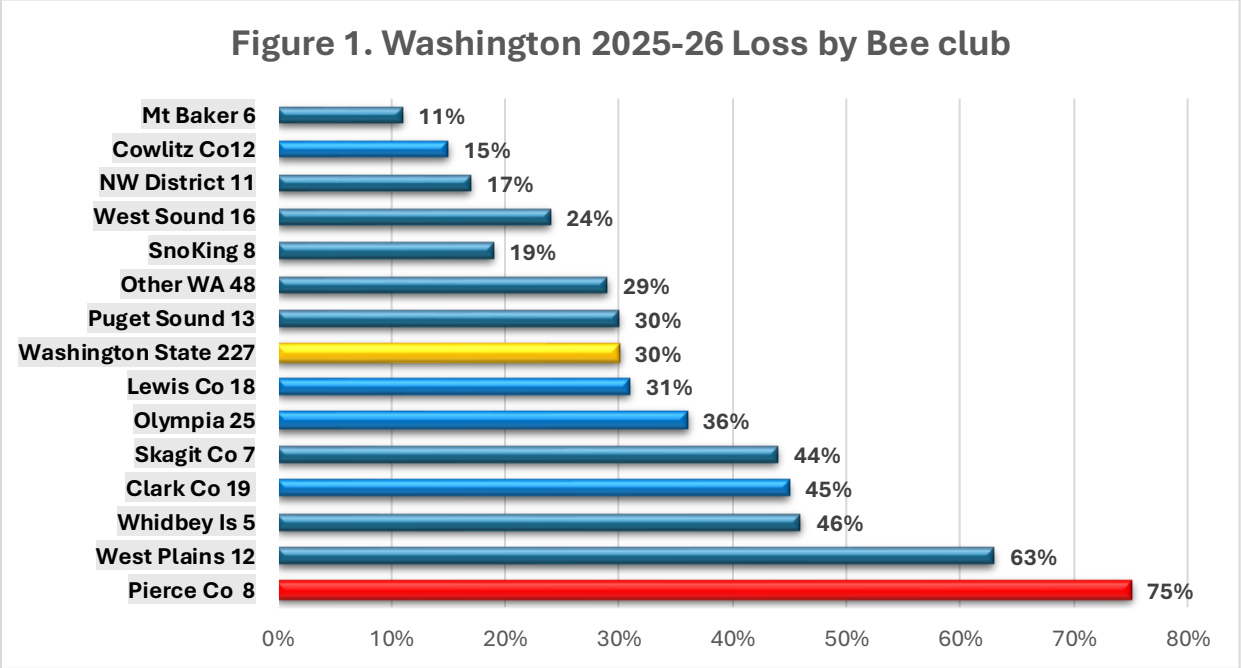
Winter Bee Losses of Pierce Co Washington Backyard Beekeepers for 2025-2026

by Dewey M. Caron

Overwintering losses of small-scale Washington backyard beekeepers = 30% a decrease of four percentage points from last year, 14 percentage points below the 10-year loss average. Two hundred twenty-seven, 97 more than last year completed a survey and 106 above the 120.8 average respondent rate for the last seven years. Individuals maintained up to 676 fall colonies. Information on winter losses and several managements related to bee health was included on the electronic honey bee survey instrument www.pnwhoneybeesurvey.com



Response by local Washington (WA) associations varied as indicated by blue bars in Figure 1. The number of respondent individuals is listed next to the association name. The bar length is the average club loss percentage for the year. Survey included 676 fall Washington beekeeper colonies, 17 fewer than last year: overall state loss average =30% (orange line). Eight Pierce County beekeepers responded to the latest survey. Their loss level was 74.5 % (red line). Fifty-one fall colonies with only 13 surviving the winter.

