

W I S C O N S I N

A close-up photograph of a squirrel perched on a tree branch, eating a nut. The squirrel has brown and grey fur and a bushy tail. The background is a soft-focus green forest.

# Wildlife Phenology

2008 | calendar



# Wisconsin Wildlife Phenology 2008

THE ALDO  
LEOPOLD  
FOUNDATION

The Aldo Leopold Foundation (ALF) was founded in 1982 by the children of Aldo Leopold to promote harmony between people and the land and foster Leopold's vision of the Land Ethic. ALF is the definitive interpreter and advocate for Leopold's legacy.

**Phenology** is a segment of ecology focusing on the study of periodic plant and animal life-cycle events that are influenced by climate and seasonal change in the environment. Skunks emerging from winter dens, sandhill cranes trumpeting their return, and seeds ripening are all examples of annual phenological events. Phenology is derived from the Greek word *phaino* meaning to show or appear, indicating its principal concern with the dates of first occurrence of natural events in their annual cycle.

The primary source of data used in this calendar is historic and continuing records from Aldo Leopold and his family in Sauk County, Wisconsin. Phenological events have been recorded at the Leopold Family Farm and Shack, a tradition begun in 1936 by Aldo Leopold, regarded by many as the father of wildlife ecology. Leopold took most of these recordings from 1936-1947 in and around this landscape, which inspired Leopold's seminal work on conservation: *A Sand County Almanac*.

Nina Leopold Bradley continues to carry on her father's work, compiling a robust phenological database spanning from 1974 through the present. This calendar uses dates from 1974-2000, averaging the annual dates to determine what date a phenological event may occur. In addition, four Aldo-Leopold-averaged dates taken from 1936 through 1947 are used. A substantial number of phenological events occur much earlier now than they did during Leopold's lifetime. Several studies have shown a significant trend for an earlier occurrence of spring phenological events suggesting some species are changing behaviors in response to climate change. For example, some species are expanding or shifting their ranges. The tufted titmouse, a songbird with an unmistakable call, did not occur during 1936-1947, but has become a year-round resident at the Leopold farm in Nina Leopold Bradley's time.



Aldo Leopold

It has exclusive rights to *A Sand County Almanac* and other writings and photographs, is owner and caretaker of Leopold's Shack and family farm, and serves as a clearinghouse for information regarding Aldo Leopold, his work and ideas. For more information contact ALF at PO Box 77, Baraboo, WI, 53913, 608-355-0279, or on the web at

[www.aldoleopold.org](http://www.aldoleopold.org)

*“[Phenology records] the rates at which solar energy flows through living things. They are the arteries of the land. By tracing their responses to the sun, phenology may eventually shed some light on that ultimate enigma, the land's inner workings.”*

– Aldo Leopold, *A Phenological Record for Sauk and Dane Counties, Wisconsin, 1935-1945*

The monthly narratives in this calendar share information about Wisconsin grassland wildlife. Historically, grassland flourished across the state, with extensive prairies, open wetlands, and oak savannas found south of Wisconsin's ecological “tension zone.” Extending across the state from northwest to southeast, the tension zone marks the transition from species adapted to a warmer and drier climate to the south and a cooler and wetter climate to the north. North of this zone, open wetlands, pine savannas, and so-called “barrens” (home to a wealth of blueberries, black bears, grouse, and other species) enriched the diversity of a landscape dominated by extensive forests.

Especially in southern Wisconsin, grasslands were widely acclaimed in the late 1800s for their beauty and fertility, drawing settlers at a rapid rate. As they plowed up land for crops and defended their homes and woodlots against fires, early settlers interrupted the long pattern of frequent fires that had helped cycle nutrients and had kept Wisconsin's

grasslands relatively free of trees. The rapid changes nearly erased native grasslands from the landscape. Just in Wisconsin's prairie ecosystem, which covered two million acres at the time of settlement, fewer than 8,000 acres – or 0.4 percent – of habitat remains, mostly in small fragments that are vulnerable to encroachment by trees and invasive species.

Some grassland bird species have found pasture lands and hayfields planted with European grasses to be acceptable habitat, while many other animals – particularly insects – depend solely upon native plants. While small and easy to miss, abundant grassland insects are invaluable to the web of life that extends from soil microbes and fungi up through animals like the badger, bobolink, and meadowlark.

Since its inception in 1985, the USDA Conservation Reserve Program (CRP) and a growing number of incentive programs have helped restore thousands of acres of marginal farmland to grassland and open wetlands. Such efforts have created many benefits for our communities, such as protecting open space, restoring habitat for grassland-dependent species and other wildlife, and reducing flooding and aiding in groundwater recharge. As financial incentives for biofuel production and residential development continue to rise, we must ask ourselves if society will truly profit from losing our remaining grasslands.

### Hopkins Law

The dates in this calendar correspond to data collected primarily in southern Wisconsin. To apply these dates to a different area, apply Hopkins Law, which states that the phenological events vary at the rate of 1 day for each 15 minutes of latitude, 1.25 days for each degree of longitude, and 1 day for each 100 feet of altitude. This means there is an approximate 22-day difference between Wisconsin's southern border with Illinois and the northern border with Michigan. There is also an approximate 10-day difference between the east and west portions of the state, due to Lake Michigan's cooling effect.

### A note on dates

The phenology of reptiles and amphibians is highly dependent upon immediate conditions for reproduction. Wood frogs, for example, first emerge when night temperatures are over 50 degrees Fahrenheit. Therefore amphibian phenology is highly variable as well as difficult to research. Also, few people record any phenological data about reptiles and amphibians, other than frog call occurrence. This is mainly due to the tiny larval stages, secretive lifestyle, and the relative unpopularity of these animals in comparison to more visible species.

Cover photo: Red squirrel, Jeffrey J. Strobel.  
Photos this page: Scarlet tanager, Jack R. Bartholmai;  
Prairie racerunner (featured in August sidebar) Mike Pingleton;  
Painted turtles, Jeffrey J. Strobel; Leopold photo, courtesy of  
The Aldo Leopold Foundation.





photos: Snowshoe hare, Hal Korber; below: Red-headed woodpecker, Ed Miller

**Badger**

*Taxidea taxus*

The American badger is found throughout Wisconsin's prairies and wooded edge areas. They are a member of the Mustelidae (weasel) family that includes martens, minks, wolverines, and skunks. Badgers are identified by their brown, gray, grizzled fur, a flat body with short legs, and a triangular face with a long and narrow upturned snout. The face is marked by white stripes on their cheeks and a singular white stripe running from the nose to the back of the head. Breeding occurs between July and August with the female giving birth in March to one to five young.

