comparison of estimated demand using this information, see Section XI.)

Table 8.1. Number of producers who will use the MSU during the first five years.

County	Number of Producers Who Said “Yes”	Number of Producers Who Said “Maybe”	Total Number of Producers Interested in Using the MSU	Number of Relevant Survey Responses
Pierce	33	34	67	85
King	47	49	96	109
Kitsap	21	14	35	39
Thurston	24	31	55	70
Anonymous ¹⁸	0	1	1	6
Total	125	129	254	309

I have considered that livestock that producers who answered “yes” represent guaranteed demand, while those who answered “maybe” represent possible demand. Limiting the anticipated start-up volumes to animals identified by producers who guarantee that they will use the MSU during the first five years (as opposed to including those who will possibly use the MSU) gives an extremely conservative estimate of demand, particularly given that not all interested individuals completed the survey. Based on this, the combination of guaranteed and possible demand may be closer to the true demand within the survey counties.

Anticipated volumes of livestock are presented in Table 8.2. Producers plan an aggressive expansion of their use of the MSU between the first and the fifth years of operation. In Year 5, producers plan to slaughter 77% more beef, 67% more pork 139% more sheep, and 94% more goat. This projected increase is all the more striking given that it will occur against a backdrop of a long-term decline in livestock populations in all four survey counties.

¹⁸ Because anonymous responses included only one producer who said he or she might use the MSU (not planning to slaughter any animals in Year 1 and only 3 beef in Year 5), anonymous responses are excluded from further analysis.

Table 8.2. Demand for the MSU in Year 1 and Year 5.

	County	Year 1				Year 5			
Guaranteed Demand	County	Beef	Pork	Sheep/ Lamb	Goat	Beef	Pork	Sheep/ Lamb	Goat
	Pierce	160	38	57	38	278	84	171	104
	King	295	56	195	265	982	101	407	600
	Kitsap	29	136	46	4	56	301	140	10
	Thurston	396	142	71	165	243	134	165	202
	Total	880	372	369	472	1559	620	883	916
Possible Demand	County	Beef	Pork	Sheep/ Lamb	Goat	Beef	Pork	Sheep/ Lamb	Goat
	Pierce	52	28	60	28	87	28	110	53
	King	112	194	316	26	256	106	74	37
	Kitsap	32	36	15	0	40	155	55	0
	Thurston	113	44	20	16	210	45	26	60
	Total	309	302	411	70	593	334	265	150
TOTAL Guaranteed and Possible Demand		Beef	Pork	Sheep/ Lamb	Goat	Beef	Pork	Sheep/ Lamb	Goat
	Pierce	212	66	117	66	365	112	281	157
	King	407	250	511	291	1238	207	481	637
	Kitsap	61	172	61	4	96	456	195	10
	Thurston	509	186	91	181	453	179	191	262
	Total	1189	674	780	542	2152	954	1148	1066

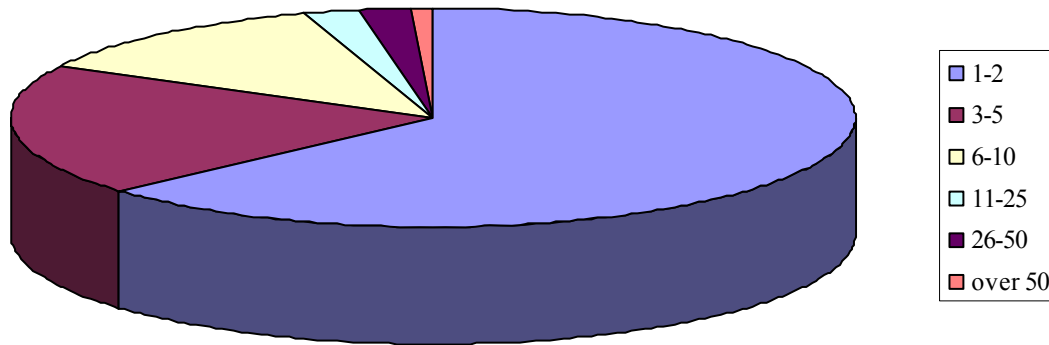
Guaranteed/Total 74% 55% 47% 87% 72% 65% 77% 86%

I expect that the level survey results represent a fairly conservative estimate of potential growth, , because additional producers may decide to use the facility after they see it successfully operating. This is consistent with the experience of the Island Grown Cooperative Mobile Slaughtering Unit, which serves producers in San Juan, Island, Skagit, and Whatcom Counties. Measured by the number of animals slaughtered, Island Grown grew 240% over the five years between 2003 and 2007 (Dunlop, 2008). Leaders at the Island Grown group say that currently, growth is constrained by their capacity to hold carcasses for aging, not by farmer demand (Dunlop, *personal communication*).

One additional distinctive feature of the demand is that many producers plan to slaughter fairly small numbers of livestock, while a few plan to slaughter much larger numbers (see Figure 8.1). According to the NASS, 89% of livestock-owning farm businesses in Pierce, King, Kitsap, and Thurston Counties own fewer than 50 animals, and this result is consistent with this.¹⁹ This will present somewhat of a challenge for the Puget Sound Meat Producers Cooperative, because others who operate mobile slaughtering facilities say that the unit must process a number of animals at a stop to be cost efficient (Greg Lynn, *personal communication*).

¹⁹ Calculated from our survey frame data.

Figure 8.1. Number of beef that individual producers plan to slaughter in the MSU in Year 1.



Additional demand for the mobile slaughtering unit

The MSU plans to provide services within Lewis and Mason Counties in addition to the surveyed counties, and this will result in additional demand for the MSU's services. Although surveys were not mailed to these areas, producers who are involved with the project, as well as some who received email announcements, completed the survey (see Table 8.3).

The demand expressed in Lewis and Mason Counties through the survey (see Table 8.4), certainly underestimates existing demand in Lewis and Mason counties, because survey announcement distribution was limited to email. Evidence that there were a relatively high number of livestock sold in Lewis County in 2002 (though Mason County sold relatively few) would lead one to expect that there might be significant undocumented demand in Lewis County. Data on number of livestock sold in each county, and the livestock populations is analyzed in Section XI.

In addition to the group of producers in Lewis and Mason counties who answered the survey, there were a few on-line survey responses from producers who are outside the anticipated service area (see Tables 8.3 and 8.4). Some of these responses are from producers who are in counties that border the service area (such as Snohomish, Kittitas, and Jefferson Counties), who might be willing to bring their animals to a satellite MSU location within the six county service area. Other responses are from producers who live in counties that are much further away, such as Skagit, Clark, and even Okanogan Counties. Presumably these producers would be less willing to transport their animals to the service area. However, the Puget Sound Meat Producers Cooperative has heard anecdotally of producers who live near Wenatchee who hope to drive animals to the service area for slaughter to obtain USDA inspection (Cheryl Ouellette, *personal communication*).

Table 8.3. Number of producers outside the survey area who will use the MSU during the first five years.

Area	Number of Producers Who Said “Yes”	Number of Producers Who Said “Maybe”	Total Number of Producers Interested in Using the MSU	Number of Relevant Survey Responses
Within the Proposed Service Area (Lewis & Mason Counties)	10	2	12	15
All Other Counties*	4	8	12	14
Total	14	10	24	29

*Other Counties included Whatcom (1), Skagit (3), Snohomish (3), Okanogan (2), Kittitas (1), Franklin (1), Jefferson (2), and Clark (1).

Table 8.4. Demand outside the survey area for the MSU in Year 1 and Year 5.

	County	Year 1				Year 5			
Guaranteed Demand	County	Beef	Pork	Sheep/Lamb	Goat	Beef	Pork	Sheep/Lamb	Goat
	Within the Proposed Service Area (Lewis & Mason Counties)	125	0	122	125	294	0	262	170
	All Other Counties*	15	20	100	15	34	73	100	20
	Total	140	20	222	140	328	73	362	190
Possible Demand	County	Beef	Pork	Sheep/Lamb	Goat	Beef	Pork	Sheep/Lamb	Goat
	Within the Proposed Service Area (Lewis & Mason Counties)	0	0	8	5	0	0	40	13
	All Other Counties*	8	10	30	20	62	100	185	0
	Total	8	10	38	25	62	100	225	13
TOTAL Guaranteed and Possible Demand	County	Beef	Pork	Sheep/Lamb	Goat	Beef	Pork	Sheep/Lamb	Goat
	Within the Proposed Service Area (Lewis & Mason Counties)	125	0	130	130	294	0	302	183
	All Other Counties*	23	30	130	35	96	173	285	20
	Total	148	30	260	165	390	173	587	203

Guaranteed/Total Demand 95% 67% 85% 85% 84% 42% 62% 94%

*Other Counties included Whatcom (1), Skagit (3), Snohomish (3), Okanogan (2), Kittitas (1), Franklin (1), Jefferson (2), and Clark (1).

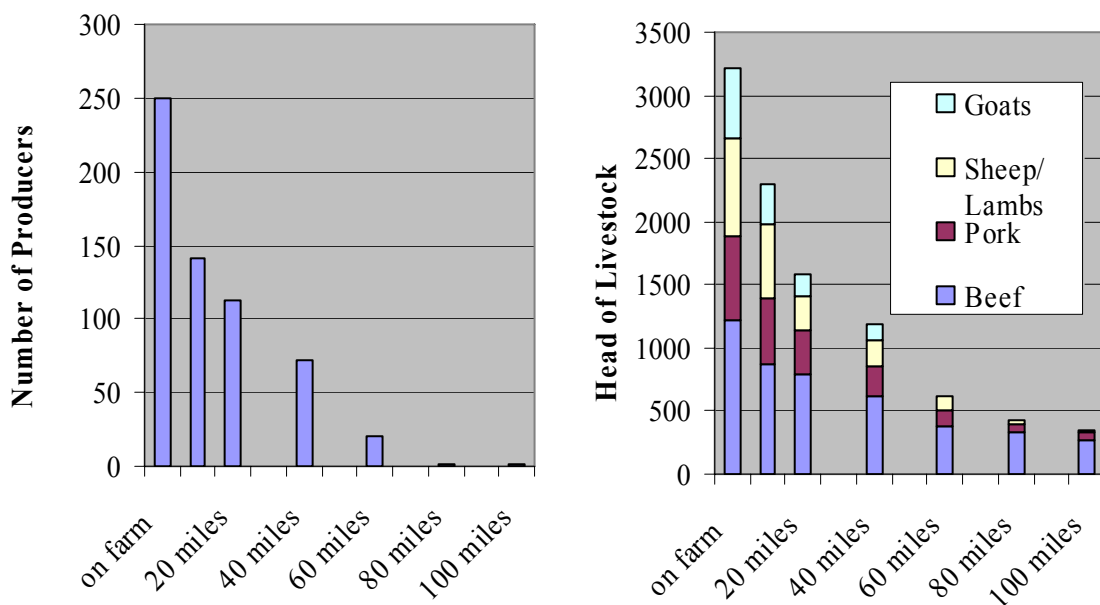
Section IX: Service Design and How It Might Impact Demand

Whether or not producers will actually use the MSU in the volumes planned depends on the characteristics of the services provided. In Sections IX and X, I discuss producers' feedback about the design of services, and their willingness to pay for USDA-inspected slaughter.

Travel distance and size

Overall, livestock producers in the service area were quite sensitive to travel distance. Within the group of producers who are interested in using the MSU, somewhere between 38 and 50% will not use the unit if they have to travel off of their farm.²⁰ Together, these producers represent about 28.3% of overall livestock volume. Both the number of producers who say they will use the unit, and the volume of animals that producers say they will slaughter, diminish even at relatively short transport distances (see Figure 9.1). However, the number of animals slaughtered falls off somewhat more slowly than the number of producers, indicating that producers who have many animals to slaughter may be more willing to travel than those with only a few livestock.

Figure 9.1. Number of producers who are willing to travel, and number of animals that they would slaughter at a given travel distance during the first year of MSU operation, all survey counties.



Many producers added comments to this section, citing two general reasons they were unwilling to travel. Some said they were unwilling to leave their farms because of the time, cost, or logistical difficulties. The Puget Sound Meat Producers Cooperative could address this problem through a variety of possible solutions. One producer commented that she would be willing to partner up with neighboring farms. Another producer suggested that Puget Sound Meat Producers Cooperative may want to investigate whether a single hauler could more efficiently provide hauling services to multiple producers who are slaughtering on the same day, to help keep the transport costs low.

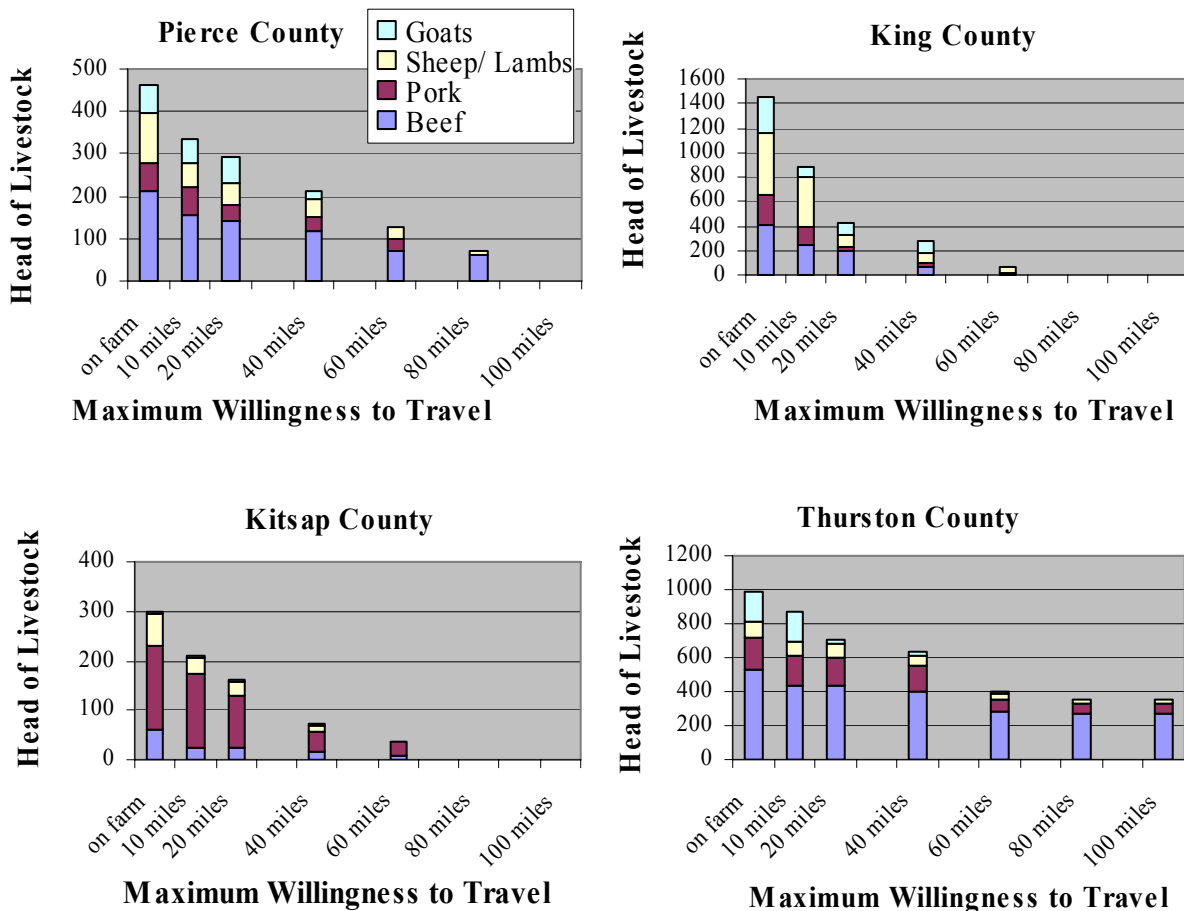
²⁰ 95% confidence interval

Scheduling animals that are close on the same day, and choosing satellite locations that are near to farms where animals are raised, will also help address this problem.

However, there was a second group of producers who commented that they were unwilling to travel because the stress of travel negatively impacts meat quality. For example, one producer commented, “I am not sure I would transport animals due to the fact they would not be relaxed when slaughtered and there would be an increase in the amount of adrenaline in the body. This effects (*sic*) the flavor of the meat....Current on-site custom slaughter provides an excellent tasting product. We do not want that to change. Our customer base appreciates the quality they receive.” Unfortunately, this group may be unwilling to travel to a satellite location, even if the MSU comes quite close to their farm.

It is also important to note that distance measured in miles may be less important than the presence or absence of geographic or traffic barriers. Producers raising livestock in less congested counties are willing to travel longer distances, with producers in Thurston County being the most willing to travel, and producers in King County being the least willing (see Figure 9.2). Several producers commented that they did not want to travel onto the ferry, and others said they did not want to enter or cross areas of congested travel. One area that producers seem to particularly avoid is the I-90, because of highly congested urban traffic (Greg Lynn, *personal communication*).

Figure 9.2. Number of animals that producers would slaughter at a given travel distance during the first year of MSU operation, broken down by county.



To help make sense of the information about how far producers are willing to travel, I also mapped the number of animals, by zip code, of the animals that producers plan to slaughter. Maps showing concentrations of combined large livestock (including beef, pork, sheep/lamb, and goat) for Year 1 and Year 5 are shown in Figures 9.3 and 9.4, on the following pages. Maps for individual types of animals are presented in Appendix C.

Even if the MSU does go to individual farms, the unit's size will limit the number of farms where it can operate. The survey asked producers whether they had access for a MSU that is 53 feet long, by 14 feet tall, by 8 ½ feet wide, the unit under consideration at the time of the survey. Between 53 and 65% of producers interested in using the MSU during the first five years could accommodate a unit of this size on their farms.²¹

Given producers' dislike of travel, and the limited physical access at their farms, it will be important for the Puget Sound Meat Producers' Cooperative to maintain as much flexibility as possible about the locations where animal slaughter will be carried out. It would be best if drivers were willing to travel to a farm whenever there is sufficient volume of livestock being slaughtered, and physical access for the MSU. It would also be advantageous to maintain a relatively large pool of potential satellite locations, so that when use of a satellite location is necessary, travel can be minimized. Driving the unit to farms will of course lead to higher labor and fuel costs, and the MSU may want to consider incorporating a variable "travel charge" calculated to reflect the additional expenses.

