



Honey Bee Colony Losses Worldwide, and Potential Impacts on U.S. Agriculture



Jeff Pettis, USDA-ARS, MD

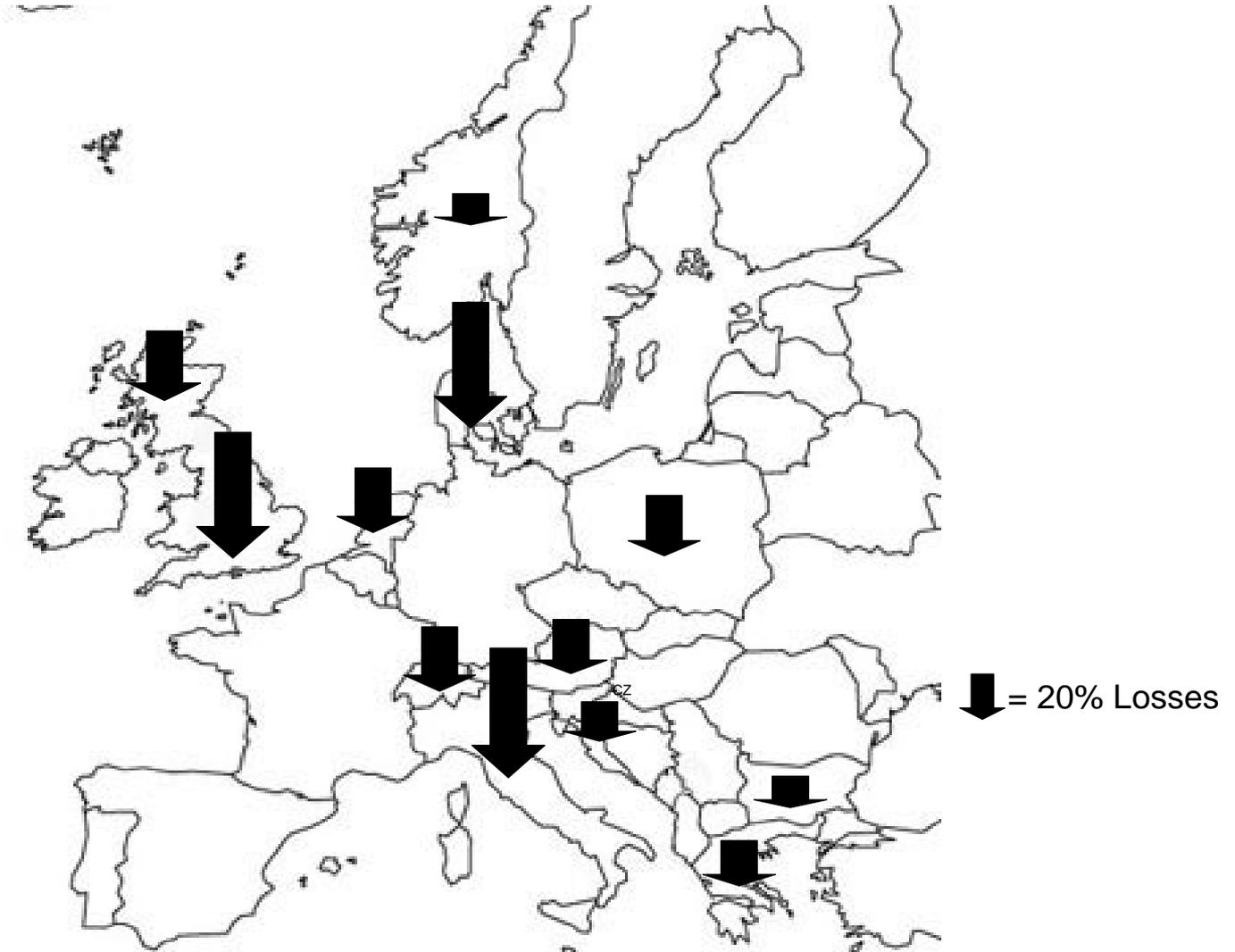
