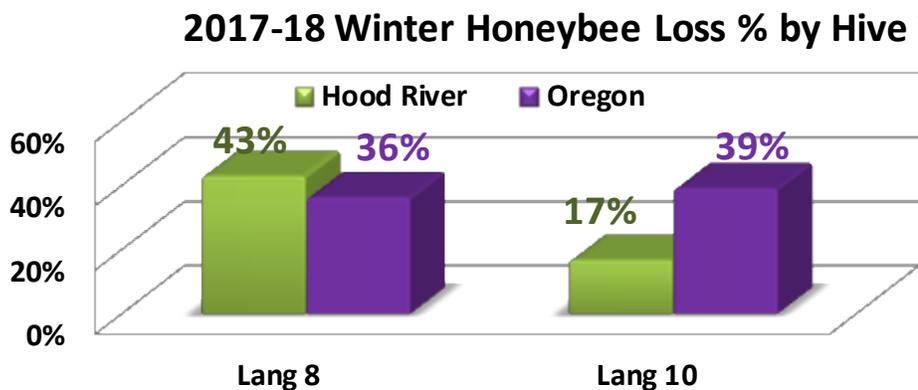


# 2018 Columbia Gorge Beekeeper Winter Loss

by Dewey M. Caron

This was the 10<sup>th</sup> year of a survivorship/loss survey of Oregon and Washington beekeepers. I received 303 responses from Oregon (OR) backyarders, an additional 104 from Washington beekeepers keeping anywhere from 1 to 50 colonies. I received 13 survey returns from Columbia Gorge beekeepers 5 more than the 8 last year. This is the first time I am preparing a separate report for the Gorge beekeepers (information on 8 Gorge returns last season are additionally included).

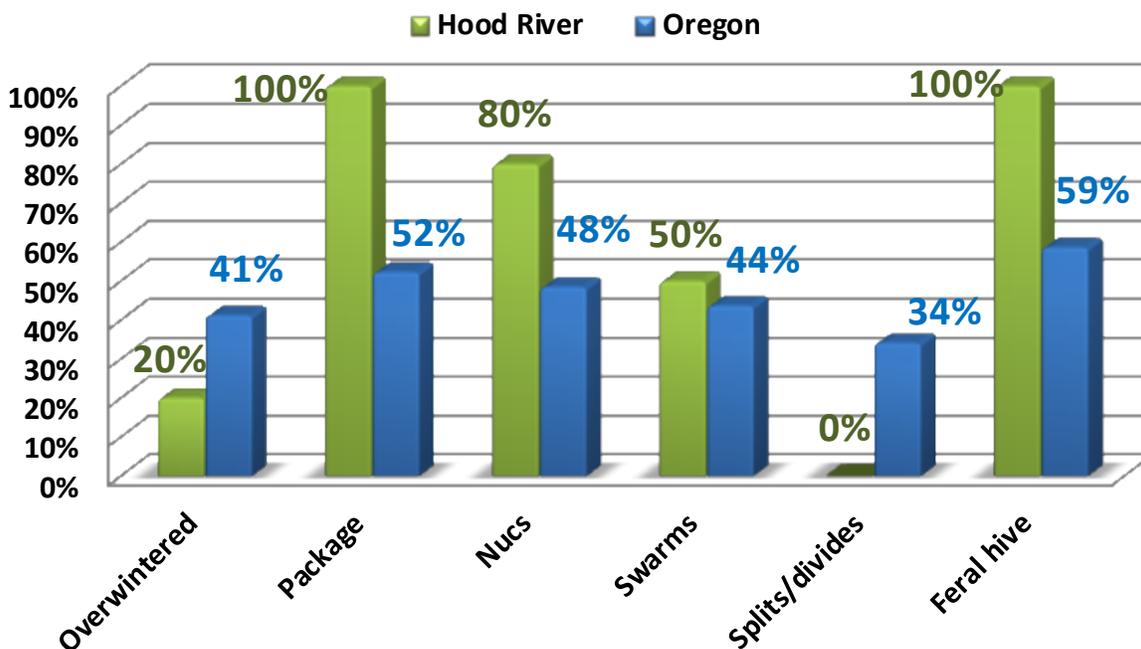
Overwintering losses of Columbia Gorge respondents was 8 colonies of 22 fall colonies = 36%, 2 percentage point lower than the statewide loss of 38% (database of 303 OR backyarders.) Overwinter losses are determined by asking the number of fall colonies and surviving spring colonies for 5 hive types. Losses for the 8 and 10 frame Langstroth hives is shown in Figure 1 comparing Gorge with statewide backyarders. Gorge beekeepers had 7 Langstroth 8 frame hives (4 survived) and 12 Langstroth 10 frame hives of which all but 2 survived. There also was 1 Top bar hive, 1 nuc and 1 other hive, all of which did not survive.



Last year the 8 Gorge beekeeper respondents had 24 fall colonies (10 8 frame Langstroth, 12 Langstroth10 framers and 1 nuc and 1 Warré hive in the fall. Losses were 3 8 frame Langstroth hives (37.5%) 4 of the 12 10 frame Langstroth (33%) The single nuc survived but the Warré hive did not.

