MOWING FOR POLLINATORS

Hosting Pollinators on Diversified Farms

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https://www.uvm.edu/extension/pollinator-resources

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If your crops are pollinator dependent for yield and quality, or if you are generally interested in conserving pollinators on your farm, there are many management activities you can adopt to support pollinator habitat and food resources. Adjusting mowing activities is one way to promote pollinator health in your landscape. Limiting mowing, grazing, or haying to 25%-33% of non-cultivated farmland at any one time protects pollinators, their resources, and foraging larvae and adults. To maximize foraging and egg-laying opportunities, maintenance activities should be avoided while plants are in flower. Ideally, mowing for pollinator health would be done only in the fall or winter (Adapted from the NRCS New England Pollinator Handbook, 2009).

However, we know not all areas can be managed for pollinators. Invasive plants may need to be mowed before setting seed or to set back plant development and establishment. Rodents may be a challenge in production areas, such as high tunnels, and mowing helps to deter populations. Hay may need frequent harvesting for feed quality. Regardless of these limitations, there are many mowing practices that can help pollinators.

- **Time of year**:
  - Where possible wait until after first hard frost to mow, **when flowers are not in bloom**. Avoid spring mowing, as wet fields may delay entry and flowering and pollinator activity may get ahead of the ability to mow.
  - Delay spring mowing ("no mow May") so flowers like dandelions can provide early season food resources.
- **Frequency**:
  - Where can you just **stop mowing**? Such as that frequently flooded area where you regularly struggle to grow a successful crop?
  - **Lazy lawn mowing**, "mow every two or three weeks", saves time, money, and flowers while some maintenance **allows for clover, dandelion, and other floral emergence.** [1]
  - Consider **mowing rotations** in fields mowed to repress forests and brush from taking over. Maybe limit to 1/4 to 1/3 of the entire space mowed one year and another area of this same size is mowed the following year. This helps provide late season floral resources, protect overwintering pollinator habitat, and foraging larvae and adults. [2]
  - Mowing at some frequency can be an important too, as grasses do well in mowed environments and can help reduce weed pressure that might overtake native flowering species.

- **Mowing pattern**:
  - Mow or brush hog **inside-out**. When cutting fields, starting in the middle rather than outside borders pushes insects and wildlife to field edges with each pass while minimizing their exposure and flight distance to protected areas, like a hedgerow or forest. [3]

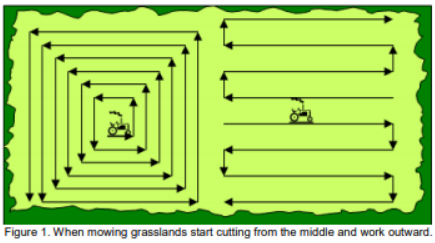

Figure 1. When mowing grasslands start cutting from the middle and work outward.

  - In a **hay system** where inside-out mowing is not feasible**, square up** your fields and leave corner patch habitat for pollinators.
  - Leave one or more **patches** within your farm landscape unmowed for the entire year. Mowing a mosaic of patches over several years, where no single area is mowed more than once a year, also is helpful.
  - Research suggests **small, scattered patches** rather than one large, centralized habitat area positively correlates with increases in pollinator communities. [4]
  - Think about **distance to crops**. Try keeping patches of floral resources within **300 feet** of your pollinated crops. Flight distances of small native bees might be as little as 500 feet, while larger bumble bees may forage a mile or more away from their nest. Keep habitat as close to the crops as possible to encourage pollination services. [2]
- **Aim high** where you can:
  - If possible, raise mower deck or lower skid shoes on field mowing equipment to raise the cutting height to **5 inches**.
  - July and August can be accompanied by a summer dearth period and high mowing can allow low growing flowers, like white clovers, to thrive and supply pollinators with food resources during this time.
  - In a hay system, this height increase may reduce yield an impact forage quality, but also consider that increased residue allows for quicker regrowth of vegetation and faster drying, while also reducing the risk of getting dirt on hay.
  - Mowing at the highest cutting height possible prevents disturbance of established nests or overwintering queens. Where practical, minimum of 12-16 inches is idea for bumble bee conservation. [5]
- **Weeds and invasive species:**
  - Whether invasive plants improve or degrade pollinator habitat is largely unknown. Invasive plants can outcompete native plants that have co-evolved with native bees. However, invasive plant species can be quite attractive to generalist bees and provide pollen and nectar.
  - Research suggests that relative attractiveness of native vs. invasive plants that co-flower with crops may reduce fruit set this was shown in lowbush blueberry in Maine where it the crop had lower fruit set if located near Japanese barberry, compared to lowbush blueberry distant from the invasive plant. [6]
- **Enhance floral resources in mowed areas with frost seeded clovers and wildflowers.**

This handout was developed with guidance from the following resources:

1. https://www.fs.fed.us/nrs/pubs/jrnl/2018/nrs_2018_Lerman_001.pdf
2. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_010204.pdf
3. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_068536.pdf
4. http://millionpollinatorgardens.org/wp-content/uploads/2018/04/Simao_Perfecto_2018.pdf
5. https://xerces.org/sites/default/files/2018-05/12-028_01_XercesSoc_Conserving-Bumble-Bees-Guidelines_web.pdf)
6. Stubbs et al. (2008), https://umaine.edu/mafes/wp-content/uploads/sites/98/2018/07/Bees-and-Their-Habitats-in-Four-New-England-States.pdf