



Published by the Tallgrass Prairie Preserve Docent Program

Distributed to Volunteers and Supporters of the Oklahoma Chapter of The Nature Conservancy

### CARL WILHITE

—Andrew Donovan-Shead

Carl Wilhite died this month after a struggle for life in the intensive care unit of Saint Francis Hospital.

Bill Rinehart said of Carl: “According to his family survivors, he always looked forward to his trips to the prairie and got him self up emotionally for those occasions. He loved looking at the prairie and watching the bison. As [some of] you know, he had health problems and had been my fourth-Thursday-of-the-month sidekick for several years, working the Gift Shop when he could. I’ll miss him.”

Mary Ellen and Dean Johnston said: “Our Audubon Society here in Joplin lost a long-time field trip companion, a wild flower photographer and botanist. He did not get to see the planned Wildcat Glades Audubon Nature Center.”

Though gone, Carl lives on in the memories of those who knew him best. His going, while sad, is a part of life that each of us must face one day. While Carl lived he had learned to celebrate Life by being a docent at the Tallgrass Prairie Preserve and involved with the Audubon Society in Joplin. Life dies to be reborn again. Carl does us honor by

reminding us of our mortality and, in doing so, makes us pause to appreciate the jewel-like moment when we can thrill to the ineffable beauty of being an integral component of the Living Universe.

### WHAT’S BLOOMING

—Van Vives

The flowers on the prairie have become a little dusty with the hot and dry weather. You will find abundant Ironweed blooming throughout the prairie. Snow-on-the-Mountain started to show up at the beginning of the month. It is during these hot, dry days that the Prairie Dodder appears in its orange entangled masses covering its host plants. The tiny white flowers go unnoticed unless you get on your hands and knees for a closeup view. You can see myriads of Broomweed ready to burst into bloom. I saw a White Wild Indigo plant in full blossom last week, as it makes a late appearance. The Goldenrods are beginning to yellow-up the prairie, along with members of the Sunflower family, Bitterweed, Mullein, and Patridge Pea.

Bitterweed, *Helenium amarum*: This plant is a much-branched plant with fine, thread-like leaves. It grows about twelve inches tall. The flower petals are three-toothed at the ends and it has a yellow rounded disk in the center. It has a strong smell

and cattle usually avoid it. If cattle do eat it their milk has a bitter taste, hence the name.



*Bitterweed, Helenium amarum, by Van Vives*

Baldwin Ironweed, *Vernonia baldwinii*: These plants are somewhat hairy and grow up to five feet tall. The leaves are alternate and up to seven inches long and two-and-a-half inches wide. There is branching only at the top and flowers grow in clusters. There are fifteen to thirty flowers in each cluster. Each flower is tubular, purple to red, and with five recurved lobes. It has a bitter taste and is considered unpalatable. It's name comes from the toughness of the fibrous stems.



*Baldwin Ironweed, Vernonia baldwinii, by Van Vives*

Mullein, *Verbascum thapsus*: Mullein is a biennial member of the snapdragon family. It can grow to six feet tall and is a stocky plant. The leaves are very hairy and up to one foot long. The first year the leaves form a basal rosette. The second year the flower stalk emerges with alternate leaves and a yellow cluster of flowers at the top of the stalk. The plant was used in early times for treating lung diseases, diarrhea, insomnia, and to relieve pain. In the Middle Ages, carrying a twig of mullein was said to protect a person from witchcraft and wild beasts. Native Americans used a tea made from the leaf for coughs. Settlers used the large leaves for baby diapers and toilet paper.



*Mullein, Verbascum thapsus, by Van Vives*

Partridge Pea, *Chamaecrista fasciculata*: This plant grows up to two feet tall. The leaves are alternate and each leaf is divided into about twenty

pairs of leaflets. The leaflets are narrow, less than one inch long and resemble the leaf of the Sensitive Briar. There are yellow flowers, with five petals, at the axil of the stalk. There is a little red at the base of each petal. It was formerly known as *Cassia fasciculata*. Native Americans and settlers used the root for treating fevers, cramps, heart ailments, and constipation.



*Partridge Pea, Chamaecrista fasciculata, by Van Vives*

Prairie Dodder, *Cuscuta pentagona*: Prairie Dodder is a parasitic flowering plant. It receives its nutrients from other plants. This plant has no apparent leaves and the stems are string-like and orange in color. It grows in a web-like fashion and covers other plants as it seeks a suitable host. The flowers are white and less than one-quarter inch wide. This plant is partial to plants of the Aster family for its host.

