

STREAM ALTERATION AND CHANNELIZATION AS VIEWED BY A STATE RESOURCE AGENCY

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Stream alteration is the modification of any stream in any way. It can include the construction of dams to hold water or the removal of such barriers as trees, logs, sandbars and large rocks along with low overhanging vegetation in order to let water move downstream faster.

Stream channelization is the changing of a stream into a man-made ditch with uniform depth channels in order to move water more rapidly downstream. Stream channelization usually necessitates the removal of all trees and other woody vegetation along each bank for distances of up to 100 feet to allow for the deposit of the silt removed from the stream bed.

Who Benefits from Stream Alteration or Stream Channelization? Usually a few individual landowners who receive partial flood protection are the ones to benefit, but occasionally a large privately owned company or corporation will profit when a major stream is altered or dammed.

Contrary to the glowing claims of the sponsors that fish and wildlife resources are benefited by the construction of small water storage reservoirs, the truth is that few, if any, of these storage reservoirs or impoundments can be intensively managed to produce more fish than the natural streams they replace because of the drastic water fluctuation, rapid water exchange and the rapid filling of these impoundments with silt.

Channelized streams detract from the natural beauty of the landscape, but more significant is the loss of fish and wildlife food and cover which results in the loss of the fish and wildlife resources themselves, further reduction in the already dwindling water table, increase in downstream floodwaters, siltation, and pollutants.

We know that the clearing of all woody vegetation up to 100 feet on either side of a stream greatly reduces the wildlife food supply and completely eliminates nesting habitat and cover for squirrels, wood ducks, furbearers, songbirds and many other species of wildlife. *We know* that the removal of trees along stream banks destroys shade, thereby increasing water temperature which is detrimental to many species of fish. *We know* that the removal of logs, snags and rocks or the creation of uniform depth channels destroys stream pools necessary for the production of fish foods and spawning areas. Without food and suitable spawning areas the fish population cannot survive. *We know* that stream channelization will further shrink our already low water table.

Only time will reveal how the loss of tributary streams to channelization and alteration will affect future populations of striped bass, pike, sauger, suckers, and other important species which inhabit the larger streams and impoundments but utilize these tributary streams for spawning. *Just how great* the destruction of our natural streams will be on the overall ecology of our land, water, forests, birds, mammals, fish and other natural resources will be revealed only to future generations.

Studies made in North Carolina on a stream channelled more than 40 years ago show that this stream's fishery resource is approximately 90 percent below its pre-channelization production.

As a resource agency the Alabama Department of Conservation is vitally concerned with the destruction of the State's natural streams by alteration and channelization through Federally-financed watershed programs.

The Army Corps of Engineers, the Tennessee Valley Authority, and the Soil Conservation Service have already begun planning to convert practically every tributary stream in Alabama into a man-made ditch. Our Department is aware of plans to channel or alter over 2,000 miles of natural streams in our State at this time, and more miles are being added to this figure almost daily.

Unfortunately the channelization problem is not peculiar to Alabama, but is a problem in all the 50 states. A U. S. Department of Agriculture publication dated July 1, 1969, indicates that 2,795 PL 566 Watershed Projects have already been received in Washington. They request authority for planning assistance. Thirteen hundred and ten or nearly one-half of these projects are from the 16 states which make up the Southeastern Association.

This destruction of fish, wildlife and other natural resources by stream channelization and alteration projects is occurring at the same time that large segments of land and water areas are being lost to industrial, urban, and other related uses not compatible to outdoor recreation activities.

With the heavy tax burden, and all other sources of revenue tapped to capacity, there is no way for state and federal resource agencies to meet present and future needs in outdoor recreation. The citizens of this country are even now demanding more land and water for their outdoor needs. With the end of the population explosion not in sight, the additional loss of more and more choice outdoor recreational resources to stream channelization and alteration will ultimately lead to a national calamity.

It is generally recognized that flooding can be a serious problem even on feeder streams and in some instances stream channelization and stream alterations are necessary. However, a study of PL 566, Appalachian and Resource Conservation and Development projects being planned and carried out in Alabama by the SCS and other agencies of the U. S. Department of Agriculture indicate that too many of these projects have been planned more to enhance land values of private interests than to reduce flooding and usually at a cost greater than programmed benefits.

In support of this statement, let us review a number of PL 566 watershed projects where there is sufficient data to make an evaluation. Fourteen such PL 566 projects in Alabama have either been constructed, are under construction or are planned for construction. These projects provide for over 436 miles of stream channelization and 188 stream alteration structures are reported to benefit 2,084 individual landowners by reducing flood damage by an average of 78.6 percent at a cost of over 27.6 million tax dollars. In other words, each of the 2,084 landowners will receive an average of \$13,270 tax dollars to enhance the value of his personal property at the expense of Alabama's natural resources. But bear in mind that these are minimum figures and do not include the cost of easement or right-of-way nor do they cover the cost of annual upkeep and maintenance of the projects.

