



# The Market Administrator's Report

Facilitating the Efficient Marketing of Milk and Dairy Products

## Pacific Northwest and Arizona Marketing Areas

William A. Wise, Market Administrator

Volume 42, No. 4

April 2016

Data for March 2016

### MARKET SUMMARIES FOR MARCH

#### Pacific Northwest (FO 124)

Producers delivered a total of 598.7 million pounds of milk to the market during March. Daily deliveries averaged 19.3 million pounds, down 21.8 percent from February. An estimated 451 producers delivered milk to the market during the month. Daily deliveries per producer averaged 42,821 pounds, down 3.3 percent from February.

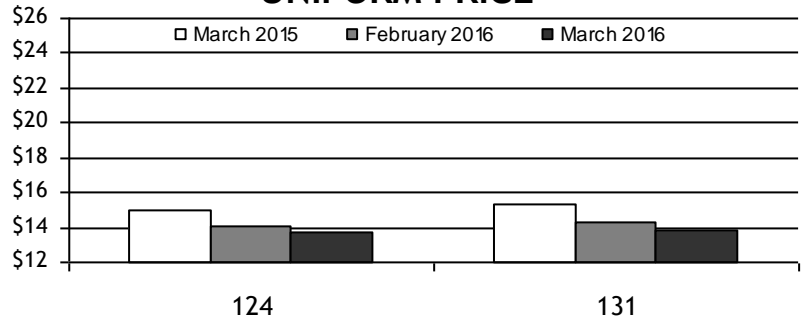
Class I producer milk during March totaled 167.7 million pounds, 28.0 percent of total producer receipts. Daily usage averaged 5.4 million pounds, down 1.7 percent from February. ▼

#### Arizona (FO 131)

Producers delivered a total of 464.0 million pounds of milk to the market during March. Daily deliveries averaged 15.0 million pounds, up 0.2 percent from February. An estimated 94 producers delivered milk to the market during the month. Daily deliveries per producer averaged 159,234 pounds, up 0.2 percent from February.

Class I producer milk during March totaled 112.6 million pounds, 24.3 percent of total producer receipts. Daily usage averaged 3.6 million pounds, up 1.2 percent from February. ▼

### UNIFORM PRICE



### Pool Quick Stats

Producer Prices & Component Levels	FO 124		FO 131	
	Feb	Mar	Feb	Mar
Uniform Price (at 3.5%)	\$14.08	\$13.67	\$14.30	\$13.84
Uniform Price (at test)	\$15.73	\$15.00	\$14.30	\$13.84
PPD	\$0.28	(\$0.07)		
Butterfat	\$2.3778	\$2.2028		n/a
Protein	\$1.7389	\$1.9206		
Other Solids	\$0.0492	\$0.0501		
Uniform Skim			\$6.23	\$6.22
Uniform Butterfat		n/a	\$2.3681	\$2.2389
Butterfat	4.005%	3.930%	3.500%	3.499%
Protein	3.243%	3.188%		
Other Solids	5.733%	5.741%		n/a

### HIGHLIGHTS THIS ISSUE

- ✓ Margin Protection Program: USDA Expands Safety-Net
- ✓ ERS Data: Dry Whey Commercial Disappearance
- ✓ Supplemental Article: Changes in Milk Shed 1996-2015

# Federal Order Price Summaries

## FINAL CLASS PRICES

The March 2016 Final Class Prices were calculated using AMS commodity price surveys from March 5, 12, 19, and 26, 2016. Current and archived Final Class Price announcements are available at [www.fmmaseattle.com/classcomponent.html](http://www.fmmaseattle.com/classcomponent.html).

FINAL	Class I (FO124)	Class I (FO131)	Class II	Class III	Class IV	Butterfat	Protein	Other Solids	Nonfat Solids
Feb 2016	\$15.54	\$15.99	\$14.30	\$13.80	\$13.49	\$2.3778	\$1.7389	\$0.0492	\$0.5951
Mar 2016	\$15.68	\$16.13	\$13.57	\$13.74	\$12.74	\$2.2028	\$1.9206	\$0.0501	\$0.5786
Change	\$0.14	\$0.14	(\$0.73)	(\$0.06)	(\$0.75)	(\$0.1750)	\$0.1817	\$0.0009	(\$0.0165)

## ADVANCED CLASS I PRICE

The May 2016 Advanced Price was calculated using AMS commodity price surveys from April 9 and 16, 2016. Current and archived Advanced Price announcements are available at [www.fmmaseattle.com/advance.html](http://www.fmmaseattle.com/advance.html).

