

# REGENERATIVE AGRICULTURE

## FOOD - CLEAN WATER - CLIMATE



### NUTRIENT AND SOIL MANAGEMENT IN FIELDS

The health of the Chesapeake Bay is intricately linked to the health of more than 83,000 farms that operate in its watershed. Agriculture contributes the largest amount of nutrients to the Bay, which in excess quantities degrades aquatic habitat for fish, oysters, crabs, and submerged plants.

In the past 30 years, farmers have more than doubled the amount of corn produced on every acre while also reducing the amount of nitrogen making it to the Chesapeake Bay by 37%. Despite these successes, more farmers will need to adopt advanced nutrient management practices (i.e., precision use of fertilizer) to restore the Bay, especially now that increasing

temperatures and precipitation due to climate change continue to make our water quality goals even harder to meet.

In 2018, The Nature Conservancy co-founded the MidAtlantic 4R Nutrient Stewardship Association — a collaboration of agribusinesses, government agencies, researchers, and conservation groups — to increase the adoption of these practices while also improving the economic sustainability of farms. **Our goal is to see 2 million acres of cropland in the Bay watershed adopt climate-smart nutrient management and soil health practices.**

### WETLAND AND FLOODPLAIN RESTORATION AT THE EDGES OF FIELDS AND DOWNSTREAM

The Chesapeake Bay watershed is made up of more than 150 rivers and 100,000 streams carrying water across the landscape and eventually to the Bay. As the population across the watershed has grown, however, many of those waterways have been greatly impaired and wetlands have been converted to other land uses; primarily agriculture and development.

Restoring the Chesapeake will require restoring this network of streams, wetlands, forest buffers and floodplains to slow and clean the water before it reaches the Bay. As we experience greater impacts of climate change — including rising temperatures and more frequent

large storms — the water filtration and storage provided by wetlands and floodplains is even more critical.

Using cutting-edge science, The Nature Conservancy is identifying key areas where wetland and floodplain restoration can have the greatest benefit to water quality. To complete restoration projects on a larger scale, the Conservancy is also helping to build new coalitions and partnerships with landowners, federal and state agencies, NGOs, and others. **Our goal is to restore and enhance 235,000 acres of wetlands and floodplains across the Chesapeake Bay watershed along with the benefits they provide.**

