

Could It Bee?: How to Decide Whether to Keep Bees

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Introduction: Honeybees are critical to Minnesota's environment and agricultural economy but they are declining at alarming rates all around the world. Hobby beekeeping is becoming increasingly popular and is an effective way to help reverse the decline in bee populations, which can be done successfully nearly anywhere with the right investment of space, time and money. The ultimate goal of this project is to answer the question "Should I get bees?" Beekeeping isn't necessarily difficult but there are potential barriers that could prevent someone from being able to keep their own bees. Therefore, the key findings from my analysis of hobby beekeeping handbooks and interviews of experienced hobby beekeepers in Minnesota develop a series of questions to ask oneself in order to answer "Should I get bees?"

In addition, information and graphics of the essential equipment required for a beekeeping operation of a single hive is included. One considering hobby beekeeping should ask themselves: Is it legal in my area? Do I have the time and money? Does my interest go beyond the benefits of the products produced by the hive?

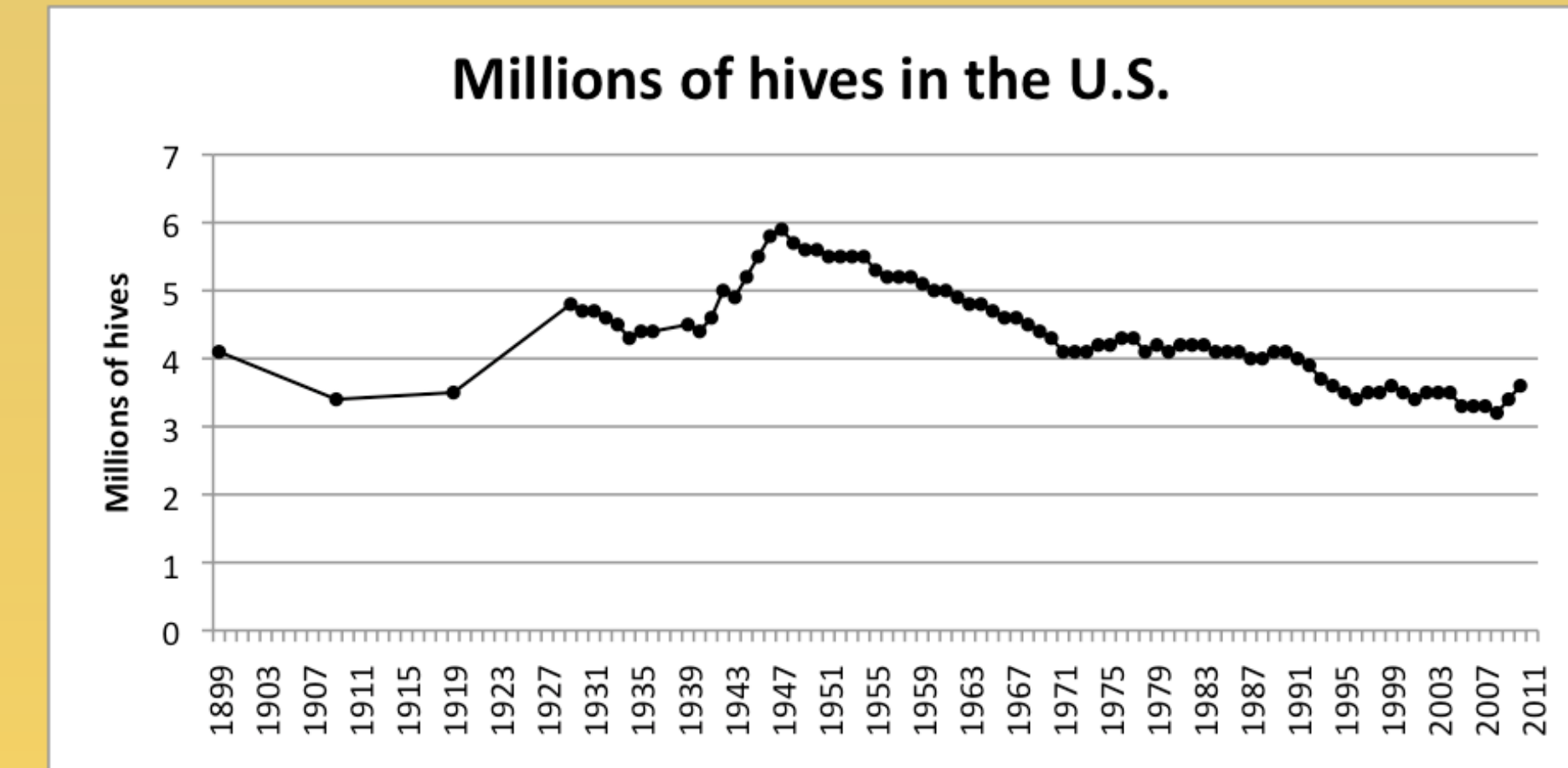
Methods: I analyzed numerous journals, articles, books, legal documents and websites to determine a basic model for first time beekeepers including if it is legal, the essential equipment, how much it will cost, how much work is required, the benefits of keeping bees and how to decide if beekeeping is right for you. In addition, I conducted multiple interviews with hobby beekeepers in Minnesota to understand different experiences of backyard beekeepers, establish particular issues specific to Minnesota and provide support to my basic model for deciding whether to get bees.

