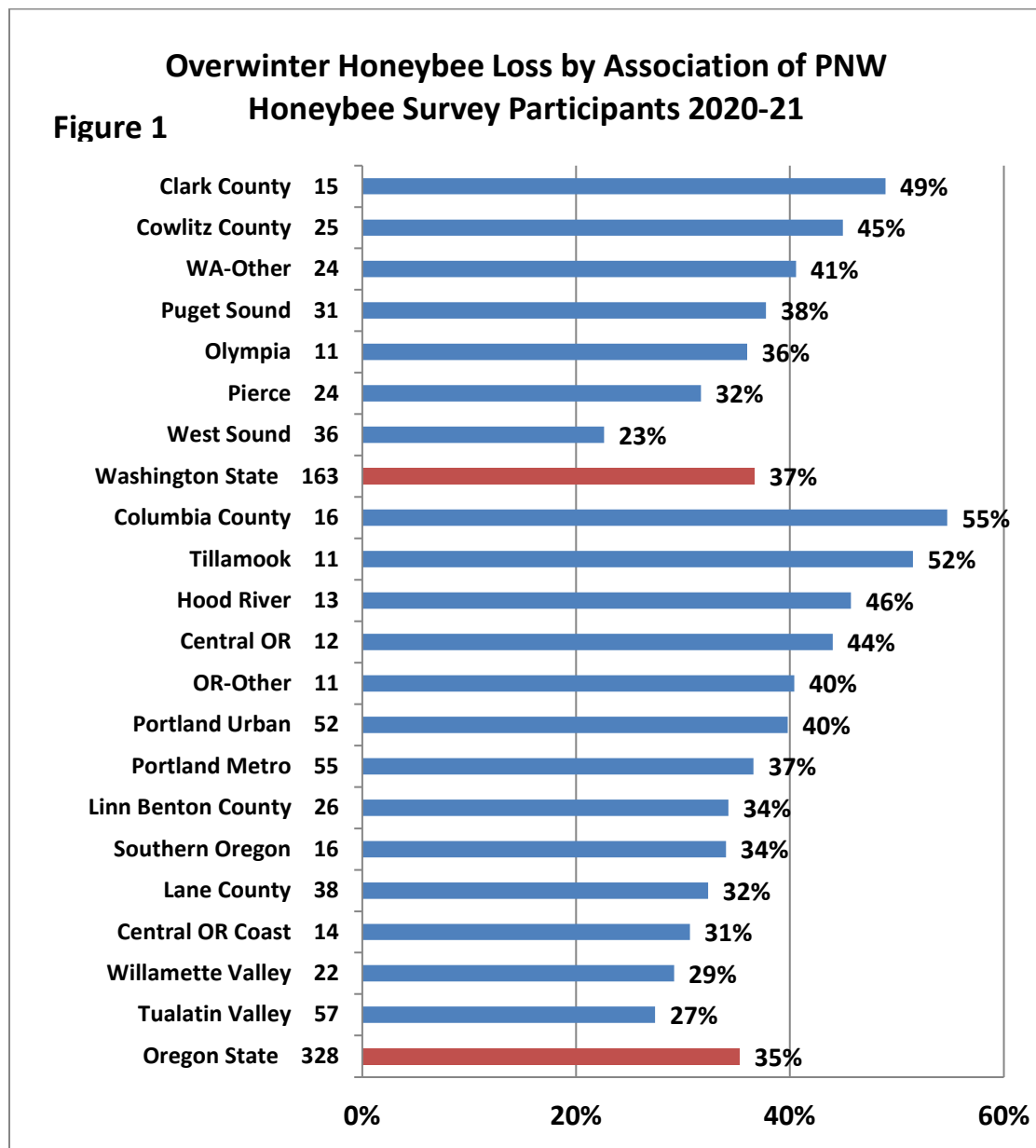


## 2020-21 PUB Winter Loss by Dewey M. Caron and Jenai Fitzpatrick

Information on winter losses and several managements related to bee health were obtained as in the past 12 years with an electronic honey bee survey instrument developed within the PUB bee group [www.pnwhoneybeesurvey.com](http://www.pnwhoneybeesurvey.com). **Overwintering losses of small-scale Oregon backyard beekeepers was 35%**, a decrease of 3 percentage points from last year. A total of 328 responses were received from OR beekeepers with 163 additional returns from Washington beekeepers. During the 2020-2021 overwintering period, 52 PUB member surveys were returned, one more than last year with 183 total hives.



