The Routt County 4-H community mapping project is a parent’s dream come true.

The project represents a happy confluence of kids, high-tech computer applications, the outdoors and community service. The outcome: relevant experience in real-world endeavors.

Thanks to a partnership with the Orton Family Foundation, and knowledge gained about Global Positioning System and Global Information System technology, six youth from Routt County took on the task to help local resource managers by mapping noxious weeds at Elkhead Reservoir in Elkhead State Park.

Jay Whaley (pictured in photo), Routt County 4-H youth coordinator, organized the project after being contacted by Connie Knapp, community mapping program manager for the Orton Family Foundation in Steamboat.

“Community mapping is a tool used by all kinds of decision makers,” Knapp said. “In the case of the Routt County project, mapping the location of weeds around the reservoir helped resource managers understand the extent of the problem and make decisions about how to deal with it.”

“Our community mapping program puts youth working alongside community members on real issues so that they learn new skills, like GIS technology, and how to apply it to decision making,” said Knapp. The program also teaches youth that math, science and technology skills have applications in the real world beyond school.

“I think the real carrot in this whole community mapping process is that kids learn in a real-world context that it’s not that they have to learn math or how to measure pH just because they should,” she said. “They see it being done for authentic reasons, are brought into the whole process of looking at the problem, monitoring it, assessing trends and hopefully working with the state parks folks to find out how to minimize those weeds.”

The Routt County project also helped resource managers comply with a 2003 government directive requiring all state agencies to map tamarisk, a new invasive weed found growing along waterways, Whaley said.

Whaley launched the project in February 2003 by rounding up kids he thought would be interested, based on past 4-H projects. Ultimately, a group of six, ranging in age from 12 to 15, came together to form the 4-H community mapping team.

“It’s a pretty unique group. We have three from Hayden, on the western side of the county, one from Steamboat and two homeschooled kids,” Whaley said.

Emily Hallenbeck, a 15-year-old native of Hayden, said at first she wasn’t very interested in the project. But the technology element and a friend’s participation hooked her.

“I got interested because it had to do with computers,” she said. Like many kids her age, Hallenbeck enjoys “messing around” with computers and discovering the different things that she can do with them.

After selecting the team, the next step was a class in GPS technology, which consists of 27 satellites orbiting the earth and a series of ground stations around the world that monitor these satellites.

Both civilians and members of the military use handheld GPS receivers to communicate with the satellites using radio waves. Combining information from four satellites, the receivers are able to pinpoint
and save a location on earth, called a “way point.” This data then can be loaded into a computer with Geographic Information System software and used to create maps.

Once the group was familiar with the hardware and software, members spent a full day surveying Elkhead reservoir. Happily, Whaley said, they found no tamarisk there. By boat and on foot the young mapping team members marked all of the Russian Olive plants they found using their handheld GPS units.

With their data in hand, team members paired up, with each pair creating a map. “So they not only learned how to load the way points on to the computer, we taught them all the things that need to be on a map and what they were trying to relay,” Whaley said.

“It was easy to make the points,” Hallenbeck said, referring to the way points created with the handheld GPS units. “But it was hard to put them into a map and design the map so it was attractive for people to read.”

Hallenbeck said it took time for team members to figure out all the things the computer systems could do along with choosing appropriate colors and creating usable map keys for their maps.

Whaley plans to continue the 4-H community mapping team again in the spring of 2005. He also hopes to help educate others in 4-H about the power and potential of GPS and GIS technologies.

He has developed a seven-step process for implementing projects.

Meanwhile, the GPS units haven’t been gathering dust. “The kids come back in and check out the units.”

One team member gathered a group who went out and mapped noxious weeds on his father’s ranch. Hallenbeck and her friend, Jennifer Epp, mapped hounds tongue, a cockle-burr-producing weed, in the Hayden Town Park. They devised a control plan — chopping down the plants and bagging seed heads — and plan to go back in the spring to monitor the problem.

Whaley said the technology involved in community mapping offers opportunities for 4-H to expand its relevance to youth. “A lot of times the public sees 4-H as cooking and cow projects. They don’t realize all the citizenship and leadership and now even technology we’re providing to youth.”

— Leigh Fortson

4-H Agent Tackles Community Mapping

Routt County 4-H youth coordinator, Jay Whaley, launched the 4-H community mapping program in February of 2003, to help the county meet a government directive to map tamarisk, an invasive plant growing along waterways. Whaley chose six 4-H youth who had worked on past 4-H projects, three from the west side of Routt County, one from Steamboat, and two homeschooled youth. All youth on the team shared a common interest…computers.