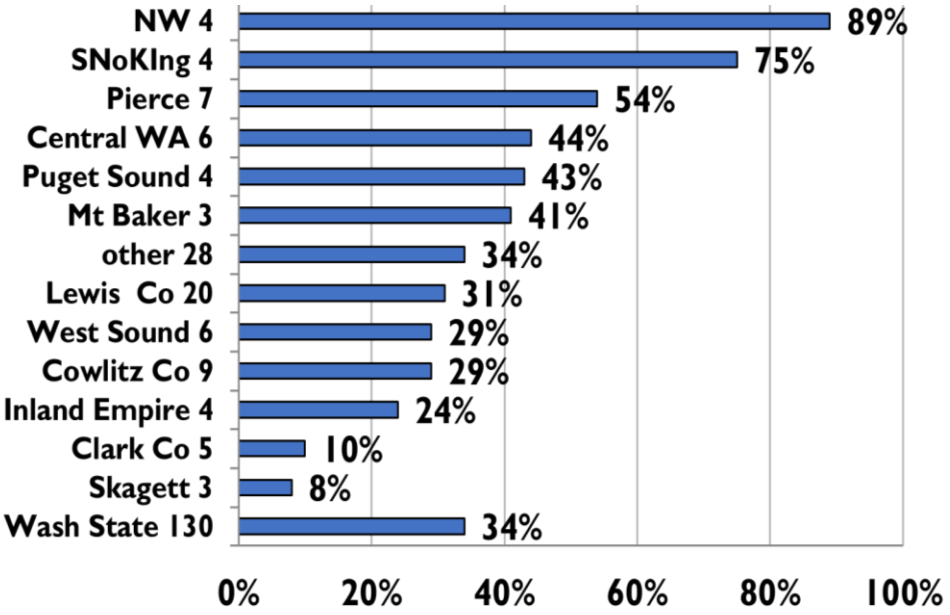
Winter Bee Losses of Clark County Washington Backyard Beekeepers for 2024-2025

by Dewey M. Caron

Overwintering losses of small-scale Washington backyard beekeepers =34%, an increase of four percentage points from last year; average Statewide loss (10 years) =44.8. One hundred thirty Washington respondents completed a survey, nine more than last year and eleven above the 119.3 average respondent rates of last six years. Information on winter losses and several managements related to bee health was included on the electronic honey bee survey instrument www.pnwhoneybeesurvey.com. Clark beekeeper losses were 10%, the2nd lowest loss level of 12 WA clubs. However, only five surveys were returned, same as last year; response rate was well below the 7-year average of 17 Clark returns annually.

Figure 1



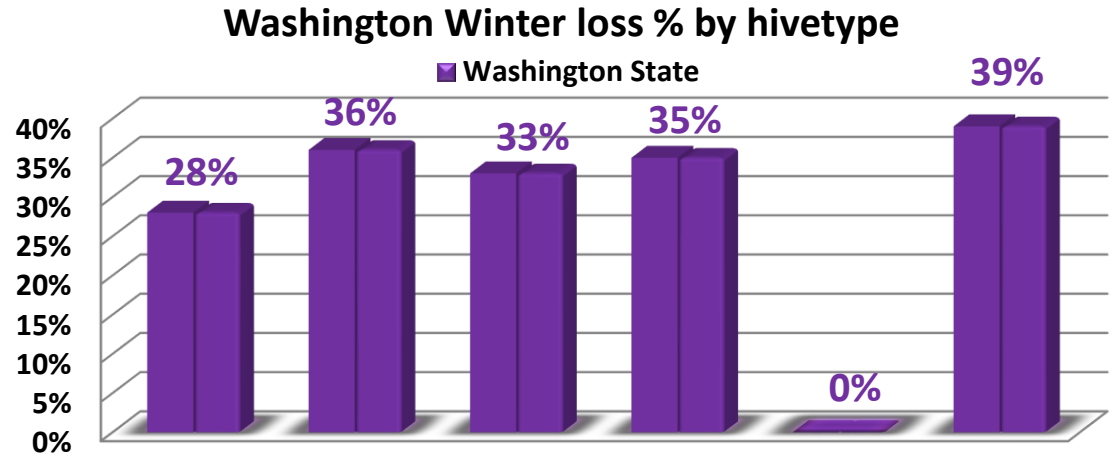
Response by local Washington (WA) association varied as indicated by blue bars in Figure 1. The number of respondent individuals is listed next to the association name. The bar length is the average club loss percentage for the year. Survey included 692 fall Washington beekeeper colonies; 42 were from Clark County beekeepers. This report primarily includes information from state responses as there were only a small number of Clark Co respondents.