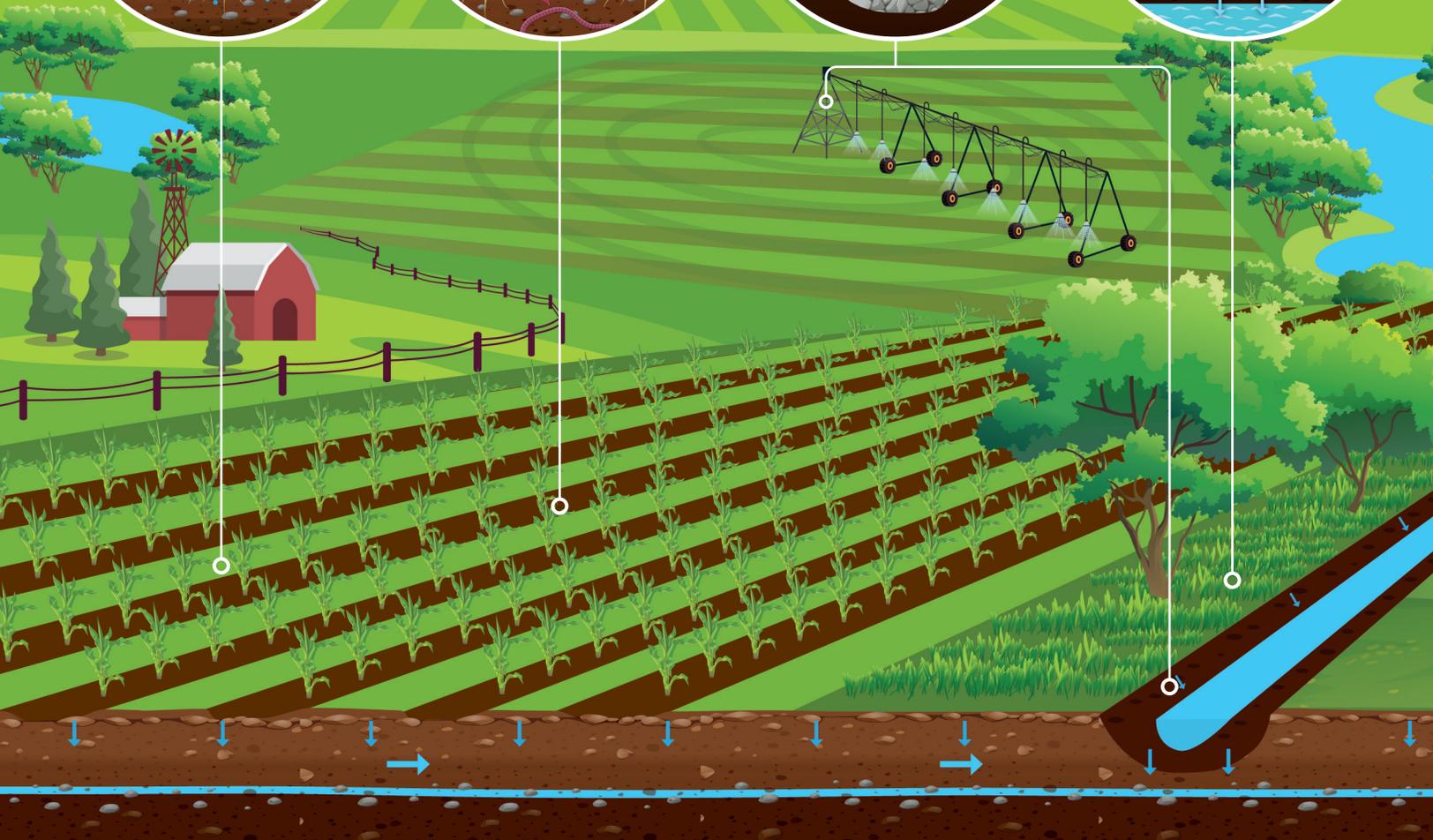
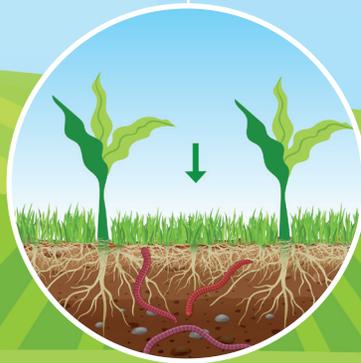
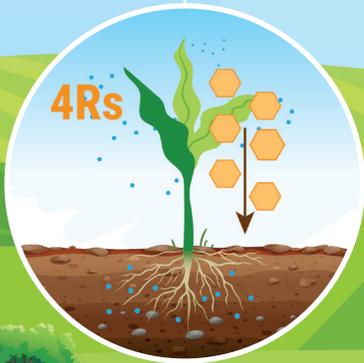
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**PRECISION NUTRIENT APPLICATION** is the core premise behind 4R nutrient management, which aims to match fertilizer applications to crop needs. The "4Rs" are using the right source of fertilizer, applied at the right time, right rate, and right place. Applying just what the plants need when they need it means fewer nutrients leaving the field and savings for farmers.

Practices to improve **SOIL HEALTH** such as planting cover crops and avoiding unnecessary tillage help to maintain living roots in the soil that absorb remaining nutrients after the growing season, while also promoting soil microbial life, storing water, reducing erosion, and capturing carbon.

**PRECISION WATER MANAGEMENT** improves yields by maintaining ideal soil moisture conditions, both through irrigation to provide water during droughts and through terraces, swales, and drainage ditches to remove and slow water after storms.

Creating **NATURAL BUFFERS AND FILTER STRIPS** of vegetation and trees near the edges of farm fields traps nutrients and sediments leaving fields after storms before they flow into waterways, while also providing valuable habitat for wildlife and pollinators.

