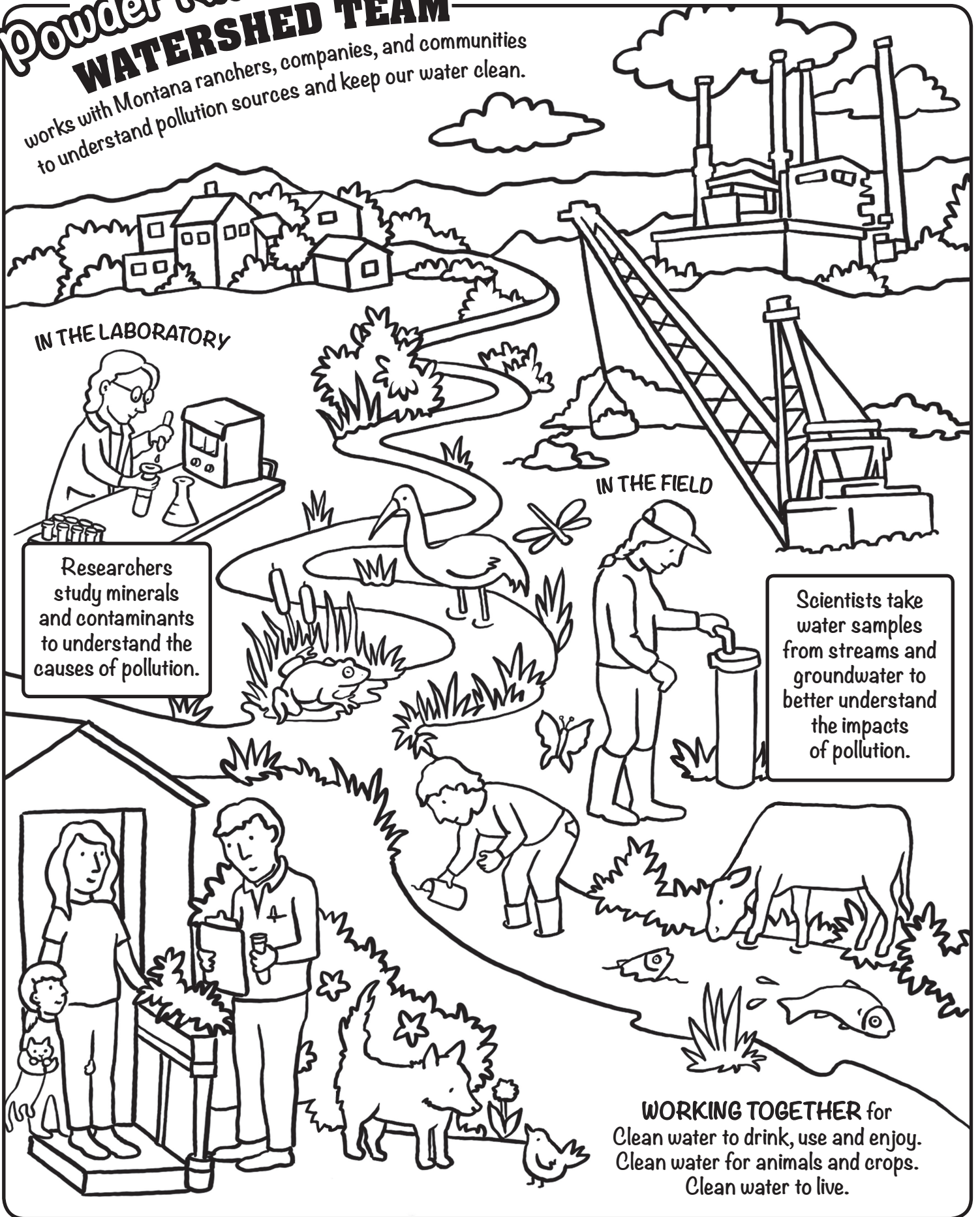


CREWS* Powder River Basin WATERSHED TEAM

works with Montana ranchers, companies, and communities
to understand pollution sources and keep our water clean.



MONTANA
NSF EPSCoR



IN THE LABORATORY

Researchers study minerals and contaminants to understand the causes of pollution.

IN THE FIELD

Scientists take water samples from streams and groundwater to better understand the impacts of pollution.

WORKING TOGETHER for
Clean water to drink, use and enjoy.
Clean water for animals and crops.
Clean water to live.

*CREWS is the Consortium for Research on Environmental Water Systems

CREWS* Powder River Basin WATERSHED TEAM

Water is one of Montana's most valuable natural resources. Whether in rivers, lakes, canals or underground, water is important for our homes, agriculture, businesses, recreation, wildlife and the environment. But water can easily become polluted, and scientists and engineers in Montana are working hard to figure out where pollution comes from and how it gets into rivers and soils. They are also studying how we can keep pollution out of our water or clean it up if it's already there.

One of their research sites is the Powder River Basin. The Powder River Basin stretches from southeast Montana into northeast Wyoming. The region contains many different waterways that are part of the Yellowstone and Missouri river systems, including the Tongue River and Cheyenne River. Many tribes, including the Crow, Oglala Lakota, and Northern Cheyenne, lived in the Powder River Basin, relying on the region's herds of bison for food and materials. Archaeologists think that people have lived in this area for over 6,000 years! Today, tribal reservations exist in southeast Montana for the Crow and Northern Cheyenne nations.

Water is an important resource for the many people that live and work in the Powder River Basin. Communities depend on the area's streams and groundwater for drinking, while ranchers and farmers use local water for their livestock and crops. The Powder River Basin is also known for its vast reserves of coal. Companies like the Rosebud Mine in Colstrip dig up and remove these coal deposits, which are then processed and used to help generate electricity in nearby power plants. After a coal deposit has been used up, the mine will then "reclaim" the spot by replanting the area with native plants or replacing the topsoil. However, mining activities can still impact the groundwater in ways that worry the mining and agricultural communities, as well as the people that live there.

To better understand the impact of coal mining in the Powder River Basin, scientists study how mining and reclamation are connected to the presence of certain chemicals in local streams and groundwater. One way they do this is by drilling deep groundwater wells and studying the water samples they find. The researchers also collect water samples from a local stream, Rosebud Creek, and test these for concentrations of certain chemicals. By testing water from both the wells and the creek, the researchers can explore connections between the groundwater and the surface water in the Powder River Basin. Scientists also check the safety of drinking water wells at homes on the Crow Reservation to understand how local people and communities are impacted by mining activities. Not all the scientists work directly in the Powder River Basin. Some people who help the Powder River Basin work in laboratories around Montana, where they can study how minerals and contaminants from the area dissolve in and can be removed from water.

All the scientists and engineers that study the Powder River Basin are part of a team called CREWS – the Consortium for Research on Environmental Water Systems. A consortium is a team, and this team is working together to help our Montana water stay clean and healthy for all to enjoy.

For more information about Montana NSF EPSCoR and research in the Powder River Basin, visit <https://www.mtnsfepscor.org/projects/crews/research/prb>

Sources

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