ADVANCED	Butterfat	Class III Skim	Class IV Skim	Base Skim	Base Class I	Class I (FO124)	Class I (FO131)	Class II Skim	Class II Non-fat Solids
Apr 2016	\$2.2106	\$6.22	\$5.19	\$6.22	\$13.74	\$15.64	\$16.09	\$5.89	\$0.6544
May 2016	\$2.2255	\$6.12	\$5.01	\$6.12	\$13.70	\$15.60	\$16.05	\$5.71	\$0.6344
Change	\$0.0149	(\$0.10)	(\$0.18)	(\$0.10)	(\$0.04)	(\$0.04)	(\$0.04)	(\$0.18)	(\$0.0200)

# Commodity Price Summaries

## AMS COMMODITY PRICES FOR FINAL CLASS PRICES CALCULATION

	February	March	Change
Cheese	\$1.5170	\$1.5162	(\$0.0008)
Butter	\$2.1350	\$1.9905	(\$0.1445)
Nonfat Dry Milk	\$0.7689	\$0.7522	(\$0.0167)
Whey	\$0.2469	\$0.2477	\$0.0008

## AMS COMMODITY PRICES FOR ADVANCED CLASS PRICES CALCULATION

	April	May	Change
Cheese	\$1.5148	\$1.5119	(\$0.0029)
Butter	\$1.9969	\$2.0092	\$0.0123
Nonfat Dry Milk	\$0.7504	\$0.7298	(\$0.0206)
Whey	\$0.2502	\$0.2465	(\$0.0037)

## CURRENT COMMODITY PRICES

The AMS survey of cheddar cheese prices showed a net decrease in prices received for 40-pound blocks and for 500-pound barrels. The survey of 40-pound blocks showed a net decrease of 0.77 cents between the March 19 and the April 16 surveys, to \$1.4951 per pound. The survey of 500-pound barrels (adjusted to 38% moisture) showed a net decrease of 1.88 cents to \$1.4853 per pound.

The AMS butter price showed a net increase of 5.85 cents between the weeks ending March 19 and April 16 from \$1.9929 per pound to \$2.0514 per pound. The AMS nonfat dry milk showed a net decrease of 1.75 cents since mid-March to \$0.7246 per pound. The average price for AMS whey showed a net increase of 0.42 cents since mid-March to \$0.2432 per pound.

# Monthly Selected Statistics

PRICE & POOL DATA	PACIFIC NORTHWEST				ARIZONA			
	Mar 2016	Feb 2016	Mar 2015	Feb 2015	Mar 2016	Feb 2016	Mar 2015	Feb 2015
<b>Producer Prices</b>								
Producer Price Differential (\$/cwt)	(\$0.07)	\$0.28	(\$0.56)	(\$0.04)	+	+	+	+
Butterfat (\$/pound)	2.2028	2.3778	1.8444	1.8296	+	+	+	+
Protein (\$/pound)	1.9206	1.7389	2.4875	2.4051	+	+	+	+
Other Solids (\$/pound)	0.0501	0.0492	0.2918	0.3273	+	+	+	+
Uniform Skim Price (\$/cwt)	+	+	+	+	\$6.22	\$6.23	\$9.20	\$9.55
Uniform Butterfat Price (\$/pound)	+	+	+	+	2.2389	2.3681	1.8434	1.8122
Statistical Uniform Price (\$/cwt)	\$13.67	\$14.08	\$15.00	\$15.42	\$13.84	\$14.30	\$15.33	\$15.56
<b>Producer Data</b>								
Number of Producers	<b>451</b>	558	431	432	<b>94</b>	94	94	94
Avg. Daily Production (pounds)	<b>42,821</b>	44,276	37,400	37,684	<b>159,234</b>	158,877	149,305	145,548
<b>Producer Milk Ratios</b>								
Class I	28.00%	22.27%	32.80%	33.42%	24.27%	24.04%	26.14%	26.44%
Class II	8.23%	6.29%	8.84%	8.74%	10.67%	10.09%	10.49%	11.34%
Class III	27.66%	41.10%	9.72%	12.50%	25.90%	23.16%	20.70%	18.98%
Class IV	36.11%	30.34%	48.64%	45.34%	39.16%	42.71%	42.67%	43.24%
<b>Market Shrinkage</b>								
Pounds	13,956,733	10,678,375	7,055,760	7,079,047	2,363,301	1,856,144	1,744,284	1,033,947
% of Producer Milk	2.33%	1.49%	1.41%	1.55%	0.51%	0.43%	0.40%	0.27%

+ Not Applicable. Preliminary data indicated in **bold**.

