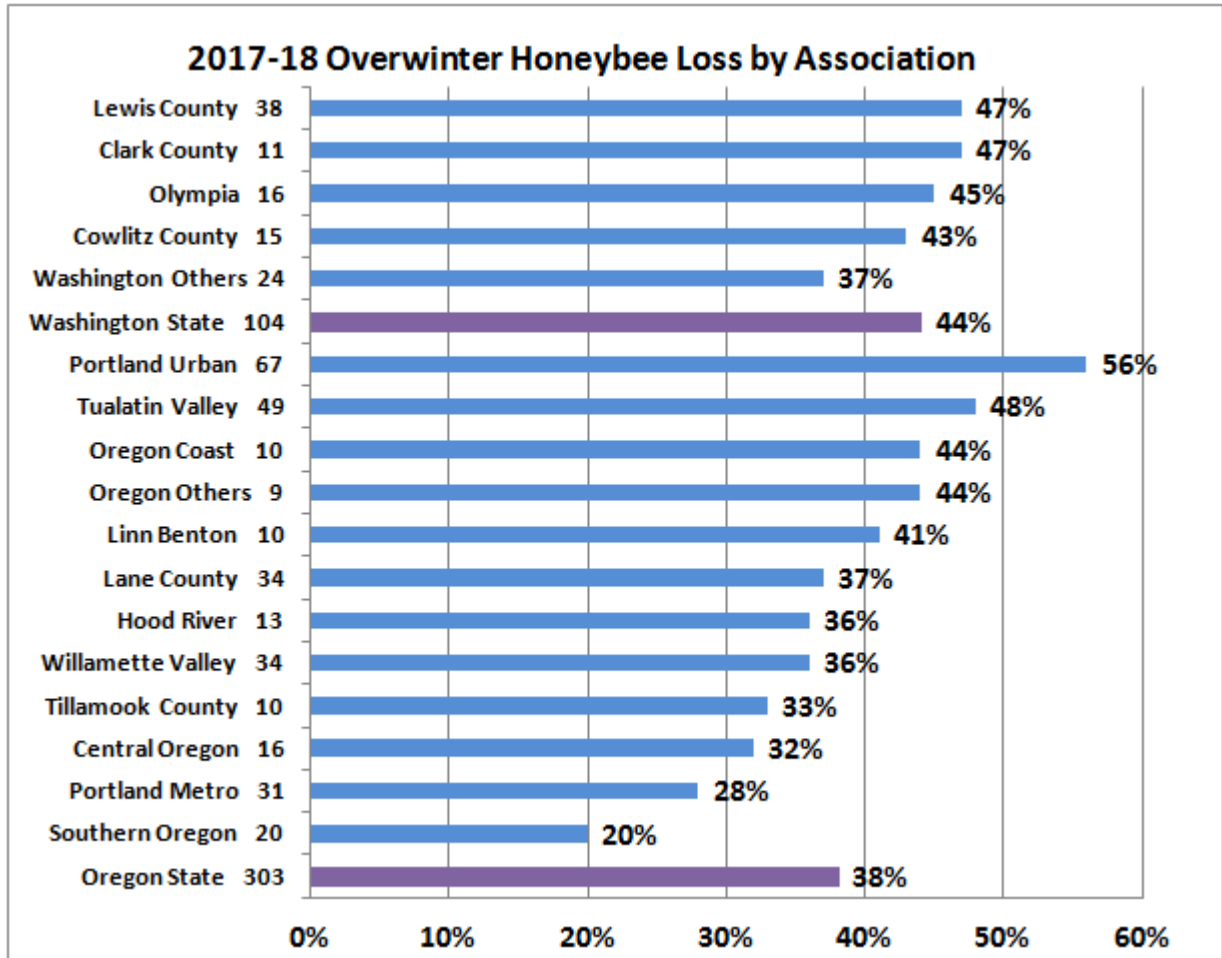


Cowlitz Co backyard beekeeper Losses 2017-18 Winter Dewey Caron

Overwintering losses of small scale Washington beekeepers was reduced from the previous elevated loss levels in 2016-2017. 104 WA beekeepers supplied information on winter losses and several managements related to bee health with an electronic honey bee survey instrument www.pnwhoneybeesurvey.com. Figure 1 shows total OR and WA response - 44% WA statewide loss last winter was down 16 percentage points from the previous year.