2022-2023 Overwinter Losses by Hive Type

The Washington survey overwintering loss statistic was developed by subtracting number of spring surviving colonies from fall colony number supplied by respondents by hive type. Results, shown in Figure 2 bar graph, illustrate overwintering **losses of 130 total WA beekeeper respondents =34%.** Langstroth 8 frame beehives had lower average losses (28%) than Langstroth 10 frames hives. Ten of 30 fall nucs failed to survive. Top Bar hive survival rate was similar to the Langstroth hives. The single Warré hive survived. Of the 26 colonies listed under “other” hive type, 8 were IDed as AZ (only 3 survived), 5 as Apimaye (2 survived) , the single long hive survived, one of two Slovenian hives survived,

the single feral hive survived and of 9 “other’ not identified, 8 survived. For the 5 Clark Co respondents, one of five Langstroth 8-frame Langstroth hives did not survive (20% loss) and one of 12 Langstroth 10-frame colonies died (8% loss level). The single Top Bar hive survived as did the 2 other hives (hive type not specified).

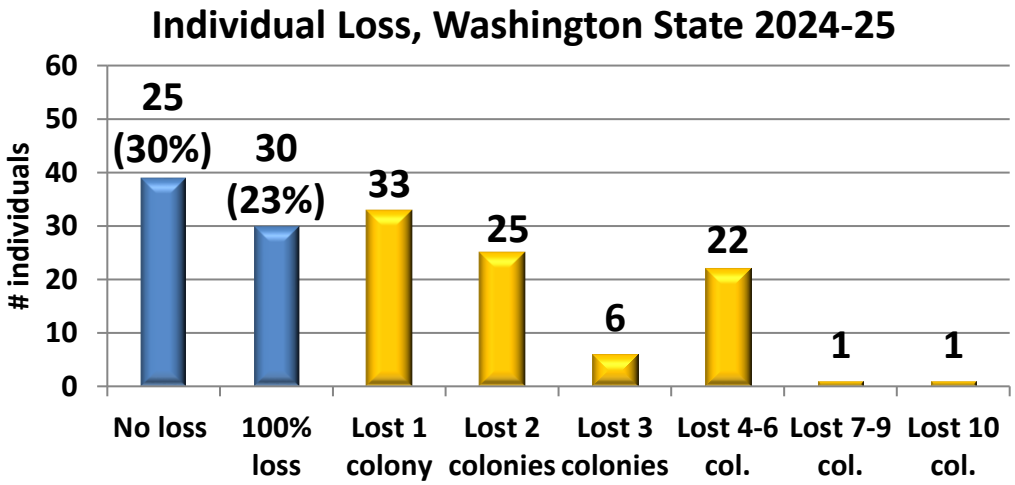
Figure 2



	Lang 8	Lang 10	Nuc	Top Bar	Warre	Other
Fall	155	447	30	17	1	26
Spring	112	286	20	11	1	16

Thirty-nine individuals had no loss (124) colonies while 30 beekeepers lost 100% (87 colonies). the greatest loss was one colony. The heaviest loss was 10 colonies. See Figure 3 graph. Two Clark Co respondents had no loss (7 colonies). The other three lost a single colony.

