

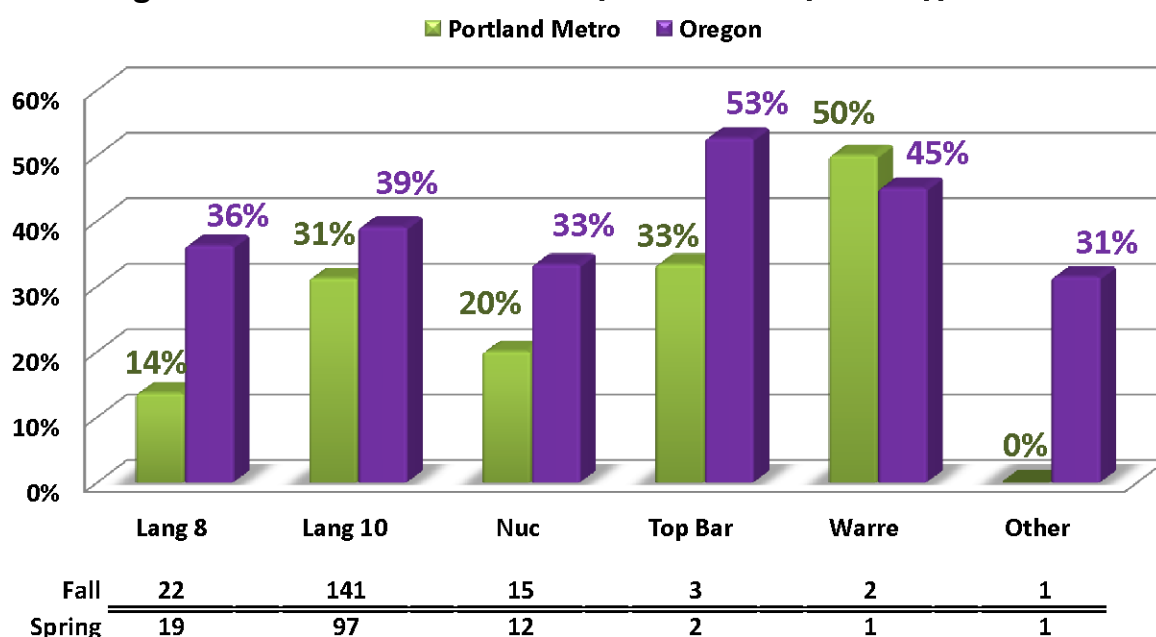
## 2017-18 Portland Metro Winter Loss Part 1 by Dewey M. Caron

At the April PM meeting members were directed to a web-based survey document in our continuing effort to define overwintering success. This was the 10<sup>th</sup> year of such survey activity. I received 303 responses from Oregon backyarders and 104 from Washington beekeepers keeping anywhere from 1 to 50 colonies. Portland Metro (PM) members sent in 31 surveys of 184 fall colonies. This is one less individual response as last year but with 59 fewer colonies compared to last year.

**Overwintering losses of PM respondents was 52 colonies = 28%.** This loss is 10 percentage point lower than the statewide loss of 38% (database of 303 OR backyarders.) Percent losses, determined for 5 hive types, is shown in Figure 1 comparing PM with the statewide backyarders. PM member respondents started winter with 141 Langstroth 10-frame and 22 Langstroth 8-frame hives (89% of total), 15 5-frame nucs (of which only 3 did not survive), 3 Top bar hives, 2 Warré hives, and one "other" (a "natural" hive – it survived winter).