Organizations that operate mobile units elsewhere in the country have also said that it is important to balance the costs (including wear on the truck, gasoline expenses, added labor, etc) with the benefits of meeting producers' needs. The "Mobile Matanza," a MSU operated by the Taos Economic Development Council, was originally intended to cover a 150-mile radius. This radius was shortened to 100 miles shortly after opening, according to their director, due to cost constraints (Greg Lynn, *personal communication*). The Island Grown Farmers Cooperative also serves an approximately 100-mile radius, and must slaughter at least four beef (or the equivalent of other animals) at a stop to break even (Martin and Lawson, 2005). In addition, the USDA does have a requirement that a MSU operate within 25 miles of its "duty station," or home base. Thus, offering slaughtering services outside of this radius depends on having an inspector that is willing to be flexible with this rule (Greg Lynn, *personal communication*).

²¹ 95% confidence interval

Figure 9.3. Number of large animals (beef, pork, sheep/lamb and goat) that producers plan to slaughter in Year 1, by zip code.

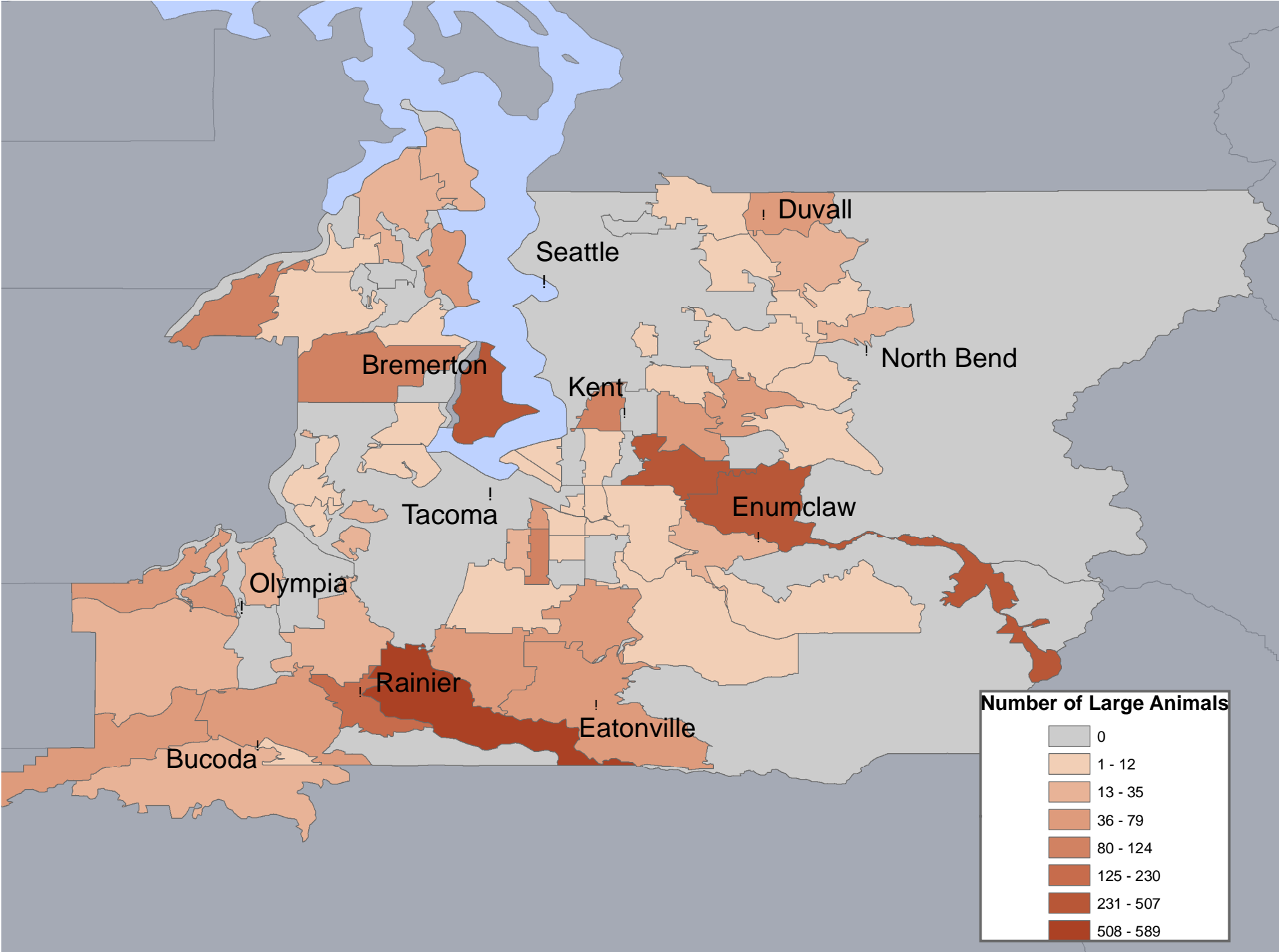
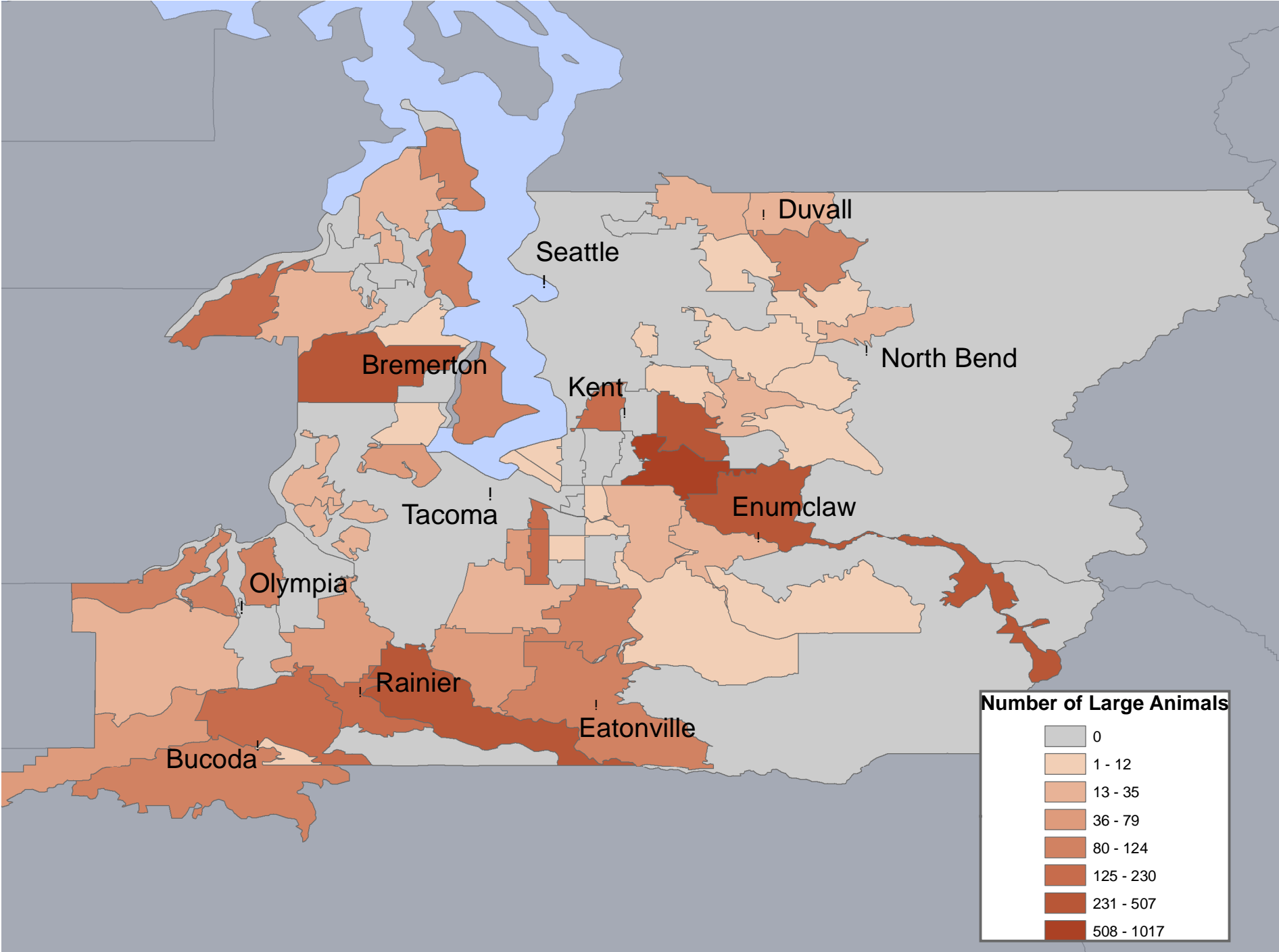


Figure 9.4. Number of large animals (beef, pork, sheep/lamb and goat) that producers plan to slaughter in Year 5, by zip code.



USDA-inspected cut and wrap services

As described in Section II, most meat that is slaughtered under USDA inspection must also be cut and wrapped under USDA inspection, before it can be sold to retail customers, with the exception that WSDA-licensed custom meat facilities may purchase USDA-inspected carcasses and process them under WSDA licensing for sale directly to end-consumers. The Puget Sound Meat Producers Cooperative has therefore already identified providing USDA-inspected cut and wrap services as a high priority and are anticipating providing these services through existing WSDA Exempt Custom Meat Processors, by helping them expand, improve and obtain USDA inspection.

As expected, most producers, between 77 and 87%, will use USDA-inspected cut and wrap services if they are available.²² The number of livestock that these producers plan to slaughter represents the ideal level of cut and wrap services that should be provided for an overall demand equivalent to that documented by our survey (see Table 9.1).

Table 9.1. Number of animals planned to be slaughtered by those who say they will use USDA-inspected cut and wrap services if they are available.

County	Year 1 (2009)				Year 5 (2014)			
	Beef	Pork	Sheep/ Lamb	Goat	Beef	Pork	Sheep/ Lamb	Goat
Pierce	189	58	113	66	349	104	278	157
King	245	119	211	91	867	157	382	237
Kitsap	39	172	61	4	72	451	195	10
Thurston	131	61	63	175	304	98	147	252
Total	604	410	448	336	1592	810	1002	656

If this level of USDA-inspected cut and wrap services cannot be provided initially, it is important that the Puget Sound Meat Producers Cooperative offer enough cut and wrap services to serve those who say they will only use the MSU if they can also obtain USDA-inspected cut and wrap. Between 41% and 53% of producers will only use the slaughtering services if they can also get USDA-inspected cut and wrap.²³ To serve this level of demand, the Puget Sound Meat Producers Cooperative will have to provide a significant minimum capacity for cut and wrap (see Table 9.2).

Table 9.2. Number of animals planned to be slaughtered by those who say they must have USDA cut and wrap services in order to use the MSU.

County	Year 1 (2009)				Year 5 (2014)			
	Beef	Pork	Sheep/ Lamb	Goat	Beef	Pork	Sheep/ Lamb	Goat
Pierce	34	33	48	41	102	70	132	79
King	138	106	90	34	325	130	212	48
Kitsap	28	50	37	0	47	169	115	0
Thurston	104	46	40	160	250	68	80	212
Total	304	235	215	235	724	437	539	339

²² 95% confidence interval

²³ 95% confidence interval

The Puget Sound Meat Producers Cooperative will need to carefully examine the question of whether this capacity can be reliably provided through upgrades of existing WSDA facilities, because without reliable cut and wrap services, use of the unit will be quite low (see Table 9.3), consisting only of meat that is slaughtered under USDA inspection, and then processed in WSDA-licensed facilities for sales directly to end users.

Table 9.3. Number of animals planned to be slaughtered by those who say they will use the MSU, even if cut and wrap is not offered.

County	Year 1 (2009)				Year 5 (2014)			
	Beef	Pork	Sheep/ Lamb	Goat	Beef	Pork	Sheep/ Lamb	Goat
Pierce	167	31	67	25	253	42	150	75
King	208	143	411	257	394	77	254	589
Kitsap	27	122	24	4	39	287	80	10
Thurston	426	140	54	21	260	111	114	50
Total	828	436	556	307	946	517	598	724

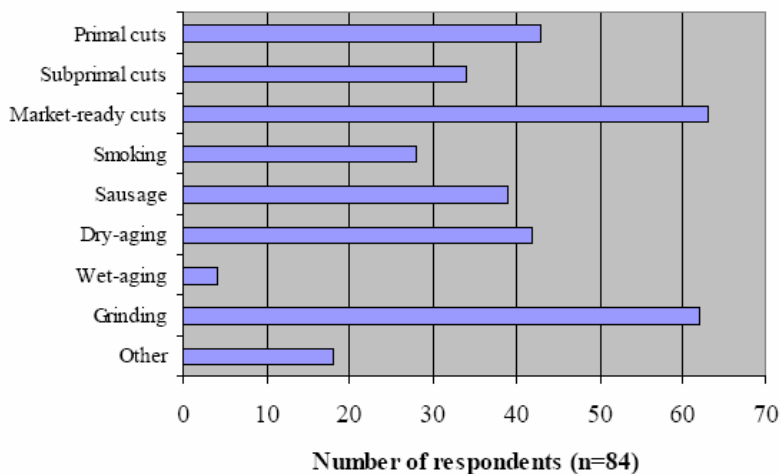
Cut and wrap capacity will need to exist at the time of slaughter, and therefore, demand is likely to be strongest at the same times of year that WSDA Custom Exempt Slaughter Facilities are already very busy. To assist with a more detailed survey of current WSDA Custom Exempt Slaughter Facilities, a list of all individuals and facilities licensed under the WSDA Custom Meat program is available in Appendix D, and a list of individuals and facilities licensed under the WSDA Custom Meat program, that were used by producers in Pierce, King, Kitsap, and Thurston Counties is available in Appendix E.

Other required services

The survey also asked producers whether there are other services that they require in order to use the MSU. Producers listed very few required services other than cut and wrap, and almost all of the services that they listed were types of meat processing. Responses included hanging capacity for aging meat (2), hog scalding (1), shrink wrapping (1), cut and wrap through local butchers (1), organic certification (1), and cut and wrap according to order (1). Another producer added that he needed space for hanging carcasses in the comments section.

Because the survey did not specifically ask producers what other meat processing services they required, this data likely under-represents the need for specific processing services. Martin and Lawson (2005) surveyed meat producers in Oregon and Washington, and found that producers, especially those who are direct marketing their products, require several specific types of meat processing (see Figure 9.5).

Figure 9.5. Meat processing services required by producers in Oregon and Washington in a 2005 survey.

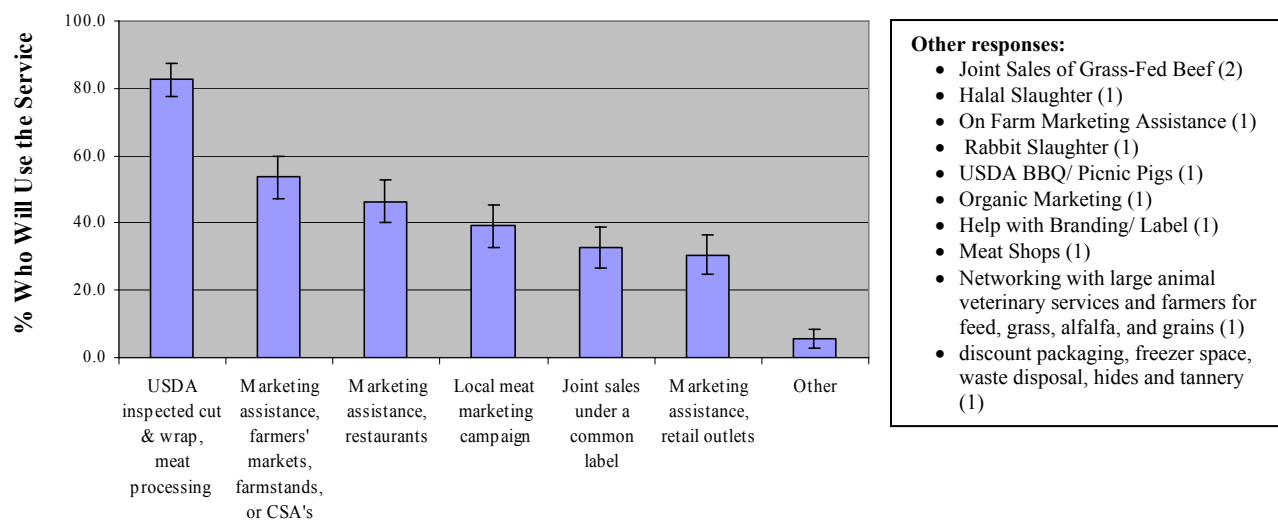


Source: Martin and Lawson, 2005

Other services producers would use

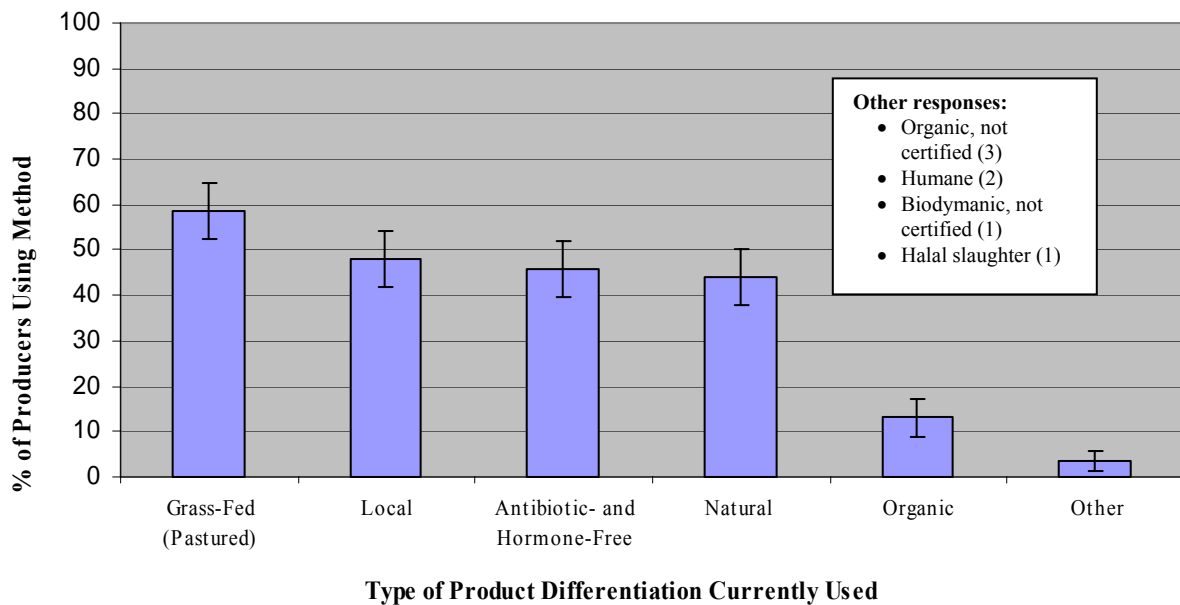
The survey also asked producers what other optional services they would use if available. Besides cut and wrap, a significant number of producers said they would use marketing assistance to help individual farm businesses market to farmers' markets, farmstands, or Community Supported Agriculture Programs (CSA's); and marketing assistance to help individual farm businesses market to restaurants (see Figure 9.6). This is consistent with the fact that few producers are currently marketing through these outlets (as discussed in Section VII). More than a third of producers were interested in a local meat marketing campaign, and fewer, roughly a third, were interested in joint sales under a common label, or marketing assistance to help individual farm businesses market their products to retail outlets.