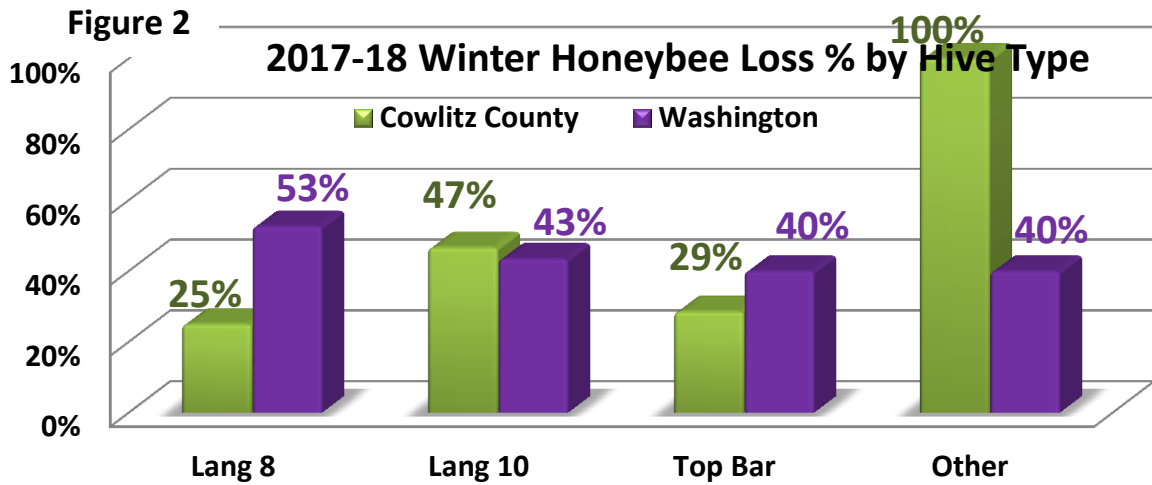


The 15 Cowlitz Co respondents (there were only 3 the previous year) reported single digit colony numbers. Six individuals (40%) had 1 or 2 colonies 5 individuals (33%) had 3 or 4 colonies and the remaining respondents had 5, 6 or 7 colonies. Six individuals (40%) had 1 or 2 years experience, 4 individuals (27%) had 3 or 4 years of experience, 3 had 5 or 6 years experience and 2 had 10+ with the largest 12 years. 9 of 14 Cowlitz beekeepers (64%) had an experienced mentor available as they were learning beekeeping.

2017-2018 Overwinter Bee Losses

Total Cowlitz Co backyard beekeeper overwinter loss = 43% loss.

The loss survey overwintering statistic was developed by our asking number of fall colonies and surviving number in the spring by hive type. Results, shown in Figure 2 bar graph, illustrates overwintering losses. Nine of 12 fall 8 frame Langstroth and just over half of the 30 10 frame Langstroth hives survived, 5 of 7 top bar hives survived but all 4 of “other” hive types (not otherwise identified by respondent) did not survive. Cowlitz Co losses were the same level as 104 statewide WA beekeepers. Figure 2 below.