Primarily nocturnal, badgers also appear early in the morning or occasionally during the day. Their home range varies from 590 to 4,200 acres. They are carnivorous, digging small rodents out of the ground. When the rodent population is low, badgers feed on birds and reptiles.

Burrows or dens are central to the badger's existence. Badgers typically have different dens used for sleeping, storing food, and giving birth. Permanent dens are used during the winter months. Badgers do not hibernate but can become torpid during the coldest part of winter, remaining in a nest chamber deep within a den for an extended period.


When threatened, a badger will back into its den, hiss or growl, and release a musk scent. Badgers might follow such a defense by plugging up the den's entrance.

Loss of habitat is the greatest threat to badger populations. Historically, people trapped badgers because their large holes were a nuisance in pasture and range areas. Today, changing land use practices in agricultural areas and development pressure have increasingly affected the American badger's home range.

Badger  
Gary Crandall



# January 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 Sunrise 7:29 AM Sunset 4:33 PM  <b>New Year's Day</b>	2  Erect and clean barred owl boxes	3  Female elk move to south-facing slopes for winter  <b>The Earth is closest to the Sun (Perihelion)</b>	4	5  Black bear cubs being born in dens
6	7	8	9	10	11  <b>Aldo Leopold's Birthday (1887)</b>	12
13	14	15	16	17  Black-capped chickadees begin spring courtship song	18	19
20	21  <b>Martin Luther King Jr. Day</b>	22  Full (Wolf) Moon	23  Red fox begin mating	24  Wolves begin mating	25  Beaver begin mating	26  Canada lynx begin mating

27  Fox and Gray squirrels begin mating	28	29	30	31  Great horned owls begin courtship activities
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December							February							
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photos: Coyote, © Paul Burwell Photography - PaulBurwell.com; below: Ring-necked pheasant, Jeffrey J. Strobel; American robin, © michaelfurtman.com

**Blue-winged Teal**

*Anas discors*

The Blue-winged teal is one of Wisconsin's farthest traveling ducks. Beginning in late August, these heat-loving birds migrate south to their wintering grounds in Central and South America. They return to Wisconsin in April and early May after wintering in mangrove swamps, coastal lagoons and marshes.

In mid-May, hens build their ground nests in dense grasslands, usually within 200 yards of shallow wetlands. These marshes provide plenty of aquatic insects and snails for the nesting hens and subsequent ducklings. Clutches contain 10 to 12 eggs and hatch 23 days after the last egg is laid. Day-old ducklings can feed themselves, but the hen is responsible for warming her brood at night, hiding them from predators, and leading them to densely vegetated marshes with plenty of food. The drakes are too small to protect their ducklings from predators, so in mid-summer they move to large marshes to molt with other drakes and broodless hens. The ducklings grow rapidly and begin flying when they are 40 days old. They reach adult size several weeks later and shift their diet to seeds and other plant material as they prepare for the long flight south.

Blue-winged teal were once Wisconsin's most abundant breeding duck. However, their statewide population has declined by 60 percent since the 1970s. Wisconsin's Mallard duck population doubled during this same period, and both of these species have remained abundant in the Prairie Pothole Region. Research is underway to determine what factors might be limiting Blue-winged teal populations in Wisconsin. However, we know that mammalian nest predation can lead to nesting failure as high as 90 percent, making the preservation and management of quality prairie/grassland nesting sites even more crucial.

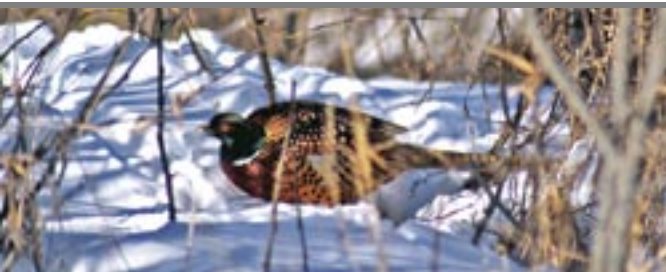
Blue-winged Teal  
© michaelfurtman.com



# February 2008

Sunday      Monday      Tuesday      Wednesday      Thursday      Friday      Saturday

January							March						
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6	7	8	9	10	11	12	2	3	4	5	6	7	8
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27	28	29	30	31			23/20	24/21	25	26	27	28	29



1	Sunrise 7:13 AM Sunset 5:09 PM	2
Erect American kestrel boxes		

3	4 Horned larks begin migrating north	5 Erect and clean out Wood duck and Bluebird boxes	6	7 Coyotes begin mating	8	9 Northern cardinals begin spring songs
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10	11	12	13	14 Valentine's Day	15	16
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17	18 Great horned owls begin nesting Presidents' Day	19	20 Full (Snow) Moon	21	22	23
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24 Bobcats begin mating	25 Canada geese spring arrival	26 Mink begin mating	27	28	29	
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photos: Pileated woodpecker, © michaelfurtman.com; below: Common goldeneye and Mallard, © michaelfurtman.com

**Northern Harrier**

*Circus cyaneus*

The Northern harrier (once called marsh hawk) occurs throughout Wisconsin and is considered a common migrant and summer resident, and an uncommon winter resident in the southern half of the state. These birds are easily distinguished by their white rump, owl-like facial disk, and long and narrow wings. The best key to identification is their low-flying behavior, with wings upraised, as they search for rodents, frogs, and other prey. Plumages differ between the sexes, with adult males predominantly light gray and adult females brown.

Northern harriers prefer undisturbed, large (typically 100 acres or larger), open upland and wetland areas such as native prairie, pasture, hayfields, old fields, oak savanna, sedge meadow, and barrens. They place their clutch of three to five eggs on the ground in dense vegetation between late April and early August, with the male providing the food for the female and the nestlings. Adult males typically migrate later in fall and earlier in spring than females and immature harriers.