Figure 9.6. Optional services that producers said they would use in conjunction with the MSU.



In thinking about what types of marketing assistance might be most helpful to those who want to use the MSU, it is important to note that most producers who are interested in using the MSU are marketing differentiated products (see Figure 9.7). About half or nearly half of producers who are interested in using the MSU are differentiating their products as grass-fed, local, natural, and antibiotic- and hormone-free. While few sold organic products in 2007, an additional 3 producers who answered “other” are marketing uncertified products that use organic or largely organic methods (though they do not use the word, in accordance with USDA regulations). Secondary evidence shows that certified organic acreage is growing quickly in Washington State, so that while the unit likely does not initially need organic certification, it may in future years.²⁴

Figure 9.7. Product differentiation by producers who are interested in using the MSU.



²⁴ Total certified organic acreage in Washington State rose 25% from 2006 and 2007, to 78,108 certified acres and at least 12,448 transitional acres. However, in 2007, certified acreage represented only 2.1% of all farm acres. (Transitional acres are not required to be reported.) (Granatstein and Kirby, 2008). However, there are also currently significant barriers for producers who might want to produce organically certified livestock, beyond the difficulty of obtaining organically certified slaughter. For example, obtaining organic feed is currently very difficult in Western Washington because of high demand and a shortage of local feed crop producers (Cheryl Ouellette, *personal communication*).

Section X: Willingness to Pay

I used two strategies to gather information about producers' willingness to pay for the MSU's slaughtering services. First, I investigated how much producers pay for WSDA Custom Exempt and USDA-inspected slaughtering services. These services represent other options that producers could choose to use for slaughtering their livestock, and therefore these prices are relevant. Second, the survey asked producers if they would be willing to pay an additional mark-up of 10-30%, above current WSDA Custom Slaughter prices, for USDA inspection of slaughter.

Prices charged by other businesses offering similar services

The price that producers paid in 2007 for WSDA Custom Slaughter varies widely. Therefore, I report both median prices and ranges in Table 10.1. WSDA Custom Slaughter is different than the service that will be provided by the mobile slaughtering unit. From the producer's perspective, one advantage of WSDA-licensed slaughter is that many of the WSDA Custom Slaughter facilities slaughter the animal at the producer's farm, and take the carcass back to their facility for cut and wrap. This means that the producer does not pay any added transportation costs (though the producer normally has to pick up the meat once it is wrapped). However, as noted previously, a disadvantage of WSDA-licensed slaughter is that the producer normally earns less revenue per pound of meat, because the product must be sold through the relatively limited channels open to meat processed in WSDA-licensed facilities.

Table 10.1. Median and range of prices paid by producers for WSDA Custom Slaughter in 2007.

	Beef			Pork		
	Slaughter	Cut & Wrap	Other	Slaughter	Cut & Wrap	Other
Median Price	\$55/ head	\$44 / head or 45¢/ lb		\$45/ head	\$45.50/ head or 45¢/ lb	
Range	\$25- \$1500/ head	\$35-\$49/ head 35¢ - \$2.30/ lb	Kill fee \$2500, Waste fee \$5, Delivery fee \$50	\$15-\$370/ head	\$15-\$370/ head or 35¢ - 57¢/ lb	Curing \$1.85/ lb, Smoking 8¢ - 85¢/lb

	Sheep/Lamb			Goat		
	Slaughter	Cut & Wrap	Other	Slaughter	Cut & Wrap	Other
Median Price	\$40/ head	\$41/ head 46.5¢/ lb		\$45/ head	\$62.50/ head or 44.5¢/ lb	
Range	\$5-\$120/ head	\$30-\$75/ head or 31¢ - \$1.20/ lb	De-boning \$3/ cut	\$25 - \$65/ head	35¢-\$1.80/ lb	None

USDA-inspected slaughtering facilities generally charged similar or slightly higher slaughtering fees than WSDA-licensed facilities, and significantly higher cut and wrap fees (see Table 10.2).²⁵ Higher overall prices are consistent with the fact that USDA-inspected facilities normally have higher costs, because of initial licensing process and ongoing paperwork and meat testing which is required. In addition to listing the prices charged by each USDA facility that producers used last

²⁵ When possible, I obtained prices of USDA-inspected slaughter directly from the slaughtering facility. Because Lampaert Meats declined to give me prices, I included prices as reported by producers.

year, I have included the prices charged by the Island Grown Farmers' Cooperative, the mobile slaughtering facility that serves San Juan, Island, Skagit, and Whatcom Counties, because they offer mobile slaughtering services very similar to the services that the Puget Sound Meat Producers Cooperative anticipates providing. In contrast to WSDA Custom Slaughter, producers are normally responsible for transporting livestock to a USDA-inspected facility, an added cost that is not included here. This cost is quite significant for facilities that are further away (for distances to USDA-inspected facilities, please see Table 7.3).

Table 10.2. Prices charged by USDA facilities for USDA-inspected slaughtering in 2008.²⁶

	Beef			Pork		
	Slaughter	Cut & Wrap	Other	Slaughter	Cut & Wrap	Other
Emmert's Buxton Meats	\$55/ head	42¢ / lb 45¢ / lb (quarter) 42¢ / lb (900 lbs and up hanging wt)	\$60 / head (organic) Other processing avail. ²⁷	\$45/ head	42¢ / lb	\$50/ head for sows/boars skinned
Island Grown	\$75/ head	\$420/ head	Equity Retain \$20	\$40/ head	\$120/ head	Equity Retain \$8
Kapowsin Meat	-	-	-	\$57/ head	Not done by Kapowsin's	No smoking services
Lampaert Meats				\$55/ head	\$1/ lb	
McCary's	\$75/ head	43¢ /lb hanging weight		\$55/ head	43¢ /lb hanging weight	No USDA smoking
Walt's Meats ²⁸	\$60-\$93/ head	\$1/ lb		\$50/ head		

	Sheep/Lamb			Goat		
	Slaughter	Cut & Wrap	Other	Slaughter	Cut & Wrap	Other
Emmert's Buxton Meats	\$35/ head	\$45/ head plus \$5 Bnls.	\$5 disposal fee	\$35/ head	\$45/ head plus \$5 Bnls.	\$5 disposal fee
Island Grown	\$30/ head (lamb)	\$45/ head (lamb)	Equity Retain \$4 (lamb)			
Kapowsin Meat	-	-	-	-	-	-
Lampaert Meats	\$25-\$30/ head	32¢ - \$1/ lb		\$30/ head	\$1/ lb	
McCary's	\$50/ head	\$50 / head (lamb)		\$50/ head		
Walt's Meats						

²⁶ When possible, I obtained prices of USDA-inspected slaughter directly from the slaughtering facility. Because Lampaert Meats declined to give me prices, I included prices as reported by producers.

²⁷ Double processing fees for paper wrapped. Regular cure 65¢ / lb, honey cure 70¢ / lb, vacuum sealed orders 83¢ / lb, boxes \$1.25 each.

²⁸ Since Walt's says they no longer offer these services, but since some producers say that they receive slaughtering services and cut and wrap as a favor, prices here are as reported by producers.

Producers' willingness to pay

In addition to asking what prices producers paid in 2007 for slaughtering at WSDA Custom Slaughter Facilities and USDA-inspected facilities, the survey asked producers whether they would be willing to pay an additional percentage, above and beyond current WSDA Custom charges, for USDA inspection of slaughter.²⁹ Roughly 65% to 75% of producers who are interested in using the MSU were willing to pay an additional mark-up of up to 30% for USDA inspection of slaughter, on top of the charges they already pay for WSDA Custom Slaughter. I did not ask whether producers would be willing to pay more than an extra 30%.

²⁹Producers were given a survey question with one of five values, ranging from 10% to 30% and were asked to answer whether or not they would be willing to pay that amount.

Section XI: Analysis of Existing USDA Data on Livestock Production

To corroborate survey results, and to make some general predictions about the levels of possible demand in Lewis and Mason Counties, which were not surveyed, I also analyzed existing data from the United States Department of Agriculture (USDA). Although USDA data is not as commonly used as survey data in livestock feasibility studies, it has been used previously (Shepstone Management Company, 2000, Shepstone Management Company, 2006).

Inventories of livestock sold

Although the USDA is the most comprehensive source of information on farming in the United States, their Agricultural Census is conducted only once every five years. Unfortunately, data on the number of livestock sold is most recently available for 2002 (2007 data will not be released until February 2009). This is particularly a concern because there has been a continued loss of farmland in the southern Puget Sound since 2002, and therefore, it is possible that there are many fewer animals currently than there were in 2002 in the 6-county region where the MSU will operate.

While the latest livestock sales data is from 2002, other data is collected by the USDA on a yearly basis. Livestock inventories are estimated by the USDA through sample data (up through the present for cattle, up through 2003 for hogs, and up through 2004 for sheep).³⁰ Therefore, I used this more recent inventory data to get a sense of how livestock populations decreased between 2002 and the present. One problem with these figures is that data for some counties is not published, in order to avoid disclosures of individual operations, and this may give the false impression that the total number of livestock has fallen to zero. This data is presented in Appendix F. While trends are somewhat difficult to identify, it seems that the number of beef cattle and sheep has remained largely stable, while the number of dairy cattle and hogs has declined somewhat.

Keeping the overall trend towards somewhat lower levels of livestock since 2002 in mind, then, the inventories of livestock sold in 2002 give some indication of the volume of animals that might potentially be available to the Puget Sound Meat Producers Cooperative (see Tables 11.1 – 11.3). Data from 1997 is also presented for comparison.

³⁰ County estimates are prepared from samples of close to 5,000 producers in Washington. Many respondents are included in the sample from one year to the next, so that year-to-year changes can be measured. The currently system for estimates also merges this with data from other surveys, to help distribute larger operations within the county estimates, strengthening their validity. (*Personal communication March 7, 2008, David Knopf, Director, USDA National Agricultural Statistics Service, Washington Field Office.*)

Table 11.1. Inventory of cattle sold.

(D= Data withheld to avoid disclosing individual operators)

	King	Kitsap	Lewis	Mason	Pierce	Thurston	Total
Farms Selling Cattle and Calves							
2002	285	92	526	48	404	303	1658
1997	548	162	792	90	606	592	2790
Cattle and Calves Sold							
2002	8,242	375	25,262	664	7,439	9,613	51,595
1997	15,229	D	21,426	862	9,800	16,113	63,430
Cattle Sold (over 500 lbs)							
2002	5,333	290	19,858	447	5,422	4,367	35,717
1997	8,696	D	15,077	539	5,549	9,698	39,559
Cattle on Feed Sold							
2002	844	36	1,009	42	1,080	374	3,385
1997	461	126	446	129	398	609	2,169

Table 11.2. Inventory of hogs sold.

	King	Kitsap	Lewis	Mason	Pierce	Thurston	Total
Farms Selling Hogs and Pigs							
2002	50	34	61	13	64	51	273
1997	52	36	54	31	63	62	298
Hogs and Pigs Sold							
2002	606	449	1,234	202	6,185	2,146	10,822
1997	761	378	1,057	599	3,058	1,394	7,247

Table 11.3. Inventory of sheep and goats sold.

(D= Data withheld to avoid disclosing individual operators)

	King	Kitsap	Lewis	Mason	Pierce	Thurston	Total
Farms Selling Sheep and Lambs							
2002	39	22	40	8	67	38	214
1997	67	24	70	12	49	45	267
Sheep and Lambs Sold							
2002	971	305	630	25	1,155	587	3,673
1997	1,385	427	1,087	107	850	1,127	4,983
Farms Selling Meat Goats and Other Goats							
2002	13	9	15	2	37	18	94
Meat Goats and Other Goats Sold							
2002	69	D	96	D	296	106	567

Total potential demand as predicted from the USDA data

Not all producers will be attracted to a new mobile slaughtering unit. Producers may have marketing outlets which do not require USDA-inspected slaughter, may be reluctant to change habits, or may not want to jeopardize their relationships with existing slaughterers to a new start-up venture. The authors of the study on which this analysis is based suggested that it is prudent to count on no more than 10% of the total volume available at the outset (Shepstone Management Company, 2006). To account for the decline in livestock numbers since 2002, I have calculated

conservatively that only 7.5% of the total animals sold in 2002 might be available to the mobile slaughtering unit. Using that percentage and the 2002 USDA livestock sales data suggests the volumes presented in Tables 11.4 and 11.5 will be available to the mobile slaughtering unit in Year 1. To facilitate comparison with the demand documented in the survey, I have presented the four survey counties separately from the two non-survey counties, and have included the total volume estimated from the survey data.

Table 11.4. Projected demand in survey counties, comparison of USDA data and survey data.

	King	Kitsap	Pierce	Thurston	Total Volume Calculated from USDA Data	Total Volume, Surveyed Demand (Guaranteed and Possible)
Cattle	618	28	558	721	1925	1141
Hogs	45	34	464	161	704	587
Sheep	73	23	87	44	226	757
Goats	5	0	22	8	35	510

Table 11.5. Projected demand in Lewis and Mason Counties, USDA data

	Lewis	Mason	Total Volume Calculated from USDA Data
Cattle	1895	50	1944
Hogs	93	15	108
Sheep	47	2	49
Goats	7	0	7

While there is some variation, the overall results from the survey and the USDA data are similar. The USDA data does predict somewhat larger volumes of cattle, and smaller volumes of sheep and goats than the survey. This may be partly due to the fact that the cattle numbers include a significant number of dairy cattle, which may be less likely candidates for USDA-inspected slaughter. It may also be that sheep and goat producers have fewer other outlets for selling their livestock, and are therefore more likely to use the MSU than cattle or hog producers.

An examination of the available livestock sales data for Lewis and Mason Counties suggests that there may be very high demand for the MSU in Lewis County, particularly among beef producers, based on the high number of livestock sold in that county. Mason County, on the other hand, appears to have relatively few livestock. The Puget Sound Meat Producers Cooperative may therefore want to plan that as they grow, some additional units will serve single counties (in the case of a large county with many livestock, such as Lewis County), whereas others may serve several counties together (in the case of counties such as Kitsap or Mason County that have fewer livestock). However, producers in Lewis and Mason Counties will not use the MSU unless they know about the service, and to-date, little outreach has been done in these areas.

Section XII: Assessment of Consumer Demand

By providing USDA-inspected slaughtering services, the Puget Sound Meat Processors Cooperative aims to increase the size and profitability of livestock farms in the counties of the Southern Puget Sound. In turn, they hope that this will contribute to two long-term outcomes:

- Higher numbers of sustainable and successful farm businesses
- More farmland owned by sustainable and successful farm businesses.

For the unit to successfully achieve these outcomes, and for the MSU to charge producers an amount that is higher than the price that they are currently paying for WSDA Custom Slaughter, producers will have to be able to pass the increased costs on to customers.

Because I did not survey customers, I looked to secondary sources to assess whether customer demand exists for the local, niche products that producers are raising. Because most livestock producers in the target area are not selling their products internationally, I assessed only local, regional, and national market demand.

Customers' buying habits are changing in ways that benefit smaller, niche producers

There is evidence that consumers are becoming increasingly aware of the issues with large factory farms, and care about them enough to change their behavior. Declining consumption of beef, for example, has been attributed to the following causes (Levi, Dale, Blank, and Nader, 1998):

- Health concerns associated with meat
- Concerns about the use of hormones, steroids, and antibiotics
- Concerns about bacterial contamination
- The inability of the consumer to purchase a consistent, quality product from the traditional meat case.