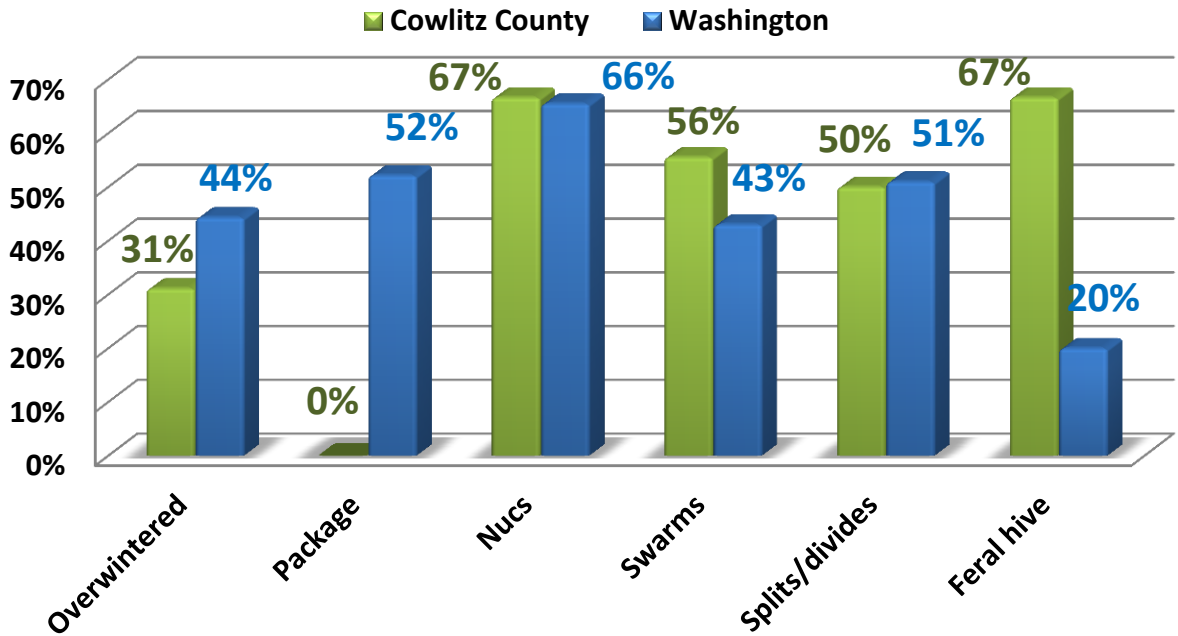


Fall Col # (loss)	12(3)	30 (14)	7(2)	4(0)
-------------------	-------	---------	------	------

For the 15 total Cowlitz beekeepers, 7 (47%) had no loss but 4 (27%) loss all their colonies. Two individuals lost 1 colony, 2 individuals lost 2 colonies, 1 individual lost 3 colonies, 4 lost 2 and one lost 6 colonies, the heaviest loss. Last year with 3 respondents lost a total of 7 colonies from 23 overwintered colonies (30%).

Loss by hive origination: We also asked survey respondents to list their loss by hive origination. The result is graphically presented below for the 15 Cowlitz Co respondents. Slightly over 50% of overwintered colonies were loss, all 4 packages and 7 of 8 nucs did not survive; for swarm captures 8 of 17 survived and all 5 splits survived. See data in Figure 3 below.

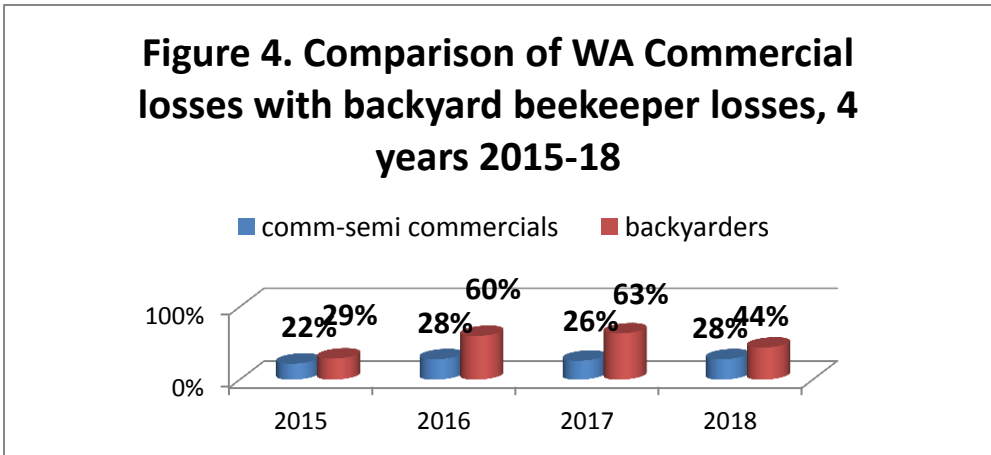
Figure 3 2017-18 Winter Honeybee Loss % by Origination



