

Estimated Pesticide Use on Cape Cod for Vegetation Management

For consideration by the Barnstable Ad Hoc Vegetation Management Committee

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Objective: Provide an overview of the relative contributions from the most important land use categories to the total pesticide use for vegetation management on Cape Cod.

The overview presented here was determined based on land use data and typical pesticide use data for the various use patterns. This is not an exact determination of the pesticide use on Cape Cod. Comprehensive use data were only available for a few use categories, such as ROW management and mosquito control. Also for Cape Cod golf courses, use data were made available. For cranberry bogs, crop and regional specific estimates were used (see page 2). Estimates of pesticide use in the residential and commercial categories were made based on national use data and adjusted for regional characteristics using professional judgment (see page 2). Mosquito control data were included for comparison purposes since it is also a wide-area use pattern. Some minor use categories such as applications on school properties and athletic fields, and agriculture other than cranberry bogs were not included. The graph below shows the total use of pesticides (expressed in lbs of active ingredients) in various use patterns with the most significant contributions to the overall pesticide use.

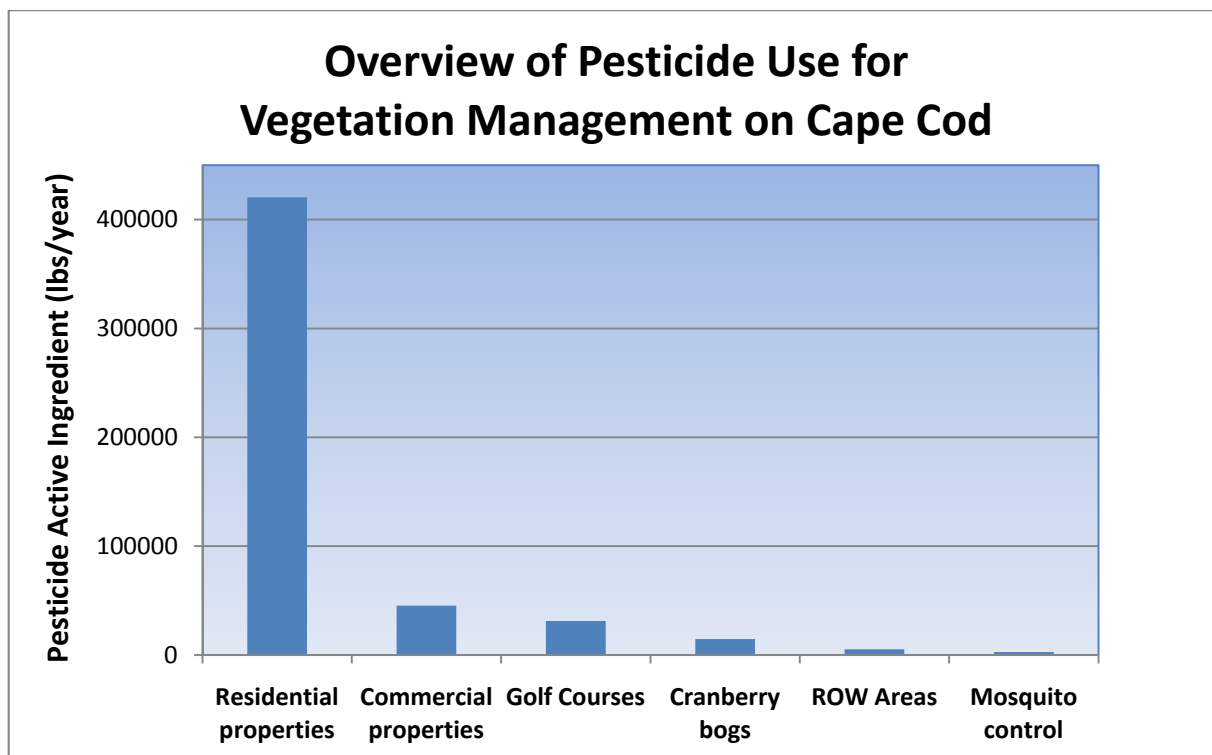


Figure 1 Overview of pesticide use for vegetation management on Cape Cod. Data were derived from land use data (see below) and estimates of typical average pesticide use data in the various use categories (see below). Pesticide (i.e., larvicide) use data for mosquito control data were taken from the 2010 report.

Disclaimer: This overview does not necessarily represent the exact pesticide use in the various use categories. Pesticide use estimates in certain categories was based on national use data. The main purpose is to show the relative contributions from the various land use categories.

The data for the graph displayed in Fig. 1 are presented in Table 1 below. Land use data were provided by the Cape Cod Commission.

| Land Use | Area (acres) | Application Factor (lbs a.i./acre) | Amount of Pesticide Active Ingredients per Year (lbs) | Comments |
|------------------------|--------------|------------------------------------|---|-----------------|
| Residential properties | 103300 | 4.1 | 420431 | See Footnote 1) |
| Commercial properties | 9068 | 5 | 45340 | See Footnote 2) |
| Golf Courses | 3000 | 10.4 | 31200 | See Footnote 3) |
| Cranberry bogs | 1700 | 8.6 | 14620 | See Footnote 4) |
| ROW Areas | 6254 | 2.8 | 2814 | See Footnote 5) |

Footnotes:

- 1) Robbins and Birkenholtz (2003) indicate a typical total pesticide load of 8.14 lbs of active ingredients per season. For the analysis presented here, a conservative value of 50% of the reported value was used to account for residents that do not apply pesticides or use less than the typical amount.
- 2) Based on the value discussed above, a value of 5 lbs a.i./acre was used considering that commercial properties typically use less pesticides than homeowners for economic reasons.
- 3) The pesticide use data were provided for a Cape Cod golf club. This is representative of a golf course that is operated under an Integrated Golf Course Management Plan which is typical of most golf courses today.
- 4) This estimate is based on data published by Hilary Sandler from the UMass Cranberry Extension Station (Sandler, 2008).
- 5) This estimate is based on the average rates from applications done in 2008/2009 that were provided by NSTAR. The area was calculated based on the length of rights-of-way (258 miles) and a conservative value for the average width of the rights-of-way corridor of 200 feet. In addition, it was assumed that only one-third of the rights-of-way area would be treated in a given year.

References:

- Robbins and Birkenholtz, 2003. Turfgrass revolution: Measuring the expansion of the American Lawn. *Land Use Policy*, 20:181-194
- Sandler, H. 2008. Challenges in integrated pest management for MA cranberry production: A historical perspective to inform the future. *In: Crop Protection Research Advances* (Eds.: Burton and Williams), Nova Science Publishers, Inc.

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