Health Benefits	Economic Benefits	Environmental Benefits	Other Benefits Mentioned in Interviews
Honey has anti-bacterial, anti-microbial, and antioxidant properties. Eating local honey can lower the effects of allergies.	Each hive can yield around \$200 worth of honey per year.	Food mile reduction (reduces the use of fossil fuels and packaging/landfills).	Brad Sinn-"We find observing them interesting and small time beekeepers like us help stabilize the pollinator population."
Honey contains minerals, vitamins and protein and is free of fat and cholesterol.	Increases vegetable garden production.	Being apart of the "Save the Bees" movement (increased population of local bees).	Mark Muldrow-"It was beneficial for teaching my kids responsibility and money management skills."
Stress relief	Save money on local honey and other by-products.	Aids pollination of local fruits, vegetables, and berries as well as native plants.	Mark Muldrow-"I enjoy meeting new people, making honey products, and the never ending learning experience."

Table 1: Lists the numerous health, economic, environmental and other benefits of hobby beekeeping.

Laws/Regulation: The Minnesota Department of Agriculture doesn't require annual registration or a fee for a hive. However, each city is different, some specify requirements that need to be met in order to keep bees, some don't permit it at all and others have no bee ordinance. For example, in North St.Paul honey bees are classified as a farm animal and no farm animals are allowed within city limits. In Minneapolis you must get a permit from Minneapolis Animal Care and Control. In Minnetonka there is no ordinance on bees, so bees are allowed unless they are a nuisance. To look up your location go to <https://www.beelab.umn.edu/resources-beekeepers/ordinances>

- Beekeeping in the United States**
- There are over 200,000 beekeepers in the United States.
 - Every state has honeybees and beekeepers.
 - The United States Department of Agriculture estimates about 99 percent of all beekeepers are now hobbyists or part-timers - not professionals.
 - Minnesota is the fifth largest honey producing state.



Graph 1: Displays the number of hives in the United States. The number of hives has declined significantly since WWII until just recently a reverse in this decline has begun. The number of commercial beekeepers has dwindled because of the decline in profitability from Colony Collapse Disorder and lower honey prices. The increased popularity of hobby beekeeping is largely responsible for this recent reverse of decline. <http://scientificbeekeeping.com/sick-bees-part-18f8-colony-collapse-revisited-beekeeping-economics/>