Dennis vanEngelsdorp, Penn State

Peter Neumann, Bern Switzerland



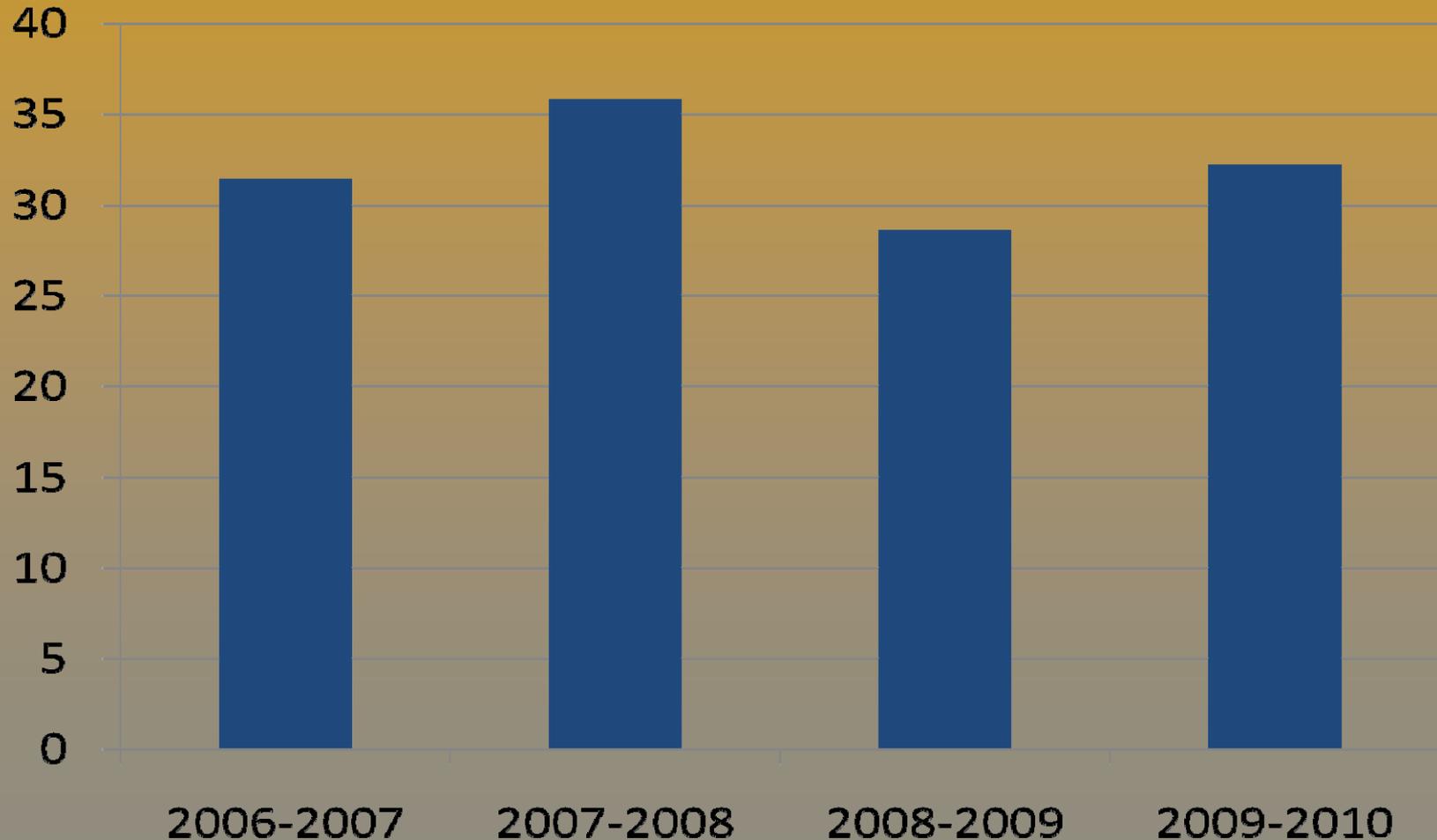
Recent colony losses

Winter 2009/2010

