An assessment of the size of the monarch butterfly release industry in 2014

Tracy A. Villareal Big Tree Butterflies

Conducted with assistance from the International Butterfly Breeders Association and the Association for Butterflies

Background

 ESA petition to list monarchs as threatened claims millions and millions are released

 Based on a New York Time op-ed article by Prof. Jeffrey Lockwood in 2006 (est. 11 million butterflies per year released)

Petitioners did not check actual calculation.
 Of the 11 million per year estimated, only ~32,000 per year were monarchs in Lockwood's calculation.

IBBA issues press release pointing out this serious error

But how many are actually released?

Survey of IBBA/AFB membership

Only U.S. farms

Only operations named on state maps from IBBA, list of operations from AFB.

Data linking names and size of farms was agreed to be held in confidence. Only T. Villareal has that data.

Methodology

- Farms self-reported monarchs sold by them (regardless of source) that could be potentially released.
- All farms contacted by telephone and then by email if no initial phone contact)
- Reported either a single number or size category
- Results use actual number where reported or the max/min of size bin to generate the range

Methodology: Size categories

• Small 1-499

• Medium 500-1,999

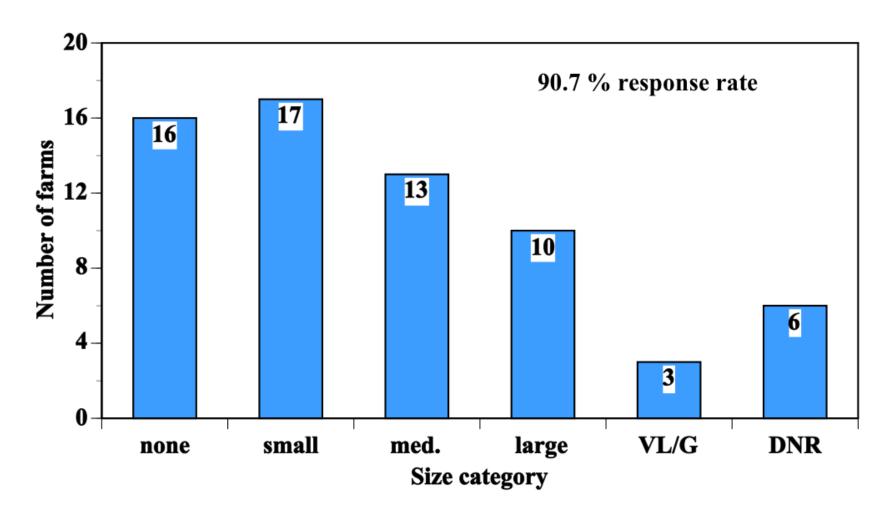
• Large 2,000-9,999

Very Large 10,000-24,999

• Giant 25,000-50,000

Adult monarchs sold for release per year. Some (<5) farms included all life stages. The contribution to adult releases is unknown but likely <100%. Thus, the reported numbers are a slight over-estimate. Six farms did not respond. Based on interviews with long-timers in the industry, they are in the small/medium category, if they are doing releases at all.

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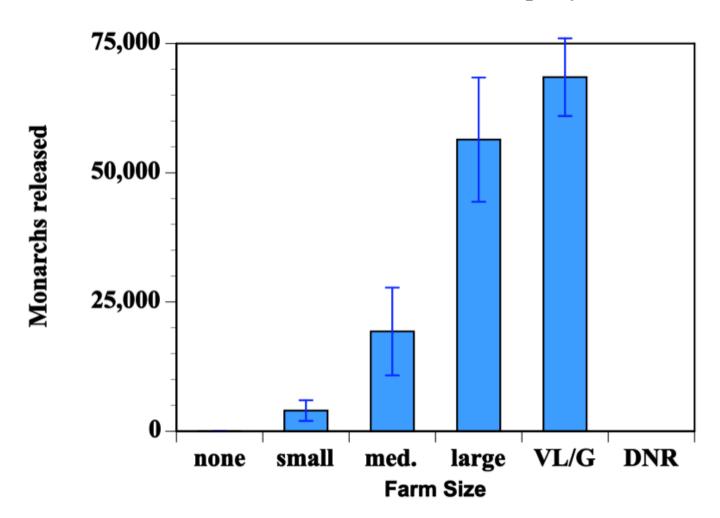


N = 65

Distribution of farms by size

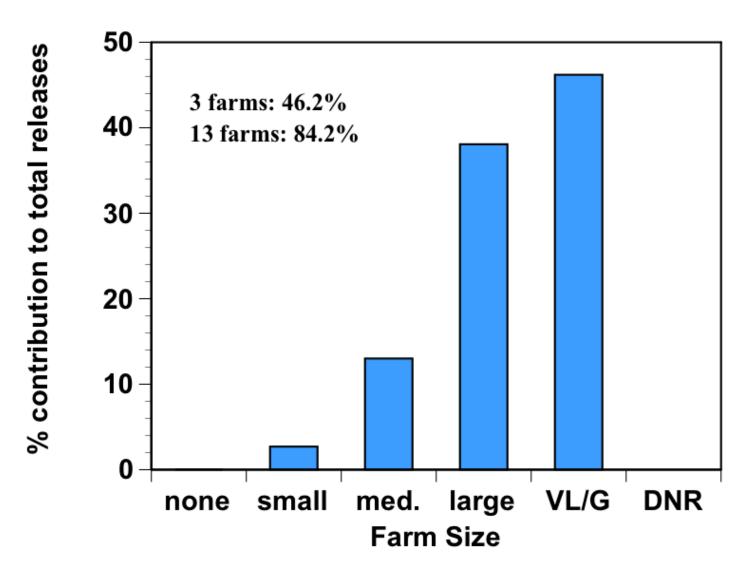
DNR:did not respond

118,230 to 193,204 monarchs per year released



using average of ranges in size bins error bars are ranges

using average of ranges in size bins



Summary

- Industry is dominated by a few large farms
- 46 of the 59 operations responding (86.8%)
 account for only 15.8% of the monarchs shipped
 for release. Many do not raise monarchs for
 release at all.
- The farms surveyed released 118,230 to 193,204 monarchs per year
- About 6 times the NYT estimate are shipped, but far less than millions and millions
- Includes only monarchs sold for release, not monarchs sold for exhibits and butterfly houses.

Summary (cont.)

- We don't know the contribution of non-member farms.
- There are at least 2 non-member operations that merit consideration due to their potential size.
 They did not respond to messages.
- Monarch Watch is not included since they do not ship adults for release.
- Estimating contributions by non-respondents and non-members suggests <250,000 monarchs are shipped for release annually.