



Woodland Skipper *Ochlodes sylvanoides* common in late summer

## Anne U. White Trail – Evolution of a Beloved Trail

By Janet Chu

Peer over the green steel barricade today to see a full stand of tall alien yellow sweet clover and a gaping bare rocky streambed. Both the Anne U. White Trail and several homes below were devastated by the flood of September, 2013. The trail has been closed since then.

This trail was a little-known biological treasure. In 2005 it was described as, “a deep and well-preserved small Foothill canyon,” by butterfly researchers. Its lush well-covered slopes and large variety of plants provided high counts of butterfly species. In 2004, an informal one-day count resulted in the sighting of 36 species. During six field days in 2005, 53 butterfly species were recorded, comparable to butterfly species in much larger areas such as Heil Valley Open Space.

During 2006, 47 species were observed on Anne U. White at Fourmile Canyon Creek, which continued to be one of the most productive sites among eleven Boulder County Open

Space research areas. Two rare butterflies Moss' Elfin (*Callophrys mossii schryveri*) and Dusted Skipper (*Atrytonopsis hianna*) were noted.

In 2007, the researchers wrote, "The total numbers of butterfly species remained relatively constant on the Anne U. White Trail. This, our primary Foothills research location, is a stable habitat. This productive narrow canyon is rich in its number and diversity of host and nectar plants. It was noticed that an increase in numbers of Variegated (*Speyeria claudia*) and Aphrodite (*S. aphrodite*) Fritillaries was observed, while smaller numbers of Hoary Commas (*Polygonia gracilis*) and Northern (*Phyciodes cocyta*) and Field (*P. pulchella*) Crescents were noted as compared to two previous years' numbers." Along the Anne U. White Trail, there was little sign of water in the creek. The streambed, however, was shaded and therefore not as much desiccation occurred along the canyon as it would have on the prairie. On July 16, 2007, an unexpectedly high number, one hundred of the flashy orange Northwestern Fritillaries (*Speyeria hesperis*) were nectaring on tall stands of Monarda and a single Gray Hairstreak (*Strymon melinus*) was taking nourishment from Prairie Clover. By August 11, Monarda flowers were old and the number of Northwestern Fritillaries fell to six. Surprisingly, a single patch of Teasel was the nectar plant of choice to Northwestern and Aphrodite Fritillaries and Woodland Skippers (*Ochlodes sylvanoides*) on that day.

In 2009 the researchers continued to observe that, "Anne U. White Trail accesses a lower Foothill riparian habitat, and its vegetation covered slopes provide a community of a diverse plants which makes a long season of nectar availability." On April 13, the uncommon Spring Whites (*Pontia sisymbrii*) and White-lined Green Hairstreaks (*Callophrys sheridanii*) were flying. In addition the Western Pine Elfins (*C. eryphon*) appeared two weeks earlier than usual. A few Hoary Commas and Mourning Cloaks (*Nymphalis antiopa*) had come out of their winter's

hibernation and were coursing the stream in warm sunlight. The Cloaks were nectaring on the early blooming Sand Willows. The rare Moss' Elfin flew on April 29. Later in the season, on July 22, the Northwestern Fritillaries were flying in large numbers and nectaring on the Monarda blossoms. Present to share their colors were the bright orange Taxiles Skippers (*Poanes taxiles*) and the darkish Dun Skippers (*Euphyes vestris*). The rare Dusted Skipper (*Atrytonopsis hianna*), a butterfly whose territory has expanded westward from the eastern U.S. was photographed on this trail. Open Space Rangers patrolled often causing the numbers of dogs off-leash to be reduced and permitting the vegetation to recover some of the dogs' social trails.