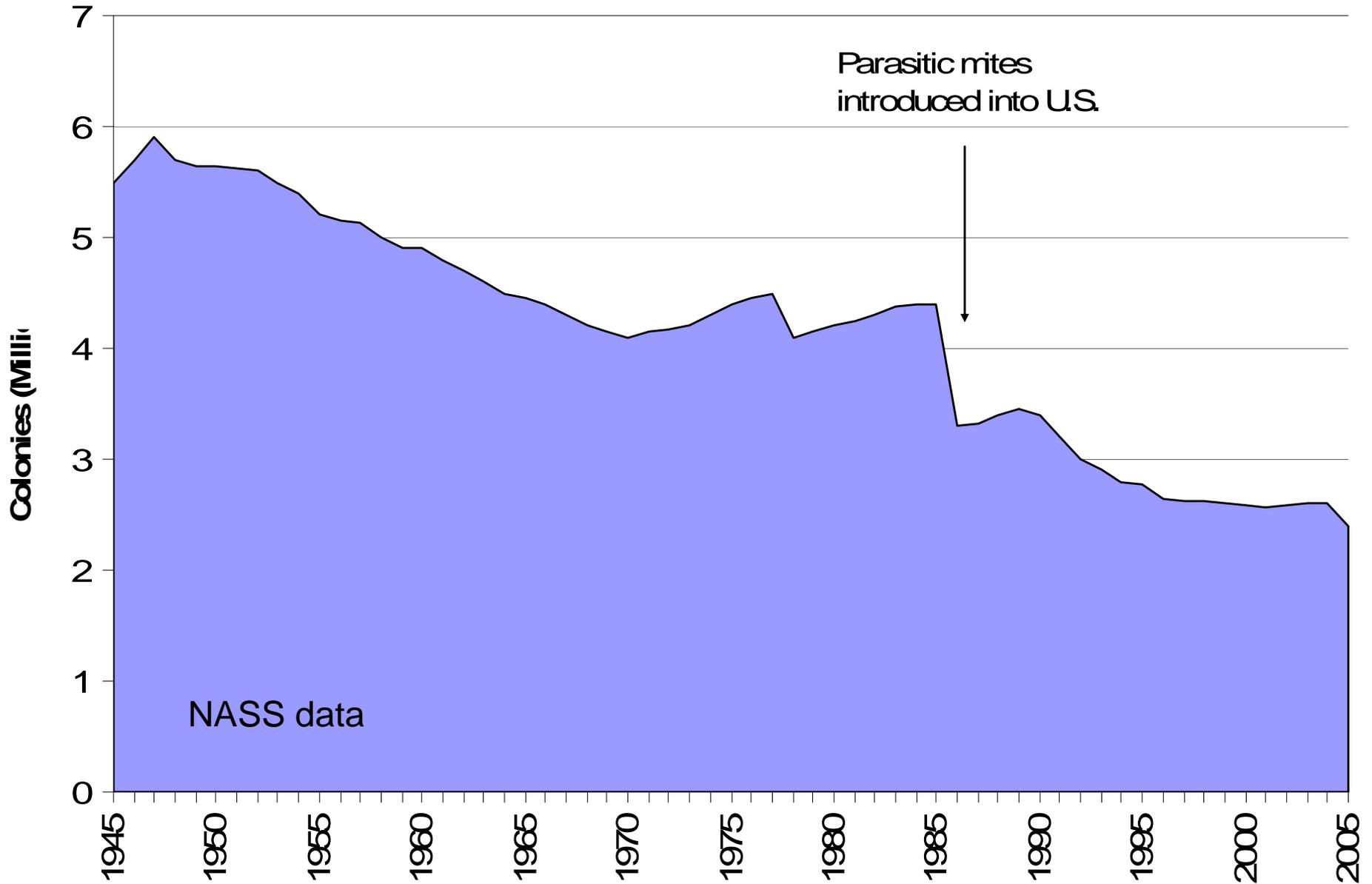


Neumann and Carreck, 2010

U.S. Honey Bee Colony Losses over a four year period, 2007-10



Managed Honey Bee Colonies in the U.S.



