

Cattlemen...

We Seriously Need To Discuss

The Birds and The Bees

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By all accounts, people who study pollinators are raising "Red Flag Warnings."

There is a significant population decline in native pollinators across the U.S. and the world. So much so, that the 2008 and 2014 Farm Bills have programs specific for Pollinator Conservation. There are Natural Resource Conservation Service (<u>NRCS</u>) funds available to create or improve pollinator habitat and for hiring a Technical Service Provider to write plans!





What Has Happened: The destruction and fragmentation of pollinator habitat have led to significant declines in many populations. At least 185 species of pollinators are considered threatened or extinct by the World Conservation Union (IUCN) with at least 2 bat and 13 bird species listed as endangered in the U.S. The health of honeybees, our primary managed crop pollinator has deteriorated in recent years and is our sentinel for other pollinators. Managed colonies of European honeybees have suffered a 50% decline in recent decades and face immediate threats from pesticides, pests, "flower food deserts" and monocultures. These threats to beekeepers have led to unsustainable annual winter losses. Between 2006 and 2014, one in 3 hives were lost each winter.



I am starting the discussion with Cattlemen, because we are landscape environmentalists. We control management of large acreages, have more natural habitat and know how to plant things. I believe we have the ability to get the "biggest bang for the buck."

The Need: Pollination, an ecosystem process, has evolved over millions of years to benefit flowering plants and the pollinators. Pollinators visit flowers for many reasons, including

feeding, pollen collection, and warmth. As they move about, they transfer pollen around the flower and amongst many flowers and is vital to the life cycle of the plant by starting seed and consequently fruit production in flowers. Pollinators provide invaluable service to plants, they are necessary for healthy, highly productive agricultural ecosystems as they ensure fullbodied fruit production.



Ninety percent of plants need the help of pollinators to complete the task of spreading pollen. There are approximately 200,000 different species of animals around the world that act as pollinators. Of those 1,000's are vertebrates not to mention the invertebrates. The western or European honeybee (Apis mellifera), is conceivably the most important pollinator in Florida and North America. Over 50 crops in the U.S. and 13 in Florida either depend on honeybees for pollination or produce more abundantly when honeybees are plentiful. Growers use other managed bee species and there are more than 315 species of wild/unmanaged



bees in Florida playing important roles in the pollination of agricultural crops, natural and managed landscapes. These included mining bees, mason bees, sweat bees, leafcutter bees, feral honeybees, and carpenter bees, among others (Ellis). Also included in the list of pollinators are butterflies, moths, beetles, flies, birds and bats (Selecting Plants for Pollinators)



<u>Why Should We Care:</u> As agriculturalists, we need to be pay attention! Animals pollinate approximately 75% of the crop plants grown for food, fiber, beverage, condiment, spices and medicines worldwide. It has been calculated 1 out of every 4 mouthfuls of foods and beverages are delivered to us by pollinators. Insect pollinated crops contribute \$20 billion to the United States economy in 2000 and \$15 billion of that by honeybees. If this were to include indirect products, such as milk

and beef from cattle fed alfalfa, the value rises to \$40 billion (Native Pollinators. 2005. NRCS #34). Spivak states we have had a 300% increase in crops that need pollination and yet we have 50% fewer hives in the 2000's as we did in the 1940's. In fact, 30% of all hives die each winter.

Recent research has shown that wild native bees (4,000 species) in North American, contribute substantially to crop pollination on farms, where their habitat needs are met. Studies in New Jersey indicated that squash production was the result of 100% pollination by native bees. Securing hives of European honeybees has become more difficult and expensive, protecting and restoring habitat has become more important. Native pollinators need the same pesticide free habitat as do managed bees.

Pollinators not only contribute to human food, they also keep plant communities healthy and provide food and cover for wildlife, prevent erosion and keeping waterways clean. They produced fruits and seeds, which are a major part of the diet of approximately 25 % of bird species, as well as mammals. Flowering plants provide egg laying and nesting sites for many insects, including butterflies. Pollinators support biodiversity and there is a positive correlation between plant diversity and pollinator diversity.





Decline of native pollinators: As a child, I remember clearly lots of white clover and many bees working the clover. As you ran barefoot, you expected an occasional sting when you inadvertently stepped on one. When was the last time you saw bees working the white clover? When was the last time you saw Liatris blooming or Goldenrod? When was the last time you burned your pastures?

Human activities, surely unintentional, have destroyed and fragmented many native pollinator habitats essentially creating "food deserts". Many native habitats are isolated and/or degraded by invasive plant species, making them less suitable for native pollinators and wildlife. These changes lead to the reduction of food sources and sites for mating, nesting, roosting and migration. "Excessive use and improper application of many pesticides directly kill



pollinators, particularly insects, and herbicides reduce their forage plant diversity by killing wildflowers. As livestock producers, imagine if our herds went without food for a month or food supplies diminish to where the cows lost body condition. We know the outcomes. The pollinators have a dysfunctional food system.



According to Spivak, native pollinator/bee populations suffered a major decline in the 1940's. She theorizes that this in part was due to the advent of the agricultural revolution as we started plowing large fields and planting monocultures, utilized pesticides, "commercial" fertilizer instead of planting cover crops and created "flower food deserts," not to mention the pesticide resi-

dues being found in plant resins (propolis) in hives . So my question to you is...when was the last time you thought about the impact of your spray programs on native pollinators themselves? When was the last time you thought about the value of Spanish needle weeds? When was the last time you even thought that weeds might actually be contributors to our environment?

There are many situations where pest control is necessary and chemical controls must be used. Certain chemistries are known to have negative and long-term impacts on bees, other pollinators, and beneficial arthropods. Others have minimal impacts. The pollinator-protection language that is required to be on pesticide labels will outline how best to minimize these impacts (Ellis). Remember, the label is the law.





What To Do: The first thing we must do is start to think about our pollinators and then start a discussion" among ourselves and learn to identify what we can do individually and as a community to expand our pollinator habitats of "food, shelter, water, space."



Secondly, we need to learn which native plants provide nectar at what time of year and set aside or in unison with livestock, manage those native nectar sources along with our grasses.



Thirdly, we need to identify where "gaps" in nectar production and plant flowering plants exist that will fill those gaps. We will need to utilize the "technical service providers" offered by NRCS and manage, for, not only livestock and "huntable" wildlife, but the wildlife that is less seen.





I believe that with a little consideration, effort, and a bit of knowledge that we can make Central Florida "all- inclusive resort" for pollinators.



References and areas for further study:

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Photos by John and Sharon Gamble