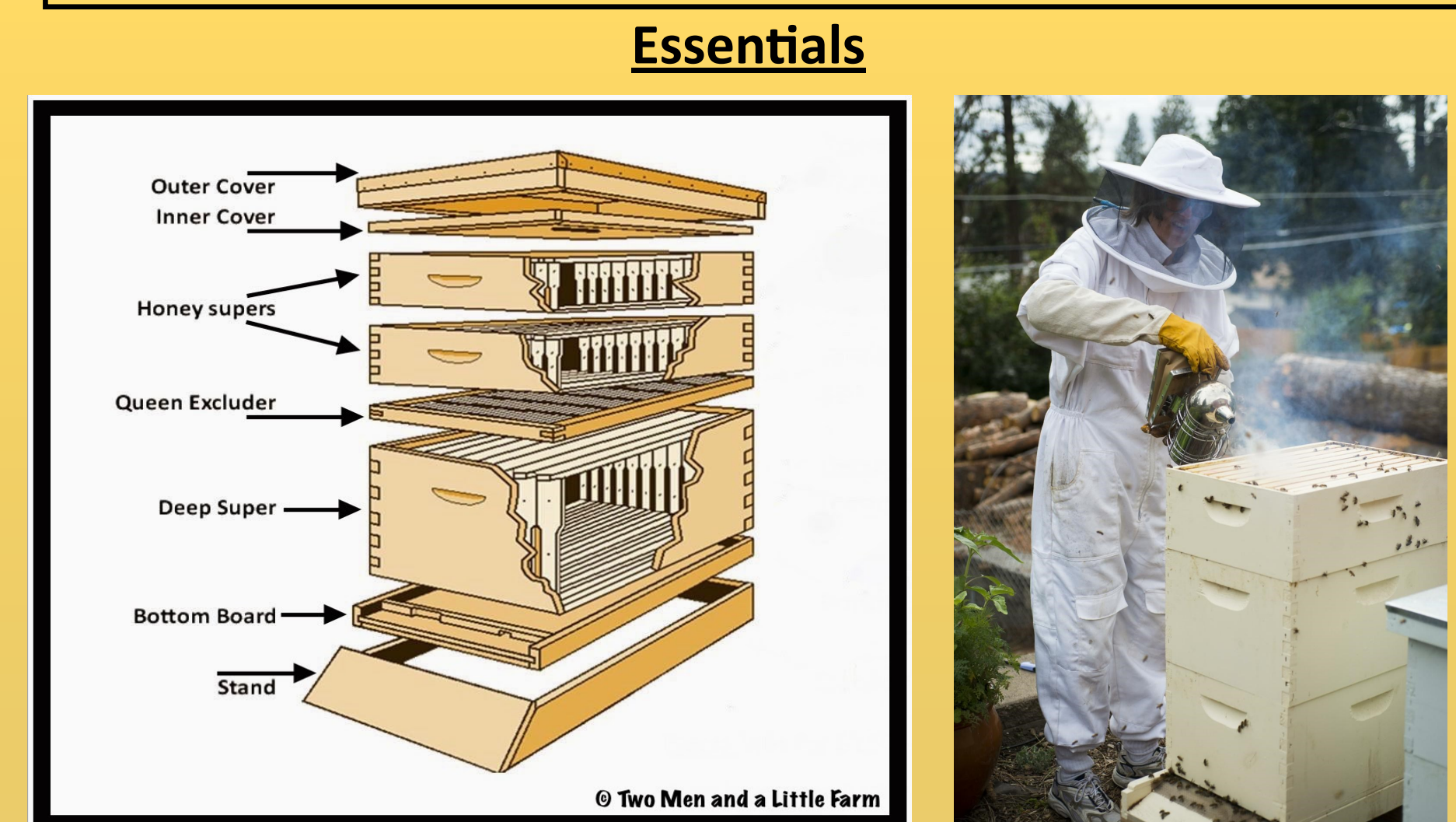


Figure 2: This image demonstrates the components of a standard Langstroth hive, which is most commonly used in the US.



Figure 3: Beekeeper applying smoke to hive before inspection.

- Costs of Essential Equipment: (est. minimum \$ bought separately)**
- Hive= \$160-300
 - Package of bees= \$90-115
 - Protective gear (suit, veil, gloves)= \$100
 - Smoker=\$10-20
 - Hive tool=\$8
- Starter kits containing all the essential gear are also available for purchase running about \$400-500. Local Beekeeper's, Brad Sinn and Mark Muldrow, both said they spent around \$500 initially to get started with their operations.

	Top Bar Hive	Warre Hive	Langstroth Hive
Overview	Simple, easy to access, no heavy lifting, and few accessories required.	Most hands-off hive, ideal for those looking for a simple-to-manage hive with lighter boxes.	Most common in North America. Heavy boxes, lots of accessories and resources available.
Cost	\$160-200 More expensive with all the bells and whistles. Few accessories required	\$240-300 Few accessories required	\$175 Required accessories and components add up and are costly
Maintenance	Most frequent maintenance and monitoring.	Least maintenance	Relatively little maintenance
Weight	Easiest on the back. Lifting only involves 3-7lb combs.	Significantly lighter than Langstroth but heavier than top bar hive	Heaviest, between around 30-80lbs, depending on the box size.
Production	Experts harvest similar honey quantities to the Langstroth	Comparable to Langstroth if boxes are added on time.	Highest honey production due to large box sizes
Colony Health	Natural, foundationless combs improve colony health	Natural, foundationless combs improve colony health	Foundationless, same likelihood for survival as others

Table 2: Compares the differences of three hive choices. It is important for beginner beekeepers to choose a hive they are physically capable of maintaining, have the time to keep up with maintenance/monitoring and are able to afford.

Interviews	Brad Sinn 3 years experience	Mark Muldrow Minimum 15 years experience
Biggest Challenge Starting Out?	Minnesota Winter	Minnesota Winter
Time Invested In A Week? (Spring/Summer)	An hour or two	30 min.
Best Tip For A Beginner Beekeeper?	"Join an area beekeeping association in the winter, learn what you can and go for it."	"Get a Mentor"
Final Suggestions?	"There also isn't just "one way" to do anything. The old guys say if you ask 4 beekeepers how to do something, you'll get 5 answers. It's about being knowledgeable but also paying attention & being a problem solver."	"Be willing to commit to it, it won't pay off if you don't put the time in and if you do it wrong you're going to get stung."

Table 3: Displays a comparison of two MN beekeepers interviews with different levels of experience. Both beekeepers suggest it will take great commitment to become a successful beekeeper and its not about the money.

- Conclusion:**
1. Is it legal to keep bees in my area?
 2. Do I have enough money? It will cost about \$500 to get all the essential equipment to get started.
 3. Do I have enough time? Assume an hour a week will be needed to be spent tending to the hive. Plus, it will require research and planning months in advance of acquiring one's first hive.
 4. Does my interest go beyond the benefits of the products from the hive? Hobby beekeepers do it for the experience and fascination with bees. One should be willing to go beyond the bare minimum investment of time and money to commit to this hobby.