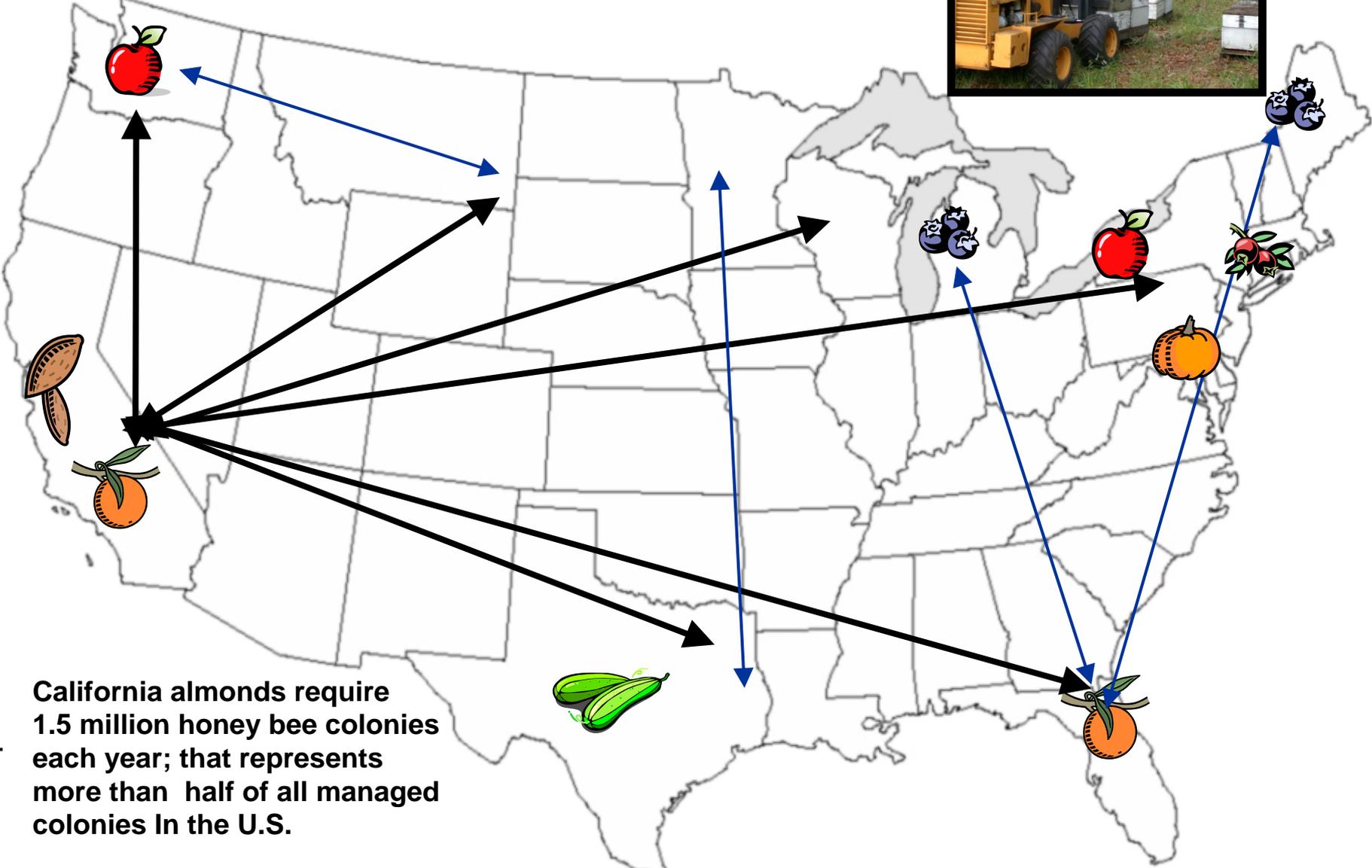
NASS data

Parasitic mites
introduced into U.S.