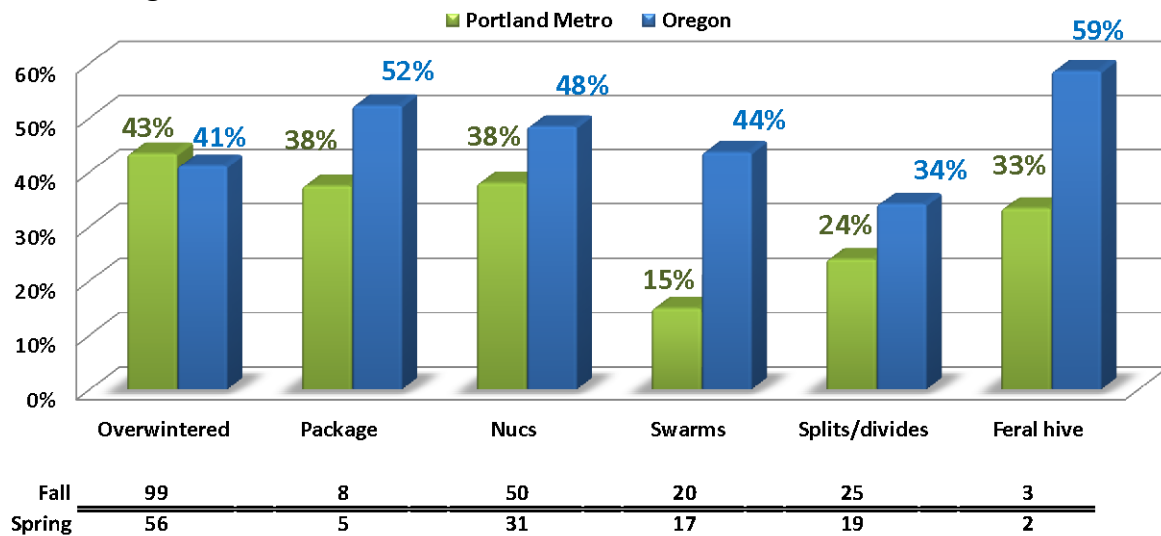
Data in Figure 1.

**Figure 1. 2017-18 Winter Honeybee Loss % by Hive Type**



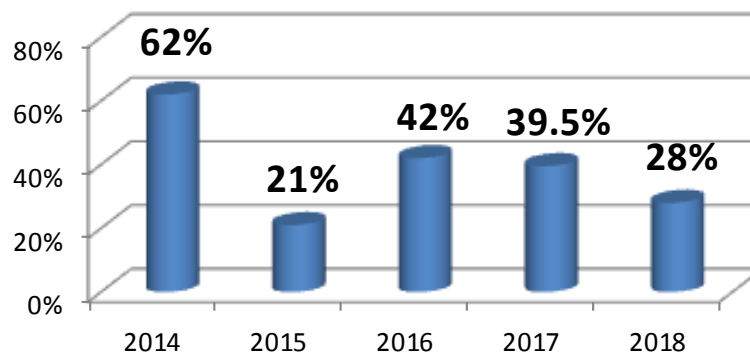
The survey also asked for hive loss by hive origination. Fifty-six of 99 overwintered PM colonies were alive in the spring (43% loss rate), similar to 41% losses statewide. PM respondents reported lower losses of package bees, nucs, swarms, splits and feral hives compared to overwintered losses and statewide. See Figure 2 for PM/statewide comparisons.

**Figure 2. 2017-18 Winter Honeybee Loss % by Origination**



Losses this past winter for PM beekeepers were 13 percentage points below the average of the last 4 years (41%). Figure 3. See [www.pnwhoneybeesurvey.com](http://www.pnwhoneybeesurvey.com) for last year's individual report for PM beekeepers.

