reduced grazing on the allotment by 50% and implemented the five-pasture, rest-rotation grazing system.

By 1984 upland vegetation had improved. In addition, cottonwood, willow and other riparian vegetation had regenerated in profusion. There were more than 1,000 cottonwoods and 3,200 willows 0.25-25.9 inches in diameter per 100 acres where previously there were none.

On this site reduced numbers of livestock and a rest-rotation grazing strategy allowed sparse, decadent riparian vegetation to regenerate rapidly and in profusion.

In 1987 the livestock permittee remarked that he had been on the allotment for more than fifty years and that the riparian areas had "always looked bad." That areas which had been nothing but sandy draws for decades now had flowing water, and abundant vegetation and wildlife.

The Roosevelt Allotment is located at about 4,000 feet elevation. Precipitation is approximately ten inches per year. Upland vegetation is characterized by semi-desert grasses, prickly pear and cholla. Riparian vegetation is dominated by cottonwood, willow and sycamore.

The permittee on this allotment had voluntarily reduced numbers of livestock without studies or procedural delay because the problem was obvious and he was concerned about the long-term productivity of the land and value of the grazing permit his children would inherit. Upland vegetation benefitted from this stewardship, but riparian vegetation remained in largely deteriorated condition.

Implementing a five-pasture, rest-rotation grazing system resulted in cottonwoods increasing from 20 per 100 acres in 1978 to more than 2,000 in 1984. Willow increased from 28 to 225 per 100 acres. These results occurred concurrent with a 27% increase in the amount of livestock forage grazed from the allotment.

■ Decades of improper livestock grazing on riparian areas reduced woody plants to widely scattered, decadent trees. They provided a source of seed, but continuous heavy livestock grazing eliminated young plants.

■ The Sedow Allotment was so overstocked a drastic reduction in livestock numbers plus a new grazing strategy were required to improve upland and riparian vegetation.

■ The permittee on the Sedow Allotment resisted reducing animal numbers and changing grazing strategy in part because in his half-century on the allotment, riparian areas had "always" looked the way they did in 1978.

■ The necessary changes in grazing management on these allotments were encouraged by the National Audubon Society's concern that improper grazing prevented regeneration of trees essential to nesting bald eagles.

In this area with 10 inches annual precipitation, cottonwoods, willows and other riparian vegetation regenerated quickly under a rest-rotation grazing strategy that concurrently increased livestock forage.

■ On the significantly more arid Roosevelt Allotment, animal numbers were in better balance with available upland forage, but riparian vegetation was severely deteriorated. Implementing an improved grazing strategy produced more livestock forage while restoring riparian vegetation.

■ The riparian healing process began and progressed most rapidly in the upper watershed. Riparian recovery in lower areas was retarded by rapid runoff from deteriorated uplands which were slower to recover than riparian areas.