

Managing Fish and Livestock on Idaho Rangelands

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Early white explorers and fur trappers—and the Indians for thousands of years before them—made good use of the large numbers of salmon, steelhead, and trout readily available in Idaho streams. Indians survived winter starvation because fish meat dried well and its oil preserved other foods. The white explorers first harvested Idaho fisheries in the late 1700's, but it wasn't until the California gold rush days that harvests became significant. Indians harvested bighorn sheep, deer, and antelope, that grazed the vast Idaho rangelands. And white settlers had immediately recognized the potential for using the area's vast rangelands to produce domestic livestock.

With the start of a domestic livestock industry came valuable use of Idaho's rangelands. In the beginning, little thought was given to how uncontrolled livestock grazing could reduce the value of Idaho's fishery resources. By the mid-1930's, it became imperative that grazing be performed in a manner that would regain and sustain the abundant harvest of forage. It was not until a couple decades later that

This compares to 1968 with only 2.9 million fishing days and total expenditure of only \$21 million. In 1968 about 40% of fishing licenses issued in Idaho were to nonresidents, bringing much needed dollars to Idaho's economy. In 1980 about 43% of the licenses went to nonresidents. The popularity of sport fishing is increasing rapidly, and participation is expected to increase by another 90% by the year 2030.

During the 1983 steelhead trout run into Idaho, 34,000 fishermen fished 185,000 days and landed 68,510 steelhead. A steelhead fisherman contributes a gross total economic value of \$72 per trip (Donnelly and others 1985). An economic evaluation of the producing chinook salmon habitat on the Challis Planning Unit (375,380 acres) yielded a net



An excellent riparian-stream habitat within a 3-pasture rest-rotation sheep allotment in the Sawtooth National Recreation Area.

the emphasis shifted to managing rangelands for both forage and fish.

This report tracks Idaho's rangeland livestock-fishery resources from their historic development to the future, and discusses the importance of managing rangelands to produce the optimum mix of forage and fisheries resources.

Idaho's Fisheries Resource

In 1980, over 400,000 fishermen fished Idaho's waters for a total of 5.4 million fishermen days, spending over \$90 million.

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A high elevation meadow in the South Fork Salmon River drainage showing high livestock forage and salmon production potential.

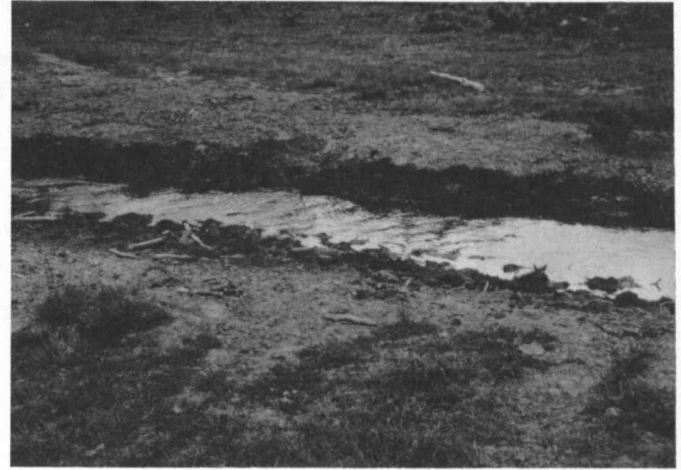
annual revenue of \$77,100 alone (USDI 1977). Thus, a small unit of land can have large fishery values because of products being generated in the riparian-stream systems.

The dramatic increase in the numbers of fishermen, especially nonresidents, has intensified the fishing pressure in Idaho. The large increase in nonresident fishermen has been excellent for the State's economy, but it has made it more difficult for the natural (existing without more help) fishery to satisfy the needs of the in-State sport fishery plus downriver sport and commercial fishing. Resource managers have had little choice other than to intensify the management of Idaho's streams so that they will produce more and better fish. Under intensified management into the turn of the century, Idaho's rangelands can produce much more fishery product than currently.

Idaho's increasing demand for outdoor recreation, which continues to outstrip Idaho's population growth, occurred at a time when Idaho's anadromous salmon and steelhead runs were diminishing. Salmon populations were so dense in the



An example of a small riparian pasture on Frenchman Creek, Ida.



Alteration of streambanks on Giraffe Creek, Idaho, by cattle.