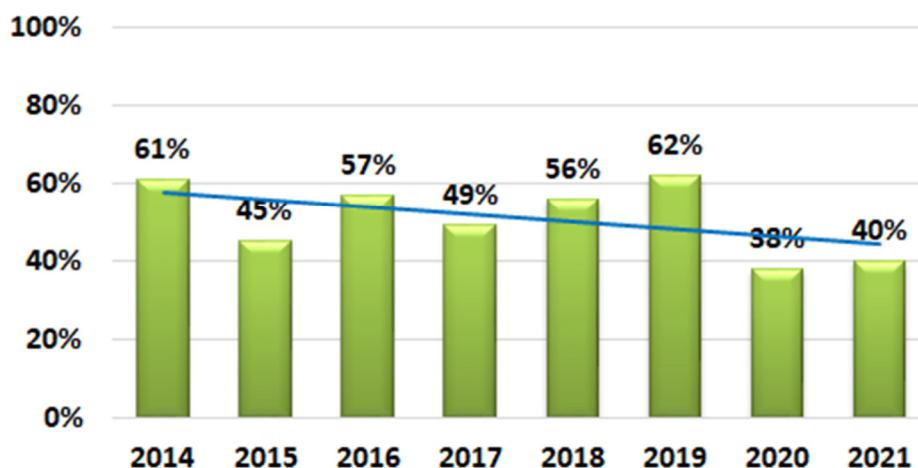
**Total overwintering losses of PUB respondents was 40%,**

PUB losses of Langstroth 62 fall 8 frame hives (24%) and 95 fall 10 frame hives (40%) was similar to statewide loss rate (30% for 8 frame hives and 37% for 10 frame hives. Although loss rates were lower for Langstroth 8 frame hive compared to 10 frame hives the average for the past 7 years is close - 37% for 8 frame Langstroth hives and 40% loss for 10 frame hives. Nuc losses for PUB were 57% but only 32% statewide - 6 year statewide average= 53%).

Top Bar hive and Warré hive losses were both higher than statewide levels TB 70%, Warré 75% vs TB 56% and Warré 47% statewide. PUB member holdings of Top Bar and Warré hives were 24 of 64 total statewide (38%). Of 7 “other” hive types only 3 survived for PUB members; 5 of the 7 were long hive types.

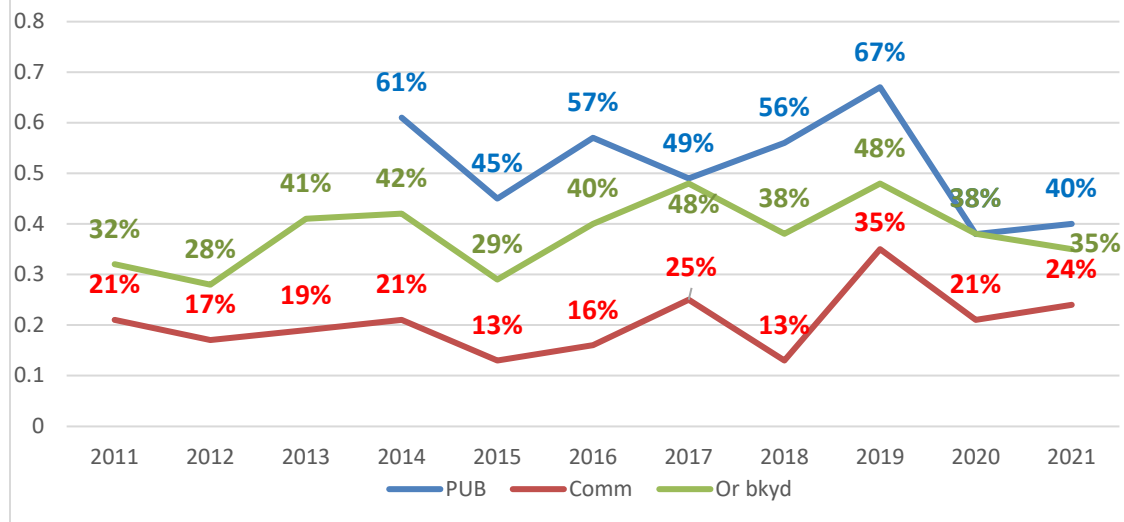
The two figures below illustrate the loss levels of PUB respondents. The line graph (figure 3) compares Oregon statewide and for the Oregon commercial beekeepers to PUB losses. Pub losses have consistently been higher.