Breeding-Bird Survey data suggest significant range-wide population declines for this species in the North America, although in Wisconsin populations appear more stable. The most important factor contributing to the population decline is loss of critical habitat by conversion to croplands, overgrazing, development, and forest succession. Most preferred habitats such as large, open prairies are very rare in the state and nation. Habitat restoration and management could greatly improve harrier populations. Habitat restoration and management would include creating large blocks of continuous, undisturbed grasslands and other open habitats by prairie plantings, tree and brush clearing, and prescribed burning.

Northern Harrier  
Brian Zwiebel



# March 2008

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<p>2</p> <p>Snowshoe hares begin mating</p>	<p>3</p> <p>Maple sap flows when day temperatures are above 40 degrees</p>	<p>4</p> <p>Woodfrogs begin calling/ breeding the first day and night over 50 degrees</p>	<p>5</p> <p>Bald eagle migration begins</p>	<p>6</p>	<p>7</p> <p>Sandhill crane arrival begins</p>	<p>8</p> <p>Tom turkeys begin gobbling</p>																																																																																			
<p>9</p> <p>Fox and Gray squirrel young born</p> <p>Daylight Savings Time Begins</p>	<p>10</p> <p>American robin spring arrival</p>	<p>11</p> <p>Eastern bluebird spring arrival</p>	<p>12</p> <p>Red-winged blackbird spring arrival</p>	<p>13</p>	<p>14</p> <p>Common grackle arrival; Eastern chipmunks emerge from hibernation</p>	<p>15</p> <p>Red fox pups being born</p>																																																																																			
<p>16</p> <p>Killdeer spring arrival</p>	<p>17</p> <p>Eastern meadowlark arrival</p>	<p>18</p> <p>Leopard frogs emerging from their winter burrows</p>	<p>19</p> <p>American woodcock first peent</p>	<p>20</p> <p>Pine marten young being born</p> <p>International Earth Day</p> <p>Vernal Equinox</p> <p>First Day of Spring</p>	<p>21</p> <p>Red-winged blackbird arrival (A. Leopold data 1936-47)</p> <p>Good Friday</p> <p>Full (Worm) Moon</p>	<p>22</p> <p>Hooded merganser spring arrival</p> <p>Canada Goose arrival (A. Leopold data 1936-47)</p>																																																																																			
<p>23</p> <p>Wood duck spring arrival; Wolf pups being born</p> <p>Easter Sunday</p>	<p>24</p> <p>Skunk cabbage begins blooming</p>	<p>25</p> <p>Ring-necked pheasants begin crowing</p>	<p>26</p> <p>Eastern phoebe spring arrival; salamanders and newts begin to emerge</p>	<p>27</p> <p>Great blue heron and Fox sparrow spring arrival</p>	<p>28</p> <p>Hermit thrush spring arrival; Chorus frogs and Spring peepers begin calling now through first week of April</p>	<p>29</p> <p>Mallards begin to arrive; Lynx kits being born</p>																																																																																			



photos: Belted kingfisher, Paul Fusco; below: Red fox, Tom Murray; Canada geese, Ellen Barth

### Eastern Hog-nosed Snake

*Heterodon platirhinos*

Despite a sometimes fierce and often repulsive repertoire of defense mechanisms, the Hog-nosed snake is harmless to people. As a first line of defense it will often try to bluff its way out of danger. It will spread its neck like a cobra, hiss, and lunge at the attacker (giving its nickname of 'puff adder' or 'hissing viper') although it is not known to bite humans. The next line of defense includes writhing and coiling while emitting feces and vomiting. The third act, if necessary, involves excreting a foul smelling musk, rolling onto its back and playing dead.

Color and pattern are variable, but usually consist of dark blotches on a gray, brown, tan, olive, or even pinkish background somewhat similar to rattlesnakes. The underside is usually dark grey or black with white speckling. The most distinctive characteristic is the wide head with an up-turned snout, giving the snake its name. Although stout-bodied, an adult Hog-nosed snake rarely exceeds 45 inches in length.


They can typically be found in areas of dry, loose, sandy soils typical of oak savannas and sand prairies. Hog-nosed snakes feed primarily on amphibians, and are specially adapted for catching and eating toads and frogs. In addition to their wide mouths, flexible jaws, and curved teeth, the snakes produce hormones that allow them to deal with toxic chemicals secreted from glands in a toads' skin.

Hog-nosed snakes are common and widely distributed across Wisconsin, except in the forested north-central region. Nationally, their numbers might be on the decline because they are often mistaken for rattlesnakes and killed, or because local amphibian populations are declining.

Eastern Hog-nosed Snake  
Mike Pingleton



# April 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 Sunrise 6:39 AM Sunset 7:24 PM	2 Trees susceptible to Oak wilt from now until hard freeze; Belted kingfisher spring arrival	3 Big brown bat spring arrival	4 Tundra swan arrival	5 Sigurd Olson's Birthday (1899)	
6 Ruffed grouse begin drumming; Peak spring duck migration	7 Bald eagles begin nesting Eastern phoebe arrival (A. Leopold data 1936-47)	8 Tree swallow arrival	9 Painted turtles are emerging	10 Yellow-bellied sapsucker spring arrival; Pasque flower blooms	11	12 Coyote pups and Mink kits being born
13 Cowbird spring arrival	14 Check bluebird boxes throughout nesting season	15 Black bears leave dens; Pickerel frogs begin calling	16 Upland sandpipers are sighted; Dutchman's breeches blooms	17 Eastern cottontail rabbits are born	18 Hen mallards begin nesting	19 Pasque flower blooms (A. Leopold data 1936-47)
20 White-tailed deer bucks growing antlers; Prairie smoke blooms Full (Pink) Moon	21 Hog-nosed snakes are emerging John Muir's Birthday (1838)	22 House wren spring arrival Marsh marigold blooms Earth Day	23 Little brown bat spring arrival	24 Barn swallows return; Whooping cranes begin laying eggs	25 Arbor Day	26 Upper Trout Lake opens (Vilas Co.) John Audubon's Birthday (1785)

27 Purple martins begin to arrive	28 Bobwhite quail are mating	29 Serviceberry blooms	30 Goslings hatching
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March							May							
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photos: Sandhill cranes, Vince Lamb; below: Four-spotted skimmer, Jeffrey J. Strobel

**Marsh Meadow Grasshopper**

*Chorthippus curtipennis*

This medium-sized, light brown-and-green grasshopper is widespread in North America and is probably found in every county in Wisconsin. Adults are active during the day and found from late June through October. They are most commonly observed in wet meadows and prairie restorations.