The PNW survey overwintering loss statistic was developed by subtracting number of spring surviving colonies from fall colony number supplied by respondents by hive type. For the eight Two Pierce Beekeeper respondents, 2 individuals with 2 Langstroth fall 8-frame colonies, reported that both survived (loss level zero), six individuals with 23 fall Langstroth 10-frame

colonies reported only seven survivors (loss level=69.5%), one individual had 2 nucs of 24 survive (91.5% loss), and of the 2 top bar hives (1 individual) both survived (loss level zero). Statewide there was an apparent advantage of 8-frame Langstroth hives, as was the case for Pierce beekeepers but colony numbers were small. Statewide results were 23% loss of Langstroth 8-frame and 30% loss of Langstroth 10-frame hives and this has been the case most years. Statewide nuc losses were 48% (78 fall nucs overwintered) – the 24 nucs of Pierce County beekeeper represented 31% of number included in statewide number.

Statewide 81 individuals had no loss (329 colonies, range 1-20) while 24 beekeepers lost 100% (84 colonies, range 1-10). The greatest loss was one colony (58 individuals). Nine individuals lost 10+ colonies. For Pierce members, one member with a single colony had total survival while one individual with two colonies lost 100%. Three individuals lost one colony, one lost two colonies and one lost three colonies. Heavy losses by two individuals of 80% and 86% were the reason for the heavy Pierce losses (36 colonies, including 24 nucs) with only six survivors). Excluding these two individuals, the six Pierce beekeepers (total of 15 fall colonies) lost seven for 53% loss which is still among the highest.

Colony numbers and years experience

There with four Pierce County beekeepers with one or two colonies – they had 7 colonies with 4 lost = 57% loss, two individual had 4 colonies with 50% loss and two individuals with 10+ colonies (largest number 26) had 83% loss. Statewide, the 108 individuals with 1 to 3 fall colonies lost 41%, while the 42 individuals with 10+ colonies lost 31%. Statewide, simple average colony number was 6.8 while for Pierce beekeepers it was 6.5 colonies. As colony numbers increase statewide percentage of loss decreases but this was not the case for Olympian beekeepers.

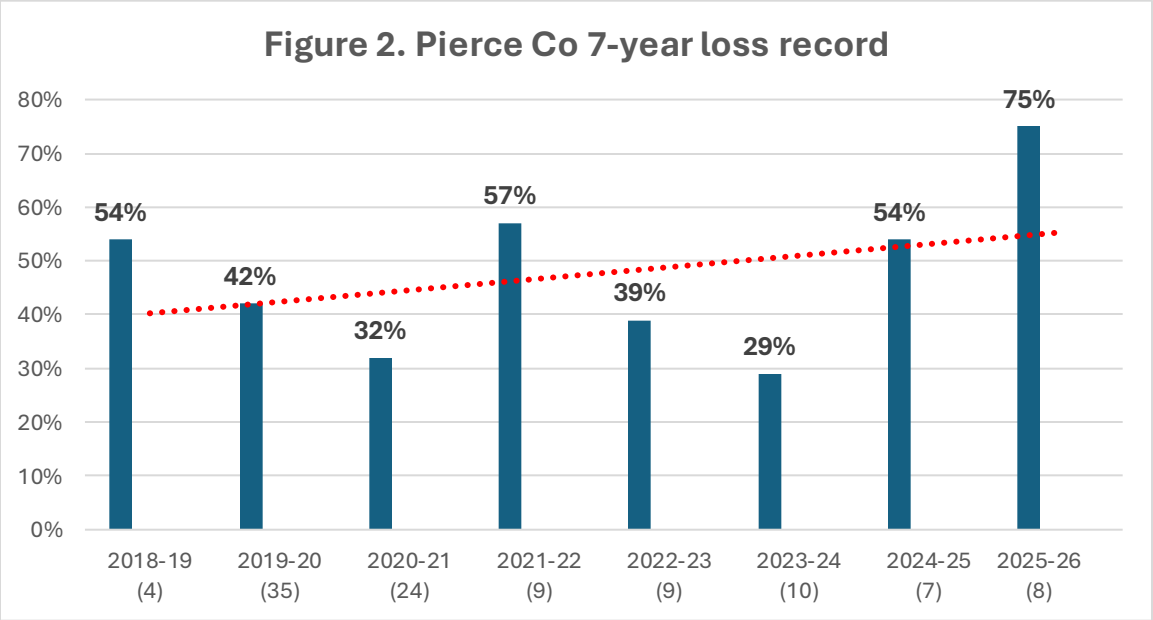
One Pierce individual had 2 years' experience – lost one of four colnies = 25% loss, three individuals had 5- or 6-yearsyears' experience – lost 4 of 7 colonies = 57% loss and four individuals had 10+ years' experience (largest was 20 beekeeping years) with seven colonies surviving = 82.5% loss. Medium number between 6 and 10 years. Statewide 61 respondents had 1 - 3 years of experience (37% loss level). Seventy-six individuals had 4 – 6 years' experience (33.5% loss level), 30 individuals had 7-9 years' experience (loss level 29%), 45 had 10-18 years keeping bees (39% loss level and the 15 individuals with 20 to 64 years' experience lost 24%. Medium number = 5 years' experience and 64 years' experience was greatest. Examining the relationship of years' experience related to loss shows that the greater the number of years of experience the percent loss decreases statewide, but this was not the case for Pierce Co respondents. Smaller numbers often skew analysis.

