"Once when I referred to the 1939 Soviet census as a 'fake,' one expert replied that no census was perfect, but that I was not thereby entitled to pick and choose which census I accepted. My objections to the 1939 census were: that the census taken in 1937 had been suppressed and the Census Board shot for 'diminishing the population of the Soviet Union' so that the new Census Board had some incentive to exaggerate the numbers ...."

-- Robert Conquest, Reflections on a Ravaged Century

Many beekeepers became interested in our strange sport because of media reports about the "demise of the honey bee." These hit the popular press in the mid-2000s, when Colony Collapse Disorder was apparently threatening life as we know it. The impending calamity made Superman's fight for Truth, Justice and the American Way seem like a childish waste of time by comparison. After all, didn't Albert Einstein rise from the grave and say that without honey bees, we would all die within three years? (He must have risen from the grave to say it because he never said it during his lifetime. And I never have figured out why a theoretical physicist would automatically be an expert biologist, ecologist and agricultural economist, but who am I to question such things?)

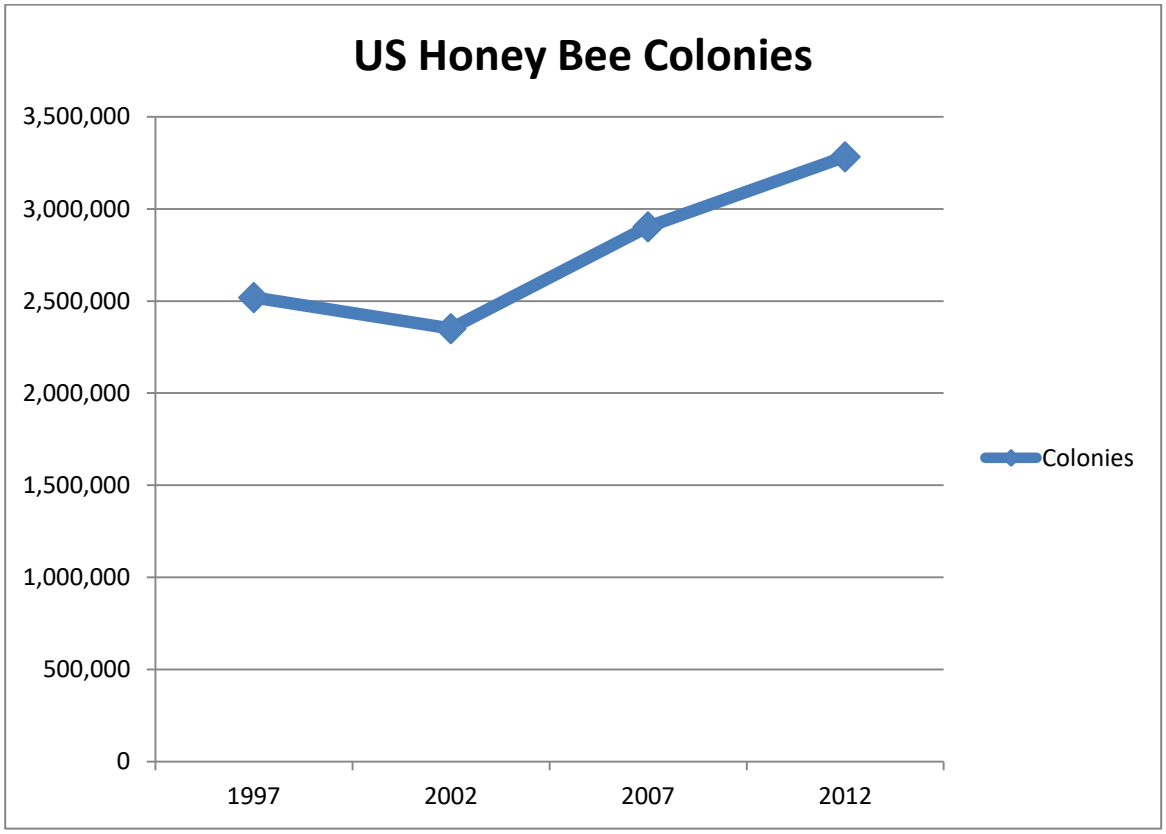
Colony Collapse Disorder, the death knell of beekeeping according to popular journalists, never made it to North Carolina and appears to have drifted off into obscurity elsewhere as well. The disorder was called "disappearing disease" when it flared up periodically in the past, partly because it caused the disappearance of colonies but also partly because the disease itself would disappear, only to reemerge for a year or two many decades later. But just because the actual disease has mostly gone away doesn't mean the journalistic hype has to disappear as well. As William Randolph Hearst said, "You furnish the pictures and I'll furnish the war." There are plenty of pictures of dead bees in the media archives just waiting for the next slow news day.

