

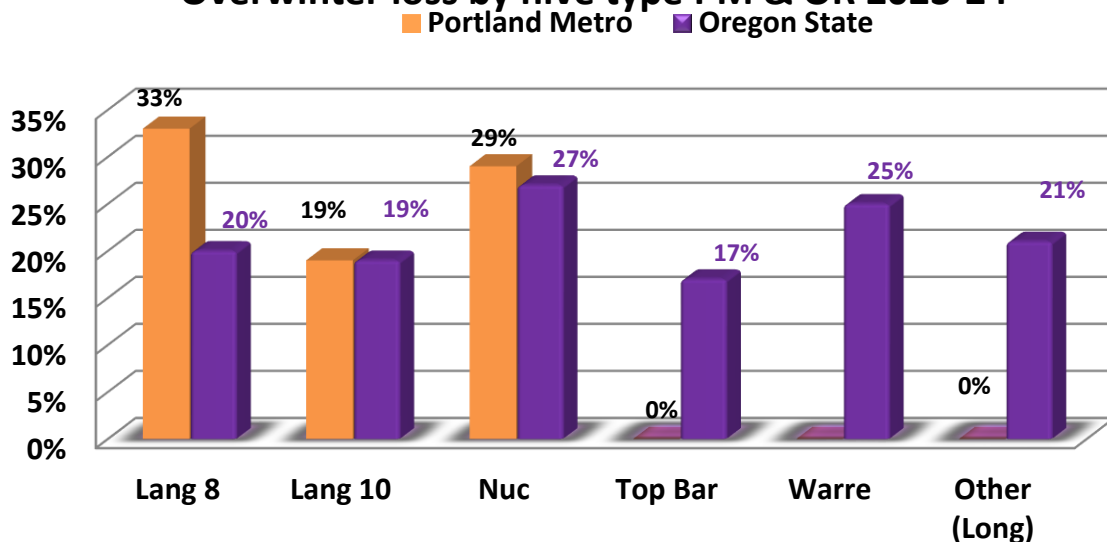
2023-24 Portland Metro Winter Loss by Dewey M. Caron

The pnwhoneybeesurvey.com is a continuing effort to define overwintering success of OR and WA beekeepers. This was the 15th year of such survey activity. I received 171 Oregon beekeeper responses; they had a 20% loss level, the lowest level in all the survey years. For unknown reasons, response tallied nearly 1/3rd fewer respondents compared to last year and considerably below the previous 5-year average of 305/year. Portland Metro response was 17 completed surveys, down 2/3rds from average of previous 5 years of 52/year.

The 17 Portland Metro (PM) members reported on 125 fall colonies. **Portland Metro loss level was 25%**, 10+ percentage points below the 10 previous year average loss of 37.5%. Percent losses, determined for 5 hive types, is shown in Figure 1 below comparing PM with the statewide backyarders. PM member respondents reported 58 fall Langstroth 8-frame and 54 10-frames hives. Losses of the 8-frame Langs was 33% compared to 19% for the Lang 10s. Five of seven fall nucs did not survive while a single Top Bar hive did survive and 5 other Long hives did as well. There were no Warré hive types reported.

Figure 1

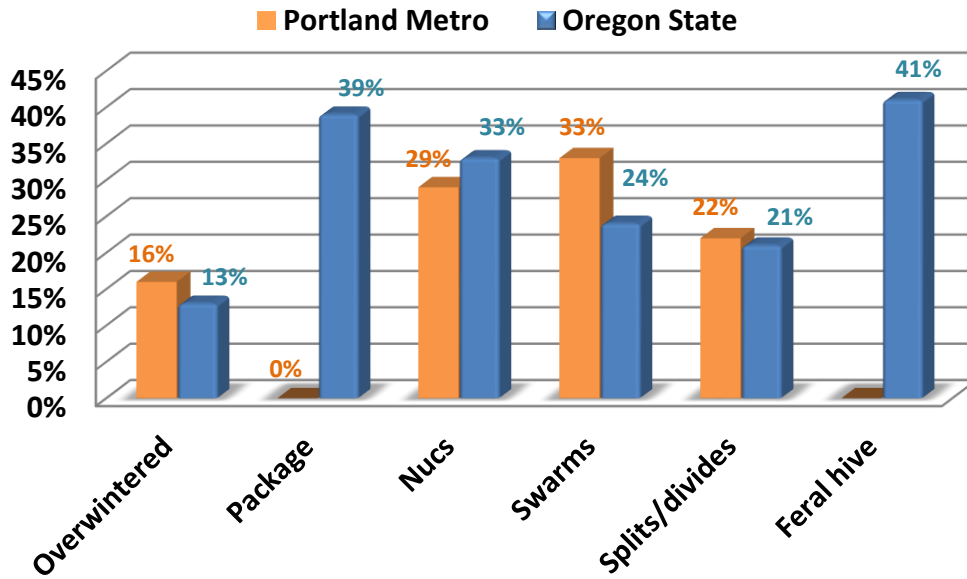
Overwinter loss by hive type PM & OR 2023-24