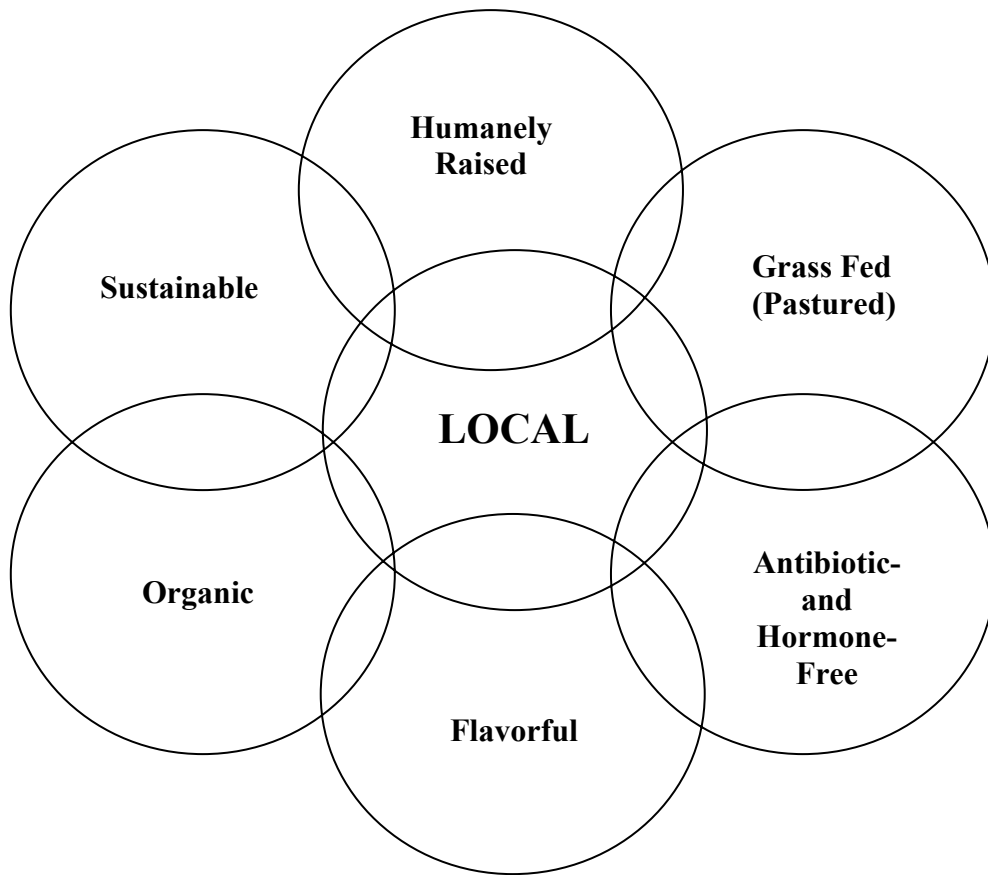
Other issues are also important to consumers. For example, a 2004 study of Ohio consumers found that 92% of Ohioans agreed or strongly agreed that it is important that farm animals are well cared for, and 85% agreed or strongly agreed that even though some farm animals are used for meat, the quality of their lives is important (Rauch and Sharp, 2005).

While niche marketing labels appeal to a relatively small group of consumers, these market segments are growing rapidly. For example, while natural³¹ and organic beef sales represented only 2.5% of total beef sales by dollar in 2007, this figure was up an astounding 31.8% from 2006, to \$388.4 million (FreshLook Marketing, as cited by Fresh Research Exposes Rapid Growth, 2008).

Smaller producers in the Southern Puget Sound Region have the potential to provide a set of products that respond to these varied, but interrelated concerns and values, visualized in Figure 12.1.

³¹ The USDA currently only requires that “natural” beef be minimally processed, and contain no additives, though many products labeled “natural” go beyond these requirements and include claims about being hormone- or antibiotic- free, vegetarian feed, or free range.

Figure 12.1. Graphic depiction of the cluster of attributes that consumers are willing to pay a premium for and that the members of the Puget Sound Meat Processors Cooperative can provide.



Source: Adapted from Dunlop, 2008

Comprehensive regional or state-level data about consumers' purchasing patterns is not available. However, the data that is available suggests that consumer purchasing behavior reflects national trends. In 2002, researchers with Washington State University and University of Washington surveyed consumer attitudes and food consumption patterns in four counties of Washington State (including two western Washington counties). They found that 28.3 % of King County consumers, and 37.3% of Skagit County consumers, say that “produced locally” is a very important factor impacting their food shopping (Jassaume, Ostrom, and Jarosz, 2004).

This is consistent with the 2007 results of the Washington Beef Demand Index Study, a yearly study funded by the State and National Beef Commission. In this study, 15% of consumers in the Seattle/Tacoma Metropolitan Statistical Area (MSA), covering the core of western Washington's consumer population (Snohomish, King, Pierce, Kitsap, and north Thurston Counties and the Sound) said that they pay a great deal of attention to “locally-raised beef availability.” This compares to 17% nationally, and 21% in the city of Seattle (Pelegrin Gray Research, Inc., 2007).

In that same study, when Seattle/Tacoma MSA consumers were asked "In the past six months, which of the following products have you intentionally bought," 28% of consumers reported buying locally-raised beef, versus 21% in the national study. The surveyors found that some consumers may have been confused about what they are actually buying; for example, some consumers

assumed that since they were buying at a local butcher shop that they were buying locally-raised beef. However, even if consumers were mistaken, more than 1 in 4 consumers cared enough about local sourcing to act upon it when purchasing food.

Increases in consumer demand are also evidenced by increases in sales at outlets for local and niche products. More than 250,000 shoppers currently visit farmers' markets in Seattle, while 50,000 individuals are regular farmers' market shoppers every year. Attendance has been growing; in Seattle, shopper counts and total farmer sales have increased between 12% and 24% every year since the first Seattle farmers' market opened in the U-District in 1993.³² More than 45,000 people are members of food cooperatives. These shoppers are more likely than other consumers to be looking for products with the constellation of attributes shown in Figure 12.1.

Farmers' market representatives, food co-op leaders, and chef groups have each told the Puget Sound Meat Producers Cooperative that they do not have access to adequate amounts of locally-produced meat, and that they are therefore unable to satisfy existing market demand. Tracy Wolpert, the Chief Executive Officer of PCC Natural Markets, the nation's largest community-owned retail food co-op (serving Seattle, Issaquah, Kirkland, Redmond, and this summer opening in Edmonds), says that for several years they have experienced "growing demands for more locally grown poultry, beef, pork, lamb, and specialty meats," and that "it has become increasingly challenging to source adequate quantities of USDA processed poultry and meat from local and regional growers."³³ Chris Curtis, the Director of the Neighborhood Farmers' Market Alliance says "to date, farmer access to...USDA-inspected slaughter facilities has not been adequate to meet farmers' need and our shoppers' demand." Moreover, he states that "Seattle shoppers...will pay a premium price for local foods that they perceive to be of top quality...that have been safely processed."³⁴ And the Zachary Lyons, Vice-President of the Seattle Chefs Collaborative, says that "the demand for local meat, produced by small-scale operations, and often pasture-raised, continues to grow at a rate that is outpacing the ability of the few local meat producers with access to a USDA-inspected processing facility to meet it."³⁵

Market outlets that serve more general customers are also expressing increased demand for local products. In conjunction with Cascade Harvest, the Puget Sound Food Project surveyed 30 large food buyers in December 2007 and January 2008. Almost all food buyers including full and partial service restaurants, schools, hospitals, food retailers, food wholesalers, food products manufacturers, cooperative purchasing entities, and food banks, mentioned a desire for local USDA meat products (Puget Sound Food Project, *unpublished report*).

Producers can realize higher returns by direct marketing specialty products

Producers who direct market their products generally capture the margins (normally 50%) currently going to middlemen in the marketing chain (Fanatico, 2006). Local market tests by the Puget Sound Meat Producers Cooperative have shown that producers will receive at least \$1 more per pound on bulk USDA-inspected carcasses, and up to \$5 per lb or more on fully processed, USDA-

³² Letter from Chris Curtis, Director, Neighborhood Farmers' Market Alliance, March 31, 2008 to Cheryl Ouellette, Project Coordinator, Puget Sound Meat Producers' Cooperative.

³³ Letter, dated March 25, 2008

³⁴ Letter, dated March 31, 2008

³⁵ Letter, dated March 29, 2008

stamped cut-and-wrapped meat products, than they earn selling cattle live to Tyson, a large processor.³⁶ The Island Grown Cooperative, a mobile slaughtering unit and cut and wrap facility in Northwest Washington, estimates that the retail value of meat slaughtered and processed in their unit was 1.04 million dollars in 2007; this same meat would have been worth \$480,000 if it were sold live (Dunlop, 2008).

Producers can also earn more if consumers are willing to pay a higher price for specialty products. The available evidence suggests that many consumers are willing to spend more, at least for products where they perceive a value difference. National marketing research by FreshLook Marketing documented an average retail price per pound in the U.S. for natural and organic beef that was \$5.50 per lb in 2007, much higher than the \$3.67/lb average price for all beef (Fresh Research Exposes Rapid Growth, 2008). And in the previously mentioned 2004 study of central Ohio consumers, 59% said they would be willing to pay more for meat, poultry, or dairy labeled as coming from humanely treated animals. Among these, 43% said they would be willing to pay 10% more, and 12% said they would be willing to pay 25% more (Rauch and Sharp, 2005). An equal number said they were willing to pay more for local foods, with 48% willing to pay 10% more, and 11% willing to pay 25% more (Smith, Sharp, and Miller, 2006).

Regionally, researchers at Washington State University conducted a choice experiment in 2003 with a sample of Spokane, WA shoppers, half of whom were grocery store shoppers and half of whom were natural foods store shoppers. Through co-joint analysis, they estimated that consumers were willing to pay \$5.65 more per lb for beef which contained “a low level of fat and calories,” and \$3.42 more per lb for beef that had “high levels of omega-3 fatty acids,” attributes that are true of grass-fed beef (McCluskey, Wahl, Li, and Wandschneider, 2005).

However, it is important to note that consumers in Washington State are still price conscious, and that they are normally only willing to pay more when they perceive a quality difference. In the grass-fed meat study, shoppers were willing to pay more for the products specifically because of its health attributes. And in the previously described 2002 survey of Washington State consumer attitudes and food consumption patterns, 56% of King County consumers, and 61% of Skagit County consumers, said that price was a “very important” factor in making food purchasing decisions. In King County, 60% of consumers were willing to pay up to 10% extra for locally grown foods, but only 20% were willing to pay 25% more (Jassaume, Ostrom, and Jarosz, 2004). Even if they are willing to pay more for local products, only 28% of these consumers said they often knew whether the food they bought was grown or produced locally, while 40% knew sometimes, 21% knew only rarely, and 11% never knew.

Taken together, this evidence strongly supports the conclusion that there is existing unmet demand for locally-produced USDA-inspected meat products. There is also evidence that some consumers in the Puget Sound region are willing to pay more products that are local, grass fed, antibiotic- or hormone-free, humane, natural, or organic. However consumers will likely only be willing to pay a premium if they know what makes meat from the Puget Sound Meat Producers’ Cooperative different, and if they link these attributes with the health and environmental value they seek.

³⁶ George Irwin, a cattle producer, found a \$1/lb. difference between the price Tyson will pay, and the price that Olsen’s Meats will pay for hanging beef that is USDA-inspected. He found a \$5/lb. difference between the price that Tyson will pay, and the price that Thundering Hooves, an Eastside company who sells USDA-inspected cuts of meat (full processed), obtains (Cheryl Ouellette, *personal communication*).

Section XIII: Conclusion

While this study does not, on its own, tell the Puget Sound Meat Producers cooperative whether or not it should move ahead with building a MSU, it does provide information that contributes to checking several of the key assumptions that lie beneath the project. In general, the information collected and analyzed in this study affirms the validity of these premises. I reconsider those assumptions, along with the relevant evidence from this study, below.

1. *Producers have the skills and resources they need to successfully produce animals*

Both existing USDA data and the survey data documents that many producers in Pierce, King, Thurston, Lewis, Kitsap, and Mason Counties are successfully producing livestock. Much of this livestock is differentiated through characteristics such as “local,” “grass-fed,” “natural,” and “antibiotic- and hormone-free.” Few producers request help with producing animals or acquiring inputs, which supports the conclusion that they feel they have the knowledge, skills, and resources to successfully produce animals for market. However, only a handful of producers are currently selling their products through USDA channels, consistent with the assertion that it is difficult to obtain USDA-inspected slaughter currently. Existing USDA facilities all have significant limitations: they are more than 300 miles away, round trip; or they are not currently serving new producers; or in one case, they are for sale.

2. *The mobile slaughtering unit will break even*

Data provided by this study about estimated demand for the MSU in Year 1 and Year 5 can be used to drive financial models that calculate the volume at which the MSU will break even. Demand data will need to be combined with figures regarding expenses as well as prices charged for service in order to determine whether or not the MSU will ultimately be a financially sustainable asset. However, predicted demand is significant.

In addition, data from the surveys provided information about how to structure services so that they will appeal to the highest number of producers possible. A majority of producers, between 65% and 75% said they are willing to pay a premium of up to 30%, on top of their current WSDA Custom Slaughter charges, for USDA inspection of slaughter. However, most producers would like to minimize travel, or have the unit come to their property.

3. *Local facilities will be willing and able to provide USDA-inspected cut and wrap services*

Results from the survey confirm that 77% and 87% of producers would use USDA-inspected cut and wrap services if they are available, and between 41% and 53% of producers require these services to use the MSU.³⁷ Given the volume of demand projected, it is possible to suggest both an ideal volume of cut and wrap services, and a minimum level of cut and wrap services.

³⁷ 95% confidence intervals

4. *Producers will know how to access new markets that are open to them with USDA inspection*

Only a handful of producers identified other services besides USDA-inspected cut and wrap services that they required in order to use the MSU, suggesting that in general, producers feel they will be able to access new markets. Most producers are already differentiating their products with at least one label. However, most producers are not currently selling under USDA inspection, and about half said that they would use marketing assistance geared towards selling at farmers' markets, CSA's, farm stands, and restaurants. Therefore, although these services are not critical to the successful functioning of the MSU, they may help farm-businesses who are using the MSU to become more profitable over the long run, and may therefore contribute to the MSU's success.

5. *There is existing customer demand for USDA-inspected, locally-raised meat*

Secondary data validates this assumption. Consumers in Western Washington consider price when they shop, but they are willing to pay more for local products if they perceive a quality or value difference. Many consumers are eager to obtain products that are grass-fed, local, humane, or antibiotic- and hormone-free, and are willing to pay a premium. Managers and buyers at farmers' markets, restaurants, and cooperatives all say that they have difficulty finding reliable sources of locally produced, USDA-inspected meat.

Overall, the evidence gathered through this study supports the Puget Sound Meat Producers Cooperative's underlying conjecture that providing USDA-inspected slaughtering services to local producers will fill in a "missing link" between livestock farmers and consumers who want to purchase their products. Designing a service that is convenient for producers to use, yet efficient and financially sustainable, is a difficult but achievable goal. However, if successfully implemented, the MSU will contribute to an increased number of successful and sustainable farm businesses in the southern Puget Sound region, preserving and augmenting the acreage being used as productive farmland throughout the area.

Appendix A: Preliminary Survey

The Meat Project Producers Introductory Survey

1. A proposed meat project might provide several services in addition to USDA certification. Please check ALL combinations that you are likely to use if available (You may check more than one):

_____ USDA certified slaughter only

_____ USDA certified slaughter & processing (cut and wrap)

_____ USDA certified slaughter & processing (cut and wrap) & local meat marketing campaign (with each farm selling meat through its own business)

_____ USDA certified slaughter & processing (cut and wrap) & joint sales under a common label

2. How aware are you of additional marketing opportunities that would be available to you if you used USDA certified slaughtering?

_____ Aware of several opportunities

_____ Somewhat informed

_____ Limited knowledge

_____ No knowledge

3. In order to best decide what volume of facility is needed, it is helpful to learn more about the volumes of animals that you are currently slaughtering, and might in the future have slaughtered. This information will be confidential, and will NOT be associated with your farm name. **In the past year, how many animals did you slaughter?**

_____ Sheep/lambs

_____ Goats

_____ Hogs

_____ Cattle

4. In the past year, did you have any animals slaughtered under USDA inspection?

_____ Yes

_____ No

5. If you did slaughter animals under USDA inspection, how did you obtain that inspection?

6. If you did slaughter animals under USDA inspection, how many animals did you slaughter under USDA certification in the past year?

_____ Sheep/lambs

_____ Goats

_____ Hogs

_____ Cattle

7. Knowing something about the current marketing methods of producers will help the meat project to provide relevant service(s). **How do you presently market your animals (please mark all that apply)?**

_____ Direct to consumer

_____ Wholesale

_____ Auction

_____ Broker

_____ Grass fed

_____ Natural

_____ Antibiotic and hormone free

_____ Organic

_____ Local

_____ Other (please specify): _____

8. If a USDA certified mobile unit were opened today, what is the minimum and maximum number of animals that you estimate you would slaughter per year in this facility, based on your **CURRENT** production?

<u>Minimum</u>	→	<u>Maximum</u>
_____ Sheep/lambs		_____ Sheep/lambs
_____ Goats		_____ Goats
_____ Hogs		_____ Hogs
_____ Cattle		_____ Cattle

9. If USDA certified mobile unit opened and had capacity, would you increase production to use the facility? Please estimate the number of **ADDITIONAL** animals per year (month) that you would want to have slaughtered. (Please mark '0' if you do not think you would increase production.)

_____ Sheep/lambs	_____ Goats
_____ Hogs	_____ Cattle

10. Where do you live?

Nearest town (you do not need to give us your farm name): _____

Zip Code: _____

County: _____

11. If there are any additional comments you would like to share with us, please make them here.

Thank you for taking the time to complete this survey!

Appendix B: Final Draft of Mail and On-Line Survey

Puget Sound Meat Producers' Cooperative
c/o Pierce County Conservation District
5430 66th Ave East
PO Box 1057
Puyallup, WA 98371

March 20, 2008

Dear Producer;

The newly formed Puget Sound Meat Producers Cooperative is a group of livestock producers, butchers, chefs, and others from Pierce, King, Kitsap, Mason, Thurston, and Lewis Counties. We are working together to try to address the lack of USDA-inspected slaughtering facilities in the South Puget Sound region. USDA inspection provides many additional marketing opportunities to farmers including selling meats to local butcher shops, restaurants, grocery stores and at farmers' markets. We are exploring a possible mobile meat slaughtering unit, a facility that could travel (via truck) to different parts of our region to provide USDA-inspected slaughter services.