# Monthly Supplemental Statistics

SUPPLEMENTAL DATA	PACIFIC NORTHWEST				ARIZONA			
	Feb 2016	Jan 2016	Feb 2015	Jan 2015	Feb 2016	Jan 2016	Feb 2015	Jan 2015
<b>Number of Handlers</b>								
Pool Handlers	24	24	22	23	7	7	7	7
<i>Distributing Plants</i>	12	11	13	13	5	5	5	5
<i>Supply Plants 1/</i>	6	7	4	5	1	1	1	1
<i>Cooperatives</i>	6	6	5	5	1	1	1	1
Producer-Handlers	5	5	5	5	0	0	0	0
Other Plants w/ Class I Use	<b>22</b>	20	19	21	<b>27</b>	27	22	23
<b>Class I Route Disposition In Area</b>								
By Pool Plants	145,112,644	153,593,533	138,069,019	154,756,610	81,113,633	85,743,761	78,842,683	87,673,877
By Producer-Handlers	6,367,007	6,308,741	6,752,119	6,970,448	0	0	0	0
By Other Plants	<b>11,255,003</b>	11,163,189	11,033,043	11,634,843	<b>7,732,790</b>	7,830,162	7,235,459	7,084,882
Total	162,734,654	171,065,463	155,854,181	173,361,901	88,846,423	93,573,923	86,078,142	94,758,759
<b>Producer-Handler Data</b>								
% Class I Use	54.82%	55.82%	65.43%	63.57%	0.00%	0.00%	0.00%	0.00%
% of Total In-Area Route Dispositions	3.91%	3.69%	4.33%	4.02%	0.00%	0.00%	0.00%	0.00%

Preliminary data indicated in **bold**. 1/ Includes Cooperative Pool Manufacturing Plants.

# Monthly Statistical Summary


RECEIPTS & UTILIZATION	PACIFIC NORTHWEST				ARIZONA			
	Mar	Feb	Mar	Feb	Mar	Feb	Mar	Feb
	2016	2016	2015	2015	2016	2016	2015	2015
<b>Receipts of Milk</b>								
Total Producer Milk	598,677,671	716,471,877	499,699,495	455,830,012	464,007,939	433,099,196	435,074,822	383,083,139
Receipts From Other Sources	30,007,478	9,914,910	16,009,399	9,541,728	4,734,544	2,878,379	6,580,419	8,066,742
Opening Inventory	36,286,009	44,199,390	32,451,763	33,699,001	22,479,914	24,303,249	24,066,678	22,947,165
<b>Total To Be Accounted For</b>	<b>664,971,158</b>	<b>770,586,177</b>	<b>548,160,657</b>	<b>499,070,741</b>	<b>491,222,397</b>	<b>460,280,824</b>	<b>465,721,919</b>	<b>414,097,046</b>
<b>Utilization of Receipts</b>								
Whole milk	38,955,238	37,743,400	35,237,131	31,764,002	26,388,139	24,573,225	25,086,198	22,519,185
Flavored milk & drinks	13,667,168	12,607,577	14,000,801	12,464,650	6,996,374	7,320,113	5,795,826	5,804,148
2% milk	56,443,049	54,283,421	57,133,197	52,181,801	30,566,388	28,653,233	31,473,495	28,573,678
1% milk	25,369,560	23,906,642	26,353,385	23,957,800	13,779,468	13,256,715	14,679,855	13,462,354
Skim milk	15,969,710	15,113,795	17,840,926	16,407,017	7,751,559	7,310,347	8,860,152	8,080,216
Buttermilk	1,639,340	1,457,809	1,558,520	1,293,749	2/	2/	462,631	403,102
Class I dispositions in area	152,044,065	145,112,644	152,123,960	138,069,019	85,481,928	81,113,633	86,358,157	78,842,683
Class I dispositions out of area	11,631,287	10,454,528	13,576,846	14,499,190	25,007,878	22,852,766	25,339,510	22,159,845
Other Class I usage	21,041,747	20,149,496	16,100,628	19,518,822	13,494,036	11,665,204	11,477,960	9,342,390
<b>Utilization by Class</b>								
Total Class I Use	184,717,099	175,716,668	181,801,434	172,087,031	123,983,842	115,631,603	123,175,627	110,344,918
Total Class II Use	53,847,271	51,914,379	49,938,987	47,162,462	50,994,612	45,011,209	46,419,398	44,238,307
Total Class III Use	165,608,319	294,853,277	48,661,777	56,989,126	120,189,844	100,553,610	90,080,491	72,699,181
Total Class IV Use	260,798,469	248,101,853	267,758,459	222,832,122	196,054,099	199,084,402	206,046,403	186,814,640
<b>Total Accounted For</b>	<b>664,971,158</b>	<b>770,586,177</b>	<b>548,160,657</b>	<b>499,070,741</b>	<b>491,222,397</b>	<b>460,280,824</b>	<b>465,721,919</b>	<b>414,097,046</b>