The Marsh meadow grasshopper feeds on grasses and sedges. They start at the tip of the leaf eating one bite until reaching the base and then work back towards the tip again (similar to us eating an ear of corn). Occasionally they will chew a piece of leaf while holding it in their front feet (tarsi). Big and little bluestem grasses appear to be favorite foods. Population density is, on average, one grasshopper per square yard. In the best of conditions, populations could be up to 10 grasshoppers per square yard. There are no reports of this grasshopper causing any significant agricultural damage.

Males tend to have longer wings than females. They avoid predators by jumping from vegetation. They also drop to the ground and walk under vegetation. Males fly 6 to 12 inches high and up to 10 feet in distance in short, straight, silent flight. A small percentage of the male and female populations have longer wings, allowing for greater dispersal to new habitat.

Males "stridulate" (make a noise by rubbing body parts together) to show aggression toward other males, attract females, notify females they are advancing, and notify females prior to mating. Receptive females respond by stridulating a soft answering song.

The publication *Guide to Grasshoppers of Wisconsin* is available for download at: [http://dnr.wi.gov/org/es/science/publications/ss1008\\_2005.htm](http://dnr.wi.gov/org/es/science/publications/ss1008_2005.htm)

Marsh Meadow Grasshopper  
Tom Murray



# May 2008

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<p>April</p> <table border="1"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td></td></tr> <tr><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td></tr> <tr><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td></tr> <tr><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td></tr> <tr><td>27</td><td>28</td><td>29</td><td>30</td><td></td><td></td><td></td></tr> </table>	S	M	T	W	T	F	S		1	2	3	4	5		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				<p>June</p> <table border="1"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> <tr><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td></tr> <tr><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td></tr> <tr><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td></tr> <tr><td>29</td><td>30</td><td></td><td></td><td></td><td></td><td></td></tr> </table>	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30								<p>1</p> <p>Sunrise 5:51 AM Sunset 7:59 PM</p> <p>Ring-necked pheasants nesting <i>Marsh Marigold blooms (A. Leopold data 1936-47)</i></p>	<p>2</p> <p>Whip-poor-will spring arrival; Large trillium blooms</p>	<p>3</p> <p>Warbler spring migration begins; Catbird spring arrival; Blue-winged teal arrival</p>
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<p>4</p> <p>Birdsfoot violet blooms; Northern oriole arrival</p>	<p>5</p> <p>Eastern gray tree frog and Cope's gray tree frog begin calling (1st week of May)</p>	<p>6</p> <p>Wood thrush and Scarlet tanager spring arrival</p>	<p>7</p> <p>Indigo bunting spring arrival</p>	<p>8</p> <p>Wild gooseberry blooms; Ruby-throated hummingbird spring arrival</p>	<p>9</p> <p>Eastern wood pewee spring arrival</p>	<p>10</p> <p>Columbine blooms <b>International Migratory Bird Day</b></p>																																																																																				
<p>11</p> <p>Shooting star blooms <b>Mother's Day</b></p>	<p>12</p> <p>Wild geranium blooms; Prothonotary warbler arrival</p>	<p>13</p> <p>Young eagles hatching; May apple blooms</p>	<p>14</p> <p>Choke cherry blooms; Mallards hatching</p>	<p>15</p> <p>Wild lupine blooms</p>	<p>16</p> <p>Sandhill crane chicks hatching</p>	<p>17</p> <p>Jack-in-the-pulpit blooms; Look for Morel mushrooms</p>																																																																																				
<p>18</p> <p>Put out grape jelly and orange halves for orioles</p>	<p>19</p> <p>Common loons begin nesting <b>Full (Flower) Moon</b></p>	<p>20</p> <p>Common nighthawk spring arrival</p>	<p>21</p> <p>Lilacs blooming</p>	<p>22</p> <p>Veeries begin singing</p>	<p>23</p> <p>First fire flies can be seen; Whooping crane eggs hatching</p>	<p>24</p> <p>Pink prairie phlox bloom; Wild asparagus emerging</p>																																																																																				
<p>25</p> <p>American woodcock young hatching</p>	<p>26</p> <p>Anemone blooms; Green frogs and Blanchard's cricket frogs begin calling at the end of May <b>Memorial Day</b></p>	<p>27</p> <p>White-tailed deer fawns are born now into June <b>Rachel Carson's Birthday (1907)</b></p>	<p>28</p> <p>First flight of Karner blue butterfly adults emerge</p>	<p>29</p> <p>Wild iris blooms; Beaver kits being born</p>	<p>30</p> <p>Ruffed grouse chicks hatching</p>	<p>31</p> <p>Monarch butterfly arrival</p>																																																																																				



photos: Eastern wild turkey jake, Jeffrey J. Strobel; below: Wood ducks, Richard Armstrong

**Bobolink**

*Dolichonyx oryzivorus*

Widespread throughout Wisconsin, the bobolink is a medium-size songbird, six to eight inches in height with an 11-inch wingspan. Breeding male bobolinks are identified by a solid black face with a buff yellow head back, and white shoulders and rump. Females and non-breeding males are yellow or buff with black streaks on sides, back, and tail. Bobolinks breed from mid-to-late May, nesting in grassy areas and hay fields until early July. They nest in mid-or-tall grass prairie, bogs, and sedge meadows. Nests are formed in depressions at the base of grasses or sedges and contain one to seven blue-gray or cinnamon colored, irregularly spotted eggs. Young are born helpless and fledge within 10 to 14 days. Bobolinks feed on seeds, insects, and spiders.

The bobolink song is a bubbling series of notes, frequently heard as a male flies low over his territory. Bobolinks are easily recognized while migrating at night by a unique "clink" vocalization as they pass overhead. Bobolinks perform an extraordinary migration feat, flying more than 12,000 miles round-trip annually. Their flight is one of the longest migrations in the western hemisphere.

Bobolinks prefer mid-successional grasslands larger than 25 acres. In Wisconsin, bobolink populations are in significant decline and have declined by almost 2 percent per year since 1966. On their wintering grounds in Argentina, they are shot as agricultural pests and are trapped and sold as pets. Here, changing land use practices, including early haying, strip-crop agriculture, and urban development, have further affected populations. Efforts to restore nesting habitat include planting mid-grass prairie species in old field areas and delaying the mowing of hayfields.