We ask you to complete a brief survey to help us plan the project in a way that best responds to your needs. Please fill it out and return it to us, even if you do not think that you would use the facility. **Responding to this survey is very important, because we will use the results to demonstrate that there is enough demand to justify this service.**

Your individual answers to questions on this survey will be confidential, and we will share only the overall results with others. We hope to use the results of this survey to complete financial plans for the mobile unit during the second half of April, so **please reply by April 18th**. If you prefer, you may fill out the survey on line, at <https://catalysttools.washington.edu/webq/survey/gyorgey/51640>.

We are reaching out to livestock producers through a variety of ways, but word of mouth may be our most valuable link. Please spread the word and encourage other farmers in your area to fill out the survey, too.

We want to make sure that all who are interested have a chance to participate from the ground floor. Please join us to make this project a reality. If you have any questions about the project, please contact me, Cheryl Ouellette, Project Manager, at cherylthepiglady@hotmail.com, or 253-278-3609. I will be happy to put you in touch with a steering committee representative from your area, and to talk with you myself. If you have questions about the survey, please contact Georgine Yorgey, at gyorgey@u.washington.edu, or 206-235-7154.

Thank you for your help!

Sincerely,

Cheryl Ouellette
Project Manager
Puget Sound Meat Producers Cooperative

Mobile Meat Processing Survey

If you prefer, you may fill out this survey on line, at

<https://catalysttools.washington.edu/webq/survey/gyorgey/51640>. We hope to use the results of this survey to complete financial plans for the mobile unit in April, so **please reply by April 18th**. Your individual answers to questions on this survey will be confidential, and we will share only the overall results with others. If you have any questions about this survey, contact Georgine Yorgey, at gyorgey@u.washington.edu, or 206-235-7154. If you have questions about the project, please contact Cheryl Ouellette, Program Manager, at cherylthepiglady@hotmail.com, or 253-278-3609.

1. Knowing something about the current marketing methods of producers will help the mobile meat slaughtering unit to provide relevant service(s). **How do you presently market your animals?**

Please check all that apply.

- ☐ Direct to Consumer on the Hoof (custom exempt slaughter)
- ☐ Direct Market {USDA} (farmers market, farm stand, food buying club, CSA)
- ☐ Wholesale {USDA only}
- ☐ Auction {live}
- ☐ Broker {live}
- ☐ Grass fed (pastured)
- ☐ Natural
- ☐ Antibiotic and hormone free
- ☐ Organic
- ☐ Local
- ☐ Other (please specify): _____

2. **In the past year, did you have any animals custom slaughtered?**

- ☐ Yes → **Please complete Questions 2B through 2C, and continue with Question 3**
- ☐ No → **Please skip to Question 3**

2B. What is the primary custom slaughter facility you use? _____

2C. How much are you currently paying to have your animals slaughtered and processed under custom slaughter? Please fill out all applicable charges.

	Sheep/lambs	Goats	Pork	Beef	Poultry (chicken and turkey)
Price per head					
Cutting fee (per lb hanging weight)					
Other Charges: (please describe)					

3. **In the past year, did your farm have any animals slaughtered under USDA inspection?**

- ☐ Yes → **Please complete Questions 3A through 3D, and continue with Question 4**
- ☐ No → **Please skip to Question 4**

3A. If you did slaughter animals under USDA inspection, what facility (or facilities) did you go to in order to obtain that service?

Facility Name: _____ City and State: _____

Facility Name: _____ City and State: _____

3B. Were you satisfied with the services the facility (or facilities) provided? If not, please state why not.

3C. How much are you currently paying to have your animals slaughtered and processed under USDA inspection? Please fill out all applicable charges.

	Sheep/lambs	Goats	Pork	Beef	Poultry (chicken and turkey)
Price per head					
Cutting fee (per lb hanging weight)					
Other Charges: (please describe)					

3D. If your farm did slaughter animals under USDA inspection, how many animals did you slaughter under USDA inspection in the past year?

	Sheep/lambs	Goats	Pork	Beef	Poultry (chicken and turkey)
Number (head)					

4. In the past year, how many animals did your farm slaughter (including home use, custom, and USDA)? Please tell us how many animals you slaughtered in each season of the year.

	Sheep/lambs	Goats	Pork	Beef	Poultry (chicken and turkey)
Number slaughtered Jan-Mar 2007					
Number slaughtered Apr- Jun 2007					
Number slaughtered Jul- Sept 2007					
Number slaughtered Oct- Dec 2007					
Total number slaughtered in 2007					

5. If we opened a USDA inspected mobile slaughtering unit, would you use it during the first five years?

- ☐ Yes → Please continue with Question 6
- ☐ Maybe/Not Sure → Please continue with Question 6
- ☐ No → Please skip to Question 13

6. If a USDA inspected mobile slaughtering unit opened in January 2009, what is the approximate TOTAL number of animals that you estimate you would slaughter from January through December 2009 in the mobile slaughtering unit?

	Sheep/lambs	Goats	Pork	Beef	Poultry (chicken and turkey)
Number (head)					

7. Think five years from now. Would you increase your use of the mobile slaughtering unit over five years? What is the approximate TOTAL number of animals that you estimate you would slaughter from January through December 2014 in the mobile slaughtering unit?

	Sheep/lambs	Goats	Pork	Beef	Poultry (chicken and turkey)
Number (head)					

8. The mobile meat slaughtering unit will attempt to keep costs low, but will need to charge a fee to cover its costs. However, products that have been slaughtered and processed under USDA inspection can also be sold at higher prices to markets such as restaurants, farmers' markets, and retail outlets. **Would you be willing to pay an ADDITIONAL 20%, on top of current custom slaughter charges, to obtain USDA inspection of slaughter?**

- ☐ Yes
☐ No

9. Initially, there may be somewhat limited capacity for local butchers to provide USDA inspected cut and wrap. To ensure that we can meet demand, **please tell us if you are likely to use the mobile slaughter only, or whether you MUST HAVE additional services in order to use the mobile slaughtering unit. Please mark all that apply.**

- ☐ Yes, I will use the mobile slaughtering unit if USDA inspected slaughtering is the only service offered.
☐ I will ONLY use the mobile slaughtering unit if I can ALSO get USDA inspected cut and wrap services. I will use both services together.
☐ I will ONLY use the mobile slaughtering unit if I can ALSO get this service, a service that

is different than USDA inspected cut and wrap (please describe): _____

10. The group could provide several other optional services in addition to USDA inspection of the slaughter. **What other services would you use? Please check all that apply.**

- ☐ USDA inspected meat processing (cut and wrap)
☐ Marketing assistance to help individual farm businesses sell USDA inspected meats to restaurants
☐ Marketing assistance to help individual farm businesses sell USDA inspected meats through farmers' markets, farmstands, or CSA's (Community Supported Agriculture)
☐ Marketing assistance to help individual farm businesses sell USDA inspected meats to retail outlets such as grocery stores
☐ A local meat marketing campaign
☐ Joint sales under a common label
☐ Other (please specify): _____

11. One way the mobile unit might offer services to multiple areas is by travelling to “satellite locations.” If a mobile slaughtering unit traveled to a nearby site, what is the MAXIMUM distance that you would be willing to transport your animals to have them slaughtered?

- | | |
|--|--------------------------------------|
| <input type="checkbox"/> I would only use the unit if it traveled to my farm | <input type="checkbox"/> 40-59 miles |
| <input type="checkbox"/> 0-9 miles | <input type="checkbox"/> 60-79 miles |
| <input type="checkbox"/> 10-19 miles | <input type="checkbox"/> 80-99 miles |
| <input type="checkbox"/> 20-39 miles | <input type="checkbox"/> 100+ miles |

12. Does your farm have access for a truck trailer that is 53 ft long, by 14 ft tall, by 8 1/2 ft wide?

- ☐ Yes
☐ No

13. Where do you live?

Farm Name: _____ Nearest town: _____

Zip Code: _____ County: _____

14. If there are any additional comments you would like to share with us, please make them here.

Please tell us who you are, so we can stay in touch as the project moves forward. (Please note- we did **not** receive your contact information when we mailed you this survey!) We would also like to know if you are willing to commit funds or volunteer time to help make the project happen.

Name: _____ Farm Name: _____

Address: _____ City, State, Zip: _____

Phone Number: _____ Email: _____

- ☐ Yes! I would like to be a charter member of the cooperative for \$1000.
☐ I would like to invest capital funds. I pledge total of \$ _____.
☐ I would be happy to volunteer my time towards the project.
☐ No, thank you. I do not want to volunteer or pledge at this time.

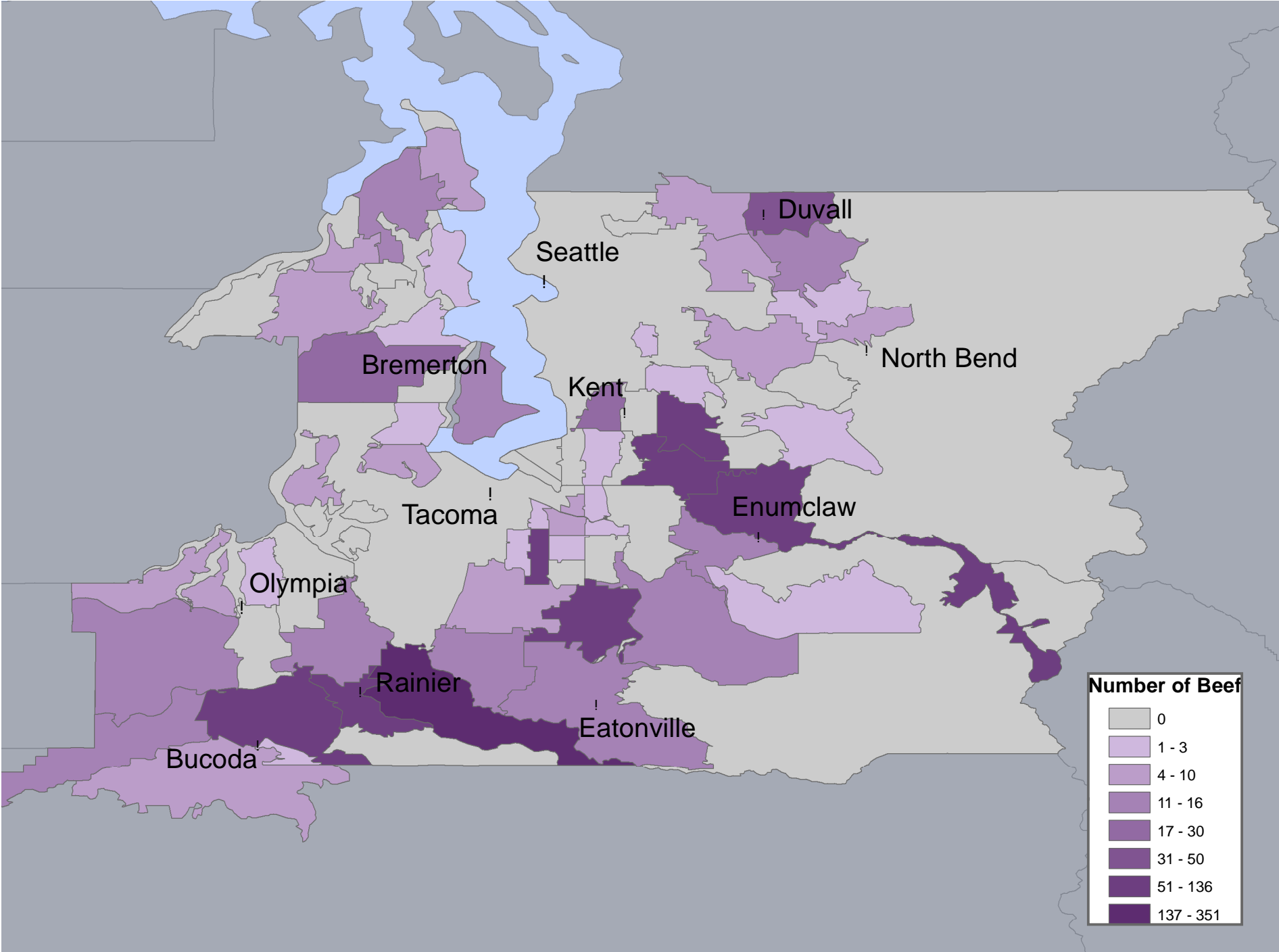
Thank you for your help!

Please return your survey in the enclosed envelope to:

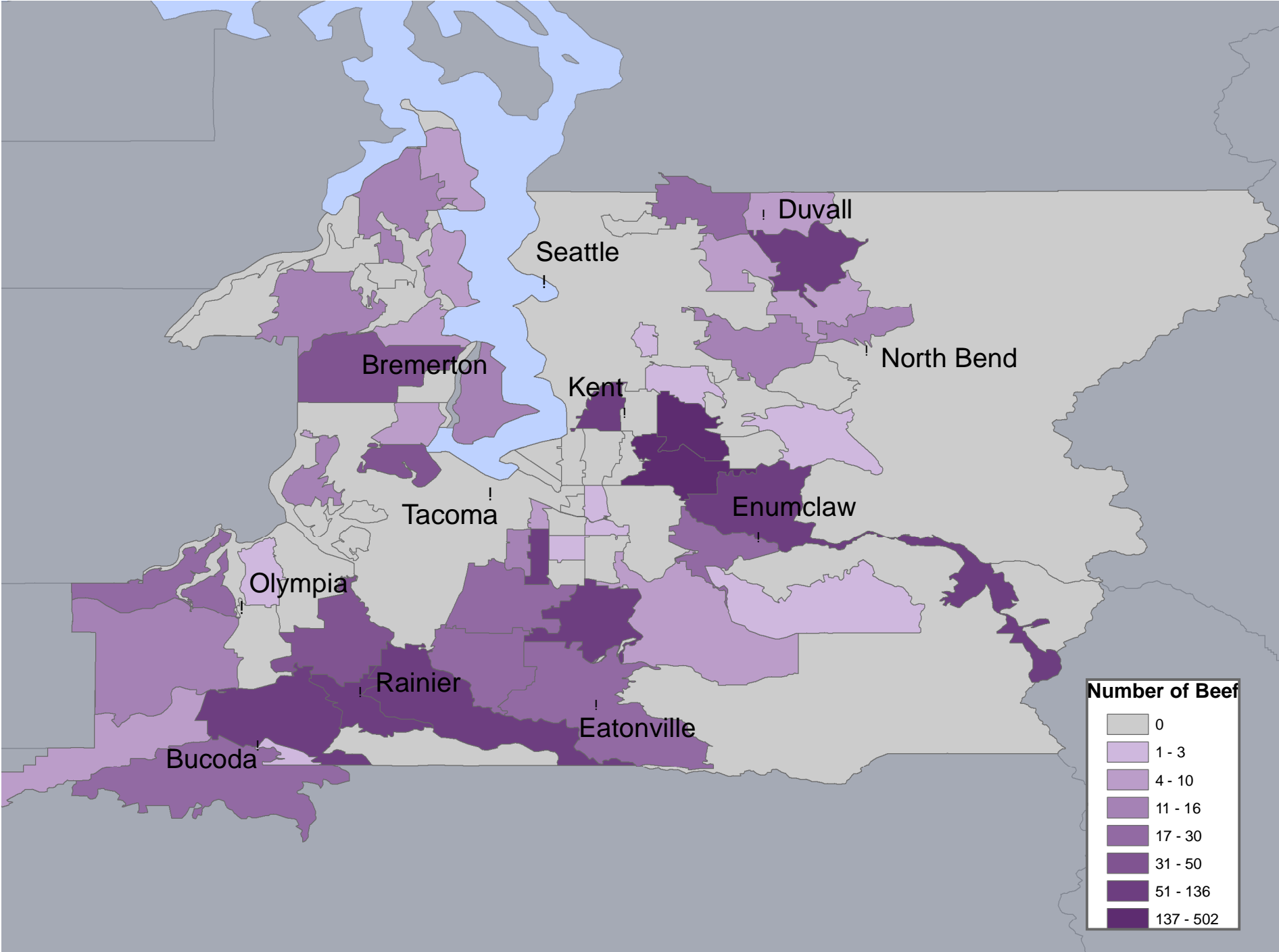
King County Dept of Natural Resources, PO Box 609, Olympia, WA 98507

If you have questions contact Georgine Yorgey at gyorgey@u.washington.edu, or (206)235-7154

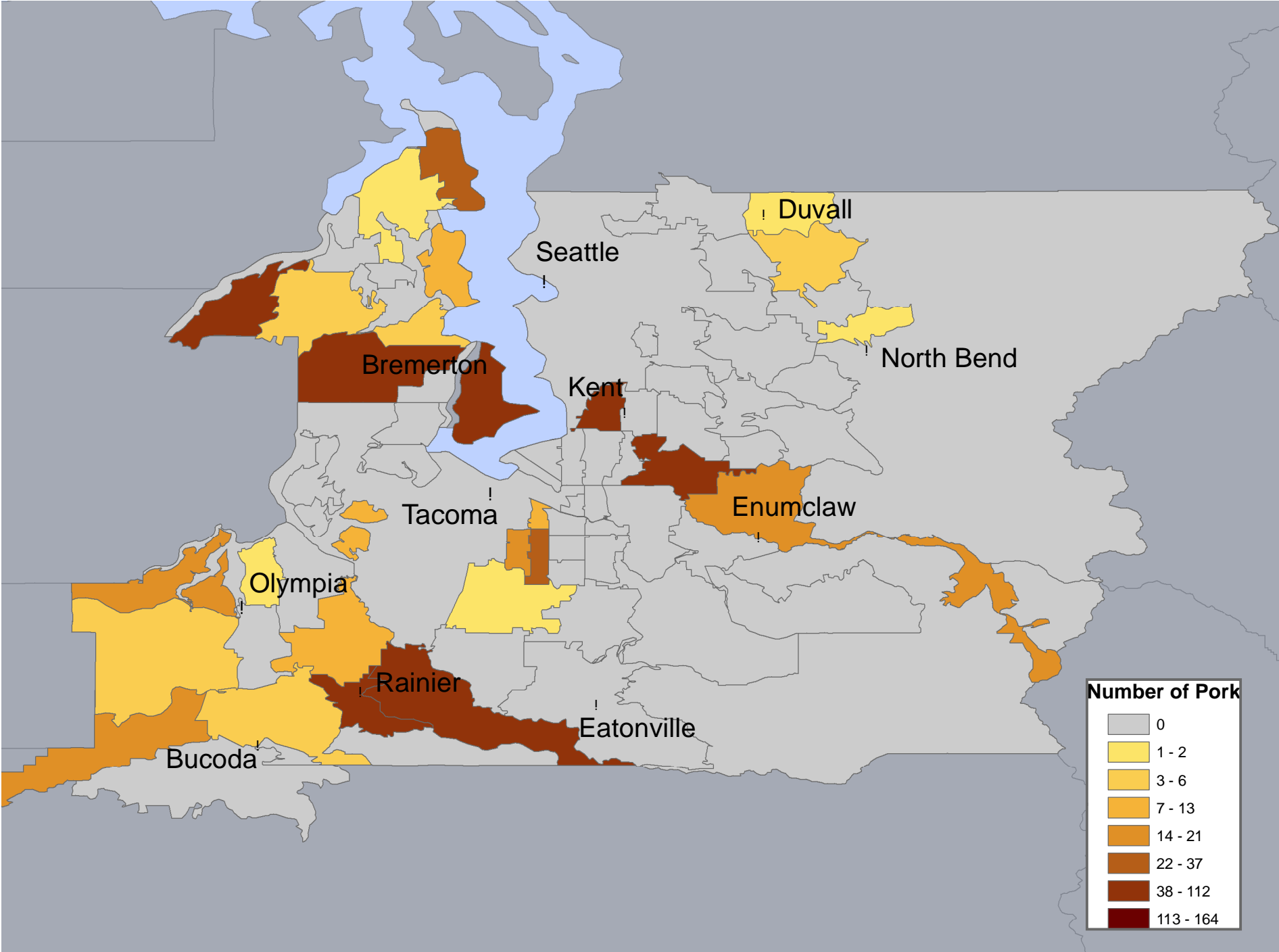
Map C1. Number of beef that producers plan to slaughter in Year 1, by zip code.