The survey also asked for hive loss by hive origination. Overwintered PM colony loss (16%) was comparable to success with splits (22%). Nuc and swarm losses were higher (29% and 33% respectively). Two package-originated colonies did not survive. See Figure 2 below for PM/statewide comparisons.

Figure 2

Hive loss by orientation 2023-24



Losses for PM beekeepers have been decreasing. Figure 3 Red dotted line is trend.

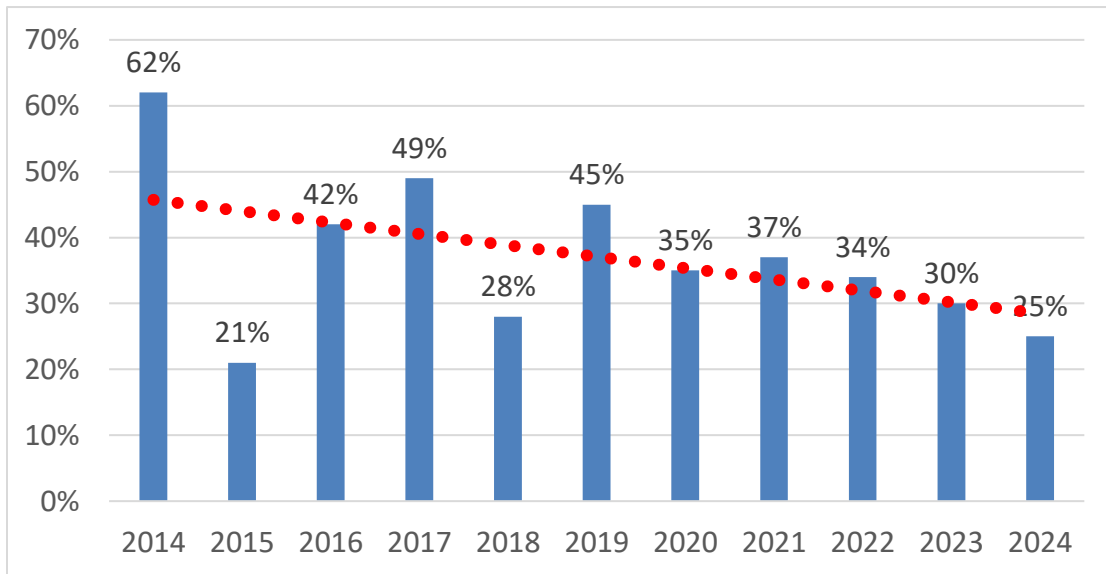


Figure 3

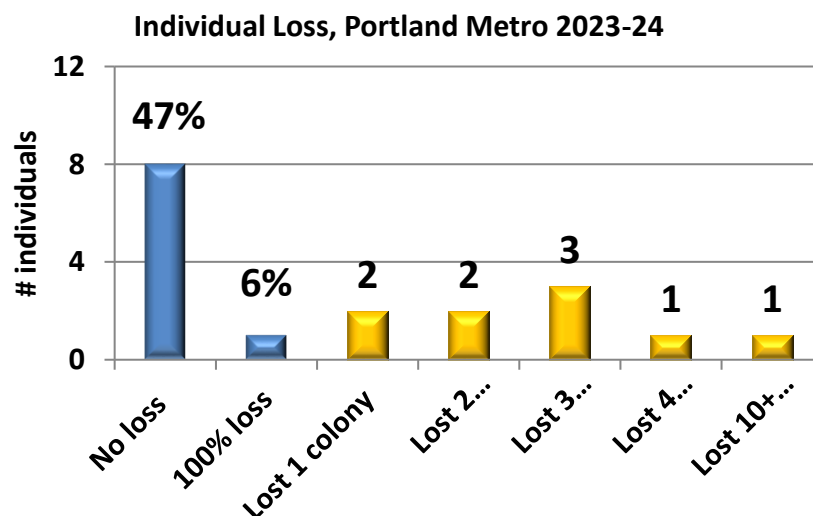
Who are the survey respondents?