In at least 7 of these 14 projects the Federal Government could purchase in fee simple the entire flood plains that the project is supposed to protect for considerably less money than will be spent for stream channelization and floodwater structures.

Let's look at the economics in another way. If the 27,656,357 dollars, the Federal cost for stream channelization and flood control structures in these 14 PL 566 projects, was invested at 5 percent, the annual interest alone would pay all flood damage claimed with an excess of over 94,000 dollars each year. On the other hand, if the 78.6 percent flood damage reduction that the projects are supposed to provide was paid, the annual surplus would amount to over 376,000 dollars annually.

In addition to these 14 projects, our Department is aware of 42 other PL 566, 7 Appalachian and 22 Resource Conservation and Development

projects in various stages of planning and development for Alabama by the SCS and other Federal agencies. Add to these 83 project figures the monies spent or to be spent for stream channelization and/or stream alteration projects by the Army Corps of Engineers and the TVA and one can guess what the total figures will be and how much outdoor recreational opportunity will be destroyed before these programs come to an end.

For those of you who are not familiar with these federally sponsored and financed projects, I am sure you are wondering how they are justified. The answer is simple. These federal agencies compile and use their own figures. They expand the benefits and play down or utterly ignore the losses in order to arrive at what they consider an acceptable benefit-cost ratio. For proof of my statement, let us review the Old Town Creek watershed in Macon and Bullock counties, a typical Alabama PL 566 Watershed project.

For benefits, the SCS compiled plans claim that annual flood damage could be reduced by \$123,600 through the construction of over 50.8 miles of stream channelization and 9 small flood water retarding structures. These plans claim that by reducing flooding by 68 percent more intensive use of croplands will produce annual benefits in the amount of \$36,467. They show that the floodwater retarding structure will allow irrigation benefits valued at \$4,900 a year. Next, the plan takes an annual benefit of \$30,043 for what it calls redevelopment benefits for an estimated 87 man years of labor created by the construction of the project measures. Then comes \$23,770 annually for secondary benefits to producers and processors of farm products and to suppliers of farm machinery and other materials. And last, but not least, they claim there will be 30,036 visits to nine small flood water retarding structure sites for recreational use at 50 cents per visit for an annual benefit of \$15,018. Although the plan points out that there will be many secondary benefits from a national standpoint, it is understandable that they claim no monetary value for these secondary benefits. These total benefit claims come to a figure of \$233,858 annually.

Now, let us see what the SCS used or should I say "failed to use" for the costs.

A cost figure of \$164,952 annually is used and includes cost of construction, technical services, right-of-ways, easements, upkeep and maintenance amortized at 3½ percent for 100 years. All costs are lumped together so I am unable to give you the cost for each of these items.

The annual cost figure of \$164,952 when subtracted from the doubtful benefit figure of \$233,850 provides an acceptable benefit-cost ratio of 1.4 to 1.

Now this is where they stop, but let's check further into a more realistic benefit-cost ratio. The SCS cost figures did not include the following items which will be destroyed or damaged by stream channelization and alteration.

1. The reduction or loss of fishing, hunting, swimming, picnicking, camping and other outdoor recreation opportunities resulting from the loss of natural habitat, and esthetic beauty.
2. The loss of forest products up to 100 feet on either side of the stream for 50 miles and in addition, present and future forest products lost in the 734 acres to be permanently flooded.
3. The losses from lowering of the water table.
4. The losses from increased downstream flooding, siltation and the rapid spread of insecticides and other pollutants.
5. And last, but not least, the loss of taxes which would have been paid if the other four losses did not occur.

There can be no question that had these loss factors been given a monetary value and included in the annual cost figures, this and most other watershed programs would not be constructed because of an unfavorable cost-benefit ratio.

At the same time that large sums of money are being expended by at least three federal agencies on projects which destroy fish, wildlife and other outdoor recreational resources in order to benefit a few individuals, another federal agency is charging \$7 to visit national parks, while still other federal agencies are requesting additional tax dollars to provide more outdoor recreational areas. Only recently Alabama was forced to obtain a major bond issue in an effort to enhance outdoor recreational areas which are being rapidly depleted by unconcerned and uncoordinated federal agencies and their unlimited tax funds.

Ladies and Gentlemen, this is not economy. It is no wonder it was necessary to extend the surtax. This is our money that is being spent for the destruction of our fish and wildlife resources in order to increase the wealth of a few individual landowners and to strengthen federal bureaucracies.

These stream alterations and channelization projects pushed by federal agencies with public tax monies must be stopped and soon. The facts are available to enlighten the public on this waste of our natural resources with our tax dollars. By individuals joining together in a group and by groups coordinating their effort throughout the nation, this tragic waste of money and resources can be brought to a screeching halt.