CLASSIFICATION OF RECEIPTS	PACIFIC NORTHWEST				ARIZONA			
	Mar	Feb	Mar	Feb	Mar	Feb	Mar	Feb
	2016	2016	2015	2015	2016	2016	2015	2015
<b>Producer milk</b>								
Class I	167,650,117	159,524,821	163,917,963	152,317,361	112,608,552	104,101,193	113,715,101	101,299,394
Class II	49,289,740	45,064,783	44,180,846	39,834,148	49,516,195	43,682,695	45,629,230	43,437,752
Class III	165,608,319	294,463,421	48,574,936	56,961,697	120,188,614	100,303,821	90,080,491	72,699,181
Class IV	216,129,495	217,418,852	243,025,750	206,716,806	181,694,578	185,011,487	185,650,000	165,646,812
<b>Other receipts</b>								
Class I	17,066,982	16,191,847	17,883,471	19,769,670	11,375,290	11,530,410	9,460,526	9,045,524
Class II	4,557,531	6,849,596	5,758,141	7,328,314	1,478,417	1/	1/	1/
Class III	0	1/	1/	1/	1/	1/	0	0
Class IV	44,668,974	31,072,857	24,819,550	16,142,745	14,360,751	15,651,218	21,186,571	21,968,383
<b>Avg. daily producer receipts</b>	<b>19,312,183</b>	<b>24,705,927</b>	<b>16,119,339</b>	<b>16,279,643</b>	<b>14,967,998</b>	<b>14,934,455</b>	<b>14,034,672</b>	<b>13,681,541</b>
Change From Previous Year	19.81%	51.76%	-33.70%	3.52%	6.65%	9.16%	-3.73%	-1.89%
<b>Avg. daily Class I use</b>	<b>5,958,616</b>	<b>6,059,195</b>	<b>5,864,562</b>	<b>6,145,965</b>	<b>3,999,479</b>	<b>3,987,297</b>	<b>3,973,407</b>	<b>3,940,890</b>
Change From Previous Year	1.60%	-1.41%	-3.77%	-3.99%	0.66%	1.18%	-0.38%	-4.70%

1/ Restricted - Included with Class IV. 2/ Restricted - Included with Flavored milk and drinks.

# Mailbox Milk Prices

## MAILBOX MILK PRICES FOR SELECTED REPORTING AREAS IN FEDERAL MILK ORDERS AND CALIFORNIA 2015 ANNUAL AVERAGES, WITH COMPARISONS 1/

For 2015, mailbox milk prices for selected reporting areas in Federal milk orders averaged \$17.02 per cwt., \$7.02 lower than the all-area average reported for 2014. The component tests of producer milk in 2015 averaged: butterfat, 3.75 percent; protein, 3.11 percent; and other solids, 5.74 percent. On an individual reporting area basis, mailbox prices decreased for all Federal order milk reporting areas, and ranged from \$19.15 in Florida to \$15.01 in New Mexico. The Florida reporting area experienced the largest annual decrease of \$7.92 per cwt, while the New Mexico reporting area experienced the lowest annual decrease of \$6.49 per cwt. 