Nobody likes to see dead bees. These perished due to bad beekeeping: my inattention led to starvation.

But wait, doesn't Mother Jones News tell us, "For about a decade, [honey bees have] been dying off at an unprecedented rate—up to 30 percent per year, with a total loss of domesticated honeybee hives in the United States worth an estimated $2 billion." That kind of loss is clearly unsustainable. Losing 30 percent of our bees per year over ten years means, if we do the math, we should run out of honey bees in… well, any minute now! I hope you took my advice from last month and ordered your packages early!

But you don't have to take my word for the disaster we are facing: you can check the actual numbers yourself (see chart on next page). The USDA Census of Agriculture, conducted every five years, shows the dramatic change in colony numbers in the US. This is a census, not a survey or estimate, so is as close to "truth" as we can expect to get. In 2012, the census count was only 3,282,570 colonies, quite a grim departure from 2,902,732 in 2007 and 2,350,005 in 2002. The magnitude of those changes clearly isn't sustainable! Oh wait… maybe I've got the chart upside down… this says total colony numbers in the US went **up** 13% from 2007 to 2012 after going **up** 24% from 2002 to 2007. That can't be right… we all know the numbers have plummeted… haven't they? How can the number of colonies go up in the face of way-of-life-threatening losses?

The answer is fairly simple. Every year,



beekeepers make splits, purchase packages and so on to bolster their colony inventories. We have a word for that in beekeeping; it is called "making increase." The net effect over the past decade is a growing inventory, not a shrinking one.

The "losses" the media scream about aren't called "losses" by people in other industries. In the retail food business, for example, they use the word "shrinkage" to describe the same sort of thing, which covers everything from bananas that go bad to breakage to employees taking five-fingered discounts. Similarly, the Internal Revenue Service counts this type of inventory reduction as part of expenses, not a "loss". To the IRS and most people, a "loss" is something you have when you end up with less than you started with at the beginning.

How to turn gains into losses

Wait just a minute! How can Bee Informed Partnership (BIP) tell us that US beekeepers lost 44% of our colonies last year when the numbers are really going up? Do they need new batteries in their calculator? Or maybe the Government is lying to us? How can both of those statistics be true?

According to BIP's Natalie Steinhauer, [1] BIP takes the maximum number of colonies per year, including all splits or other increase, and compares that to the number of colonies at the start of the next year. I don't know about you, but I don't expect all of my splits to "take", especially when I make them raise their own queens. 50% success isn't bad. But the difference between 50% success and 100% success isn't what I would call a "loss" – it is a "non-gain".

Say I have 10 colonies and use those to make 4 splits. Two of them don't thrive so I combine them with the other two in fall. By my math, this undertaking gives me a 20% increase

[1] Natalie Steinhauer, "BIP and NASS: Why the Difference?", *Bee Culture*, July 2016, p. 27.

(10 colonies have grown to 12). But according to BIP, I have a 14% loss (14 colonies have shrunken to 12). Which is right? Maybe the answer depends on whether we are trying to keep bees or are trying to get grant money.

What about this analogy: when we plant vegetables in our garden, the instructions tell us to plant so many seeds per foot. Then they say that once the seedlings are a certain height, we should go down the row and thin the plants out to a fewer number per foot. Let's say we plant the seeds at two per foot and they all come up. We thin them to one per foot. We now have a 50% loss, according the math BIP uses to count losses. Can we take that off of our taxes?

