How farmers are transforming the landscape of agriculture

CINDY MURRAY Special to the Daily Sun

I have great news for gardeners, the environment, and the entire human population! More and more scientists, farmers, nonprofits, governments, and commercial enterprises are collaborating in a quest for sustainable and regenerative agricultural practices.

Sustainable agriculture aims to produce profitable crops and livestock without degrading the environment. Regenerative agriculture goes a step further by restoring damaged soils, water cycles, biodiversity, and more, including enhancement of carbon storage. Today's column will highlight a sampling of these endeavors and accomplishments.

May Ranch

In the summer edition of Living Bird magazine, a featured article entitled "After the Fire" by Michael Booth highlights May Ranch on the southeastern plains of Colorado. The ranch lies in the shortgrass prairie ecosystem, a semiarid climatic zone, which has always made ranching there difficult at best — even more so now as the effects of climate change accelerate. With this in mind, the Mays have employed conservation measures from the get-go, such as raising Limousin cattle, which require less water. Additionally, the ranch employs water-saving drip irrigation for their alfalfa and hay crops.

One of their outstanding achievements, brought about through years of hard work and perseverance, has been restoring traditional grazing lands to the native shortgrass prairie ecosystem. Non-native and overgrazed grasses grow shallow root systems. Shortgrass prairie vegetation, on the other hand, extends roots down about six feet, tapping into vital minerals. This provides ideal nourishing graze for livestock when ranchers follow strict grazing rotations. Adjoining native flora and wildlife also benefit immensely.

Incredibly, the ranch has never resorted to killing coyotes, because prairie dogs are allowed to prosper. Coyotes prefer this prey and leave the calves alone.

As a boon for Mother Nature as well as humanity, May Ranch's 15,000 acres of deep-rooted shortgrass prairie is, as Michael Booth states, "… a carbon-sequestration gold mine." The May Ranch receives extra income through the Ducks Unlimited Carbon Program, which connects land stewards with industries or individuals that release greenhouse gases. These industries "offset" some of their released gases by paying landowners like May Ranch to sequester carbon. But if the land is plowed, the deal is off — plowed soil releases its carbon stores back into the atmosphere.

Pacific Northwest dairy farmers

Who would guess that farmers would, one day, welcome raptors? This happens to be the case with some dairy farmers in the Pacific Northwest. Rather than viewing bald eagles as a threat to their livelihood, they are welcoming these magnificent birds.

Here's why. During the past 50 years, climate change has forced salmon to spawn earlier in the winter, before yearly floods have reached their normal peak. Now waters aren't strong enough to shore up the carcasses of the depleted salmon, which had once provided forage for bald eagles. These birds are somewhat slothful raptors; they prefer dining on dead meat rather than expending energy hunting down prey.

Strange as it may seem, the birds have now found a reliable winter source of nourishment on dairy farms — the waste products of births and deaths of cows. Occasionally bald eagles will also hunt farm vermin like starlings and rodents.

Blackwell's Farm

When Beverly Bowen decided to go back to her roots on her family farm in the Piedmont region of North Carolina, she knew she couldn't be the kind of land steward her ancestors were; farming and climate change had already taken its toll on the soil.

With the aid of her son, Seth Blackwell, and the North Carolina Cooperative Extension, she started over, employing modern, sustainable farming techniques like cover-cropping during the off-season with daikon radish and kale. Both of these crops have deep tap roots that break up compacted soils like hers. Tap roots improve water infiltration, aid nutrient retention, build soil structure, and prevent erosion. This no-till type of agriculture even helps keep weeds and pests away.

To avoid recompacting her 60 acres of now prime grazeland, she keeps to a strict schedule of rotating cattle in and out.

These illustrations of transformative agriculture barely scratch the surface of the accomplishments and ongoing efforts aimed at nurturing humanity in the course of replenishing our soils, water systems, and ecosystems. I greatly admire the farmers, ranchers, researchers, and conservationists who have the courage and tenacity to put novel, perhaps daring, innovations to the test.

SKYWARN is a program that trains volunteers to help keep their local communities safe by providing timely and accurate reports of monsoon season weather to the National Weather Service. (Video courtesy of Flagstaff NWS)

Cindy Murray is a biologist and co-editor of Gardening Etcetera and has been a Coconino Master Gardener since 2010. She is married and has two amazing grown children and two grown grandchildren. Cindy enjoys photographing Arizona's great outdoors, especially sunsets, birds, and insects. She is a member of Arbor Day Foundation, Audubon Society, The Nature Conservancy, and The Cornell Lab of Ornithology.