Reporting Area 2/	Mailbox Milk Price 3/		
	2014	2015	Difference
	<i>Dollars per hundredweight</i>		
New England States 4/	25.42	18.55	-6.87
New York	24.53	17.20	-7.33
Eastern Pennsylvania 5/	24.50	17.13	-7.37
Appalachian States 6/	25.44	17.90	-7.54
Southeast States 7/	25.87	18.16	-7.71
Southern Missouri 8/	24.80	17.70	-7.10
Florida	27.07	19.15	-7.92
Western Pennsylvania 9/	24.45	17.29	-7.16
Ohio	24.20	17.29	-6.91
Indiana	23.53	16.46	-7.07
Michigan	23.45	16.04	-7.41
Wisconsin	24.22	17.68	-6.54
Minnesota	24.21	17.46	-6.75
Iowa	24.50	17.10	-7.40
Illinois	24.50	17.31	-7.19
Corn Belt States 10/	22.95	16.06	-6.89
Western Texas 11/	22.71	16.05	-6.66
New Mexico	21.50	15.01	-6.49
Northwest States 12/	23.75	16.41	-7.34
All Reporting Areas 13/	24.04	17.02	-7.02
California 14/	21.83	15.08	-6.75

1 Net pay price received by dairy farmers for milk. Includes all payments received for milk sold and all costs associated with marketing the milk. Price is a weighted average for the reporting area and is reported at the average butterfat test. Mailbox price does not include any Milk Income Loss Contract (MILC) payments. Mailbox price does include, for the most part, the assessment under the Cooperatives Working Together (CWT) program. 2 Information is shown for those areas for which prices are reported for at least 75 percent of the milk marketed under Federal milk orders. The price shown is the weighted average of the prices reported for all orders that received milk from that area. 3 Figures are annual averages—the weighted average of the monthly figures; except California, which is the simple average. 4 Includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. 5 All counties to the east of those listed in footnote 9. 6 Includes Kentucky, North Carolina, South Carolina, Tennessee, and Virginia. 7 Includes Alabama, Arkansas, Georgia, Louisiana, and Mississippi. 8 The counties Vernon, Cedar, Polk, Dallas, Laclade, Texas, Dent, Crawford, Washington, St. Francois, and Perry, and all those to the south of these. 9 The counties of Warren, Elk, Clearfield, Indiana, Westmoreland, and Fayette, and all those counties to the west of these. 10 Includes Kansas, Nebraska, and the Missouri counties to the north of those listed in footnote 8. 11 All counties to the west of Fanin, Hunt, Van Zandt, Henderson, Houston, Cherokee, Nacogdoches, and Shelby. 12 Includes Oregon and Washington. 13 Weighted average of the information for all selected reporting areas in Federal milk orders. 14 Calculated by California Department of Food and Agriculture, and published at <http://cdfa.ca.gov/dairy/uploader/docs/MailBox%20Data%202014.pdf>. Annual average is simple average. Report Contact: Randal Stoker, [randal.stoker@usda.gov](mailto:randal.stoker@usda.gov) or 202-690-1932.

# USDA Updates

## USDA EXPANDS SAFETY-NET FOR DAIRY OPERATIONS ADDING NEXT-GENERATION FAMILY MEMBERS

On April 12, 2016, Agriculture Secretary Tom Vilsack announced that dairy farms participating in the Margin Protection Program (MPP) can now update their production history when an eligible family member joins the operation. The voluntary program, established by the 2014 Farm Bill, protects participating dairy producers when the margin - the difference between the price of milk and feed costs - falls below levels of protection selected by the applicant.

"This change not only helps to strengthen a family dairy operation, it also helps new dairy farmers get started in the family business, while ensuring that safety net coverage remains available for these growing farms," said Secretary Vilsack. "When children, grandchildren or their spouses become part of a dairy operation that is enrolled in MPP, the production from the dairy cows they bring with them into the business can now be protected. By strengthening the farm safety net, expanding credit options and growing domestic and foreign markets, USDA is committed to helping American farming operations remain successful."