Bobolink  
Maslowski/USFWS



# June 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 Sunrise 5:21 AM Sunset 8:31 PM Ring-necked pheasant broods appearing	2 Black bears begin mating; Trumpeter swan eggs begin hatching	3 Yellow hawkweed blooms; Mink frogs begin calling now through July	4 Painted turtles begin laying eggs <b>Gaylord Nelson's Birthday (1916)</b>	5 Wild quinine blooms	6 Bullfrogs begin calling	7 Yarrow blooms
8 Indian paintbrush blooms	9 Daisy fleabane blooms	10	11 Harebell blooms	12	13	14
15 Black-eyed susan blooms <b>Father's Day</b>	16	17	18 Flowering spurge blooms <b>Full (Strawberry) Moon</b>	19	20 Butterfly weed blooms <b>Summer Solstice First Day of Summer</b>	21 Prairie smoke seed collection
22 Goats rue and Common milkweed bloom; Wild lupine seed collection	23 St. Johns wort and Compass plant bloom	24 Blue-winged teal ducklings hatching	25 Hoary vervain blooms	26	27 Marsh milkweed blooms	28 Wild columbine seed collection
29 Lead plant blooms	30 Rattlesnake master blooms					

May							July									
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photos: Green frog, Jeffrey J. Strobel; below: Whooping crane, Bruce Faanes

**Painted Lady Butterfly**

*Vanessa cardui*

The Painted lady is a large butterfly with a wing span of two-to-three inches. From above, the Painted lady is orange with a black apex and white spots and thick dark lines in the forewing. From below, they are very similar to the American lady with black-and-white patterning on a pinkish background. The Painted lady has four small eye-spots on the hindwing, while the American lady has two larger spots. The shaggy body and adjacent wing surface are tan.

The Painted lady is perhaps the most wide-spread butterfly in the world, found throughout Europe, Asia, Africa, North America, and Central America. Not a permanent resident in Wisconsin, they migrate here from the deserts of the southwestern U.S. and northern Mexico. In Wisconsin, their flight usually consists of two broods (generations), and their abundance varies greatly from year to year. They are often seen from May through October. Found almost anywhere, they tend to inhabit sunny, open habitats, preferring old fields, meadows, and disturbed areas including gardens and roadsides.

Males perch on shrubs or bare ground in open areas, and patrol during the afternoon for receptive females. Females lay eggs (pale green and barrel-shaped) singly on the tops of host plant leaves. Once hatched, caterpillars live in silk nests and eat leaves of their favorite plants – thistles, hollyhock, mallow, and various legumes. After several molts, they transform into a chrysalis, go through complete metamorphosis, and emerge as an adult butterfly. The adult Painted lady prefers nectar from composites three-to-six feet high, including aster, cosmos, blazing star, ironweed, joe-pye weed, and especially thistles.

Painted Lady  
Paul Samerdyke



# July 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																																			
		1 Sunrise 5:22 AM Sunset 8:41 PM	2	3	4 Queen of the prairie and Mountain mint blooms <b>Independence Day</b> <b>The Earth is Farthest from the Sun (Aphelion)</b>	5 Purple coneflower blooms																																																																																																			
6 Canada goldenrod and Culver's root bloom	7 Purple loosestrife and Cup plant bloom; Fall shorebird migration begins	8 Painted turtles begin to hatch; cicadas can be heard	9 Wild bergamot blooms	10 Purple prairie clover and Whorled milkweed bloom	11 Prairie dock blooms; Common spiderwort seed collection	12 Evening primrose blooms; Turkey hens molting																																																																																																			
13 Second flight of Karner blue butterfly begins	14 Turks cap lily blooms	15 Shooting star seed collection	16 Ironweed blooms	17 Monkey flower blooms	18 Sandhill crane chicks learn to fly <b>Full (Buck) Moon</b>	19																																																																																																			
20	21 Purple martins begin to gather	22 Joe-pye weed blooms	23 Nodding wild onion blooms	24	25 Boneset blooms	26 Big bluestem in pollen																																																																																																			
27	28 Spotted jewelweed blooms; Rough blazing star blooms	29 Deer antler growth nearing peak size	30	31	<table border="1"> <thead> <tr> <th colspan="7">June</th> <th colspan="7">August</th> </tr> <tr> <th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th> <th>S</th><th>M</th><th>T</th><th>W</th><th>T</th><th>F</th><th>S</th> </tr> </thead> <tbody> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td> <td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td>2</td> </tr> <tr> <td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td> <td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td> </tr> <tr> <td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td> <td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td> </tr> <tr> <td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td> <td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td> </tr> <tr> <td>29</td><td>30</td><td></td><td></td><td></td><td></td><td></td> <td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td> </tr> </tbody> </table>		June							August							S	M	T	W	T	F	S	S	M	T	W	T	F	S	1	2	3	4	5	6	7							1	2	8	9	10	11	12	13	14	3	4	5	6	7	8	9	15	16	17	18	19	20	21	10	11	12	13	14	15	16	22	23	24	25	26	27	28	17	18	19	20	21	22	23	29	30						24	25	26	27	28	29	30
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photos: Common buckeye, Tom Murray; below: Common loon, Jeffrey J. Strobel

**Prairie Racerunner**

*Cnemidophorus sexlineatus*

Prairie racerunners are slender-bodied lizards with a long tail. They reach a total body length of just over nine inches. Both male and female Prairie racerunners have six narrow stripes running from the head onto the tail, and are usually colored pale yellow to greenish-yellow. Males have a gray or gray-blue belly, while females and young have a white or light gray belly. Often confused with skinks, the snout of the Prairie racerunner is more pointed, the legs are longer, and the body has very fine scales that are coarse, not shiny. The tail is covered with large rough scales, often gray or brown in color.

Prairie racerunners occur in western Wisconsin along the Mississippi and Wisconsin Rivers in sandy prairie areas and on open, rocky, bluff prairies. Requiring loose sandy soils, they are accomplished burrowers but will use mammal or other ready-made burrows. Burrows serve as refuges from predators and aid in the racerunner's thermo-regulation.

