

YARD & GARDEN REPORT

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Restore the monarchy

Monarchs in North Dakota are happy today. The weather was pleasant during their long journey here from Mexico. Now they are feeding and breeding in our flower-filled prairies and gardens.

Everyone loves monarchs for their bright orange wings and gentle habits. I invite you to take a closer look at this insect and you will find a true marvel of nature.

No other insect on earth can match the migration of the monarch—a round-trip pilgrimage covering thousands of miles. The monarchs of North Dakota have one of the longest flights—over 2,500 miles to Mexico!

In late August the butterflies will sense the shorter days and start flying south. They will soar in the skies like hawks, gliding 25 miles or more a day. Remarkably, they will arrive to the same villages and even the same trees their great-grandparents visited the year before.

Did you know monarchs can scare away predators that are over 100 times their size? Imagine that! They gain these powers by eating and storing toxins from milkweed in their bodies. Many birds, lizards and other predators have evolved to avoid monarchs due to these toxins.

Monarchs are amazing—but also very fragile. Their populations have declined by 80% over the last 20 years. This is due to many factors, including the loss of overwintering sites in Mexico. In the USA they have lost breeding habitats due to



Figs. 1–3. Gardeners can support monarchs by growing milkweeds such as swamp milkweed (top) and butterfly milkweed (bottom left).

agricultural expansion. The development of herbicide-tolerant crops has led to major increases in herbicide use and eliminated milkweed in pockets of farm fields where the plant once grew abundantly.

We can restore populations of monarchs by growing ornamental milkweeds (*Asclepias* spp.) in our gardens (Figs. 1, 2). Monarchs cannot survive without milkweed.

Reduce the unnecessary use of poisonous insecticides. These

chemicals threaten monarchs, pollinators and other beneficial insects.

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Our state tree makes a comeback

The grand tree of North Dakota is making a comeback.

The arching branches of elms once lined our city streets like columns in a cathedral. The majestic trees provided rapid and comforting shade over our neighborhoods.

The invasion of Dutch elm disease (DED) changed everything. Discovered in Mandan in 1969, the disease has killed thousands of elms throughout our state.

What a great loss—and these losses continue today as DED spreads

There is hope. We've learned how to manage DED. Trained arborists can identify infected trees quickly and dispose of the wood before the pathogen spreads.

There has been amazing progress in the introduction of new elms that resist Dutch elm disease.

Dutch elm disease actually came from Asia, and Asian trees have developed genetic resistance to it. The University of Wisconsin and Morton Arboretum (Chicago) have incorporated the DED-resistance of Asian elms into American elms and released promising varieties (*Table 1*). Japanese elm cultivars such as



Fig. 4. Our state tree grows fast and strong. It tolerates drought and thrives in our prairie soils. New introductions resist Dutch elm disease.

'Discovery' have been released, too.

Researchers estimate that less than 1 out of every 100,000 American elms is resistant to DED. In spite of those dismal odds, a few gems that resist the pathogen have been discovered.

Dutch elm disease destroyed a grove of elms along the Wild Rice River near Fargo. In this grove of death, one tree stood tall and healthy. Today we call that tree Prairie Expedition® elm, with proven resistance to the disease. Look for this tree in your nursery (currently

municipalities are busy buying as many as possible). Other American elms with exceptional resistance to DED are St. Croix™ and 'Jefferson'.

No elm is immune to DED. Use varieties that resist DED and keep them growing vigorously. Vigorous trees fight disease better than weak trees. Train elm trees when young to prevent weak, narrow crotches.

For more information, go to www.ag.ndsu.edu/springfever/ and watch Greg Morgenson's 2014 talk on selecting elm cultivars.

Table 1. Distinctive traits of promising elms for North Dakota. Unless noted otherwise, all of these cultivars grow fast, have an arching vase-like habit, are hardy to Zone 3 and have dark green foliage.