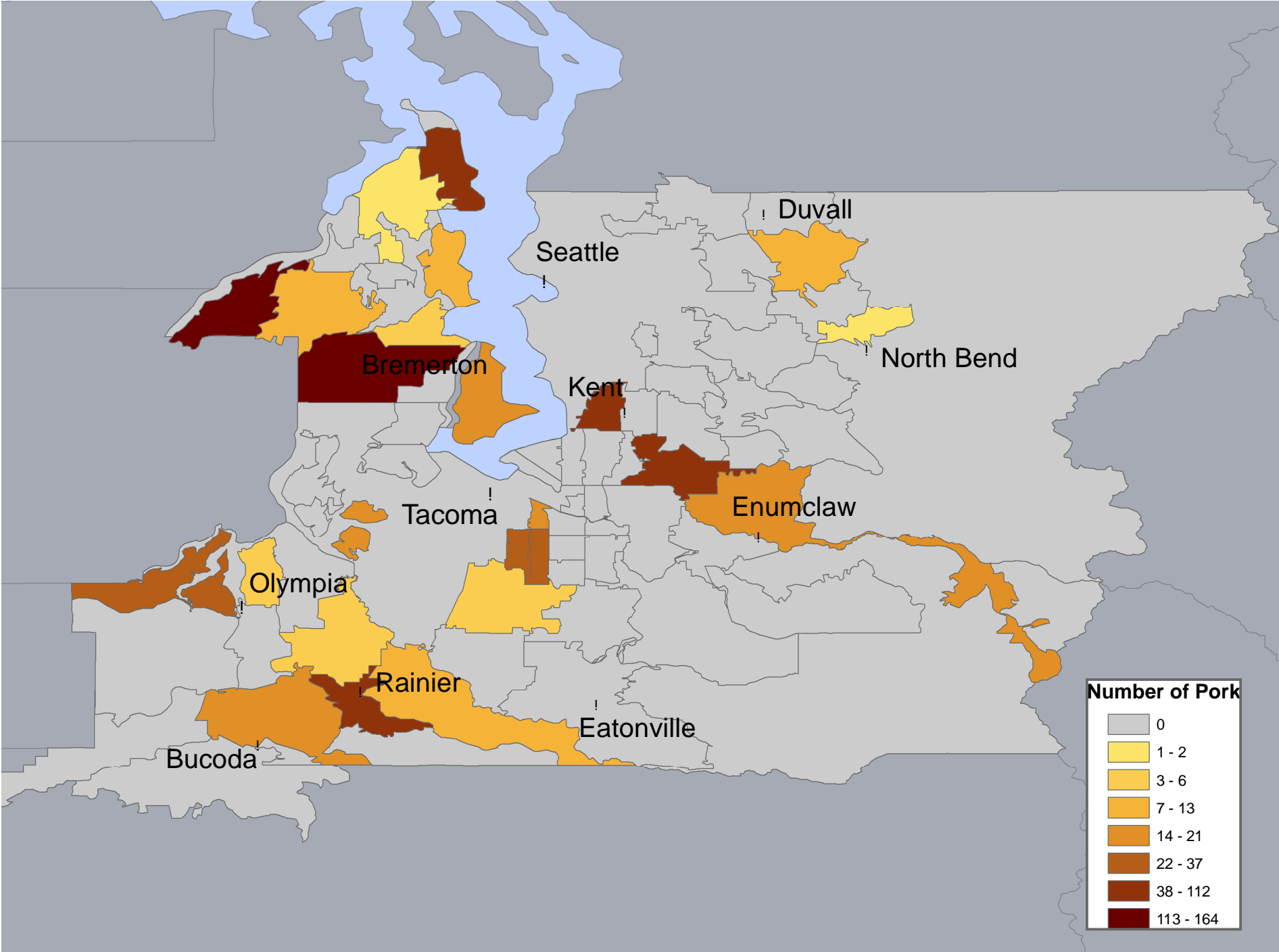
Map C2. Number of beef that producers plan to slaughter in Year 5, by zip code.



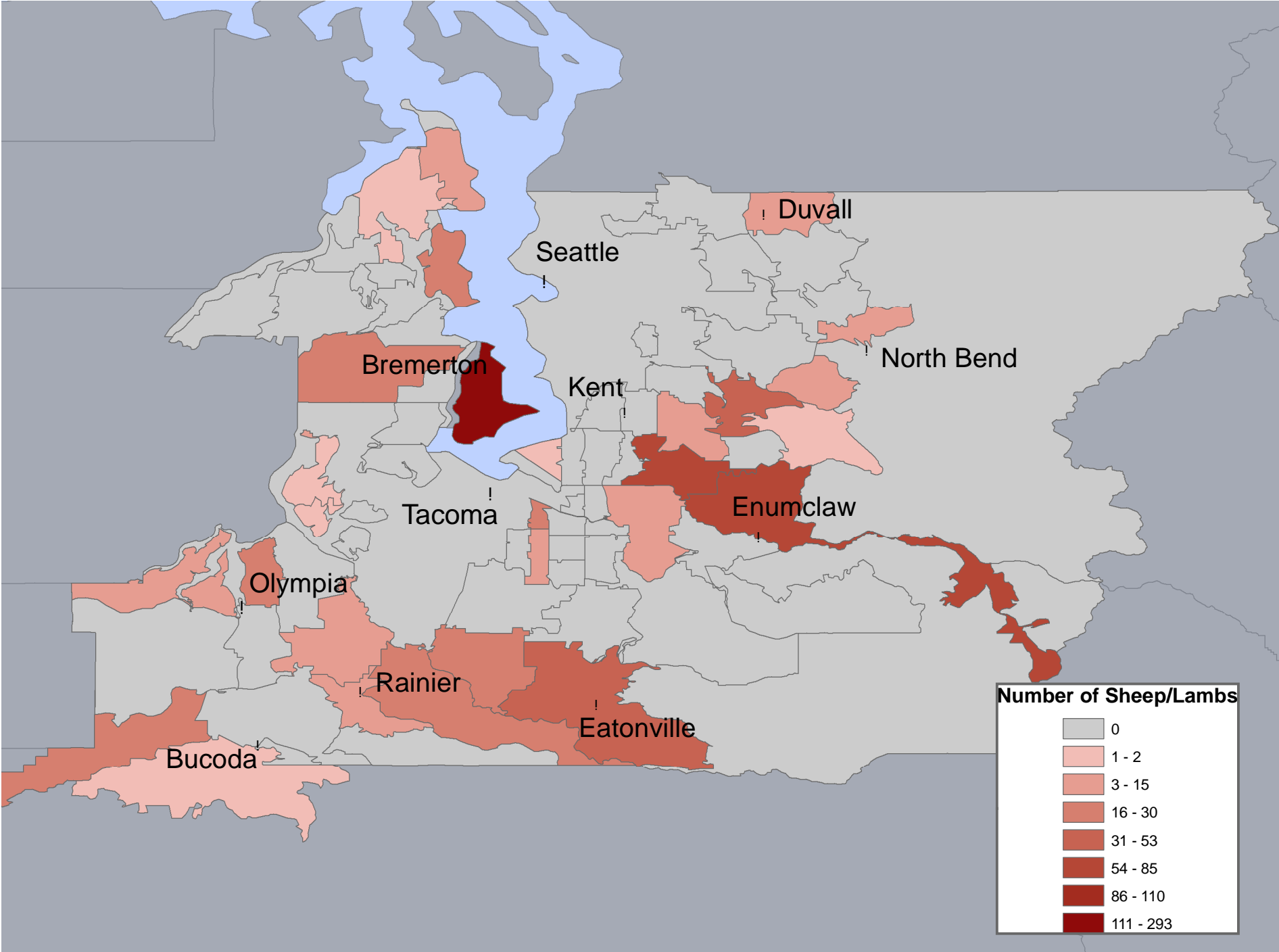
Map C3. Number of pork that producers plan to slaughter in Year 1, by zip code.



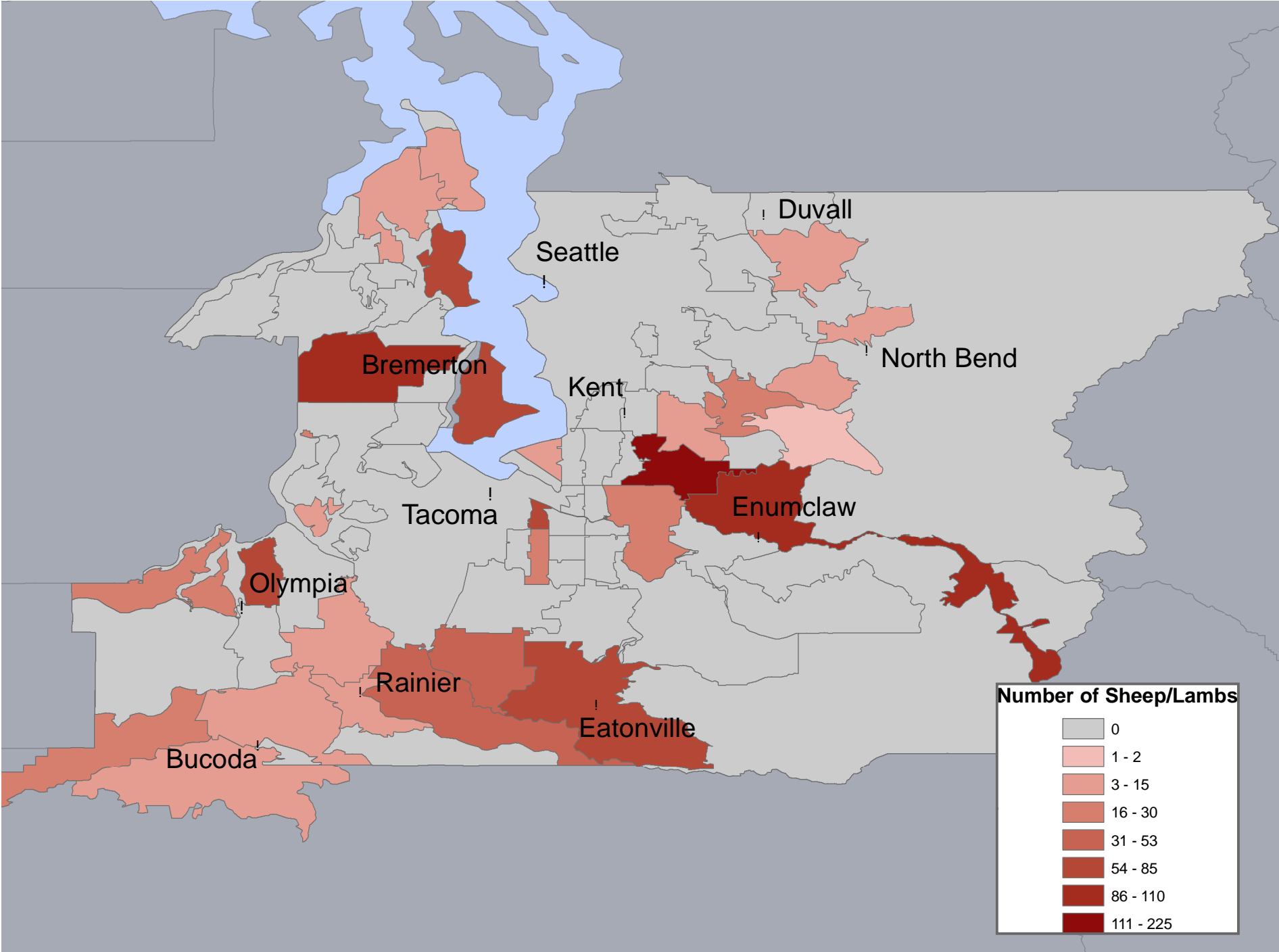
Map C4. Number of pork that producers plan to slaughter in Year 5, by zip code.



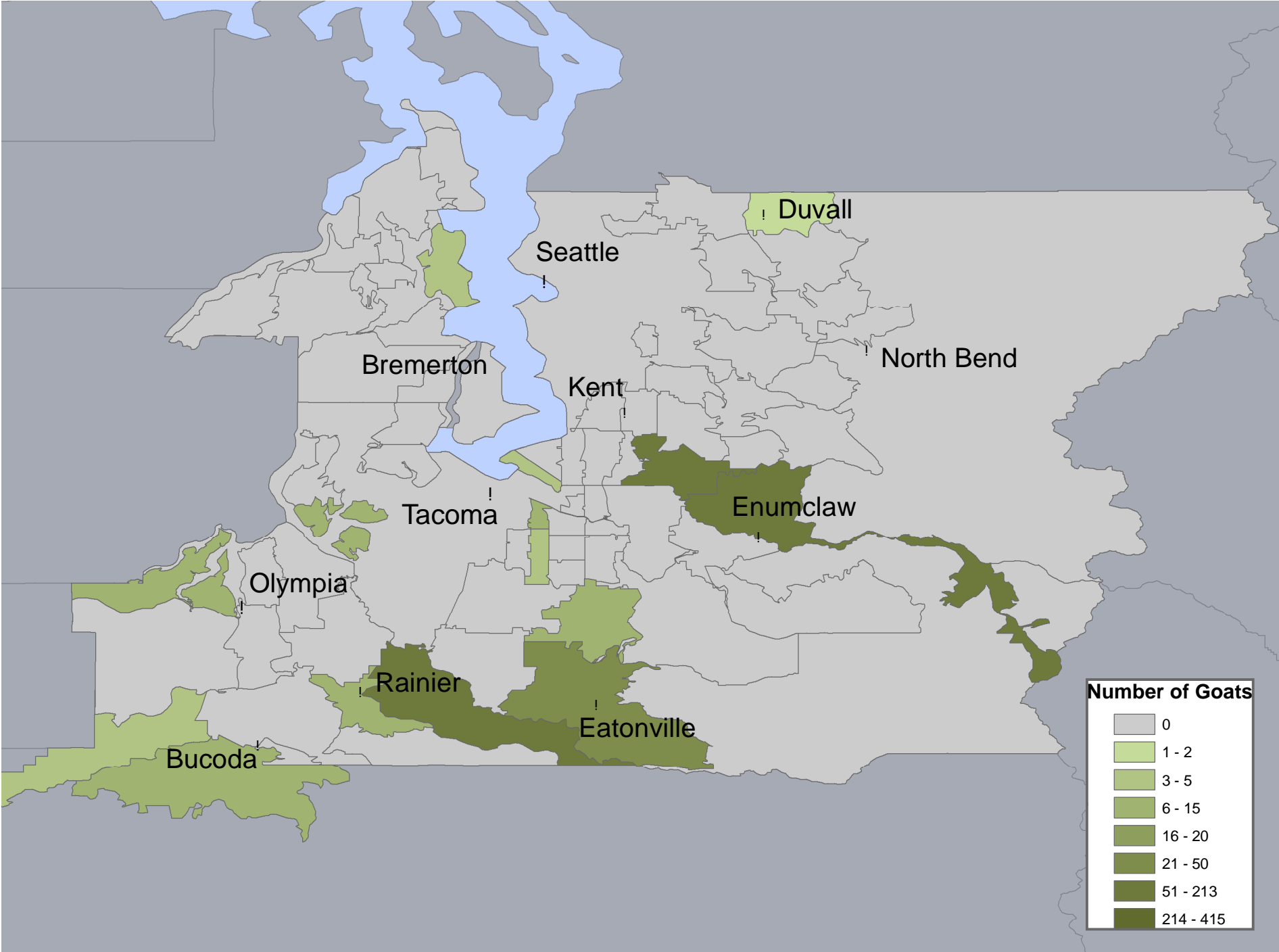
Map C5. Number of sheep that producers plan to slaughter in Year 1, by zip code.