Racerunners are extremely fast, clocked at nearly 18 mph. Voracious eaters, racerunners rely on their speed and sense of smell to locate and capture insects such as crickets, grasshoppers, moths, spiders, and caterpillars. Breeding occurs in spring, probably not more than two-to-three weeks after emergence from hibernation. They lay four-to-six eggs in shallow burrows from early June to middle July. The young hatch in early August.

Prairie racerunners are restricted in range and declining due to the loss and degradation of sand prairie habitat from development, natural succession, and conversion to agriculture and pine plantations. Also, the non-native invasive plant Spotted knapweed is simplifying vegetation diversity, and in turn, negatively affecting the racerunner's invertebrate food source.

Prairie Racerunner  
Mike Pingleton



# August 2008

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<p>Stiff goldenrod blooms</p>			<p>Blackberries and Elderberries are ripening</p>		<p>Canada tick trefoil and false boneset seed collection</p>	<p>Gerardia blooms; Golden alexander seed collection</p>																																																																																			
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					<p>Northern orioles begin second song</p>	<p>☉ Full (Sturgeon) Moon</p>																																																																																			
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<p>Wild rice ripens</p>	<p>Great blue lobelia blooms; Side-oats grama seed collection</p>	<p>Turtlehead blooms</p>	<p>Thimbleweed and Prairie cinquefoil seed collection</p>			<p>Snowshoe hare mating ending</p>																																																																																			
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<p>Sweet flag seed collection</p>																																																																																									
<p>31 Horsemint and Common evening primrose seed collection</p>	<p>Black-eyed susan seed collection</p>		<p>Bottle gentian blooms</p>	<p>Snapping turtle eggs hatching</p>	<p>Goats rue seed collection; Monarchs begin flight to Mexico</p>	<p>New Jersey tea and Bottlebrush grass seed collection</p>																																																																																			



photos: Black bear, Mary Konchar; below: Eastern bluebird, Jim Monroe; Monarch on cup plant, Rachel Mockler/USFWS

**Short-eared owl**

*Asio flammeus*

The Short-eared owl is in the family of true owls (Strigidae) and is given its name from the very short, feathered ear tufts (often difficult to see) typical for the owls in the Asio genus (Long-eared owls are included in this genus as well). The Short-eared owl is medium-sized (13 to 17 inches tall) with buff/rust and dark-streaked colored plumage. In flight, this owl appears very light with dark "wrist" bands being a characteristic marking from underneath.

The Short-eared owl is one of the most widely distributed owls, although its distribution is irregular or patchy. It uses wide open spaces such as grasslands, sedge meadows, hay fields, salt marshes, and tundra. Nesting occurs on the ground in grassy areas, making them very susceptible to predation during this time, especially if prairie-like habitat is limited. Often, management aimed at other wetland and upland prairie birds will provide quality habitat for this owl as well.

The diet of the Short-eared owl consists of small mammals typical of the prairie such as voles, mice, shrews, and gophers, with small birds sometimes included. They hunt primarily at twilight and at night. Hunting occurs mostly on the wing by quartering or hovering, and occasionally from a perch. They detect prey largely by acoustical cues, with their ears being slightly offset to aid in localization.

In Wisconsin, the Short-eared owl is somewhat uncommon, with documented nesting near Buena Vista Wildlife Area (Portage County), the Killsnake Wildlife Area (Calumet and Manitowoc County), and other scattered grassland sites. It is more common during the winter. Nationally, in areas of the Northern plains their status seems stable, but there are significant declines in the coastal states.

Short-eared Owl  
Dave Herr



# September 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 Sunrise 6:22 AM Sunset 7:31 PM  <b>Labor Day</b>	2  Clean out Purple martin boxes and cover holes	3  New England aster blooms	4  Wool grass seed collection	5  Ruffed grouse broods begin to disperse	6  Fringed gentian blooms; Wild quinine seed collection
7  Ruby throated hummingbirds begin southern migration	8  Flowering spurge seed collection	9	10	11  White-tailed bucks begin to shed velvet	12	13  Prairie dock and Culver's root seed collection
14  Purple prairie clover seed collection	15  Stiff gentian blooms ○ Full (Harvest) Moon	16  Migrating Canada geese begin to arrive	17	18  Hawks and Blue-winged teal are migrating	19  Rattlesnake master and Pasture rose seed collection	20  Prairie blazing star seed collection
21  Trumpeter swan cygnets learning to fly	22  <b>Autumnal Equinox First Day of Fall</b>	23  Whooping cranes begin migrating south	24  Leaves are turning color	25  Canvasbacks begin southern migration	26  White wild indigo and Round-headed bushclover seed collection	27  Wild beragamot, Leadplant and Swamp milkweed seed collection

28

29

30

Sawtooth sunflower, Switchgrass, and Indian grass seed collection



August							October							
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photos: Porcupine, © Paul Burwell Photography - PaulBurwell.com; below: Northern flicker, Dave Herr; White-tailed deer, Jeff Pines

**Western meadowlark**

*Sturnella neglecta*

A prairie obligate species, Western meadowlarks avoid landscapes with greater than 5 percent tree cover and have a decided preference for short-grass pastures, dry prairies, and barrens habitats in Wisconsin. Their highest population densities occur in Wisconsin's southwest driftless area, the north-central barrens, and central sands area. This bird species is virtually identical to its close relative, the Eastern meadowlark. Both species are medium-sized birds with a yellow breast and a distinctive black chevron below the chin. Their flight is a series of rapid wing beats and short glides that show prominent white markings on each side of the tail. Western meadowlarks can be distinguished readily from the Eastern by their vocalizations and call notes. The Western has a 7-to-10 note, flute-like song instead of the two-note drawn out whistle of the Eastern meadowlark.

A noted early nester, Western meadowlarks typically follow the melting snow line from their wintering areas in the southwestern U.S., arriving in Wisconsin by mid-March and initiating egg-laying by the end of April. Optimum grassland areas for nesting are between 25 and 250 acres in size with enough residual vegetation to conceal a ground nest containing a clutch of four to six eggs. Their diet consists of grain/weed seeds, and insects obtained while foraging on the ground.