Loss by Origination

We also asked about hive loss by origination. Three of the 8 Pierce beekeepers used FAST TRACK and did provide answers – 5 did. Two individuals had no loss of three previously overwintered colonies, one of one package survived, 4 of 20 nuc-originated colonies survived (20% loss), one individual lost 1 of 2 packages, two swarm-originated colonies survived (2 individuals), and one split-originated colony survived. NOTE: The numbers do not track well with the loss by hive types. Statewide, 50% used FAST TRACK. The best survival was previously overwintered, with a 22% loss rate (80 individuals). Packages overwintered by 28 individuals had 30% loss Overwintered nucs, 86 fall colonies, had 29% loss. There were 45 individuals overwintering swarms (72 colonies), they had 32% loss. Forty-five individuals overwintered splits, 127 total and they had 21% loss.

7-year Record of losses

The survey had very low survey participation in the last few years. The graph below shows the record for the past seven years. The number of respondents is shown in ( ). The red dashed line shows the loss trend. This is contrary to state and other associations. Note: In 2019—20 John Thomas did a different lo survey of 32 respondents and found a 54% loss level, 12 percentage points higher than the PNW survey.



Colony death perceived reason and acceptable loss level

We asked survey takers who had winter losses for the "reason" for their losses. More than one selection could be chosen. In all there were 31 WA selections (1.7/individual) provided. Seven Pierce members had 10 selections (recall that one had no loss, and one said

they did not know.) Varroa and moisture three selections, yellow jackets two selections and one selection each of weak in the fall and CCD.

Acceptable loss: Pierce survey respondents were asked what an acceptable level of loss was. One indicated zero (no loss), two said 5%, one said 15% and another 20%, (medium between the two – statewide 20%) and three individuals said 50%.

Why do colonies die? There is no straightforward way to verify reason(s) for colony loss. Colonies in the same apiary may die for several reasons. 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. More attention to colony strength and checking stores to help avoid winter starvation will help reduce some of the losses. **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

We asked in the survey for information about some managements practiced by respondents. The survey inquired about feeding practices, wintering preparations, sanitation measures utilized, screen bottom board usage, mite monitoring, both non-chemical and chemical mite control techniques and queens. Respondents could select multiple options and there was always a none and other selection possible. This analysis seeks to compare responses of this past season to previous survey years. Two Olympia respondents FAST TRACKED and did not respond while six did respond to initial questions on managements and those on controls. The small numbers will skew results so individuals should compare their results with statewide responses.

Closing

I intend to continue to refine this instrument each season and hope you will join in response next April. I hope we can get a larger response, return to a few years ago, from Pierce beekeepers. I will demonstrate how the results can be of service when I visit Pierce County in August. I will respond to any questions or concerns you might have. Email me directly for quicker response. dmcaron@udel.edu

Thank You to all who participated. If you find any of this information of value, please consider adding your voice to the survey in a subsequent season. Dewey Caron June 2026.