Fall Col 3 (loss) 45(14) 1(1) 3(2) 9(5) 2(1) 3(2)

Comparison of backyarders and commercial/semi-commercial beekeepers

A different (paper) survey instrument was mailed to Pacific Northwest (PNW) semi-commercial (50-500 colonies) and commercial beekeepers (500+) asking about their overwintering losses. Comparison is shown in Figure 4 below with approximate number of hives represented by the commercial/semi-commercial beekeepers and number of backyarder survey respondents.



# Comm hives	~40,000	33,200	16,604	26,115
# backyarders	31	52	101	104

Backyard losses have consistently been higher, most years double the losses of larger-scale beekeepers, over 7 years of survey responses. The reasons for this dichotomy are complex. Commercial and semi-commercial beekeepers examine colonies more frequently and they examine them first thing in the spring as they take virtually all of their colonies to Almonds in February. They also are more likely to take losses in the fall and are more pro-active in varroa mite control management.

Self-reported “reasons” for colony losses: One survey question asked respondents to check the “reasons” for winter loss; multiple responses were possible. There were a total of 18 selections (1.8/individual) provided by Cowlitz County respondents as the reasons for their overwintering losses. Queen failure was indicated by 5 individuals (50% of respondents), Varroa by 4 individuals, poor wintering conditions absconding were each listed once.

There is no easy way to verify reason(s) for colony loss. Colonies in the same apiary may die for different reasons. **Doing a dead hive examination (necropsy) is the first step in seeking to solve the heavy loss problem. More attention to colony strength and checking stores to help avoid winter starvation will help reduce some of the losses. Control of varroa mites will also help reduce losses.** I did a workshop with Portland Urban Beekeepers at their Zenger Farm apiary (Foster road off I 201) and have a report of examination 2 dead-outs (one Bee PMS (mites) and the other Spring starvation which is posted on the PNW website.

Why do colonies die? There appears to be no single reason for loss and a good deal of variance in opinion as to what might be an acceptable loss level. We are dealing with living animals which are constantly exposed to many different challenges, both in the natural environment and the beekeeper’s apiary. Major factors are thought to be mites, pesticides, declining nutrition adequacy of the environment and diseases, especially viruses and Nosema. Management, failure to do something or doing things incorrectly, remains a factor in our losses.

What effects our alteration to the bee’s natural environment and other external factors play in colony losses are not at all clear.

Langstroth wrote about the importance of taking losses in fall management saying if the beekeeper neglects such attention to his/her colonies 45% loss levels may occur, depending upon variable environmental conditions. It can be argued that losses of 30, 40, 50% or more might be “normal.” Older, more experienced beekeepers recall when loss levels were 15% or less. Honey production fluctuates each year but, once again, seem to be declining on average. Numbers of U.S. bee colonies have declined since the 1940s, returning to numbers for 100 years ago but worldwide numbers of bee colonies are steadily increasing.

So there is no simple answer to explain the levels of current losses nor is it possible to demonstrate that they are excessive for all the issues facing honey bees in the current environment.

Managements; Our survey, asked about managements (feeding, winterizing, sanitation), mite sampling and controls and queens. I analyze these managements relative to losses. With 15 respondents the data may be skewed by the small respondent numbers thus analysis for the total 104 WA respondents might be more informative. Both will be posted to this website as soon as available.

THANK YOU Bee counted-Bee informed! If you find any of this useful please consider participating in the PNW survey. Your input is much appreciated.