

Swallows along the Platte

PART TWO

Part one of this essay discussed the benefits and costs of social life for cliff swallows and their foraging and nesting behavior. The essay continues with discussion of the cliff swallow's opportunistic breeding behavior and colony size.

BY CHARLES R. BROWN

Do unto others before they do unto you

The cliff swallow's highly social nature also illustrates a fundamental consequence of living together for most animals: there are plenty of opportunities to exploit others around you. By color-marking cliff swallows and intensively observing them at their nests, we discovered

that these birds are constantly trying to use their neighbors to their own selfish advantage. A bird will intrude into the nest next door, steal its neighbor's nesting material (grass stems) or the wet mud on its nest, attempt to copulate with its neighbor's mate, throw out one of its neighbor's eggs or in some cases even lay an egg in its neighbor's nest. These are not cases of mistaken nest identity, as cliff swallows clearly know whose nest is whose. Sometimes these trespass attempts are almost continuous, as birds repeatedly try to enter several of their neighbors' nests in rapid succession. Typically, cliff swallows guard their nests almost constantly, probably to try to prevent their neighbors from doing these things to them, but there are enough lapses in

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Monarch butterflies

The last migration

BY BENJAMIN VOGT

ON May 23 my wife yelled to me from the back door of our house, "There's a monarch on the allium!" The last two springs, this being our third here, we had not seen a monarch butterfly until around my birthday in mid-July. And frankly, I didn't expect to see hardly any at all this whole summer. As I dashed out to the garden with my camera in hand, there it was, fighting 40 mph wind gusts, rising and slicing through the air to land on an allium, as bumblebees zipped around it like electrons. I knew the moment wouldn't last.

In 2007 my wife and I moved into our first home together, new construction on the edge of Lincoln. The holdout American elm in the corner of the quarter-acre lot had barbed wire still wound around its trunk, a property marker for some farmer's previous field. As a child, I tended her gardens with my mother in Minnesota, and as I grew older, confined to apartments, I knew I'd want a big garden someday. With a can of orange spray paint, and a day or two before the sod came in, I marked off 2,000 feet of beds and borders for an ornamental garden designed specifically for native wildlife and plants. Milkweed was first on the list.

I actually knew little about gardening but meticulously researched Plains and Midwestern plants online, purchasing the right plant for the right spot—the dry hill and the mucky clay valley of my small yard. I dug \$10 holes for \$1 plants from morning to sunset in 90-degree heat for two summers. Some of the first plants were two *Asclepias incarnatas* (swamp milkweed) and an *Asclepias tuberosa* (butterfly weed), larval host plants for the monarch butterfly and named after the Greek god of healing, Asklepios. Milkweed is said to treat warts and poison ivy, remove mucus from the lungs, cool fevers and work as a contraceptive. You never know how you might need your plants.

At night that first summer of gardening, I'd dream of black-laced orange butterflies and dozens of other insects and birds frolicking in my Eden. But I didn't know what to expect. I was a book-reading graduate student, no botanist or entomologist. In 2008, when I noticed a yellow, white and black striped caterpillar, I really had no idea it was a monarch until I did a Google search. I didn't know the 30 pen-tip-sized white pegs on the undersides of leaves were eggs that would hatch a few days after being laid. The monarchs had come like magic.

Folklore states that if a butterfly flies into your face, cold weather is imminent. For some, it means that within 10 days sufficient frost will turn the leaves the same color as the butterfly. In central Mexico come fall, the monarch arrives at the end of a 3,000-mile migration from as far as southern Canada on the Day of the Dead, which marks the return of a deceased loved one's soul. No one knows how these monarchs, several generations removed from their northward-bound ancestors, find their way

back to their winter home.

The Mariposa Monarch Biosphere Reserve (138,000 acres) lies in the central Mexican states of Michoacan and Mexico. While Anganguo is considered the unofficial monarch headquarters, the most prominent overwintering site is in El Rosario, where as many as four million butterflies—of an estimated 200 million—roost per acre in the fir and pine trees of the oyamel forests on only 12 mountaintops. The trees provide shelter from cold rains, which can freeze the monarchs, while they also hold in warmth rising from the forest floor. The conditions are precariously perfect, delicate microclimates, and only since 1975—as a result of ads taken out in Mexican newspapers—have scientists known the home location of the world's only migrating butterfly.

The summer breeding range of monarchs east of the Rockies is over 247 million square acres, but here the insects cluster in only a few colonies that range in size from one to 10 acres. Like massive dreadlocks, they hang from trunks and branches in suspend-

No one knows how these monarchs, several generations removed from their northward-bound ancestors, find their way back to their winter home.

ed reproduction or diapause. These monarchs were born in September, and unlike the summer generations that live for only two to four weeks, they will last seven months until the February and March migration back north to Texas and the Gulf states, where they will lay eggs and quickly die.