The PM respondents to the electronic survey managed one to 40 fall colonies. One individual had 1 colony, which survived, two respondents had 2 colonies and two individuals had 3 colonies both with 50% losses. 29 % of total respondents with 1, 2 or 3 colonies experienced a collective loss level of 45%. Two individuals each had 4, 5, and 6 colonies with collective loss level of 23%. The two individuals which had eight or nine colonies lost 24% and the 3 individuals with 10+ colonies had a 22% loss.

Five individuals (29% of respondents) had 1, 2 or 3 years of experience and another five individuals had 4 – 6 years' experience (medium number=5). Three individuals had 7-9 years experience and four had 10+ years experience, with 14 years experience the greatest. When loss level was correlated to experience, the 5 individuals with 1-3 years experience had 31% loss level, those with 4-6 years experience had a 24% loss the 3 respondents with 7-9 years of beekeeping experience had a 4% loss level (lost 1 of 25 colonies) and those with 10+ years experience had a 32% loss. Clearly beekeepers with fewer colonies lose more colonies percentage-wise and PM individuals with more experience had slightly lower losses (10 individuals with 1-6 years beekeeping loss=27% and the 7 individuals with 7+ colonies had loss level of 24%) For statewide respondents the norm is beekeepers with more beekeeping experience have lower percentage of colony losses.

Fifteen of 17 (88%) PM beekeepers had an experienced beekeeper mentor available as they were learning beekeeping. This percentage was up from 82% the previous year.

Not everyone had loss. Seven PM individuals (41%) reported total winter survival; unfortunately, two individuals (12%) lost 100% of their colonies. Greatest loss was three colonies and 12 colonies was the heaviest loss). Individual loss data is shown below in Figure 4.



None of the 17 individuals moved hives during the season; two had bees in 2 apiaries.

Reasons for Colony Loss/Acceptable loss

We asked the 10 individuals that had colony loss to estimate what the reason might have been for their loss (multiple responses were permitted). There were 20 total listings for PM, 2/individual.

- 1 each indicated poor wintering and CCD
- 2 each starvation & yellowjackets
- 5 each varroa & weak colonies
- 6 said loss due to queen issues

Survey individuals are asked to indicate what might be an acceptable loss level. The median was 15% which was also most common selection.

Why do Colonies Die?

There is no easy way to verify reason(s) for colony loss. Colonies in the same apiary may die for varied 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. PM individual choices varied from zero to 100%, with medium of 15%.

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 which are declining. Can we duplicate the low losses this season in the next season? It is not possible to demonstrate that losses are necessarily excessive for all the issues facing honey bees in the current environment. Varroa mites and the viruses they transmit are considered a major factor, but by no means the only reason colonies are not as healthy as they should be. We are learning how better to manage varroa mites and we have new tools virtually every year to bring to the challenge.

Management Selections and Losses

The survey inquired about feeding practices, wintering preparations, sanitation measures utilized, screen bottom board usage, queens, mite monitoring and both non-chemical mite control techniques (such as screen bottom board use, drone brood removal efforts, etc.) and chemical mite controls utilized. Individuals could check none or more than one response; many PM beekeepers often do not do just one thing/management to their colony (ies) to control mites toward improving overwintering success. This analysis however is of a single factor equated with loss level. Such analysis is correlative and doing a similar management as fellow beekeepers do does not necessarily mean you too will improve success.

This further analysis of management factors takes longer. This report will be reposted with that information once available.

Closing comments

This survey was originally designed to 'ground truth' the larger, national Bee Informed loss survey. See statewide PNW reports for OR and WA for this comparison (Figure 5 of statewide report). The numbers while slightly different do in fact track well. Unfortunately, the national BIP survey was discontinued after 2023. See the BeelInformed website www.beeinformed.org for additional information and are encouraged to examine that data base as well. The BeelInformed survey is measuring the larger scale OR beekeepers not the backyarders as loss rates are of total colony number. Reports for individual bee groups are customized and only available from the PNW website; they are posted for previous years.

I intend to continue to refine this instrument each season and hope you will join in response next April. If you would like a reminder when survey is open please email us at info@pnwhoneybeesurvey.com with "REMINDER" in the subject line. I have a blog on the pnwhoneybeesurvey.com and 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 May 2024