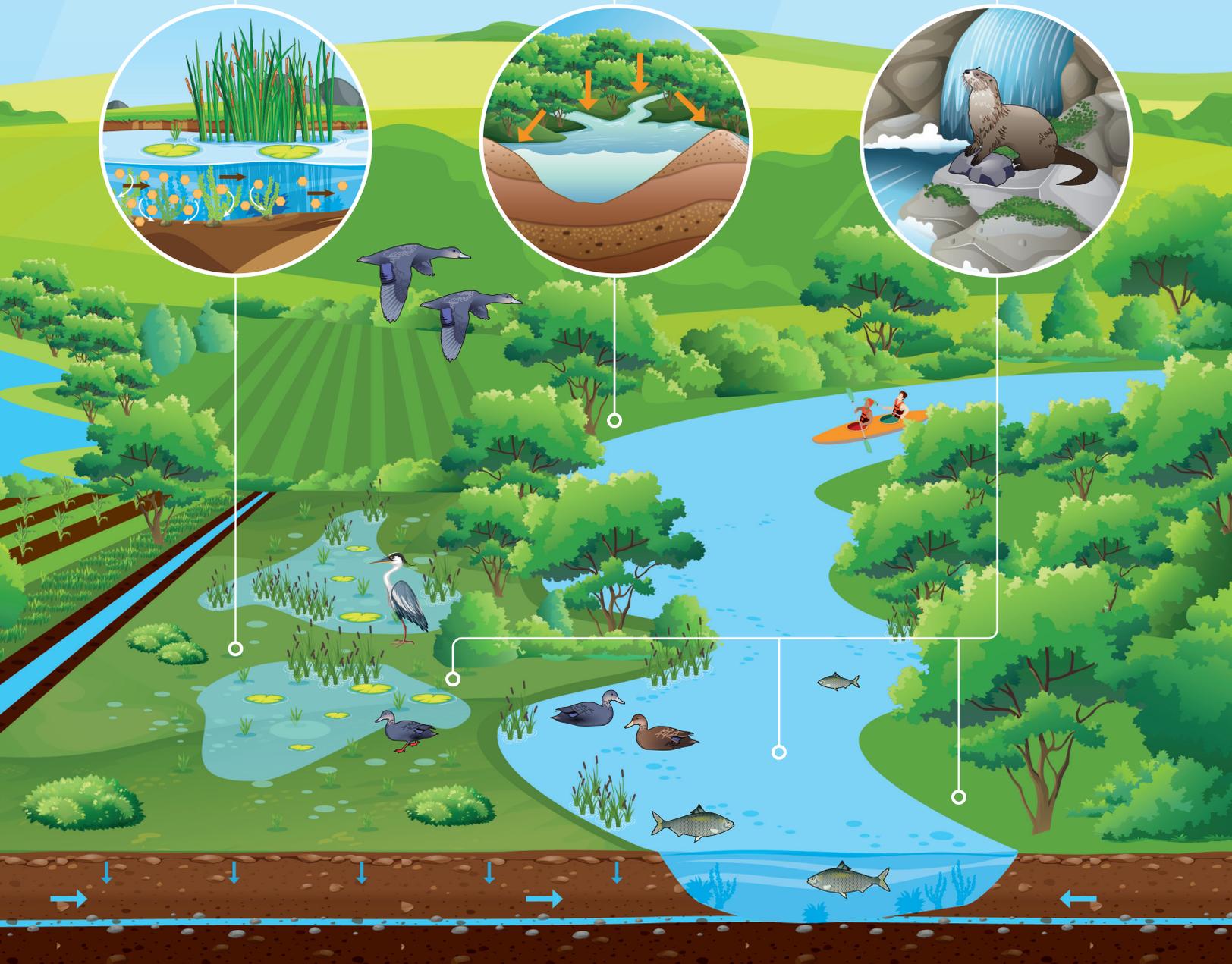


# WETLANDS AND FLOODPLAINS

Wetlands perform critical function throughout different parts of the watershed. **WETLANDS ADJACENT TO FARM FIELDS CAN CAPTURE** nutrients and sediment carried away by rainwater during storms by slowing down runoff and allowing natural processes to filter the water before it continues downstream.

Large-scale storm events can impair water quality by moving high volumes of water very quickly across the land. Restoring streams and degraded **FLOODPLAINS** helps to slow and store flood water to allow nutrients and sediment to be removed. In some areas, it can also reduce flooding to communities downstream.

Humans aren't the only ones who benefit from wetland restoration. A huge array of wildlife depend on wetlands for everything from food to shelter to a place to rear young. Wetland and **STREAM RESTORATION** can be particularly beneficial for animals like fish, birds, small mammals, reptiles and amphibians. Around the Chesapeake Bay watershed, that includes species like black ducks, river otters, salamanders, and trout.





## FOR MORE INFORMATION

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