The survey also asked for hive loss by hive origination. Four of 5 overwintered colonies were alive in the spring (20% loss rate), double the success of statewide beekeepers. Both the single package and feral hive did not survive, ½ of swarm captures survived and all 3 splits survived the winter. See Figure 2. [Last year 2 of 4 overwintered hives survived, 2 of 2 packages, and 7 of 11 nucs installations survived, Also ½ of the swarms (6) survived as did 2 of 3 splits.]

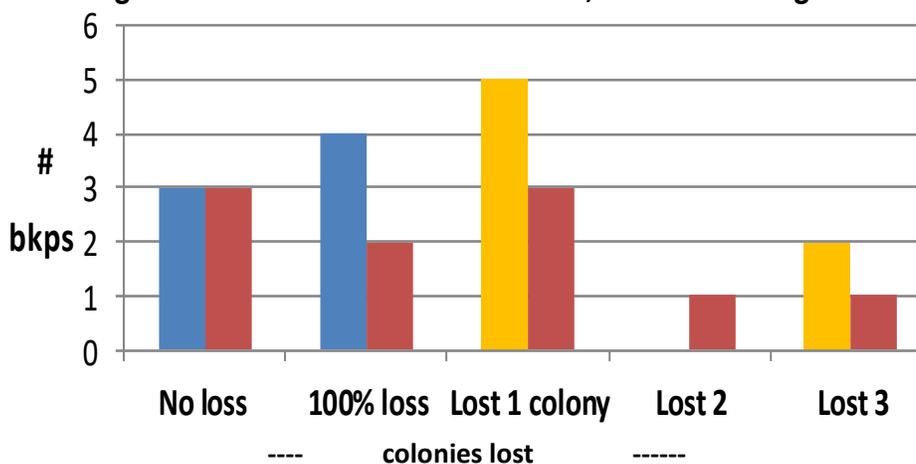
### 2017-18 Winter Honeybee Loss % by Origination



Fall Col # (loss) 5(1)                      1(1)                      5(4)                      4(2)                      3(0)                      1(1)

Not everyone had loss. Three individuals reported total winter survival each of past 2 winters. Four individuals had total loss this past winter, double the number of individuals of the previous season. Most of loses were of a single colony (5 individuals in 2018, 3 in 2017; heaviest loss was of 3 colonies (2 individuals this past winter and one in 2017). Data below in Figure 3.

**Figure 3. 2017 & 2018 individual loss, Columbia Gorge**



Colony numbers were low. In 2017 ½ the individuals had 2 colonies with the highest number 5 (one individual); in 2018 ½ the respondents had a single colony with the highest

number 6 colonies (2 individuals). In 2018 ½ the individuals had 1 or 2 year's experience, ½ that number had 3 or 4 years experience, 2 individuals were 5<sup>th</sup> year beekeepers and the longest beekeeping experience was 10 years. Eleven of the 13 survey respondents in 2018 said they had a mentor available in their first years of keeping bees.

We asked for individuals that had colony loss to estimate what the reason might have been. Multiple responses were permitted. The 31 responses by 2018 Gorge PM beekeepers (1.6/individual) were highly varied as expected. Four individuals (40%) said losses were due to varroa mites, 3 said queen failure, 2 each indicated poor wintering conditions and yellow jackets. One each said don't know, weak in the fall, mice and absconding. When asked for an acceptable loss level responses ranged from zero to 50% with 20% medium (middle response).

There is no easy way to verify reason(s) for colony loss, nor a consensus of an acceptable level. Colonies in the same apiary may die for different reasons. Doing the dead colony necropsy is the first step in seeking to solve a heavy loss problem. See elsewhere on the PNW website a report of workshop that examined 2 dead colonies at Zenger farms in Portland toward determining reason for winter loss. **More attention to colony strength and possibility of winter starvation will help reduce some of the losses. More adequate control of varroa mites will significantly help reduce losses.**

**Why do colonies die?** 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 in colony loss are thought to be mites, 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.

Langstroth a hundred and sixty years ago wrote about the importance of taking losses in fall management, saying if the beekeeper neglects such attention to his/her colonies 45% loss levels may occur, depending upon winter weather conditions. It can be argued that losses of 30, 40, 50% or more might be the new "normal." Older, more experienced beekeepers recall when loss levels were 15% or less. Larger-scale beekeepers make splits to replace losses while smaller-scale backyard beekeepers seek to capture swarms or purchase packages or nucs to replace their losses or simply give up after losing their colony(ies). Numbers of U.S. bee colonies have declined since the 1940s, returning to numbers of 100 years ago, but have remained at ~2 ½ million colonies - worldwide numbers of bee colonies are steadily increasing.

**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 virus they transmit are considered a major factor, but by no means the only reason, bee colonies are not as healthy as they should be.**

**Thank You to all Columbia Gorge members who participated.** If you find any of this information of value please consider adding your voice to the survey in a subsequent season. To get a notification when next years survey is available please place **“REMINDER”** in the subject line of an email sent to [info@pnwhoneybeesurvey.com](mailto:info@pnwhoneybeesurvey.com) and join us in discussion on the blog.

Dewey Caron, May 2018