**Figure 2 Portland Urban Loss History**



The survey also asked for **loss by hive origination**. Overwintered colonies had the best survival in PUB (37%) and statewide (28%). Package (58%) and nuc losses (55%) were similar. Swarms (45%) and splits (50%) were slightly less. Eight of 10 feral transfers survived. Statewide numbers will be posted as soon as possible on [www.pnwhoneybeesurvey.com](http://www.pnwhoneybeesurvey.com).

**Figure 3** Average winter losses PUB, Oregon backyarders and Oregon commercials 2011-2021



Typical of the statewide data, the PUB respondents are largely new beekeepers. 54% of PUB respondents had 1 or 2 fall colonies, another 29% had 3 to 6 colonies while 8 respondents (10%) had 9+ colonies – maximum number for any respondent was 13 colonies. Not everyone had loss. In fact, 8 of 52 members reported NO LOSS (15% of survey respondents) while 17 respondents (33%) reported total winter loss of colonies. Heaviest loss was 8 colonies.

PUB survey respondents reported a **range of beekeeping experience**. Twelve individuals had one year experience, with 48% have 1 to 3 years' experience. 12% had 9+ years' experience with 41 the largest number of years. Most common was 2 and 5 years of experience=7 individuals each. Thirty-five of 52 PUB respondents (67%) said they had a mentor available as they were learning beekeeping.

### Reasons for Colony Loss/Acceptable loss

We asked individuals that had colony loss to estimate what the reason might have been for their loss (multiple responses were permitted). Twenty-two PUB individuals listed varroa (56 % of respondent choices), followed by weak in fall (12) and queen failure (10). Seven individuals said starvation, six checked pesticides and five didn't know. Other choices had 2 or fewer responses.

### Why colonies die?

There is no easy way to verify reason(s) for colony loss. Colonies in the same apiary may die for different reasons. Examination of dead colonies is, at best confusing, and, although some options may be ruled out, we are often left with two or more possible reasons for losses.

There is 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. An acceptable loss level has crept upwards over time.

Major factors in colony loss are thought to be mites and their enhancement of viruses, especially DWV (deformed wing virus) and declining nutritional adequacy/forage and diseases. Pesticides in the agricultural environment weakens colonies. Yellow jacket predation is a constant danger to weaker fall colonies, Management, especially learning proper bee care in the first years of beekeeping, remains a factor in losses. What effects our changing environment, such as global warming, contrails, electromagnetic forces, including human disruption of it, human alteration to the bee's natural environment and other factors, play in colony losses are not at all clear.

**There is no simple answer to explain the levels of current losses nor is it possible to demonstrate that they are necessarily excessive for all the issues currently facing honeybees. Varroa mites and the viruses they transmit are considered a major factor colonies are not as healthy as they should be.**

## **Managements**

I will be examining the data for the management questions asked and comparing them with losses. That will be posted as soon as available.

**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.