Figure 3

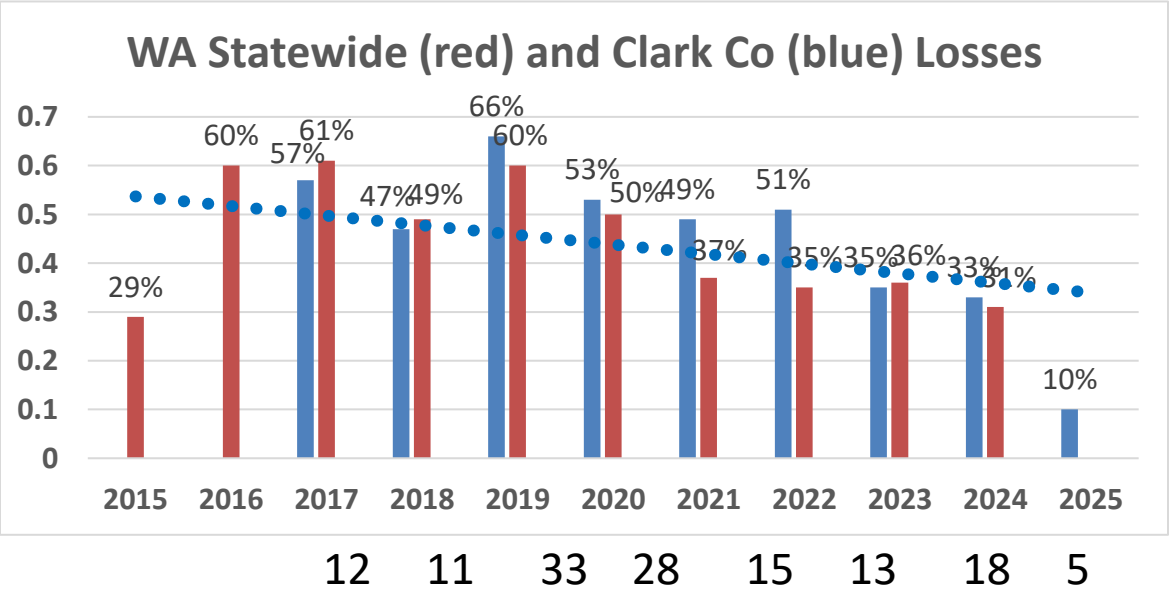


The WA respondents to the electronic survey managed up to 40 fall colonies. Seventeen individuals had a single colony (and had colony loss of 47%), 29 respondents had two colonies (the greatest number) with 45% loss and thirteen individuals had three colonies (44% loss). Typical of previous surveys, fifty-nine individuals (45% of respondents) had 1, 2 or 3 fall colonies (loss level of 45%). Forty-two individuals had 4 to 6 fall colonies and had loss level of 48%. Four was the median number. Thirteen individuals had 7 to 9 colonies; they had a loss level of 21%. Ten individuals had 10-19 colonies with a loss level of 32%, 7 individuals had 20-40 colonies had a loss level of 18%. The 15 individuals with 10+ colonies lost 23%. The range of Clark Co respondents was 3 to 9 colonies.

Forty-nine respondents (37.5% of total) had 1, 2 or 3 years of experience; they had a 37% loss level. The 8 individuals with one year of experience had the heaviest loss of 47%. Thirty individuals (23% of total respondents) had 4 – 6 years' experience (medium number = 5 years' experience) with a 32% loss, 21 individuals had 7-9 years' experience (loss level 31%), 21 had 10-18 years keeping bees and 358% loss level and nine had 20+ years' experience (4 individuals had 50 years' experience, the maximum beekeeper experience years (these 4 had a 20% loss) and they had a 21.5% loss level. Examining the relationship of colony numbers and years' experience related to loss shows that loss of colonies decreases by about 1/3rd with the greater number of colonies and/or years of experience. Range for Clark Co respondents was 1 to 10 years experience.

One hundred six (81%) WA beekeepers had an experienced beekeeping mentor available as they were learning beekeeping. This percentage was six percentage points higher than last year, slightly higher than the 6-year average. For Clark County, all five individuals reported having a mentor available as they were learning beekeeping.

Figure 4



Nine-year loss record for Clark Co beekeepers and 11-year loss record for Washington survey respondents is shown in bar graph above (Figure 4). The numbers below the graph indicate the

number of Clark Co respondents. Average Statewide loss (10 years) =44.8%. Average Clark Co losses (last 7 years) = 48.9%)

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 statewide there were 115 WA selections (1.85/individual) provided. Varroa mites (32 individuals, 25% of total selections) was the most common choices. Weak in the fall, starvation and poor wintering were next most common followed by yellow jackets and don't know. Ten individuals only listed queen issues. The two "other" listings were absconding and too small a winter cluster. Figure below shows the number and percent of factor selections. Clark County had eight selections (by four individuals which had loss). Two each selected poor wintering, starvation and queen issues and varroa and weak in fall were additional choices.

Acceptable loss: Survey respondents were asked reason for loss. Seventeen (15%) indicated zero (no loss). Thirty-three percent of individuals indicated 10% or less. Twenty percent was medium choice. Nineteen percent said 50% was an acceptable loss level. See table below. For the 5 Clark respondents one said 5%, 2 indicated 15% (median)and one said 20% and the other 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.

Most Washington beekeepers do not perform just one management to their colony (ies) toward improving colony health and overwintering success. This analysis however compares a single

factor equated with loss level. Such analysis is correlative and doing a similar management as fellow beekeepers does not necessarily mean you too will improve success. Refer to managements statewide – there were too few Clark Co returns to perform any meaningful analysis.

Thank you to the 5 Clark County respondents. I hope this report is of some value to you.

Dewey M. Caron May 2025