1950's that horsemen had problems trying to cross Idaho's salmon streams. These populations are now only remnants of the past runs mainly because of downriver hydroelectric development impacts. Like the other Western States, Idaho failed to treat its riparian habitats with the respect needed, and many streams no longer have their once-productive streamside vegetative cover. As a result, streambank and channel conditions have been altered. A century of heavy combined impacts have taken their toll, and Idaho's streams cannot produce the numbers of fish the State's citizens would like to harvest, nor have the streams the potential to produce such numbers. In addition, downstream Indian tribes and commercial and sport fishermen are heavily dependent upon anadromous salmon and steelhead produced in Idaho.

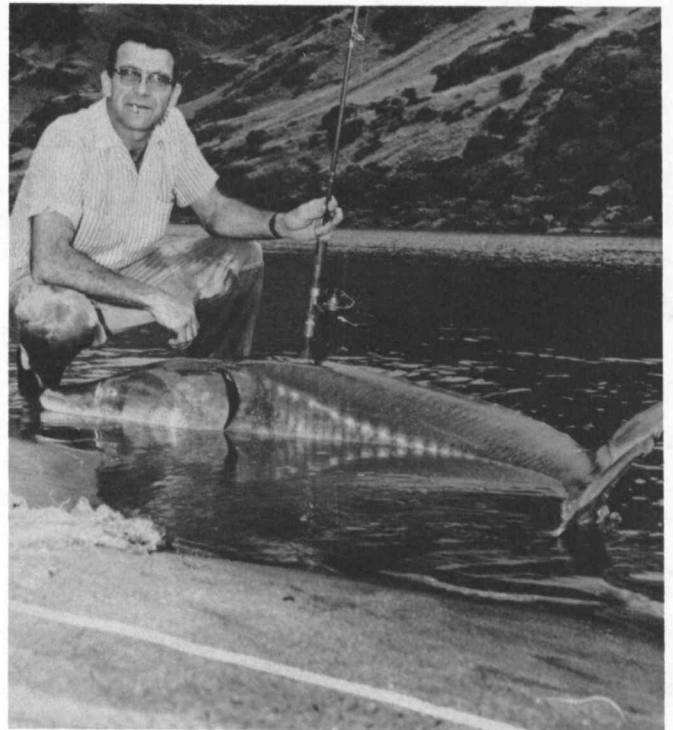
Idaho's Livestock Resource

The first significant numbers of domestic livestock entered Idaho when Indians brought in horses during the early 1700's. Cattle and sheep did not enter the Northwest until the late 1700's. By the 1800's the ability of Idaho's ranges to support large numbers of livestock became evident as the immense "seas of grasses," dotted with sagebrush and juniper, were soon being used by domestic livestock. With the discovery of gold in Idaho and California in the mid and late 1800's, immigrants moved their stock through the Snake River plains and surrounding mountains. Cattle were also driven up the Columbia and Snake River drainages and were present when Fort Boise and Fort Hall were established in southern Idaho in 1934. By 1969 there were several thousand Texas longhorns in Owyhee County, driven up from California. The first permanent settlers moved into Idaho in the 1850's, and they used the riparian bottomlands for both living and livestock grazing.

My father and grandfather, sheepmen in Idaho before and after the turn of the century, often described the "seas of grasses" throughout the Snake River plains and the Raft River Valley. As did many other livestock operators, my father honestly believed that this immense resource would support large herds forever. But within a few years after the turn of the century, many began to find that Idaho's ranges were overstocked.

Sheep were not introduced in large numbers until the

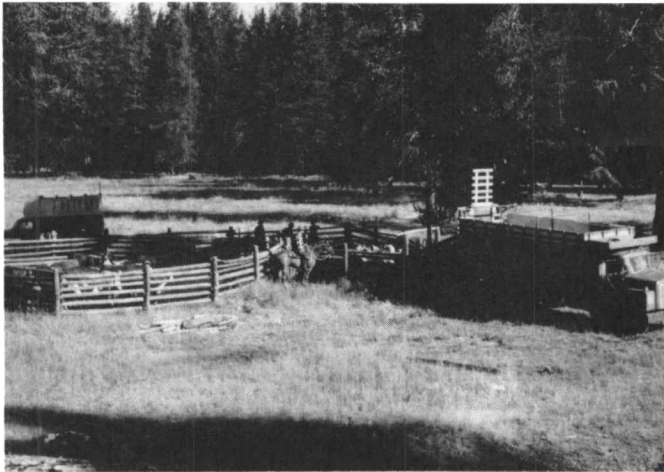
1860's; then numbers increased rapidly. By the mid-1860's California sheep were brought to Idaho mining towns for food. By 1870 livestock drives, with as many as 250,000 animals, were crossing Idaho. The 1880 census listed about 47,000 permanent sheep in Idaho, but by 1940 the number had increased to 1.8 million. By 1980 they had declined to about 360,000, so the impact on rangelands and streams by



Sturgeon fisherman in Hells Canyon, Idaho.

sheep was drastically reduced. One sheep driveway alone, from the Snake River plains to the Sawtooth Valley, was passing about 200,000 sheep per year as late as 1950. This sheep driveway now only passes a few bands of sheep. My father talked about how the large number of "California bands" passing during the late fall, in the 1920's, were counted by the number of dust clouds hanging over the plains.