The U.S. Department of Agriculture's (USDA) Farm Service Agency (FSA) published a final rule which makes these changes effective on April 13, 2016. Any dairy operation already enrolled in the Margin Protection Program that had an intergenerational transfer occur will have an opportunity to increase the dairy operations production history during the 2017 registration and annual coverage election period. The next election period begins on July 1, 2016, and ends on September 30, 2016. For intergenerational transfers occurring on or after July 1, 2016, notification must be made to the FSA within 60 days of purchasing the additional cows. Each participating dairy operation is authorized one intergenerational transfer at any time of its choosing until 2018.

The Margin Protection Program was established by the 2014 Farm Bill, which builds on USDA's historic investments in rural America over the past seven years.

For more information, visit FSA online at [www.fsa.usda.gov/dairy](http://www.fsa.usda.gov/dairy) or stop by a local FSA office and ask about the Margin Protection Program. To find a local FSA office in your area, visit <http://offices.usda.gov>.

Source: USDA. Office of Communications. Release No. 0090.16

## ERS DATA: DOMESTIC COMMERCIAL DISAPPEARANCE OF WHEY PRODUCTS

USDA's Economic Research Service (ERS) published an article in the April 2016 edition of *Amber Waves* that looks at domestic commercial disappearance of whey products. ERS began publishing monthly and annual commercial disappearance of dry whey in October 2015.

According to the article, "the data show that while domestic use has declined for dry whey and fluctuated widely for whey protein concentrates and lactose, exports of whey products have seen strong and steady growth driven by robust demand in Asia and New Zealand."

The full article is available at <http://ers.usda.gov/amber-waves.aspx>.

## USDA SEEKING COMMENTS

The U.S. Department of Agriculture (USDA) is seeking comments about a proposed rule amending the makeup of the National Dairy Promotion and Research Board (Dairy Board). The proposal would modify the number of Dairy Board importer members by one. Currently the Board includes two importer members. Comments may be submitted at [www.regulations.gov](http://www.regulations.gov).

## New Feature!

See page 9 of this PDF for a "Supplemental" article.

This edition's topic is:

***Changes in the Pacific Northwest  
Order's Milk Shed: 1996-2015***

# Federal Order Statistics for March 2016

Federal Order Name (Number)	Producer Deliveries	Class I Receipts	Class I Utilization	Class I Price	Uniform Price
	<i>- million pounds -</i>			<i>- per cwt (at location) -</i>	
Northeast (FO 1)	2,305.0	761.9	33.05%	\$17.03	\$14.81
Appalachian (FO 5)	496.0	333.5	67.23%	\$17.18	\$15.87
Florida (FO 6)	241.6	203.9	84.37%	\$19.18	\$18.06
Southeast (FO 7)	508.1	333.4	65.61%	\$17.58	\$16.22
Upper Midwest (FO 30)	3,126.8	295.3	9.44%	\$15.58	\$13.84
Central (FO 32)	1,350.5	419.6	31.07%	\$15.78	\$13.87
Mideast (FO 33)	1,766.1	543.2	30.76%	\$15.78	\$13.97
<b>Pacific Northwest (FO 124)</b>	<b>598.7</b>	<b>167.7</b>	<b>28.00%</b>	<b>\$15.68</b>	<b>\$13.67</b>
Southwest (FO 126)	1,273.3	368.3	28.93%	\$16.78	\$14.72
<b>Arizona (FO 131)</b>	<b>464.0</b>	<b>112.6</b>	<b>24.27%</b>	<b>\$16.13</b>	<b>\$13.84</b>

For links to Market Administrator's webpages, see [www.fmmaseattle.com/links.html](http://www.fmmaseattle.com/links.html).



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### Visit the MA Website

[www.fmmaseattle.com](http://www.fmmaseattle.com)

# SUPPLEMENTAL ARTICLE

The following pages were prepared by the  
Market Administrator's economics staff.

