Lupines!

by Cathy Butcher
Wisconsin Master Naturalist

When Mother Nature first created lupine flowers I believe she was so enchanted with their beauty that she decided there should be many more. I think she must have then handed Father Wind a big handful of seeds to spread around the world. He chose locations with poor sandy soil, planted them gently then patiently waited to see what would happen. What did happen was the development of hundreds of species of lupines. Some became trees, others grew as shrubs, and many bloomed and seeded once per year as annuals. Other species needed two or three years to bloom and produce seeds. Father Wind was pleased with this abundance of beauty, and so was Mother Nature.

This romantic story from my imagination is meant to convey my sense of wonder and interest in this species of wildflowers that first captured my attention when I saw a hillside of stately garden lupines growing in northern Wisconsin. Those plants were probably hybrids of *Lupinus polyphyllus*, a plant native to western North America, but not Wisconsin. The variety of colors I saw that day delightfully ranged from bright white, vibrant yellow, brilliant blue to intense purple with some plants sharing two different colors.

L. polyphyllus commonly known as Washington lupine, or garden lupine, is a short-lived perennial that sends up a stout stem to almost 5 feet. It blooms from the bottom up. The colors of the sweet pea-like flowers range from blue to purple. White flowers are produced occasionally. In the 1800's *L. polyphyllus* was being grown in traditional cottage gardens in England. Sometime around the 1920's, George Russell, an unknown gardener

working in York, England began working to improve the *L. polyphyllus* species. He specifically sought to achieve higher density of blooms along the tall stems, a longer blooming period, and more variety and intensity of colors. After several decades of cross breeding lupines, Russell created magnificent plants with the qualities he desired. These lupines became known as Russell hybrids. The seeds were eventually made available to the public and their popularity soared. It is believed that many of the roadside lupines in northern Wisconsin are naturalized Russell hybrids. However, after several generations the plants begin reverting back to the mostly blue and purple colors of the parent plants, yet the effect remains stunning. Hundreds of plants appear in meadows and line roadways for miles. Mercer, Wisconsin celebrates a yearly Lupine Junefest where bicyclists can enjoy riding through 50 miles of paved roads saturated with lupine blooms.

Wisconsin does have a native lupine known as the sundial lupine, or *L. perennis* L. This smaller plant only reaches about 2 feet in height. The blooms are mostly blue although white ones occasionally appear. As with the garden lupine, the leaves are palmately divided with the sundial lupine having 7-11 leaflets and the garden lupine having 9-15 leaflets. Spread your fingers, look at your hand and you will have an idea of the leaf's shape, just add a few more fingers! The sundial lupine is also a native wildflower of Florida but only grows in the northern portion of the state. Other native lupines found in Florida are: *L. diffusus*, sky blue lupine; *L. villosus*, lady lupine; *L. westianus*, Gulf coast lupine; and *L. aridorum*, scrub lupine.


Sky blue lupine

I am familiar with two of the native Florida lupines and they are just as captivatingly beautiful as the Washington lupines even though they differ in size and color. Sky blue lupine and scrub lupine will never reach the height attained by *L. polyphyllis*. They top out at about 3 feet. Both have velvety oval shaped leaves, instead of palmate, and fuzzy seedpods which are typical of many lupine species. Sky blue lupine is fairly common in central Florida and I have been astonished by the prolific bloom that takes place in pastures along the I-4 corridor between U.S. Highway 27 and Kissimmee. The gray-green foliage and vibrant blue flowers seem to dot acres of this gently rolling, sandy landscape. Much of that land is for sale and will likely be swallowed up by development. The future of sky blue lupine may be at stake as more of its habitat is altered for human use.

While sky blue lupine may still be common, scrub lupine is the rarest of the rare. This pale pink-flowered lupine has only been known to exist on the well-drained sandy soils of the "ancient islands" of

central Florida. These prehistoric desert ridges run for a hundred miles down the center of the state. They were the only land remaining above sea level during times that the rest of the peninsula was submerged over a million years ago. Isolation and harsh conditions of these ridges caused unique plants and wildlife to develop. They are endemic to Florida meaning they are found nowhere else on earth. Scrub lupine only developed on what is called the Mt. Dora and Winter Haven Ridges in Orange and Polk counties.


Scrub lupine

I had my first introduction to scrub lupines through volunteer work with the Ridge Rangers, a group of hardy folks who help restore wildlife habitat on Florida Wildlife Commission-managed lands in central Florida. They also assist researchers with the Bok Tower Rare Plant Conservation Program.

Several years ago I noticed a Ridge Ranger workday scheduled to collect data on scrub lupines at Lake Blue Scrub, a wildlife preserve located not far from where I lived. Reading about the rareness of this plant led me to assume I would probably not be allowed within trampling distance. Much to my surprise that day, I found my face buried within the soft, fuzzy plants counting blooming stems.

Collecting this information is critical for Bok Tower rare plant specialist, Juliet Rynear, whose research on these plants will hopefully lead to the solution for saving them from extinction. There are only a few populations of scrub lupines left. Juliet monitors several research sites in an attempt to establish sustainable populations. One such site is located at Mackay Gardens and Lakeside Preserve in Lake Alfred.

Propagating enough plants for these test sites presented a big challenge. Scrub lupines simply do not tolerate being transplanted from the wild. Starting from seeds seemed to be the best option. But seeds of many lupine species have a very hard covering that needs to be worn down before germination can occur. Naturally this might take up to a year or longer while weathering processes break down the seed coat. Mechanical abrasion speeds up the process considerably. Thus, I found myself leaving the Bok Tower Rare Plant facilities one day with bloody fingertips after an afternoon spent rubbing hundreds of tiny, moist lupine seeds across fine sandpaper in an attempt to scarify the seed coat. I also was given the opportunity to help Juliet plant these seeds in specialized potting soil to germinate in the greenhouse and later transplant the precious seedlings to the Mackay research site. No doubt Juliet is the surrogate mother of her scrub lupines but I felt like a proud nanny!

Even though the fate of scrub lupines remains to be seen there are many other lupine species still thriving around the world. Historically, certain species of lupines were cultivated for food, dye, medicine, and animal fodder. Although some are edible others are poisonous to humans and toxic to livestock. Lupines have also been used since ancient times to enrich soil fertility. Being a member of the legume family, they have the ability to take nitrogen from the air and convert it to a usable form in the soil for other plants. So, for centuries, they have been grown as a green manure crop, one that is grown almost to maturity and then cut or tilled back into the soil to boost the fertility for other crops and create good soil structure.

So how do you pronounce lupine? **Loo-pin!**

Photo credits: Cathy Butcher/ Paul Butcher

Photos top to bottom: Cathy Butcher and roadside lupines, northern Wisconsin; roadside lupines northern Wisconsin; sky blue lupines Lake Alfred, Florida; scrub lupines, Lake Blue Scrub, Auburndale, Florida.