Snow-on-the-mountain, *Euphorbia marginata*: The stems are stout and finely hairy growing up to three feet tall. The leaves are alternate and up to

four inches long with pointed tips. What looks like large white flowers at the top of the plant are really white leaves with green stripes. The real flowers are in the center of the striped leaves and are white and less than one-half inch wide. The milky sap is a skin irritant to some people. Cattle avoid eating it.



*Prairie Dodder, Cuscuta pentagona, by Van Vives*

Mare's Tail, *Conyza canadensis*: This is a member of the Sunflower family and is also known as Horseweed. It has a single stem and flares out at the top producing a flowerhead of very small, numerous flowers. The pollen acts as an irritant to some people who suffer from hay fever. Native Americans crushed the heads and sniffed them to clear the nasal passages by sneezing. White-tailed deer and livestock browse the plants.

### **BISON WALLOWS?**

Van Vives

Somehow the term "bison wallow" just doesn't feel right to me. I have always known them as

“buffalo wallows.” So I decided to test the two terms with the eminent authority, Google. Yes, “buffalo wallow” has it, hands down! There were 7,740 references for “buffalo wallow” and only 829 for “bison wallow.”



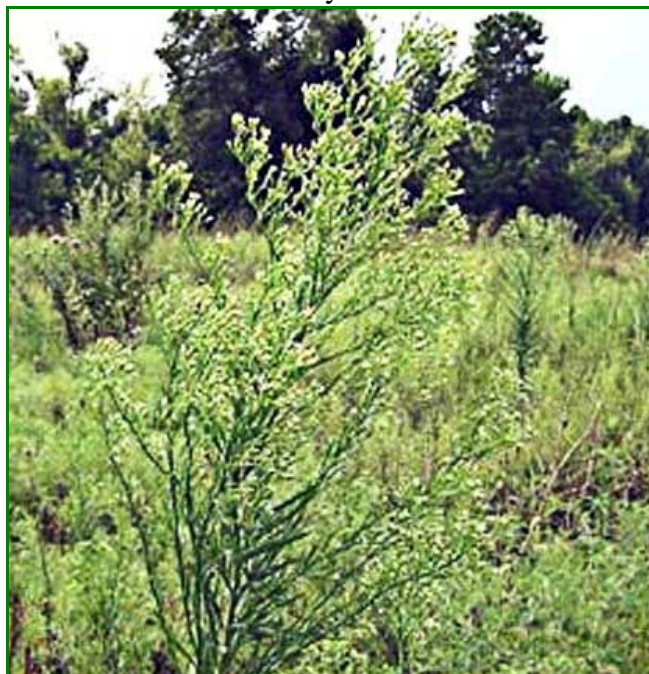
*Snow-on-the-mountain, Euphorbia marginata, by Van Vives*

We docents are familiar with our two in-house wallows on the nature trail, but I wondered if they were typical in size. After wading through many of the 7,740 references it appears that they are fairly typical at about fifteen feet wide and one foot deep. There are reports of people coming across wallows that were thirty feet wide and two feet deep. Speculation has it that the larger ones have probably been widened by the winds during the very dry seasons, rather than 4,000 pound bison bulls stirring up the dust.

Then I got to wondering how many buffalo wallows there were in the early days when bison numbers were fifty to sixty millions. Now that kind of calculation takes a few assumptions. Let’s say that twenty bison frequent one wallow. We

know that they don’t always use the same wallow all year long, so we assume that each set of twenty bison creates one wallow per month and assume they live an average of twenty years. Well, I’ve given you all the necessary parameters, so I’ll let you do the math! If you come out with about 660,000,000, you are probably right. Can you imagine what the total volume of water would be collected when it rained if each was one foot deep?

I came across an interesting piece of scientific information on Google. “The location of the buffalo, whether in a wallow or in the shade, does not have any significant effect upon its rectal temperature.” That makes one curious about the scientist that did the study.



*Mare's Tail, Conyza canadensis, by Van Vives*

Wallows were necessary for the bison’s good

health. It provided a way for the animal to fight the biting insects by coating its fur with dust and when the wallow was wet, with mud. It also was an aid in detaching the fur in the early summer months. It is said that it also was a way to establish the dominance in a group of bison by one animal displacing in the wallow an animal of a lower rank. It is not uncommon for the bison to enrich the wallow with its urine and dung so the battle with the biting insects can become more effective.