**Figure 3. PMBA OVERWINTER LOSSES 2014-2018.**

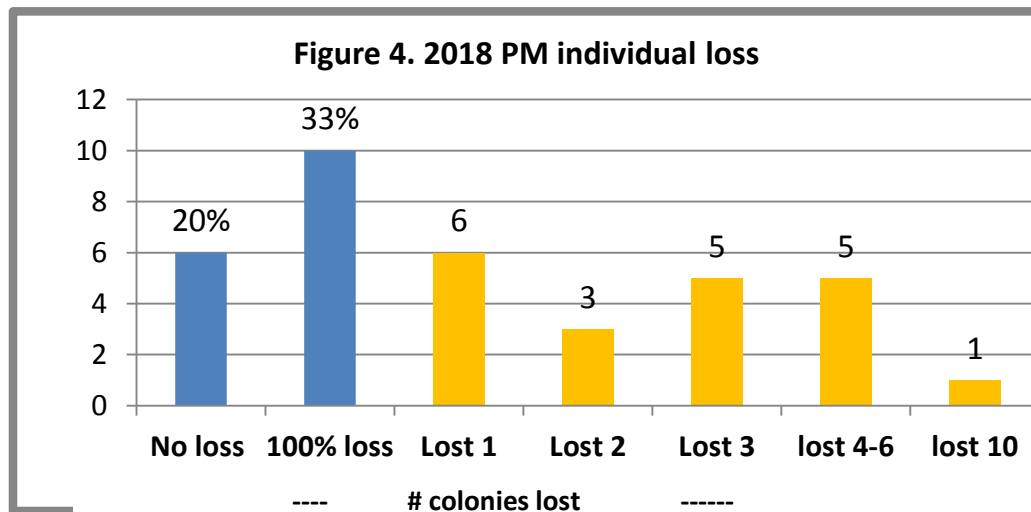


The PM survey respondents were a mixture of single digit colony beekeepers with those with more colonies, along with new and more experienced individuals. Eight PM respondents had 1 fall colony, 1 had 2 and 5 had 3 colonies (48% of PM respondents), 7 respondents had 4 to 6 colonies, 2 individuals had 7-9 colonies while six individuals had 12 or more colonies (21% of total respondents); the largest number was 30 colonies.

Five individuals had one year of experience, three had two and an equal number had 3 years (total of 1, 2 or 3 years of beekeeping experience=35.5% of total respondents). Eleven individuals had 4 to 6 years' experience =35.5%), 4 respondents had 7 to 9 years of experience

and seven had 10+ years' experience (22.5% of total respondents); 35 years was largest. Half of PM beekeepers indicated they had a mentor their initial year of keeping bees.

Not everyone had loss. Ten PM individuals (33%) reported total winter survival; unfortunately however, six individuals (20%) lost 100% of their colonies. Six individuals lost 1 colony; heaviest loss was 10 colonies. Data is shown graphically below in Figure 4.



Two individuals had two apiaries; three individuals had bees at 3 apiary sites. Losses at 2<sup>nd</sup> /3<sup>rd</sup> apiaries was similar to primary apiary losses. Four individuals moved hives during the season, 2 only short distances (across yard for example) while the other 2 moved greater distances, one for pollination, one due to loss of apiary site.

### 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). Of 377 statewide responses (1.8/individual), 82 chose varroa (39% of respondent choices), 63 chose Queen failure (30% of respondents), 52 chose Weak in fall (24.5% of respondents), 34 poor wintering conditions and don't know (16% of respondents). The 34 Portland Metro responses (2/individual) were led by varroa (53% of total individuals); Queen Failure (41%) with 3 individuals each selecting poor wintering conditions, weak in fall, starvation, pesticides and yellow jackets. Two individuals expressed no opinion and one said it was a lack of "beekeeper love".

	Varroa mites	Poor wintering conditions	Weak in fall	Queen failure	Starvation	pesticides	Yellow jackets	Other
Portland Metro # (%)	9 (53%)	3 (18%)	3 (18%)	7 (41%)	3 (18%)	3 (18%)	3 (18%)	3 (18%)
Statewide %	39%	16%	24.5%	30%	9%	7%	11%	23%

Survey individuals are asked to indicate what might be an acceptable loss level. The median (middle) selection was 15%. PM responses were: zero (7 individuals), 10% loss acceptable (4 individuals), 15% (5 individuals), 25% (6 individuals) and 33% (1 individual). Two selected 50% and one checked 100%.

**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. See report on dead colony examination workshop, 2018 at Zenger Farms apiary, a separate report on this [www.pnwhoneybeesurvey.com](http://www.pnwhoneybeesurvey.com) website.

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), pesticides, declining nutritional adequacy/forage and diseases, especially viruses and Nosema. 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 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.**

## **Part 2: Management selections and losses**

This requires further data analysis. Report will be posted as soon as available.