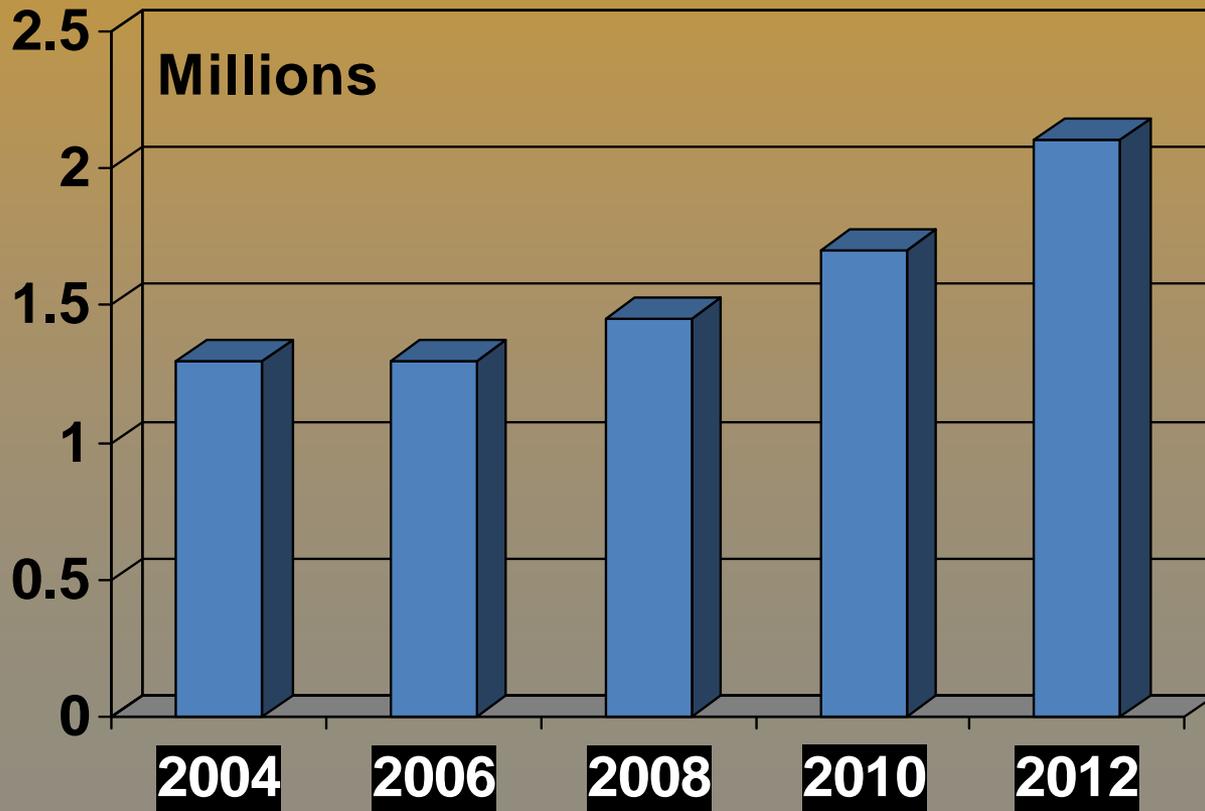


Major Migratory Routes of Honey Bee Colonies

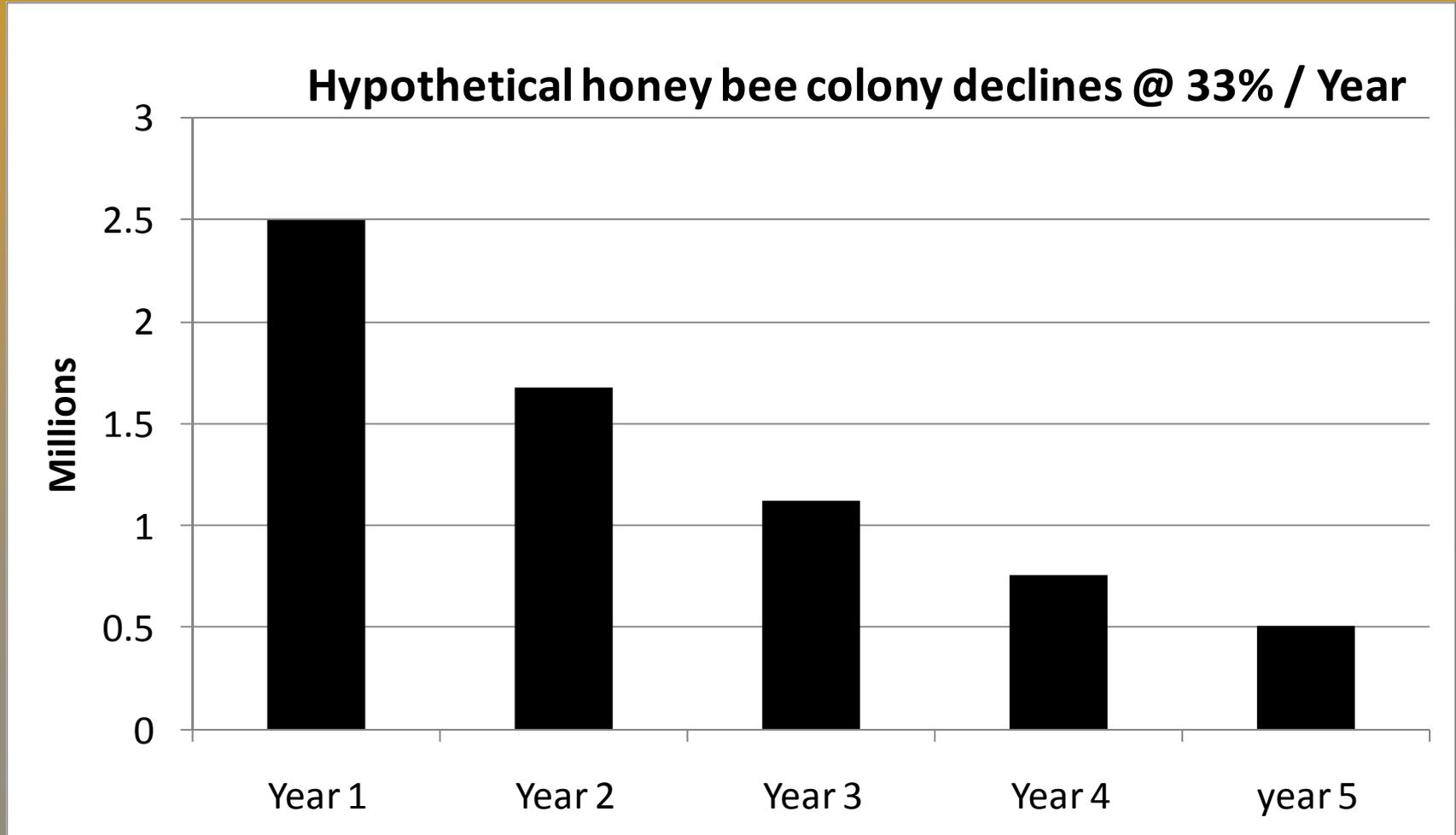


California almonds require 1.5 million honey bee colonies each year; that represents more than half of all managed colonies in the U.S.

Honey bee colonies needed in California almonds



Hypothetical colony decline in the US over a 5-year period w/ 33% / yr.





Almonds Cost / Colony

1990s	\$75
2000s	\$150

Low Bush Blueberries

1990s	\$50
2000s	\$100



With continued bee colony losses can we meet pollination demand?



Importation of package bees from Australia?



USDA-APHIS National Bee Pest Survey, 13 States in 2009



Survey for exotic bee pests and for levels of Varroa, Nosema, virus, etc.





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A honey bee hive and organic vegetable garden on the White House lawn, thanks to Michele Obama