By 1879 cattle had increased to where an estimated 100,000 head were driven to Idaho railheads. At that time the basic grazing pattern in southern Idaho was to winter cattle near the Snake River, move to the lower surrounding desert areas in the spring, move into the higher elevation forested areas in the summer, and return to the Snake River plains in the fall. Thus, streams in or near the Snake River received the first major impacts from livestock grazing activities during this period.



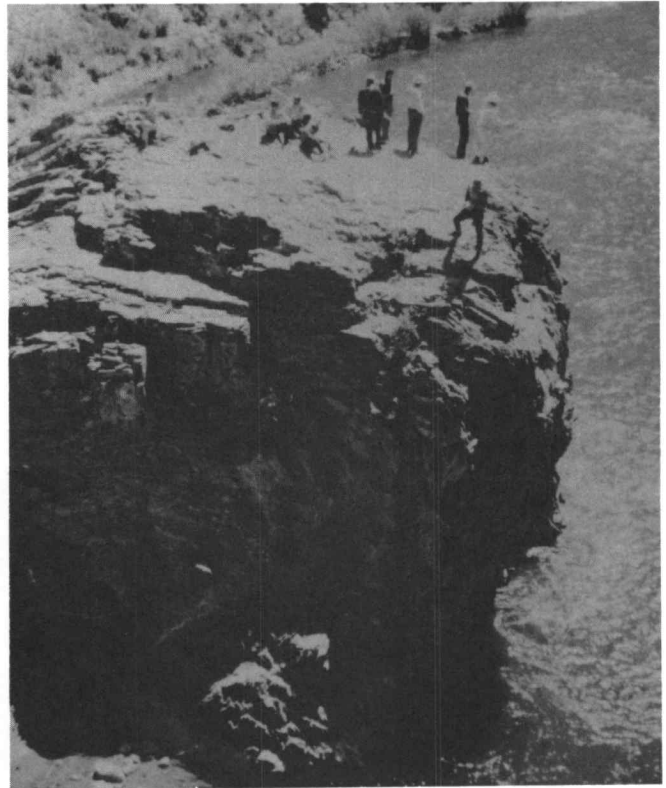
Moving cattle after grazing mountain meadows.

By the late 1920's livestock grazing was so widespread and intensive that many rangeland streams were in poor condition or becoming so. An *Idaho Statesman* newspaper article in 1928 reported that the native desert bunchgrasses had been replaced by a grass (cheatgrass) that "grows in a day, ripens in a day, and blows away in a day." An admitted exaggeration, it nevertheless reflects the rangeland conditions during this time.

As the livestock industry continued to grow from the late 1800's until the mid-1930's, the number of cattle and sheep occupying the available rangeland increased far beyond its carrying capacity. After the 1930's when private range owners and land management agencies initiated improved grazing management practices, the rangelands began to improve. But because livestock are attracted to stream-riparian areas, that portion of the range did not respond as the overall rangelands had. During the 1950's and 1960's Idaho's streams improved little. Currently, the Soil Conservation Service estimates that over 2,500 miles of stream-banks in the Snake River Basin (87% of Idaho's land area) are moderately to severely eroded and account for 390,000 tons of sediment into these streams each year.

During the 1970's and to the present there has been a great movement to manage the rangeland for all its resources. Idaho's rangeland users realized how sensitive these riparian areas are to abuse, but they also quickly learned how fast these productive lands responded to their improved management techniques.

Many ranch operations in Idaho are dependent on the use of public lands for their spring, summer, and fall grazing.



Salmon fishing off Tunnel Rock in Idaho's famous Salmon River.

About 88% of Idaho's cattle feed at least parttime on the public ranges. Livestock are then returned to farm lands for winter feeding. Thus, during much of the year, fish and livestock are using the same areas at the same time.

The Combined Resources

Historically, livestock have played an important part in Idaho's economy, and the sale of livestock generates more income than any other single agricultural commodity. Livestock graze most of the rangelands each year, while fish use only a small portion of the rangelands. But much of Idaho's 16,000 miles of fishing streams do run through rangelands, and the narrow fringe of riparian zone along the edges of these streams is crucial to the production of both "red meat" (beef) and "white and pink meat" (fish). Over 99% of the energy and nutrients that contribute to the items fish consume come through or from the adjacent riparian lands. The high mountain meadows support more beef per acre than any of the other natural range types, and also contribute to the most productive spawning and rearing areas for salmon, steelhead, and trout.