As with many other grassland birds in Wisconsin, Western meadowlark populations are in serious decline. Breeding-Bird Surveys carried out from 1966 to 1994 show an average annual decline of 8 percent. The decline appears to be fueled by loss of habitat through conversion of pastures and hay fields to row crops, increases in invasive woody species in grasslands, urban development, and brood parasitism by cowbirds.

Western Meadowlark  
Brian Zwiebel



# October 2008

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<p>September</p> <table border="1"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td></td></tr> <tr><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td></tr> <tr><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr> <tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td></tr> <tr><td>28</td><td>29</td><td>30</td><td></td><td></td><td></td><td></td></tr> </table>	S	M	T	W	T	F	S	1	2	3	4	5	6		7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30					<p>November</p> <table border="1"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr> <tr><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr> <tr><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td></tr> <tr><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td></tr> </table>	S	M	T	W	T	F	S							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29		<p>1</p> <p>Sunrise 6:55 AM Sunset 6:38 PM</p> <p>Tamarack trees are turning golden; Bottle gentian seed collection</p>	<p>2</p> <p>Little brown bat departure; Dark-eyed junco fall arrival</p>	<p>3</p> <p>First frost</p>	<p>4</p>
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<p>5</p> <p>Stiff goldenrod, Ironweed, Canada wild rye and Yellow coneflower seed collection</p>	<p>6</p> <p>Compass plant seed collection</p>	<p>7</p> <p>Big bluestem and Blue vervain seed collection</p>	<p>8</p> <p>White-tailed buck making scrapes and rubs through November</p>	<p>9</p>	<p>10</p> <p>Rough blazing star seed collection</p>	<p>11</p>																																																																																				
<p>12</p> <p>Eastern prickly pear cactus, Showy goldenrod and Old field goldenrod seed collection</p>	<p>13</p> <p>Prairie dock seed collection <b>Columbus Day</b></p>	<p>14</p> <p>Frogs begin to burrow into mud; Wood ducks migrating south <b>Full (Hunters) Moon</b></p>	<p>15</p> <p>Last Eastern phoebe sighting; Sky blue aster and Little bluestem seed collection</p>	<p>16</p>	<p>17</p>	<p>18</p> <p>Red-winged blackbirds gather for departure</p>																																																																																				
<p>19</p> <p>Redhead ducks migrating south</p>	<p>20</p>	<p>21</p> <p><b>Ding Darling's Birthday (1876)</b></p>	<p>22</p>	<p>23</p>	<p>24</p>	<p>25</p> <p>White-tailed bucks begin rut</p>																																																																																				
<p>26</p> <p>White-throated sparrow departure</p>	<p>27</p> <p>Canvasback peak fall migration <b>Teddy Roosevelt's Birthday (1858)</b></p>	<p>28</p>	<p>29</p> <p>Black bears begin to den</p>	<p>30</p>	<p>31</p> <p><b>Halloween</b></p>																																																																																					



photos: Ruffed grouse, Jeffrey J. Strobel; below: Cedar waxwing, Dave Herr; Sandhill cranes, Ray White

**Upland sandpiper**

*Batramia longicauda*

The Upland sandpiper is classified as one of Wisconsin's shorebirds, yet is also an obligate grassland bird and is considered a quintessential species of the grassland. They stand approximately 10 inches high on long yellow legs with large prominent dark eyes, a black rump, and long tail (hence, "longicauda" which means long tail) with noticeable dark banding. In flight the bird can be distinguished by its blackish-colored primary wing feathers. The call is a very distinctive "wolf whistle" often heard in flight and on its breeding grounds.



Upland sandpipers are neotropical birds that arrive here from South America in April or May. They nest on the ground in short grasslands and produce a clutch of four eggs, which hatch in approximately one month. Their diet consists of a variety of insects and some fruits and seeds. Upland sandpipers begin their migration south as early as late summer into September, and winter in northern Brazil, Argentina, and Paraguay.

The bird is distributed throughout the state in larger grassland tracts, and is a species of special concern status because of the fragmentation and loss of grassland habitat that has been converted from idle fields and pasture to row crops. Upland sandpipers prefer large tracts (at least 100 acres, preferably adjoining other grasslands) of dry grassland with some forb and low, shrubby cover, a light-to-moderate litter layer without dense, tall grassland vegetation. Grassland management for this species focuses on maintaining large, contiguous blocks of dry permanent grassland/barrens habitat such as pastures, old fields, hayfields, and dry prairies free of trees and wooded fencerows.

Upland Sandpiper  
© Patricia Velte, BackyardBirdCam.com



# November 2008

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photos: Bobcat, © Paul Burwell Photography - PaulBurwell.com; below: Red pine cone, Ellen Barth, Rough-legged hawk, Dave Herr

**Milkweed Tussock Moth**

*Euchaetes egle*

The Milkweed tussock moth is the only member of its genus to inhabit the Eastern half of the U.S. The moth ranges from southern Canada to Texas and Florida. Other members of this family include the Woolly bear caterpillar that folklore says can predict the upcoming winter by the amount of black on the caterpillar (which has been shown to be untrue). Found among prairies, sedge meadows, oak savannas, and edge areas, the Tussock moth has a wingspan of one to nearly two inches, and is identified by unmarked gray wings and a black-spotted, yellow abdomen.

The moths feed on dogbane and a variety of milkweeds native to the prairies, including butterfly weed, and purple and poke milkweeds. Like most species in the Arctiidae family, the Milkweed tussock moth uses chemicals ingested from its host plant as a defense against predators such as bats. It also has a tymbal organ that produces ultrasonic sounds for both mating and defense.

The female tussock moth lays its eggs in a group in late June on the underside of leaves, and covers the eggs by a blanket of its body hairs. The earliest caterpillars are gray, with fine hairs. As they molt, body color changes from light yellow to a striking and distinctive body of black, white, and orange-tufted, feather-like hairs. The Milkweed tussock moth caterpillar is much showier than its Woolly-bear relative.

As young caterpillars feed, they avoid the leaf veins. Older individuals sever the veins above the feeding areas, thus managing the flow of the milky 'sap' in the leaf. Large lacy patches of defoliated milkweeds can be a sign that the Tussock moth caterpillar has been feeding.