American elm (*Ulmus americana*)

'Jefferson'	Washington DC. Very tall (65' H x 50' W). Zone 4. Triploid (sterile seeds).
Prairie Expedition®	North Dakota. Well suited for prairies. Large (55' HW). Very hardy (Zone 2).
St. Croix™	Metro Minnesota. Mammoth size (60–75' H x 70–90' W).

Japanese elm (*U. japonica*)

'Discovery'	Manitoba. Sturdy, smaller, more upright habit (35–40' HW). Slower growth. Drought tolerant. Resists leaf beetles; clean leaves.
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Japanese elm hybrids (*U. japonica complex*)

'Cathedral'	Wisconsin. Very fast growth. Must prune to prevent storm breakage. Drought tolerant. 50' HW.
Triumph™	Chicago. Zone 4. Very fast growth. Sturdy. Dark, glossy leaves. Urban tolerance. 60' H x 40' W.



MONITOR FOR SWD

Spotted wing drosophila (SWD) is infesting raspberries. Set traps to monitor for it. Use a 16-ounce plastic party cup with lid. Punch entry holes (1/8- to 3/16-inch diam.) in the cup.



Bait with 4 ounces of apple cider vinegar. Add a drop of liquid soap to kill flies. A sticky yellow card inside can help you see the tiny "fruit" flies. Place traps in shade suspended on a branch or stake. Change bait weekly. One trap per acre is needed.



Male SWD have spots on their back wings. If detected, pesticides are available. Eat, cook or refrigerate fruit promptly. For more info, Google *Integrated Pest Management of Spotted Wing Drosophila in ND*.



BEAT THE HEAT

Drink plenty of water. Our bodies cool by sweating and we need to replace that lost water. Cool water is best. Avoid soda (causes cramps) and alcohol (causes dehydration).



Dress cool. Wear loose-weave, cotton fabrics that allow the body to breathe while protecting you from the sun. Wear a hat or cap. Plan ahead. Perform strenuous activities during the cool morning or



evening. Take breaks in the shade or an air-conditioned room. Know your limits, especially early in summer. Headaches, rapid heart rates and dizziness are warning signs. Exercise regularly.



HARVEST LEAFY HERBS

Harvest at the peak of fragrance and flavor. In most cases this is just before herbs begin to flower. Flavorful oils are highest in the mid-morning after the dew has dried.



Annuals. Harvest basil a few inches down the stem and just above a new set of leaves. Snip leafy stalks of parsley, dill and cilantro at the base of the plant. Keep pinching flower buds before they open. This creates bushier plants and extends



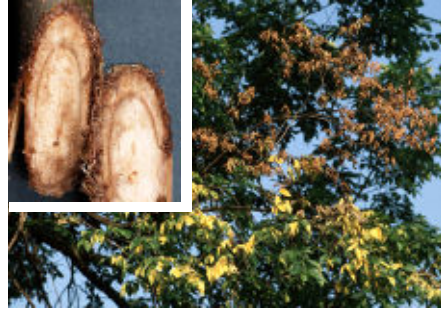
the harvest season. *Perennials.* Be careful not to remove too much. Harvest only about one-third of the top growth. The plants will generate new growth for another harvest this fall.

Problems found in North Dakota yards and gardens:



Fig. 14. Fire blight on apple, pear

Branch tips die back, often showing a "shepherd's crook." Prune out dying tips. Sterilize pruners between cuts. Delay any major pruning until winter.



Figs. 15, 16. Dutch elm disease

Major branch shows yellowing and wilting. Look for brown streaking in sapwood and beneath bark. Removal of tree is most effective strategy.



Fig. 17. Ash flower gall

Green fuzzy balls develop on ash branches. Caused by mites feeding on flowers in spring. Galls are mostly aesthetic and cause little stress. Pesticides are not useful at this time.



Fig. 18. Grubs

Grubs eat roots, creating dead spots. Peel back damaged turf to reveal pests. If more than 3 grubs per square foot, treat with carbaryl or trichlorfon. Irrigate deeply to get chemical in soil.



Fig. 19. Mildew on grape

Gray powder develops on fruits and foliage. 'Valiant', the leading variety, is highly susceptible. Remove infested clusters. Sulfur sprays prevent spread. Prune vines in winter to increase air circulation.