Anne U. White provided one of our earliest secluded warm spots, to which we looked forward each year. Researchers were always eager to begin the season with early butterfly searches, however in 2010, twelve inches of snowpack continued to melt on the slippery trail on March 30. The Hoary Commas and Mourning Cloaks roused out of hibernation and swirled 'round each other over the stream. Anne U. White had become popular with hikers, long-distance runners and dog owners which tended to impact some of the vegetation. On June 16, there were sixteen dog-walkers and two dogs off leash. The bare ground continued to be exposed on their social trails. Northwestern Fritillaries were flying in large numbers on July 27, and nectaring on Monarda blossoms. In 2010 snow remained later than in past years. By April 13 Cabbage Whites (*Pieris rapae*) were evident.

During 2011, "Heavy foot traffic and off-leash dogs continue to disturb trailside vegetation. On April 15, there were 14 dogs and three off-leashes. Their claws cut the undergrowth destroying blossoming and possible nectar producing plants for butterflies." Even so, it remained a productive valley. On May 8, we observed W. Pine Elfins nectaring on Wild Plum and Oregon Grape-holly, with the Echo Azures (*Celastrina ladon sidara*) on Willow.

Mourning Cloaks found early sappy-sustenance in Sapsuckers' rows of holes in Birch bark on May 27. Julia Orangetips (*Anthocharis sara julia*) which fly for a short time in May were observed both in 2008 and 2011, but none in 2009 or 2010. On June 13, the row of Lilacs beside Pinto Drive leading to Anne U. White was in full bloom and filled with Pale (*Papilio eurymedon*) and Western Tiger (*P. rutulus*) Swallowtails, Mourning Cloaks, and fritillary species. Several Edwards' (*Speyeria edwardsii*) Fritillaries were nectaring on orange Wallflower blossoms. Twenty-six species were seen during that very productive day. Tiny Blues, Uhler's Arctics (*Oeneis uhleri*), and two Indra (*Papilio indra*) Swallowtails were puddling in mud and on wet wood, imbibing substances used in building their future sperms packets. We saw three new butterflies on this trail for the first time: Callippe (*Speyeria callippe*) and Mormon (*S. mormonia*) Fritillaries, and Northern Checkerspots (*Chlosyne palla*).

In late spring 2011, rich vegetation and optimal weather conditions were conducive to butterfly life cycles resulting in the highest numbers of individuals seen during nine years of observations. Butterflies were numerous and active in June with many blossoms evident. Four species of Swallowtails and Common Ringlets (*Coenonympha tullia ochracea*) were flying above the trail. A five-foot flood from the Fourmile fire runoff tore one of the favorite nectar producing plants, Bee Balm, away and covered these with sand. In addition, the trail was closed for one month following the flood on July 19, when no hikers or dogs were allowed providing, undisturbed conditions except for a repair crew. Fritillaries were left to nectar on goldenrod, a poor substitute nectar plant.

On August 12, 2011, Amy Chu wrote in her field journal, "The trail was just opened after a five-foot flood washed through here from the Fourmile burn area. It was rebuilt by staff and 12 Youth Corps volunteers after flooding took many trees down and snapped willows. The stream

previously was topsoil-edged about two to three feet wide, but now is sanded in five foot widths. The detritus is full of charcoal with at least two drowned orange Aphrodite Fritillaries among the black chunks.” She did comment that the 12 species and 123 individuals had returned on that day, after this small disruption. It was the first day hikers were allowed to revisit after one month of trail work following the Fourmile burn.

During February, 2012, there was heavy snowfall and rain in February which was a precursor for the spring and early summer flower crop to be spectacular. An early season appeared for butterflies and blossoms. The warmth of early summer and the numerous blossoms triggered butterflies to disperse more widely. We anticipated a fine season with many immigrants arriving, and this was so until early July. Twenty-nine species were observed in Open Spaces properties outside of their predictable habitats. However, when the ten-day blistering heat wave began June 22 through July 2, it was enough to stop much flower production in the Foothills. Drought came in July and caused blossoming to cease, and butterflies to emerge much less often from then on. Venice Kelly visited this trail on August 30, 2012 when she found 10 species and 76 individuals. This compares with the following year on August 18, 2013, where Jean Morgan and this author found 10 species and 94 individuals.