Tussock Moth Caterpillar  
Patrick Coin



# December 2008

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																											
	1 Sunrise 7:10 AM Sunset 4:24 PM  Freeze line reaches the WI/IL border	2  White-tailed jackrabbits feeding on haystacks	3	4	5  Look for beaver prints and tail tracks in the snow	6																																																																																											
7	8  Upper Trout Lake average freeze date (Vilas Co. '62-'72)	9	10	11	12  ☉ Full (Cold) Moon	13																																																																																											
14	15  Look for mink slides along creeks and waterways	16	17	18  Look for otter slides along creeks and waterways	19	20  Lake Mendota average freeze date (Dane Co.)																																																																																											
21	22	23  Look for snow fleas (springtails) on the snow near dead vegetation	24	25  Christmas	26	27  Take part in the Christmas Bird Count																																																																																											
28  Endangered Species Act Passed (1973)	29  White-tailed deer bucks begin to shed antlers	30	31		<p>November</p> <table border="1"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td>1</td><td></td></tr> <tr><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr> <tr><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr> <tr><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td></tr> <tr><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td></tr> </table>	S	M	T	W	T	F	S						1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	<p>January</p> <table border="1"> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td>1</td><td>2</td></tr> <tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr> <tr><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td></tr> <tr><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td></tr> <tr><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> <tr><td>31</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	S	M	T	W	T	F	S						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
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## Landowner assistance available with the U.S. Fish and Wildlife Service (USFWS)

**The Partners for Fish and Wildlife Program** assists private landowners in restoring wetlands, grasslands, oak savannas, pine and oak barrens, streams and endangered species habitat. Financial and/or technical assistance is offered to private landowners through voluntary cooperative agreements. Under these cooperative agreements, landowners agree to maintain the restored lands for the life of the agreement (10-year minimum). Landowners also retain full control of their land.

**For more information on the Partners for Fish and Wildlife Program, visit** [www.fws.gov/midwest/Partners](http://www.fws.gov/midwest/Partners)

**The National Wildlife Refuge System**, managed by the U.S. Fish and Wildlife Service, is the only system of federal lands dedicated entirely to wildlife. The Refuge System consists of 545 refuges, covering 97 million acres. These protected lands provide habitat for more than 200 species of fish and nearly 500 other animal species. Among the hundreds of wild species that call wildlife refuges home are 250 threatened or endangered plants and animals. More than 39 million people visit the wildlife refuges each year.

**For more information about the U.S. Fish and Wildlife Service and the National Refuge System, visit** [www.fws.gov](http://www.fws.gov)

## Landowner assistance available with the USDA Natural Resources Conservation Service (NRCS)

### **Wetlands Reserve Program (WRP)**

WRP is a voluntary program to help private landowners restore wetlands previously altered for agricultural use. The program provides assistance for wetland habitat restoration on lands that have been owned for one year and can be restored to wetland conditions. Landowners may restore wetlands with permanent easements, 30-year easements or 10-year contracts. One-time easement payments are based on the lesser of: 1) an appraisal based on pre-easement land value minus the post-easement land value, 2) the geographic rate based on agricultural county caps or 3) the landowner offer. Permanent easements receive 100% of the payment and 100% of the restoration costs; 30-year easements receive 75% of the land payment and 75% of the restoration costs; 10-year contracts pay for 75% of the restoration only. Permanent or 30-year easements are recorded with the property deed. Public access to restored lands is not required.

### **Wildlife Habitat Incentives Program (WHIP)**

The purpose of WHIP is to develop or improve fish and wildlife habitat for declining species on private and public land through prairie, barren, savanna, and stream restoration. Typical practices include seeding native vegetation, in-stream fish structures, brush management, and prescribed burning with Karner Blue Butterfly habitat emphasized in 2007. Non-federal land is eligible, including agricultural and non-agricultural land, woodlots, pastures and streambanks. Applications are funded based on statewide ranking. Landowner contracts are 5-10 years in length with flat rate cost share assistance available.

**\*Note: NRCS programs may be changing with the new Farm Bill currently under debate so consult the NRCS website for the latest program information.**

### **Environmental Quality Incentive Program (EQIP)**

EQIP provides technical and financial assistance to agricultural producers for conservation practices that protect soil and water quality. Many practices are eligible for cost-sharing. Agricultural producers on agricultural lands are eligible. Projects are selected based on their environmental value. Contracts last 1-10 years. EQIP financial assistance varies by practice.

### **Conservation Security Program (CSP)**

CSP is a voluntary conservation program that supports ongoing stewardship of private agricultural lands by providing payments for maintaining and enhancing natural resources, including wildlife. CSP identifies and rewards those farmers who are meeting the highest standards of conservation and environmental management on their farm operations. Eligible landowners in selected watersheds may receive annual payments based on their level of stewardship, through a 5 to 10 year contract.

### **Conservation Reserve Program and Conservation Reserve Enhancement Program (CRP and CREP)**

CRP and CREP assist landowners or operators who set aside cropland (or pasture that is adjacent to streams) with annual rental payments throughout the contract period. Continuous CRP is an ongoing non-competitive sign up which includes practices such as grass buffers, windbreaks, waterways, wetland restoration. Cost sharing for practice installation is provided as well as other incentives. Whole field practices include tree planting, grass cover, prairie and oak savanna establishment. Land eligibility varies by soil type and crop history. Contracts last for 10-15 years. CRP and CREP are Farm Service Agency programs with NRCS providing technical assistance.

### **Web Soil Survey <http://websoilsurvey.nrcs.usda.gov/app/>**

This Web site allows online viewing of soil survey maps and reports. This new application greatly enhances access to information on soils which can be helpful for wildlife and forestry planning.

**For more information about these and other NRCS conservation programs, visit** [www.wi.nrcs.usda.gov](http://www.wi.nrcs.usda.gov)



A special thank you to Nina Leopold Bradley and the Aldo Leopold Foundation for providing the phenology data for this calendar.

Thank you to the following individuals who contributed time and expertise to this calendar – USFWS staff: Rhonda Krueger, Rachel Mockler, Jon Olson, Trish Vanderhoef, Bill Peterson, Shawn Papon, Paul Charland, Mike Engel, Ted Koehler, Art Kitchen, Jim Riemer; NRCS staff: Greg Kidd, UW-Extension staff: Bruce Webendorfer, Jeffrey J. Strobel, and John Exo; The Aldo Leopold Foundation: Craig Maier. Also thank you to all the photographers for their willingness to donate photos.

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