

Fishing for facts to save salmon

By T.J. BURNHAM

PRODUCERS know buffers between streams and farming areas are important to fish health, but little is known about how wide those zones should be for effective protection.

Now, thanks to continuing studies by Oregon State University riparian entomologists Sandra DeBano and David Wooster, some answers are surfacing.

In a project launched in 2001 to study the salmon issue, DeBano and Wooster, who are married, began digging for answers that will help farmers by providing hard science on what works to save fish.

"Farmers wanted to know exactly what was hurting the salmon and how to fix it," says DeBano.

Key Points

- OSU conducts new research on buffers and riparian areas.
- Team strives to use science to support regulations.
- Farmers are eager to get data before they develop buffers.

The mission of the team is to provide the scientific facts on which to base good policy dealing with salmon.

Working primarily on the Umatilla River, but also conducting research along the Walla Walla River, the two work out of the Hermiston Agricultural Research and Extension Center in Hermiston, Ore., but their findings are expected to impact salmon-saving efforts in a much wider area.

An example of why science-based policy is needed is



RIPARIAN RIDDLES: OSU riparian entomologists Sandra DeBano and husband David Wooster work along the Umatilla River to bring science to regulations for riparian buffers and river levels.

found in the inconsistency that stream buffers are regulated in western Oregon forests, but not in eastern Oregon cropland.

While many studies have been performed on forest river systems, few, if any, have probed this question in cropland areas.

"Growers here are concerned that regulations may be enacted which would not be based on solid science," says DeBano.

Finding effective buffers

So she and Wooster are looking at different kinds of buffers. They're studying whether woody or herbaceous buffers are best, along with the size and shape of effective buffers.

"We're trying to measure benefits of various kinds of buffers," she says.

"A lot of money is being

spent on putting in buffers, but very little monitoring has been done," DeBano explains. "As a result, we don't know what is effective or why."

Working with tribal groups and other growers, as well as the Oregon Department of Fisheries and Wildlife, the team looks at insects and other invertebrates as indicators of stream health.

Higher water levels

They are also investigating the impact of irrigation system withdrawals from the rivers. "This project is in response to pressures to leave more water in the rivers," explains Wooster. "There isn't much science telling what the return would be if more water is left in rivers."

"We're looking at what the return in term of salmon health

may be each time we increase rivers to certain levels," he says.

"There are groups lobbying for regulations which would leave more water in the river with the idea that would lead to more salmon, but we really don't know what benefits actually result from taking less water from rivers," he adds.

Based on talks with growers, DeBano and Wooster say the farming community is excited over actually getting some science behind regulations.

"They just want to make sure what they are asked to do is backed by science in the salmon equation," DeBano says.

"They really don't seem to be concerned about what our findings may be," she says.

"They mainly want data for a more informed policy."

Buffer advice: Go wide

By NATHAN BETTS

IF you're looking to plant buffers that benefit winged wildlife: Think wide! That's the recommendation from two recent studies funded by the Natural Resources Conservation Service's Agricultural Wildlife Conservation Center.

The studies drew similar conclusions: Wider buffers create better habitat for certain species of butterflies and birds. While the studies confirmed that both birds and



PHOTO BY ROBER HILL

BIGGER IS BETTER:

Researchers found nesting pairs of meadowlarks only in buffers wider than 100 feet.

butterflies are found in narrow buffers, wider buffers attract grassland specialist species and birds that use buffers for nesting.

"Finding a greater diversity and abundance of butterfly species in wider buffers is consistent with bird use of buffers," says Bill Hohman, a biologist with NRCS.

Researchers in a south-

western Minnesota study on butterflies' use of conservation buffers determined habitat-sensitive butterflies, such as the great spangled fritillary, responded positively to added buffer width. However, they point out that wider buffers don't necessarily increase overall butterfly population.

"We did find more habitat-sensitive butterflies in wider

buffers, but wider buffers didn't produce more monarch or Eastern tailed blue butterflies and others that are tolerant of habitat disturbances," says Dianne Debinski, an associate professor at Iowa State University.

Butterfly benefits

The study did provide tips to manage filter strips in a way that benefits butterflies. The report points out that even narrow filter strips are used by butterflies and that planting native species will attract more species of butterflies.

Research also revealed that planting species that grow higher and thicker should also attract more habitat-sensitive butterfly species.

Researchers suggest planting wide strips of warm-season

grasses and forbs for best results because flowering plants and nectar availability can lead to an increase in the overall butterfly population.

Wider buffers helpful

The benefits of wider buffers don't stop with butterflies. A study conducted at the U.S. Geologic Survey Patuxent Wildlife Research Center near Beltsville, Md., revealed that if conservation buffers are meant to be truly valuable to birds, they may need to be much wider than many existing buffers.

Matthew Perry of the USGS says that, while birds were present in buffers of all widths, they only observed bird nests in wider buffers.

"We found no nesting in either the 50-foot- or 100-foot-wide grass strips," Perry says. "However, when we observed buffers in strips 130 feet to more than 200 feet wide, we found nesting pairs in most of those buffers."