On May 19, 2013, the seldom seen Spring Whites (*Pontia sisymbrii*) and Julia Orangetips were flying. One of the two Uhler’s Arctics during this season was seen here. This meadow butterfly is usually more common. In August the Northwestern Fritillaries, Taxiles and Woodland Skippers (*Ochlodes sylvanoides*) were flying by the dozens and nectaring on Heterotheca, Fremont Geranium, Canada Thistle, Bull Thistle and Solidago. An abundance of nectar-energy provided for great butterfly activity, including Skippers chasing up and around the

Fritillaries. During August fifteen species were observed including the rare Dusted Skipper; the welcome Monarch (*Danaus plexippus*), and Red Admiral (*Vanessa atalanta*).

Rare butterflies are reported to the Colorado Natural History Watch List, which documents rare species for the state. The Boulder County documented list is 202 species at this time.

Even though July 2013, was the third wettest in Boulder, the temperatures were so high (about 74 days above 90 degrees), the summer butterfly populations didn't recover. By mid-August some late summer butterflies had emerged, but populations were smaller than seen in the past. "This continues to be an ideal trail for close-up nature study with the stream beside and often below the observers, and canyon walls close to the trail. It is heavily used by picnickers, trail runners, people with dogs (mostly on leash). The newly instituted noon closure (in fear of further flooding) has actually allowed some vegetation to recover.

Comparing the counts one-year after the 2013 flood , in August, 2014, to the previous four-year August count averages at Anne U. White reveals: Butterflies occurring above average numbers in 2014; the invasive Cabbage Whites (18 to 6.3); the resident Weidemeyer's Admirals (5 to 3.8). Butterflies that occurred in below average numbers in August, 2014: Aphrodite Fritillary (6 to 16.8) Northwestern Fritillary (7 to 10.5) Western Branded Skipper (1 to 3.8). It would appear that the Cabbage Whites have several broods and successfully place their high numbers of chrysalids scattered high and low on plants. The Fritillaries lay eggs only on Violets which are always at ground level and hide chrysalids in the litter. Likely many of these were destroyed.

On August 7, 2015 we entered the canyon with two rangers. A lively Monarch greeted us at the barricade, joined by American and Painted Ladies, Aphrodite Fritillaries, Taxiles and

Woodland Skippers. One ragged Gray Hairstreak spent its last day quietly on a rock in the streamlet. A Mourning Cloak was our last butterfly sighting as we left the rubble.

To conclude, the riparian flowers have not recovered; Monarda has minimal blooms and the Melilotus fills monoculture spaces. Some Oxeye-daisy invasives are showing along with many aggressive Mullein. During that August, 2015 day of exploration, only ten species and 33 individual butterflies were counted. This compares with 2012, the highest count year, with 50 species and 509 individuals.

The trail has been closed since the remarkable flood of September, 2013. Some work has occurred to clear timbers from the creek to prevent further debris accumulation. Volunteers and staff have begun some trail recovery that is projected to be complete at the end of the 2016 season. The recovery is very slow. There is no trail. Further research will necessarily have to wait.

<b>Anne U. White Fourmile Canyon</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
# of Species identified annually in Anne U. White	44	45	35	31	47	50	29	17	10
Cumulative # Species sighted in Anne U. White 2007-2014	47	66	69	69	75	82	82	82	82
Research Hours on Site	9.5	16	10	10.5	19.5	13.5	11	6	3
# Individual Butterflies Counted	366	536	217	112	773	509	334	105	33
# Individuals / Research Hour	38.5	33.5	21.7	10.7	40	38	30	17.5	11
# Species / Research Hour	4.6	2.8	3.5	3.0	2.4	3.7	2.6	3	3.3

**Janet Chu 964 Ravenwood Road, Boulder CO**

**chuhouse@hotmail.com**