*Bison Wallowing, by Van Vives*

There are writings in the memoirs of some of the early settlers stating that the presence of wallows was the bane of the farmer. Because of the trampling of the hooves of many bison, the soil in the wallows became packed and hard, which made it difficult to plow. Other references indicate that the water collected in the wallows was life-saving when the wagon trains ran out of water on the plains. Sometimes these pools of water became stagnant and caused sickness. The wallows after a rain were used as swimholes by the tired, dusty cowboys.

Wildlife benefits from the wallows. Various insects, rodents, and small animals find a haven in these shallow holes. When muddy or wet they can burrow into the earth and create places of safety and nests in which to breed.

Very old wallows are still observable, especially from aircraft, because the type of grasses and plants growing in these indentations are different from the surrounding plant life and thus of a different color and texture. We can see a difference in the wallows on the nature trail, primarily because the plants are made up of rushes, due to the additional moisture.

The Buffalo Bur is a very stickerly plant with yellow flowers. It requires a disturbed area to thrive. So it thrives around buffalo wallows where the bison often trample. It is because of this that the Buffalo Bur received its name.

I can recall teenagers who seemed to keep their bedroom floor strewn with dirty (and sometimes clean) clothes up to a foot deep and mothers yelling, “You must like to wallow in dirty clothes!!” So perhaps we have taken on some of that inclination prevalent among the bison. And maybe those that have pools in their back yard are just enjoying their “wet wallow.”

#### **BISON WALLOW BIODIVERSITY**

—Andrew Donovan-Shead

As you might suspect from Van’s essay on buffalo wallows, they improve the biodiversity of the landscape by retaining water. Alice Outwater

contends that the wallows slowed runoff of water, allowing it to percolate into the soil. Remember Andrew Potter's article on diatoms in the January issue of the newsletter earlier this year? Diatoms help to purify water. Water attracts insects. Insects attract birds, and other animals come in search of a drink. Water standing in the depressions of a wallow changes the nature of the landscape. A wallow is a miniature wetland, albeit seasonal. Bison, beavers, and prairie dogs are significant

promotors of biodiversity.

**NEWSLETTER PUBLICATION**

—Andrew Donovan-Shead

Deadline for submission of articles for inclusion in the newsletter is the 10<sup>th</sup> of each month. Publication date is on the 15<sup>th</sup>. All docents, Nature Conservancy staff, and university scientists are welcome submit articles and pictures about the various preserves in Oklahoma, but of course the Tallgrass Prairie Preserve in particular.

***Tallgrass Prairie Docent Coordinators***

Program Coordinator	Dennis Bires	918-341-3908	dennisbires@lycos.com
Newsletter Editor	Andrew Donovan-Shead	918-688-7502	awd-s@cloistral.net
Docent Scheduler	Van Vives	918-333-3840	vcarlv@aol.com
New Docent Recruitment	Dennis Bires (Tulsa)	918-341-3908	dennisbires@lycos.com
	Betty Turner (Bartlesville)	918-333-7864	bbturner999@aol.com
New Docent Training	David Turner	918-333-7864	drenrut@aol.com
Docent Reorientation	Steve Forsythe	918-914-3320	ms@msforsythe.com
Docent Recognition Dinner	Deana Brewster	918-865-2799	xswbysgirl@aol.com
Nature Room	Doris Mayfield	918-743-6922	dmayfield@mindspring.com
Web Coordinator	George Pierson	918-232-1904	gpierson@tnc.org

***The Nature Conservancy Coordinators***

	State Director	Michael Fuhr	918-293-2929
Tulsa Office	Director of Conservation	Jay Pruett	918-293-2917
	Director of Operations	Eileen Jobin	918-293-2920
	Director of Philanthropy	Deirdre McArdle	918-293-2912
Oklahoma City Office	Associate Director of Philanthropy	Keven Virgilio	405-858-8557
Tallgrass Prairie Preserve	Preserve Director	Harvey Payne	918-287-4803
	Director of Stewardship	Bob Hamilton	918-287-4803
J.T. Nickel Family Nature & Wildlife Preserve	Preserve Director	Chris Wilson	918-456-7601
Pontotoc Ridge Preserve	Preserve Director	Jim Erwin	580-777-2224
Four Canyon Preserve	Preserve Director	Chris Hise	580-488-2657