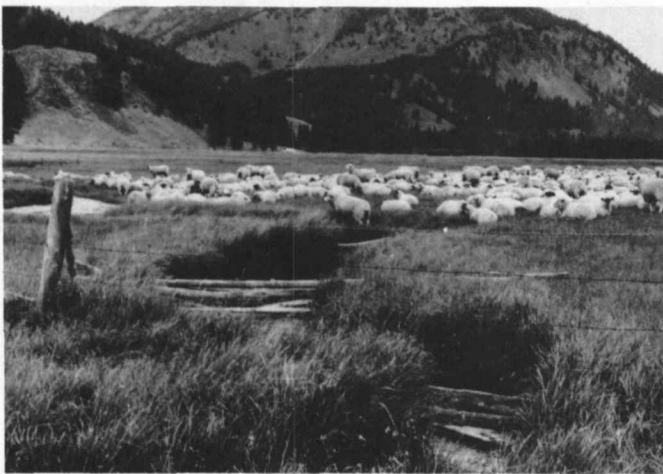
Improper livestock grazing can degrade all 4 components that make up the fisheries habitat: streamside vegetation, stream channel condition, shape and quality of the water column, and the structure of the soil portion of the stream-bank. Improving the riparian portion of the rangeland allows these stream components to begin to rehabilitate. Where streamside vegetation is abundant and vigorous, flood impacts are minimized. Rehabilitating riparian environments through improved grazing offers a productive and efficient way to increase wild trout populations in Idaho.



Cattle grazing in the lush Tyndal Meadows in Idaho's Johnson Creek drainage.



Cattle grazing a meadow stream draining into the North Fork Payette River, Idaho.



Sheep grazing in Idaho's Sawtooth National Recreation Area.

Idaho's Future

If the past can help predict the future, Idaho could see great climatic changes within the next couple of decades. Since 1961 the Great Salt Lake to the south has risen 14 feet covering about 500,000 additional acres. In Nevada, the Carson Sink, almost dry in 1963, spread over 100 square miles by 1983. In recent years Idaho has seen above-normal snowpacks, especially during the winters of 1983 and 1984. These heavy snowpacks led to some of the highest streamflows on record. These conditions have had great impacts on Idaho's

fisheries. Even larger storm and drought events in the future could put Idaho's streams under additional stress. Only well-managed riparian habitats would be able to withstand ever-changing climatic events without undue impacts to the fish populations. Even pristine streams would take punishment from such large climatic events.

Idaho already has progressed far enough to know that some past and newly developed grazing strategies are quite compatible with fishery needs, while some grazing strategies that are not compatible have been identified. The riparian pasture concept has been developed and implemented with stream corridor fencing that could be used to protect and enhance certain high-value resources. Most importantly, grazing strategies, such as patterns of rest-rotation, have been improved to the point that they could move Idaho ahead in rangeland management.

Idaho's livestock-fishery future looks bright, and as time should prove, Idaho is going to produce more forage and more fisheries on the same rangeland to satisfy a continuous increase in user demand. Quality research and improved management is moving Idaho ahead.

Literature Cited

- Donnelly, D.M., J.B. Loomis, C.F. Sorg, L.J. Nelson. 1985.** Net economic value of recreational fishing in Idaho. USDA Forest Service Res. Bull. RM-9, Rocky Mountain Forest and Range Exp. Sta., Fort Collins, Colo.
- USDI Bureau of Land Management. 1977.** Livestock grazing program for the Challis Planning Unit Final Environmental Impact Statement. Idaho State Office, Boise.

Erosion Conference

The International Erosion Control Association is holding its Eighteenth Annual Conference at John Ascuaga's Nugget Hotel, in the Sparks/Reno, Nev., area, on February 26 and 27, 1987. The theme is "Erosion Control—An Investment In Our Future."

Additional information is available from IECA Executive Director, PO Box 195, Pinole, CA 94564-0195, (415) 223-2134.

Legumes in Conservation Tillage

What role legumes might play in conservation tillage systems will be discussed during a national symposium, April 27-29, 1987, at the University of Georgia in Athens. The symposium is sponsored by the Soil Conservation Society of America in cooperation with the American Society of Agronomy and the Conservation Tillage Information Center. A proceedings will be published by the Soil Conservation Society of America and made available during the symposium to all participants.