How can an insect with the mass of a paperclip make such journeys and endure? As I watch the July monarchs perform aerial courting—the male dive-bombing and grabbing at the female, hoping to get her on the ground for copulation—I find it amazing that their four thin wings don't shred. In the heat, the wind, the miles of interstate, they dodge death. And then there are blue jays and orioles, who have learned to only eat the thoracic muscles to avoid the poisonous wings that contain cardenolides, which induce vomiting and heart attacks in predators. Tachnid flies lay eggs in caterpillars—maggots emerge weeks later from a newly

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ON THE FRONT PAGE

Image, top left: The former District 51 schoolhouse, which has recently served as lodging for a ranch hand, courtesy of Alan Bartels

Image, top middle: Book cover image, courtesy of The University of Iowa Press.

Image, top right: Male cowbird, courtesy of Paul A. Johnsgard

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Perspective from page 22

Allen reported that the current containment cap on the outflow pipe was collecting less than half of the likely estimated oil flow, about 466,200 gallons per day, or about 11,100 barrels; however, BP and others, including the SF Chronicle, report that BP is able to collect 15,800 barrels a day.

MSNBC on June 7 reported that the oil slick had stained beaches and marshes in spots along more than 100 miles of coast from Louisiana to the Florida Panhandle, and a sheen on the surface was spotted about 150 miles west of Tampa, Fla.

Examiner.com reported on June 12 that the oil slick now covers approximately 3,000 square miles of the Gulf of Mexico's surface.

The Gulf Coast is one of Ducks Unlimited's five highest-priority conservation areas in North America and supports more than 13 million ducks and geese in some years over the winter.

The Christian Science Monitor reported on June 2 that species ranging from sperm whales to Kemp's Ridley sea turtles and from pelicans to already depleted bluefin tuna could be impacted by the spill. According to the National Wildlife Federation, other key species affected by the spill include reddish egret, royal tern and snowy plover.

The National Wildlife Federation reported on May 22 that six to nine times more sea turtles are being found dead than the average rate, and the 29 stranded dolphins found since April 22 represent two to six times the normal rate.

National Oceanic and Atmospheric Administration administrator Jane Lubchenco stated that "no oil" had been found inside the dead dolphins, though the New York Daily News on June 2 reported on a stranded dolphin "filled with oil" found by a BP contract worker.

The U.S. Fish and Wildlife Service reported on May 28 that 444 birds and 222 sea turtles had been found dead in the area.



On April 30, contract employees with BP America, Inc. prepare an oil containment boom at Naval Air Station Pensacola (Fla.) to assist in oil recovery efforts from the Deepwater Horizon oil spill in the Gulf of Mexico. (Patrick Nichols/U.S. Navy)



On May 30, a protest was held in Jackson Square, New Orleans, against the BP oil spill disaster in the Gulf of Mexico. The protest was one of many held throughout the country. (Infrogation of New Orleans)

According to Examiner.com on June 12, rescue teams had brought in about 1,000 birds from oil-covered Gulf waters; however, experts say that number represents only about 10 percent of the number of birds believed to have been killed in the oil slick.

According to BP's estimates, their costs as of June 14, including the cost of the spill response, containment, relief well drilling, grants to the Gulf states, claims paid and federal costs, were approximately \$1.6 billion.

Adam Sharp, writing for "Energy & Capital," estimated that the disaster might result in a one-time charge of \$6 billion or more, "chump-change to a company with an average daily profit of \$43 million (in 2009)."

Dan Shapley on Thedailygreen.com reported that BP's last statement for the first quarter of 2010—before the spill began—showed profits of \$6.1 billion. "In the last four years (including the first quarter of 2010), BP has made a total of \$82 billion, according to Google Finance—putting the cost of the cleanup so far at just 1.2 percent of profits. If you assume BP would have made about as much as it has averaged over the past four years, the cost of the Gulf oil spill [conservatively estimated at \$1 billion] so far amounts to just under 5 percent of BP annual profits."

Admiral Allen noted on June 14 that "Dealing with the oil spill on the surface will take a couple of months" but the getting the oil out of marshlands and other habitats "will be years."

The long-term effects of the Deep Horizon oil spill are undetermined, of course, but the Exxon Valdez tanker spill, considered one of the U.S.'s worst ecological and economic disasters, can provide some understanding of what the Gulf region will experience in years to come. The tanker ran aground on Bligh Reef in Prince William Sound shortly after leaving the port of Valdez, Alaska, in the early hours of March 24, 1989. Over 10 million gallons of crude oil spilled from its tanks into one of the most environmentally sensitive regions of the U.S. Consider that the Gulf region has already experienced well over that amount of crude being spilled into its waters and will likely experience more. According to the National Wildlife Federation:

Still not completely recovered after more than 20 years: Barrow's goldeneyes, black oystercatchers, harlequin ducks, killer whales, sea otters, clams, mussels, sediments and intertidal communities.

Still not recovering after more than 20 years: Pacific herring and pigeon guillemots.

Still impaired after more than 20 years: commercial fishing, recreation, tourism and general human subsistence.

Cris Trautner is production editor for Prairie Fire and co-partner of Infusionmedia Publishing.

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