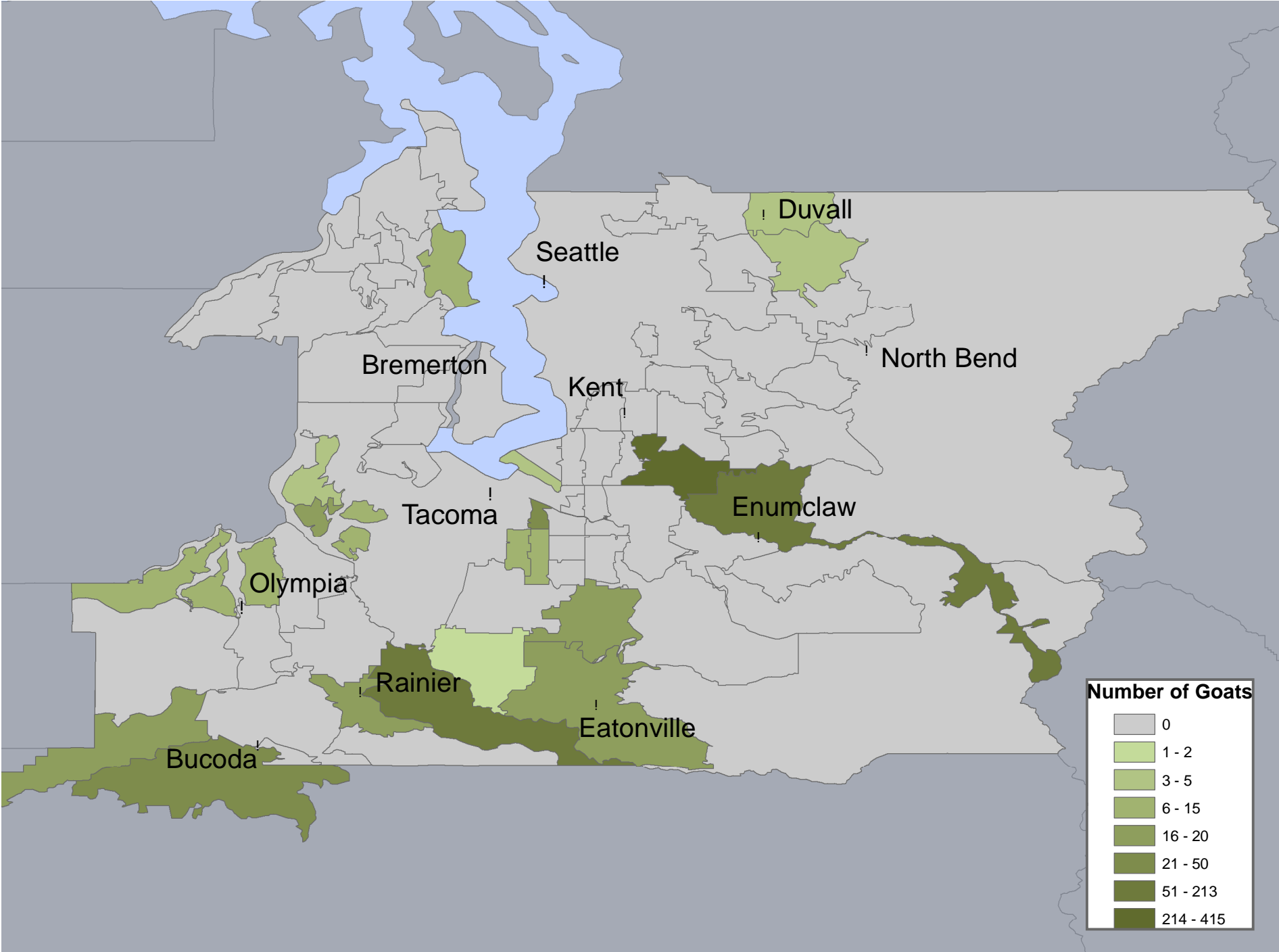
Map C6. Number of sheep that producers plan to slaughter in Year 5, by zip code.



Map C7. Number of goats that producers plan to slaughter in Year 1, by zip code.



Map C8. Number of goats that producers plan to slaughter in Year 5, by zip code.



Appendix D: Custom Meat Facilities, Establishments and Slaughter Trucks Licensed with the WSDA as of April 30, 2008

CMF = Custom Meat Facility

CSE = Custom Slaughter Establishment

CFS = Custom Farm Slaughterers

WSDA Custom Exempt Facilities Within the Proposed Service Area for the Puget Sound Meat Producers Cooperative

Processor Name	Owner First	Owner Last	Phone	Site Address	Site City	Site Zip	County	CMF	CSE	CFS
BESTFED FARM, INC.	ASEGID	FESEHA	206-293-0804	29203 140TH AVE SE	AUBURN	98092	KING		1	
DANMAR FARMS INC	DANMAR FARMS INC		206-650-7860	30621 SE 31ST ST	FALL CITY	98024	KING		1	
HOBART CUSTOM MEATS	HEINZ	MEIER	425-432-0704	20453 276TH AVE SE	HOBART	98025	KING	1		
LIND'S MEATS	MIKE & LOUISE	LIND	253-631-3172	23022 172ND AVE SE	KENT	98042	KING	1		1
OLSON'S MEATS AND SMOKEHOUSE, LLC	Gregory	Olson	360-825-3340	20104 SE 436TH ST	ENUMCLAW	98022	KING	1		1
RICKSON VILOG	Rickson	Vilog	253-854-1738	28004 55TH AVE S	AUBURN	98001	KING		1	
SEA BREEZE FARM	George	Page	206-567-4628	10730 SW 116TH STREET	VASHON	98070	KING	1	1	
ALM RANCH	IVER	ALM	425-222-5650	3724 324TH AVE SE	FALL CITY	98024	KING		1	
FARMER GEORGE MEATS	JOSEPH	KEEHN	360-876-3186	3870 BETHEL ROAD SE	PORT ORCHARD	98366	KITSAP	1		1
SWEENEY'S MEATS INC	MARK	SWEENEY	360-692-8802	9690 BROWNSVILLE HWY NE	BREMERTON	98311	KITSAP	1		
NEWMANS CUSTOM MEAT	Gene	Huguenin	360-324-9019	285 MEIER DR	WINLOCK	98596	LEWIS	1		
BEEF SHOP (THE)	Gene	Huguenin	360-736-5257	1721 AIRPORT ROAD	CENTRALIA	98531	LEWIS	1		
HYATT CUSTOM SLAUGHTERING	Sherri	Hyatt	360-295-3306	1592 STATE ROUTE 506	VADER	98593	LEWIS			1
MILLER'S CUSTOM SLAUGHTERING	Jerry	Miller	360-748-6129	156-A NEWAUKUM VALLEY ROAD	CHEHALIS	98532	LEWIS			1
MORTON MEAT CO	John	Rolewicz	360-496-5327	241 MAIN ST	MORTON	98356	LEWIS	1		1
NORMA BOREN	NORMA	BOREN	360-498-5480	193 ANDERSON ROAD	GLENOMA	98336	LEWIS	1		
PETE'S CUSTOM MEATS	Pete	Wherry	360-978-4007	111 LEONARD ROAD	ONALASKA	98570	LEWIS	1		
SALMON CREEK MEATS	SONA & JOE	MARKHOLT	360-985-7822	139 KOONS ROAD	MOSSYROCK	98564	LEWIS	1		
UNCLE JIM'S SMOKEHOUSE	JIM	SMITH	360-740-8836	1387 CERES HILL ROAD	CHEHALIS	98532	LEWIS	1		
DECKER CREEK CUSTOM MEATS	IRA	BREHMEYER	360-426-0187	2971 W DECKERVILLE ROAD	MATLOCK	98560	MASON	1		1
HOME MEAT SERVICE	Glenn	Probst	360-452-8488	SE 341 TAYLOR ROAD	SHELTON	98584	MASON	1		

Processor Name	Owner First	Owner Last	Phone	Site Address	Site City	Site Zip	County	CMF	CSE	CFS
BUTCHER BOYS	Robert	Rolewicz	253-840-1099	15014 MERIDIAN ST EAST	PUYALLUP	98375	PIERCE	1		
CRESCENT CUSTOM MEATS	Mohamad	Moalim	253-863-6334	5221 160TH AVE E	SUMNER	98390	PIERCE		1	
CUSTOM MEATS	Roy	Johnson	253-537-9377	2120 128TH ST E	TACOMA	98445	PIERCE	1		
JIM'S CUSTOM CUTTING	JAMES	COOK	253-843-2688	102 296TH ST EAST	ROY	98580	PIERCE	1		
JP'S BUTCHERING	Josh	Phillips	253-797-2433	15808 86TH AVE CT E	PUYALLUP	98375	PIERCE			1
K.P. MOBILE SLAUGHTER	KENNETH L	KRAHN	253-884-9235	903 WEBB ROAD	LAKE BAY	98349	PIERCE			1
MEAT SHOP of TACOMA INC, THE	Lee	Markholt	253-537-4490	13419 VICKERY ROAD EAST	TACOMA	98446	PIERCE	1		
MOUNTAIN VIEW MEAT & SAUSAGE	Steve	Anderson	253-537-5332	2519 EAST 112TH STREET	TACOMA	98445	PIERCE	1		
ROCKY ACERS FARMS	WILFRED	STEPHENSON	360-832-6394	2014 KINSMAN CT EAST	ROY	98580	PIERCE		1	
T & J MOBILE SLAUGHTERING	JAMES	HOLLINGSWORTH	253-863-3979	6002 119TH AVE E	PUYALLUP	98372	PIERCE			1
BRIAN'S FARM SLAUGHTER	BRIAN	FENNEL	360-264-5111	1715 149TH LANE SE	TENINO	98589	THURSTON			1
DOUBLE H SLAUGHTERING INC (TRUCK #2)	GENE	HUGUENIN	360-413-7566	2211 HUNTINGTON LOOP SE	OLYMPIA	98513	THURSTON			1
HERITAGE MEATS	TRACY	SMACIARZ	360-491-8487	18241 PENDELTON ST SW	ROCHESTER	98579	THURSTON	1		
KEVIN'S FARM CUSTOM	Kevin	Mendenhall	360-507-3275	14933 KOWLES ROAD SE	TENINO	98589	THURSTON			1
LITTLEROCK MEATS	MICHAEL	HEPFER	360-754-6557	3705 113TH AVE. SW	OLYMPIA	98512	THURSTON	1		1
MICHAEL ERICKSON	MICHAEL	ERICKSON	360-894-2839	16420 143RD AVE SE	YELM	98597	THURSTON			1
STEWART'S MARKET INC	Dorothy	Carlson	360-458-2091	17821 STATE HWY 507	YELM	98597	THURSTON	1		
TOM, DICK & HARRY'S MEATS	TOM	SHAUT	360-458-2999	4TH & WEST RD	YELM	98597	THURSTON	1		

Other WSDA Custom Exempt Facilities in Western Washington

Processor Name	Owner First	Owner Last	Phone	Site Address	Site City	Site Zip	County	CMF	CSE	CFS
MACOMBER MEATS	DOUG	MACOMBER	360-452-2603	394 BILLY SMITH ROAD	PORT ANGELES	98362	CLALLAM	1		
MORGAN SLAUGHTERING	STEPHEN	MORGAN	360-452-7823	3406 OBRIEN ROAD	PORT ANGELES	98362	CLALLAM			1
SUNRISE MEATS & LOCKERS	STEVEN R	FINK	360-457-8750	1325 EAST FIRST ST	PORT ANGELES	98362	CLALLAM	1		
BUTCHER BOYS	James	Kurfurst	360-693-6241	2615 EAST 4TH PLAIN BLVD	VANCOUVER	98661	CLARK	1		
LONGHORN PAK	MARTIN	BROSSEAU	360-896-6221	12903 NE 72ND AVE	VANCOUVER	98665	CLARK			1
MAYER'S CUSTOM MEATS	Jeff & Cathy	Mayer	360-574-2828	12903 NE 72ND AVE	VANCOUVER	98686	CLARK	1		
R-PLACE FARM SLAUGHTERING	Rodger	Kujava	360-798-2043	29404 NE 132 AVE	BATTLE GROUND	98604	CLARK			1
STEPHENSON MEATS, INC	Wally	Stephenson	360-887-3931	1170 S. HILLHURST RD	RIDGEFIELD	98642	CLARK	1		1

Processor Name	Owner First	Owner Last	Phone	Site Address	Site City	Site Zip	County	CMF	CSE	CFS
T-BONE EXPRESS (THE)	Charles	Whitcomb	360-931-9076	511 E YACOLT RD	YACOLT	98675	CLARK			1
WARD'S CUSTOM MEAT CUTTING	TERRY C	WARD	360-687-5225	26000 N.E. 147th AVE	BATTLEGROUND	98604	CLARK	1		1
BOLARS CUSTOM MEAT CUTTING, INC	BILLY	BOLAR	360-274-4202	381 DELAMETER ROAD	CASTLE ROCK	98611	COWLITZ	1	1	1
MATT'S CUSTOM MEATS	Matt	Franett	360-414-1073	705 NORTH MAPLE HILL ROAD	KELSO	98626	COWLITZ	1	1	1
J & A HENSLE MEATS	Albert	Hensler	360-249-4751	232 BRADY LOOP ROAD EAST	MONTESANO	98563	GRAYS HARBOR		1	
J & J CUSTOM SLAUGHTERING	JASON	JENSEN	360-387-4841	1400 PILCHUCK DRIVE	CAMANO ISLAND	98282	ISLAND			1
T-N-T CUSTOM WILD GAME CUTTING/WRAPPING	JOHN & MARY	TUSS	360-387-2683	1151 SW CAMANO DR	CAMANO ISLAND	98292	ISLAND	1		
FRANCES MEAT CO	Gerald	Zumbuhl	360-934-6345	8 HOLT ST	RAYMOND	98577	PACIFIC	1		
FRANCES MEATS CUSTOM FARM SLAUGHTER	GERALD	ZUMBUHL	360-934-6345	8 HOLT ST	RAYMOND	98577	PACIFIC			1
PATRIOTIC FARM SLAUGHTER	Jimmy	Lev	360-942-3054	1649 LARSON ROAD	RAYMOND	98577	PACIFIC	1		1
PATRIOTIC PACKING TRUCK # 2	Jim	Lev	360-942-3054	1649 LARSON ROAD	RAYMOND	98577	PACIFIC			1
JIM'S MEAT MARKET	JIM	SCRIBNER	360-378-2373	45 MADDEN LANE	FRIDAY HARBOR	98250	SAN JUAN	1		1
ANDAL'S CUSTOM MEATS	STEVE	ANDAL	360-424-5543	20251 E HICKOX ROAD	MT VERNON	98274	SKAGIT	1		1
ISLAND GROWN FARMERS	ISLAND GROWN FARMERS CO-OP		360-766-4273	13400 D'ARCY ROAD	BOW	98232	SKAGIT	1		
BART'S LOCKER MEATS	BART	MARZOLF	360-568-4748	7415 79TH AVE SE	SNOHOMISH	98290	SNOHOMISH	1		1
DEL FOX CUSTOM MEATS INC	PATRICK	CAIRUS	360-629-3723	7229 300TH ST NW	STANWOOD	98292	SNOHOMISH	1		1
J & P'S BUTCHERING	JOHN	MALGESINI	360-568-8686	13404 Old Snohomish-Monroe Road	SNOHOMISH	98290	SNOHOMISH			1
KELSO'S KUSTOM MEATS	JANICE	KELSO	360-568-3065	216 MAPLE STREET	SNOHOMISH	98290	SNOHOMISH	1		1
ONE WAY MEATS	JOHN	MALGESINI	360-568-8686	13404 Old Snohomish-Monroe Road	SNOHOMISH	98290	SNOHOMISH	1		
SILVANA MEATS, INC	JOHN	KALBERG	360-652-7188	1229 SR530 - Pioneer Hinghway W	SILVANA	98287	SNOHOMISH	1		1
COLUMBIA VALLEY MEATS	ALLEN	SAAR	360-988-8592	9118 FROST ROAD	SUMAS	98295	WHATCOM	1		1
EDIN'S CUT & WRAP	DARRYL R	EDIN	360-398-7324	258 WEST POLE ROAD	LYNDEN	98264	WHATCOM	1		
KEIZER MEATS	GEORGE	KEIZER	360-354-2515	8168 BOB HALL ROAD	LYNDEN	98264	WHATCOM	1		1
LYNDEN MEAT & ICE	RICHARD	BIESHEUVEL	360-354-2449	1936 FRONT STREET	LYNDEN	98264	WHATCOM	1		1