Fig. 20. Rust on Juneberry

Berries develop "spikes" that emit orange spores. This disease comes from nearby junipers. Prune to reduce shade and humidity in canopy. Protective sprays may be applied in spring. Avoid planting near junipers.



Fig. 21. Smut

Fungal galls develop on ears, tassels and stalks. Remove galls before they rupture and release spores. Avoid wounding stalks when cultivating. Remove and destroy diseased stalks this autumn. Crop rotation is helpful.



Fig. 22. Anthracnose on cukes

Tan lesions develop and may drop out, creating holes in leaves. Avoid overhead sprinkling. Protect with fungicides (chlorothalonil, mancozeb or copper). Sow disease-resistant hybrids in the future.



Fig. 23. Septoria on tomato

Small (1/8-inch), numerous spots begin on lower leaves. Remove infected foliage. Avoid getting foliage wet when irrigating. Fungicide sprays (chlorothalonil, mancozeb or copper) prevent spread.

Weather Almanac for July 3–16, 2015

Site	TEMPERATURE				RAINFALL				GROWING DEGREE DAYS ^{1,2}			
	July 3–16				July 3–16		2015		July 3–16		2015	
	Avg	Norm	Max	Min	Total	Norm	Total	Norm	Total	Norm	Total	Norm
Bottineau	68	68	87	38	0.46	1.38	6.53	10.67	240	230	934	958
Bowman	69	69	91	47	0.40	1.03	8.29	9.86	240	251	908	928
Carrington	69	70	88	45	3.01	1.69	10.11	11.43	247	254	996	1040
Crosby	69	66	89	48	0.87	1.49	6.79	9.08	247	213	963	867
Dickinson	70	68	90	51	1.37	1.31	7.79	10.34	260	238	970	938
Fargo	72	71	89	44	1.41	1.39	12.41	12.31	281	276	1117	1130
Grafton	69	68	89	45	4.17	1.38	13.82	11.19	254	234	1002	983
Grand Forks	69	69	89	42	1.69	1.55	8.25	10.99	254	242	1042	1008
Hazen	70	70	92	41	0.97	1.27	8.69	10.35	254	260	972	1070
Hillsboro	69	70	90	42	0.77	1.63	9.58	11.81	256	257	1053	1055
Jamestown	71	70	88	45	2.90	1.67	14.46	10.99	272	259	1079	1029
Langdon	67	66	85	44	1.82	1.58	9.48	10.92	229	203	909	819
Mandan	71	70	91	44	0.56	1.56	11.38	10.31	266	261	1044	1008
Minot	71	68	89	51	1.63	1.30	11.32	10.96	266	236	1007	928
Mott	70	70	90	47	0.09	1.18	10.25	10.52	251	257	963	987
Rugby	69	67	88	46	2.16	1.61	8.54	11.45	250	231	964	970
Wahpeton	70	72	89	43	1.94	1.63	11.15	12.06	266	281	1084	1184
Watford City	72	69	95	50	1.23	1.38	7.18	9.17	276	242	1044	957
Williston	73	71	97	53	1.69	1.31	6.48	8.64	283	272	1062	1098
Wishek	70	68	88	47	0.61	1.44	11.22	12.30	261	241	980	920

DAYLENGTH (July 16, McClusky, center of ND)³

Sunrise: 6:00 AM | Daylength: 15h 35m
 Sunset: 9:35 PM | Change since July 2: -19m

LONG-TERM OUTLOOKS⁴

July 22–26: Temp: Near Normal; Precipitation: Above Normal
 July 24–30: Temp: Above Normal; Precipitation: Above Normal

¹ GDDs for garden vegetables are not available. GDD data in this table are for corn, which responds to temperature as most vegetables grown in gardens. Data begin May 1 with base minimum and maximum temperatures of 50 and 86°F., respectively.

^{2,3,4} Sources: North Dakota Agricultural Weather Network, www.sunrisesunset.com, and National Weather Service, respectively.

Credits

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