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## Changes in the Pacific Northwest Order's Milk Shed: 1996 - 2015

Change is perhaps the only constant. Changes in the character of the milk shed of the Pacific Northwest Order over the last 20 years illustrate this point.<sup>1</sup> Where milk is produced and the size of dairies has changed significantly. Using three perspectives, this article attempts to illustrate some of those changes by looking at producer milk and producer numbers in October of 1996, 2000, 2005, 2010 and 2015.<sup>2</sup>

### General Changes

In October 1996, 1,289 producers delivering a total of 551 million pounds comprised the milk shed of the Pacific Northwest Order. Nearly twenty years later, in October 2015, the number of producers decreased to 577, but the milk delivered to the market increased to 736 million pounds. This dramatic change in the Pacific Northwest can be illustrated a number of ways. The easiest way is through simple statistics as are shown in Table 1. The number of producers, average production, minimums and maximums, and average per day tell one story. While the number of producers declined by 55 percent since 1996, the average production per producer increased from about 427,000 pounds to nearly 1.3 million pounds, or almost 200 percent. Between 1996 and 2010, the market lost about 20 percent of producers every five years. Between 2010 and 2015, the decline of producer numbers slowed, reflecting a 9 percent decrease. Conversely, increases in producer milk were less than 5 percent before 2010, but were about 10 to 15 percent each five year period since 2005. Average production per producer per day increased from almost 14,000 pounds in 1996 to over 41,000 pounds in 2015. And while the size of the smallest farms in the region has not changed substantially, the size of each year's largest farm has grown by over 200 percent. One last simple statistic is a measure of the variability or diversity of dairy farm size in the region, i.e., the coefficient of variation (CV). The CV is calculated as the standard deviation divided by the average (mean). Over the period, the distribution of farm sizes has become somewhat more diverse. Whereas in 1996, the CV was 140 percent, meaning most farms were relatively smaller, by 2015, the CV had increased to 174 percent. The increase suggests the market is now supplied by a relatively more diverse group of both smaller and larger farms, about 24 percent more. One aspect of the changes in the milk shed of the Pacific Northwest Order that may be evident in the simple statistics, but not particularly obvious, is a regulatory change that occurred in April 2006. In April 2006, the Pacific Northwest Order was changed after a hearing and a vote of producers to fully regulate all handlers whose routes exceed 3.0 million pounds and who meet the criteria of a pool distributing plant. A small part of the change between 2005 and 2010 can be attributed to this change in the structure of the Federal order.

**Table 1: Descriptive Statistics of Producers and Producer Milk: October**

Variable	1996	2000	2005	2010	2015	% Δ 1996-2015
Number of Producers	1,289	1,017	824	633	577	-55%
Total Production	550,667,714	570,477,116	577,594,045	667,198,115	736,259,376	34%
Minimum *	5,000	2,000	1,000	4,000	6,000	20%
Maximum †	7,000,000	8,000,000	10,000,000	17,000,000	22,000,000	214%
Average Per Producer	427,205	560,941	700,964	1,054,025	1,276,013	199%
Average Per Producer Per Day	13,781	18,095	22,612	34,001	41,162	
Standard Deviation of Production	598,585	760,149	1,068,303	1,833,471	2,214,171	270%
Coefficient of Variation ‡	140%	136%	152%	174%	174%	24%

\* Rounded to nearest thousand.

† Rounded to nearest million.

‡ Standard deviation of production divided by average per producer.

### Changes by Region

Another way to illustrate the story of changes in the milk shed of the Pacific Northwest Order relates to how milk production has moved between regions. To tell this story, four regions were defined using the Cascade Mountains and the

<sup>1</sup> The milk shed includes producers primarily in Oregon and Washington, but also certain counties in Idaho, Northern California, and Utah. Producer-handlers and dairy farms whose milk is not pooled on the order are not included in this data.

<sup>2</sup> Data for October 1996 was used instead of October 1995 because milk historically associated with the order was not pooled due to price relationships in October 1995. Some producers and producer milk not consistently pooled on the order have been excluded from this analysis.

Oregon-Washington border: 1) Western Washington; 2) Eastern Washington; 3) Western Oregon; and 4) Eastern Oregon. In 1996, the majority of producers and producer milk were located in Western Washington (See Table 2). Over the last twenty years, Western Washington's share of producer milk dropped from about 50 percent to about 24 percent while its share of producers dropped from about 54 percent to a little over 40 percent. At the same time, the shares of producer milk and producers in Eastern Washington increased substantially. Eastern Washington's share of producer milk increased from about 28 percent to almost 50 percent while its share of producers rose from about 16 percent to about 24 percent. Somewhat similarly, Eastern Oregon's share of producer milk increased from about two percent to about 11 percent. One final and perhaps interesting observation is that Western Oregon's share of producer milk has not declined as much as Western Washington's and its share of producers has actually increased.