Even simpler: if someone takes two steps forward and one step back, it seems to me they are one step ahead but by BIP's math they are one step behind. With BIP's formula, there can never be gains, only "losses".

But winter losses are unsustainable!

Okay, so we aren't actually losing total inventory, but the losses (or shrinkages), year after year, are unsustainable, aren't they? At what point do we have to admit that something "unsustainable" is being sustained after all? In fact, Peter Borst, in an article in *American Bee Journal*,[2] says that today's "unprecedented losses" aren't really unprecedented. In the 1940's, beekeeping expert G.H. Cale wrote:

> "*From our own experience we find thirty-five out of one hundred hives are empty each spring from all causes and must be replaced one way or another.*"

Thirty-five out of 100, 35%, is right in the middle of the range that beekeepers are currently lamenting.

One part of the issue is that we have only recently started paying close attention. Before BIP started its annual survey, winter, summer and annual loss (or shrinkage) numbers were anecdotal, not rigorously assessed, and those are the numbers we compare against when we use the terms "unprecedented" and "unsustainable." Furthermore, Borst explains that wise beekeepers have always "taken winter losses in the fall" (see September 2014 "Controlling Winter Losses" and July 2015 "The Flip Side of Making Splits"), therefore so-called winter losses were generally lower. But with fees for winter pollination of almonds reaching $200 per colony, there is a strong incentive to keep all colonies alive, regardless of inherent potential. It is the colony counts that become important, more so than the colony health or strength. And so commercial winter losses are higher than they would be if many of those losses were proactively taken in the fall. The net result is the same, but the counts are pushed from the fall to the winter.

Chickens versus bluebirds

In an excellent paper entitled "Colony Collapse Disorder: The Market Response to Bee Disaster",[3] Randal Rucker and Wally Thurman, agricultural economists at Montana State and NCSU, respectively, point out the obvious but rarely stated fact that honey bees are agricultural livestock, not wildlife. The supply of honey bees is dictated not by the availability of habitat, climate change or even pesticide use (or misuse) but instead it ebbs and flows depending on the price of honey and the rental rate for pollination. When pollination rates and honey prices are up, as they are now, the inventory of honey bees goes up. When they are down, it goes down. The same holds true for cows, pigs and chickens with respect to their markets. There are factors at any given point in time that may make beekeeping more difficult than at other times, but beekeepers adapt very quickly to an ever-changing production environment and the impacts are short-lived.

Implications for hobby beekeepers

What does all this mean for hobby beekeepers? For one thing, since The Public is completely ignorant about anything related to

[2] Peter Loring Borst, "The Fall and Rise of the Honey Bee", *American Bee Journal*, March 2015, p. 315

[3] Randal R. Rucker and Wallace N. Thurman, *"Colony Collapse Disorder: The Market Response to Bee Disease," PERC Policy Series, No. 50, January 2012*

beekeeping, it is our responsibility to say what we mean and mean what we say. If we say honey bees are declining without explaining that we don't mean total inventories, just that industry-wide same-year growth is less than desired, we are lying to people. Lying is a bad thing. It causes people to make bad policy decisions and it destroys trust in us once the truth comes out.

Furthermore, obfuscation about colony counts causes people, including beekeepers, to focus on the wrong issues. For example, if high losses/shrinkages are considered to be "just the way things are", then bad beekeeping becomes acceptable. It becomes okay to overlook the fact that, according to BIP, the best beekeepers, the ones who manage their colonies with care, lose very few colonies. Meanwhile the majority of hobby beekeepers (58% in 2014) don't even practice basic Varroa management and, no surprise, have high levels of disease and death in their colonies.

Our focus as beekeepers shouldn't be on what is or is not happening to other beekeepers in distant lands but instead what is happening in our own bee yard. National and world-wide "losses", regardless of whether they are high or low, are irrelevant to the health of the bees under our own care.

Do you want to actually do something about colony deaths? Don't sign a petition – instead take a beekeeping class! (See January 2016 "Get Thee to a Bee School").

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Looking for a truly desperate cause? According to the US Agricultural Census, the number of llamas is honestly decreasing at an alarming rate. Let's get those petitions circulating!