WSDA Custom Exempt Facilities in Eastern Washington

Processor Name	Owner First	Owner Last	Phone	Site Address	Site City	Site Zip	County	CMF	CSE	CFS
C & L MEATS	CHAS L	SCHOONOVER	509-659-0452	1497 LIND RALSTON ROAD	RITZVILLE	99169	ADAMS	1		
MEAT BLOCK, INC. (THE)	DARREN	SUMMERS	509-659-0155	408 E 1ST	RITZVILLE	99169	ADAMS	1		1
MEAT SHOP, THE	EDMUND C	MEEK	509-488-3119	720 REYNOLDS ROAD	OTHELLO	99344	ADAMS	1		
MELCHER MEATS	JEFF	MELCHER	509-982-2819	1658 N. KULM RD	ODESSA	99159	ADAMS	1		
TLC CUSTOM MEATS INC	KENNETH	DOCKINS	509-488-9953	93 N. DESDEMONA DRIVE	OTHELLO	99169	ADAMS	1		1
CLARKSTON HEIGHTS MARKET	John	Fraizer	509-758-5431	2454 APPLESIDE BLVD	CLARKSTON	99403	ASOTIN	1		
LARRY'S CUSTOM CUT	Larry	Altman	208-790-0583	1848 WILMA DR	CLARKSTON	99403	ASOTIN	1		
BURN'S BROS. CUSTOM SLAUGHTER	Ryan	Burns	509-737-7844	510 DOUGLAS STREET	RICHLAND	99352	BENTON			1
GENE'S CUSTOM SLAUGHTERING	STACY	McCORKLE	509-627-3133	97405 E. 80 PR	KENNEWICK	99338	BENTON			1
KNUTZEN'S KUSTOM KILL & KUTTING	Stephen	Knutzen	509-545-9089	6404 W COURT STREET	PASCO	99301	BENTON	1		1
PERRY'S FINLEY SHOPPER, INC	KATHY	RICHARDS	509-582-2451	222608 E GAME FARM RD	KENNEWICK	99337	BENTON	1		
UNDERWOOD'S PROSSER LOCKERS	ROBERT	UNDERWOOD	509-783-1313	1221 BENNETT AVE	PROSSER	99350	BENTON			1
UNDERWOOD'S PROSSER LOCKERS	BOB	UNDERWOOD	509-786-1313	1221 BENNETT AVE	PROSSER	99350	BENTON	1		
J & J MEATS	JERRY	JAMES	509-782-3300	7300 NAHAHUM CANYON	CASHMERE	98815	CHELAN	1		1
SANDALS WENATCHEE L.L.C.	DAN	SANDAL	425-462-1020	1036 WALNUT	WENATCHEE	98801	CHELAN	1		
DAYTON CUT AND WRAP	James	Westergreen	509-382-4234	121 E. MAIN STREET	DAYTON	99328	COLUMBIA	1		1
EASTMONT CUSTOM CUTTING	FRED	PERRY	509-884-3777	3501 ROCK ISLAND ROAD	EAST WENATCHEE	98802	DOUGLAS	1		
RALPH'S CUSTOM MEATS	Rafael	Najera Avila	509-884-9703	2208 1ST ST NE	EAST WENATCHEE	98802	DOUGLAS	1		1
BOB'S MEAT SHOP	MORGAN	JANNOT	509-634-4355	54 BRIDGE CREEK ROAD	KELLER	99140	FERRY	1		
PAGE'S CUSTOM MEATS	Bonnie	Page	509-779-4519	49 BJORK RANCH ROAD	CURLEW	99118	FERRY	1		
BIG B'S CUSTOM CUTS	William	Gelenaw	509-554-4365	3410 N CAPITOL AVE	PASCO	99301	FRANKLIN	1		
BOB'S CUSTOM KILL	Michael	Chubb	509-430-1360	2511 ALDER RD	PASCO	99301	FRANKLIN			1
BRYAN'S BUTCHER BLOCK	BRYAN	SCHUTZ	509-545-0429	6415 BURDEN BLVD	PASCO	99301	FRANKLIN	1		
MCCARY MEATS	HERSCHEL M.	MCCARY	509-269-4488	6880 ROUTE-170	MESA	99343	FRANKLIN	1		
BASIN MEATS INC	BOBBY G	PARHAM	509-765-9352	5286 STRATFORD ROAD NE	MOSES LAKE	98837	GRANT	1		1
BLOCK 40 MEATS	Darrell	Oldridge	509-765-6259	10578 ROAD 10 NE	MOSES LAKE	98837	GRANT	1		1
DOUBLE R CUSTOM MEATS LLC	JODY	DAVEY	509-754-1106	340 RAILROAD STREET NE	EPHRATA	98823	GRANT	1		1
MARLIN HUTTERIAN BRETHREN	PETER	GROSS	509-345-2390	21344 RD 18 NE	MARLIN	98832	GRANT	1		
HAWK HAVEN MEATS	STEVEN	FILLEAU	509-674-9321	351 HAWK HAVEN ROAD	CLE ELUM	98922	KITTITAS			

Processor Name	Owner First	Owner Last	Phone	Site Address	Site City	Site Zip	County	CMF	CSE	CFS
OWENS & SONS INC	RAY	OWENS	509-674-2530	502 E FIRST ST	CLE ELUM	98922	KITTITAS	1	1	
3-H MEAT CO	HENRY	PATERA	509-773-6605	3 HATFIELD ROAD	GOLDENDALE	98620	KLICKITAT	1		
C & L LOCKER CO.	JAMES H.	BOLAND	208-882-3396	1695 HIGHWAY 95N	MOSCOW	83843	LATAH			1
CHC CUSTOM CUT	DON COPENHAVER	Tyler Covey & Shane Hopkins	509-636-3984	33740 COPENHAVER ROAD N.	CRESTON	99117	LINCOLN	1		
FRANK HALFORD	FRANK	HALFORD	208-746-8486	3344 14TH ST A	LEWISTON	83501	NEZ PERCE			1
CORNETT'S CUSTOM SLAUGHTER	Carmen	Cornett	509-422-3613	23194 A HWY 20	OKANOGAN	98840	OKANOGAN			1
METHOW VALLEY MEAT CO	Peter	Paluck	509-997-2343	992 TWISP CARLTON RD	TWISP	98856	OKANOGAN	1	1	1
OKANOGAN CUSTOM MEATS	JOHN	BROWNLEE	509-422-5116	23253 HWY 20 SOUTH	OKANOGAN	98840	OKANOGAN	1		
THOMSON CUSTOM MEATS	Christopher J.	Thomson	509-997-9353	180 BENSON CREEK ROAD	TWISP	98856	OKANOGAN	1		
VALLEY PACKING CO	ELAINE	STEDTFELD	509-486-4308	1157 HIGHWAY 7 NORTH	TONASKET	98855	OKANOGAN	1		1
WINTHROP RED APPLE	Michael	Walker	509-996-2525	920 HIGHWAY 20 S	WINTHROP	98862	OKANOGAN	1		
POTLATCH PACK INC	MELVIN	KRASSELT	208-875-1361	5497 HIGHWAY 95	POTLATCH	83855	OUT OF STATE			1
PRAIRIE CUSTOM MEATS	DONALD	KIRK	208-773-2333	N. 2708 HIGHWAY 41	POST FALLS	83854	OUT OF STATE			1
MASON'S MEAT PACKING CO	Neil	Mason	509-447-3788	1871 GREEN ROAD	NEWPORT	99156	PEND OREILLE	1		1
CROWN FOODS INC	Crown Foods Inc		509-326-1111	1402 NW BOULEVARD	SPOKANE	99205	SPOKANE	1		
DUNHAM & SONS MEATS	Robert	Dunham	509-924-9821	EAST 12907 WELLESLEY	SPOKANE VALLEY	99216	SPOKANE	1		1
FORNEY'S CUSTOM SLAUGHTERING	Curt	Forney	509-276-7191	4439 RAILROAD ROAD	CLAYTON	99110	SPOKANE			1
IVY'S CUSTOM MEATS	Robert	Ivy	509-276-2410	103 W. "D" STREET	DEER PARK	99006	SPOKANE	1		
QUADRA-K MEATS	Kenneth	Wilke	509-624-9760	2115 WEST 44TH STREET	SPOKANE	99204	SPOKANE	1		1
REEDY'S CUSTOM MEATS	Edward	Reedy	509-292-1500	39016 N ELK-CHATTAROY ROAD	ELK	99009	SPOKANE	1		1
RUSTY'S COUNTRY MEATS	RUSSELL	MINNAMEIER	509-276-2237	3125 W. FINDLEY RD	DEER PARK	99006	SPOKANE	1		
TOM'S CUSTOM CUTS #2	Thomas	Turnbough	509-455-8129	14606 W MEDICAL LAKE 4 LKS.	CHENEY	99004	SPOKANE	1		1
BAUMAN'S CUSTOM MEATS	ALLEN	MARSHALL	509-935-8025	202 W MAIN	CHEWELAH	99109	STEVENS	1		
C N J CUSTOM MEATS	Curt	Forney	509-276-7191	4439 RAILROAD AVE	CLAYTON	99110	STEVENS	1		
CAREK'S FARM SLAUGHTERING	MARC	CAREK	509-937-2522	33316 LAKE VIEW LANE	VALLEY	99181	STEVENS			1
M & R MEATS	Mary	Akers	509-935-4598	2337 BURNT VALLEY ROAD	CHEWELAH	99109	STEVENS	1		
RAY'S CUSTOM CUTTING	RAY	MILLER	509-684-5544	S 220 LOUIS PERRAS RD	COLVILLE	99114	STEVENS	1		1
RICK'S CUSTOM SLAUGHTER	RICK	CORNETT	509-935-6495	1614 SWISS VALLEY ROAD	ADDY	99101	STEVENS			1

Processor Name	Owner First	Owner Last	Phone	Site Address	Site City	Site Zip	County	CMF	CSE	CFS
SMOKEY RIDGE, INC.	DOREEN	NELSON	509-935-6213	2450 HEINE RD	CHEWELAH	99109	STEVENS	1		
HAUN'S MEAT & SAUSAGE L.L.C.	GERALD & DEE	HAUN	509-525-6605	5042 STATELINE ROAD	WALLA WALLA	99362	WALLA WALLA	1		1
ED'S CUSTOM MOBILE SLAUGHTERING	ED	SALLEE	541-298-5016	6862 CHENOWITH ROAD WEST	THE DALLES	97058	WASCO			1
COLFAX MEAT PACKING CO	R. VINCENT	TAYLOR	509-397-3012	N. 4002 PALOUSE RD	COLFAX	99111	WHITMAN	1	1	
GARFIELD MEAT & LOCKER	Tom & Windy	Tevlin	509-635-1217	N. 102 3rd STREET	GARFIELD	99130	WHITMAN	1		1
AHTANUM CUSTOM MEATS	DON	BAGGARLEY	509-966-3642	3105 SOUTH 79TH AVENUE	YAKIMA	98903	YAKIMA	1		
BEN McINROY CUSTOM FARM BUTCHERING	BEN	McINROY	509-453-8046	4302 THORP ROAD	MOXEE	98936	YAKIMA			1
CJ'S CUSTOM MEATS	Michael	Rockholt	509-877-2227	671 JONES ROAD	WAPATO	98951	YAKIMA	1		
COUNTRY PLACE MARKET	DENNIS	GROTHAUS	509-248-5987	909 LOWER AHTANUM ROAD	YAKIMA	98903	YAKIMA	1		
CULLEN'S CUSTOM MEATS	JIM	CULLEN	509-837-0079	6852 VAN BELLE ROAD	SUNNYSIDE	98944	YAKIMA	1		
FREDDY'S CUSTOM MEAT SHOP	Fred	Brown	509-965-4596	8308 AHTANUM ROAD	YAKIMA	98903	YAKIMA	1		
J.Z.'S CUSTOM FARM SLAUGHTER #1	JOHAN	ZIJLSTRA	509-837-6616	4241 STOVER ROAD	SUNNYSIDE	98944	YAKIMA			1
JAHR'S EUROPEAN SAUSAGE & CUSTOM CUTTING	Peter	Jahr	509-697-8904	160 RANCHETTE LANE	SELAH	98942	YAKIMA	1		
JERRY'S VALLEY MEATS LLC	GERALD	DEATON	509-837-3626	2561 SUNNYSIDE MABTON RD	SUNNYSIDE	98944	YAKIMA	1		
MATTERHORN MEATS	Alfred	Bucheli	509-248-1600	1313 NORTH 16TH AVE	YAKIMA	98902	YAKIMA	1		
NILE VALLEY GAME PROCESSING	LARRY	STEVENSON	509-653-1647	23 E. 2ND STREET	NACHES	98937	YAKIMA	1		
R & R RETAIL MEATS	Gary	Ringer	509-248-3900	2109 SOUTH 3RD AVE	YAKIMA	98903	YAKIMA	1		
SELAH CUSTOM CUT	LANNY & NANCY	BONSEN	509-697-8261	491 MCGONAGLE ROAD	SELAH	98942	YAKIMA	1		
TANEWASHA'S CUSTOM FARM SLAUGHTER	BENJAMIN	SCHWARTZ	509-833-7700	10110 FORT ROAD	WAPATO	98951	YAKIMA			1
TED O. WALLACE	TED	WALLACE	509-248-3470	293 HOFF ROAD	MOXEE	98936	YAKIMA			1
TIETON DRIVE CUSTOM	Gary	Perrault	509-966-6212	9010 TIETON DR	YAKIMA	98908	YAKIMA	1		
WEEDS FARM SLAUGHTERING	JIMMY	WEED	509-248-1211	1340 EAST SELAH ROAD	YAKIMA	98901	YAKIMA			1
WEST VALLEY CUSTOM MEATS, INC.	Michael	Vieira	509-966-3440	6609 TIETON DRIVE	YAKIMA	98908	YAKIMA	1		

Appendix E: WSDA Custom Exempt Facilities used by Producers in Pierce, King, Kitsap, and Thurston Counties in 2007³⁸

Farmer George Meats, Port Orchard, WA (Kitsap Co.)	38
Olson's Meats and Smokehouse, LLC, Enumclaw, WA (King Co.)	19
Lind's Meats, Kent, WA (King Co.)	11
Double H Slaughtering Inc., Olympia, WA (Thurston Co.)	9
Michael Erickson, Yelm WA (Thurston Co.)	9
The Beef Shop, Centralia, WA (Lewis Co.) ³⁹	8
Kevin's Farm Custom, Tenino, WA (Thurston Co.)	5
One Way Meats, Monroe, WA (Snohomish Co.)	5
Kelso's Kustom Meats, Snohomish, WA (Snohomish Co.)	4
Littlerock Meats, Olympia, WA (Thurston Co.)	4
The Meat Shop of Tacoma, Inc, Tacoma, WA (Pierce Co.)	4
Bart's Locker Meats, Snohomish, WA (Snohomish)	3
Stewart's Market, Inc., Yelm, WA (Thurston Co.)	3
Heritage Meats, Rochester, WA (Thurston Co.)	2
JP's Butchering, Puyallup, WA (Pierce Co.)	2
Silvana Meats, Sylvana, WA (Snohomish)	2
Emmert's Baxton Meats, Sandy, OR	2
Brian's Farm Slaughter, Tenino, WA (Thurston Co.)	1
Butcher Boys, Puyallup, WA (Pierce Co.)	1
Home Meat Service, Shelton, WA (Mason Co.)	1
K P Mobile Slaughter, Lake Bay, WA (Pierce Co.)	1
Morton Meat Co., Morton, WA (Lewis Co.)	1
Patriotic Packing, Raymond, WA (Pacific Co.)	1
Slaughter Facility (not identified)	1
T & J Mobile Slaughtering, Puyallup, WA (Pierce Co.)	1
Kapowsin Meats, Graham, WA	1
Total	139

³⁸ Ten facilities could not be matched to the Washington State Department of Agriculture list of Custom Exempt Facilities. None of these facilities was used by more than two producers, so they were omitted from this list.

³⁹ Some producers referred to this facility by its previous name, H & H.

Appendix F: Inventories of Cattle, Hogs, and Sheep in King, Kitsap, Lewis, Mason, Pierce and Thurston Counties, 2002 – 2007

Inventory of Cattle and Calves (head)*				
Year	County	Cattle All	Beef Cows	Milk Cows
2002	King	20000		13400
2002	Kitsap	1500		
2002	Lewis	30000	6800	9100
2002	Mason	1500		
2002	Pierce	14500	4200	5300
2002	Thurston	25500	4100	11100
2002	Total	93000	15100	38900
2003	King	22000		11600
2003	Kitsap	1500		
2003	Lewis	31000	7200	9000
2003	Mason	1500		
2003	Pierce	15500	4400	4600
2003	Thurston	25000	4400	10000
2003	Total	96500	16000	35200
2004	King	18000	2000	11100
2004	Kitsap	1500	700	
2004	Lewis	31000	7300	9000
2004	Mason	1500	900	
2004	Pierce	16000	4200	4900
2004	Thurston	17000	3900	7800
2004	Total	85000	19000	32800
2005	King	17500		10600
2005	Kitsap	1500		
2005	Lewis	29500		8700
2005	Mason	1500		
2005	Pierce	16500		4900
2005	Thurston	18000		7100
2005	Total	84500	0	31300
2006	King	18500		10500
2006	Kitsap	1500		
2006	Lewis	31500		9500
2006	Mason	1500		
2006	Pierce	17000		5100
2006	Thurston	19000		6500
2006	Total	89000	0	31600
2007	King	15000		11000
2007	Kitsap	1500		
2007	Lewis	35000		8500
2007	Mason	2000		
2007	Pierce	17000		5000
2007	Thurston	21000		8000
2007	Total	91500	0	32500

*Counties with no reported data may still have significant numbers of livestock, but less than 15 producers. Therefore, data is withheld to protect producers' identity.

Inventory of Hogs (number)*

Year	County	Hogs and Pigs
2002	King	600
2002	Kitsap	500
2002	Lewis	800
2002	Mason	100
2002	Pierce	800
2002	Thurston	700
2002	Total	3500
2003	King	500
2003	Kitsap	
2003	Lewis	700
2003	Mason	
2003	Pierce	
2003	Thurston	700
2003	Total	1900

*Counties with no reported data may still have significant numbers of livestock, but less than 15 producers. Therefore, data is withheld to protect producers' identity.

Inventory of Sheep (number)*

2002	King	
2002	Kitsap	400
2002	Lewis	1000
2002	Mason	
2002	Pierce	1100
2002	Thurston	2100
2002	Total	4600
2003	King	1100
2003	Kitsap	
2003	Lewis	1000
2003	Mason	
2003	Pierce	1200
2003	Thurston	1800
2003	Total	5100
2004	King	1100
2004	Kitsap	400
2004	Lewis	1000
2004	Mason	
2004	Pierce	1200
2004	Thurston	900
2004	Total	4600

*Counties with no reported data may still have significant numbers of livestock, but less than 15 producers. Therefore, data is withheld to protect producers' identity.

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