**Table 2: Producer Milk and Producers by Region: October**

Region *	Producer Milk (Million Pounds)					Number of Producers				
	1996	2000	2005	2010	2015	1996	2000	2005	2010	2015
Western WA	273	257	213	173	175	692	523	384	276	238
Eastern WA	157	186	236	313	361	206	178	156	142	136
Western OR	112	118	118	114	118	369	297	261	200	186
Eastern OR	9	9	10	68	82	22	19	23	15	17

	Percent of Producer Milk					Percent of Producers				
	1996	2000	2005	2010	2015	1996	2000	2005	2010	2015
Western WA	50%	45%	37%	26%	24%	54%	51%	47%	44%	41%
Eastern WA	28%	33%	41%	47%	49%	16%	18%	19%	22%	24%
Western OR	20%	21%	20%	17%	16%	29%	29%	32%	32%	32%
Eastern OR	2%	2%	2%	10%	11%	2%	2%	3%	2%	3%
East	30%	34%	43%	57%	60%	18%	19%	22%	25%	27%
West	70%	66%	57%	43%	40%	82%	81%	78%	75%	73%

\* Western Oregon includes California. Eastern Washington includes certain counties in Idaho and Utah. See also footnote 2.

### Changes by Size-Range of Production

One more way to tell the story of the changes in the milk shed of the Pacific Northwest Order is to look at changes in what share of the market is supplied by small, medium, medium/large, large, and very large dairy farms. Looking at the data through changes in how the market is supplied by different sized dairies reveals some stark changes. For this analysis, farm size is measured in pounds of pooled milk delivered by each producer (See Table 3).<sup>3</sup> The portion of the market supplied by small and medium sized dairies has dropped by 40 percentage points from about 58 percent to 18 percent. The portion supplied by large and very large size farms has increased by about 44 percentage points from about 12 percent to 56 percent. But while the character of market has changed significantly, small and medium size farms still number 385, or 67 percent of the total. The share of the market supplied by medium/large size farms has decreased only slightly from 29 percent to 26 percent, while the relative share of producers more than doubled from 8 percent to 21 percent.

<sup>3</sup> These ranges are for illustration purposes only and are not intended to reflect a specific industry standard or common understanding of dairy farm size. Using an aggregate milk production per cow figure for Oregon and Washington (1,900) calculated from National Agricultural Statistics Service data for October 2015, the production by size-range categories roughly translate as follows: small: 1-130 cows; medium: 130-550 cows; medium/large: 550-1,300 cows; large: 1,300-2,600 cows, and very large: more than 2,600 cows.

**Table 3: Producer Milk and Producers by Size Range of Production: October**

Size Category	Size-Range *		Producer Milk (Million Pounds)					Number of Producers				
	≥	<	1996	2000	2005	2010	2015	1996	2000	2005	2010	2015
Small	0.25		89	59	44	27	23	681	442	334	210	176
Medium	0.25	1.00	233	210	173	133	110	484	419	328	247	209
Medium/Large	1.00	2.50	160	187	179	186	191	106	125	119	116	119
Large	2.50	5.00	45	78	106	139	164	14	25	33	40	46
Very Large	5.00		23	37	76	183	248	4	6	10	20	27

Size Category	≥	<	Percent of Producer Milk					Percent of Producers				
			1996	2000	2005	2010	2015	1996	2000	2005	2010	2015
Small	0.00	0.25	16%	10%	8%	4%	3%	53%	43%	41%	33%	31%
Medium	0.25	1.00	42%	37%	30%	20%	15%	38%	41%	40%	39%	36%
Medium/Large	1.00	2.50	29%	33%	31%	28%	26%	8%	12%	14%	18%	21%
Large	2.50	5.00	8%	14%	18%	21%	22%	1%	2%	4%	6%	8%
Very Large	5.00		4%	6%	13%	27%	34%	0%	1%	1%	3%	5%

\* Million pounds.

### Summary

Over the past 20 years, the character of the milk shed of the Pacific Northwest Order has changed dramatically. Producers have grown larger and shifted from regions west of the Cascade Mountain range to regions east of the Cascades. And while the larger dairy farms have grown yet larger, two thirds of the producers in the milk shed currently produce less than one million pounds per month, and almost a third produce less than 250,000 pounds a month. It will be interesting to see what changes the next five years will bring.