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CLEAN WATER RESTORATION IN MONTANA

by

Arthur N. Whitney

Thank you Mr. Chairman, I am happy to have this opportunity to talk to you about what Montana is doing do comply with the Clean Water Restoration Act of 1965. I want to make it clear from the start that I represent the Montana Fish and Game Department which does not have the authority for pollution control in Montana. However, we certainly do have an interest in pollution control because it affects the resource we are managing. I think probably the most dramatic example of the affect of pollution control on a fishery is the Clark Fork River near Missoula. When I first went to Missoula in 1954, the Clark Fork was a dirty brown color, at least as far downstream as Rock Creek. Fishermen didn't use it and our stream sampling equipment showed no fish were present in this section of the river. In the late 1950's the Anaconda Company put in greatly improved pollution control treatment for their waste near Warm Springs, Montana, and today the fishing is very good in the Clark Fork from the Little Blackfoot on downstream and some people do fish right up to the Anaconda Company's waste treatment outfall at Warm Springs. Pollution control on the Clark Fork in the last ten years has given Montana anglers an additional 50 to 60 miles of good trout stream. Thus, the Fish and Game Department is certainly vitally interested in pollution control.

The agency that does have pollution control authority in the state is the Montana Water Pollution Council. This council was set up by the pollution law of 1955 and I believe I can describe the council best by reading a portion of the law that sets it up. "There is hereby created a State Water Pollution Council hereinafter referred to as the 'Council'. The Council shall consist of seven members as follows:

The Executive Officer of the State Board of Health; Director, State Fish and Game Department; the State Engineer; and four members to be appointed by the Governor as follows: A representative of Industry concerned with the Disposal of inorganic

waste within the State, for an initial term of one year, thereafter for a term of four years; a representative of industry concerned with the disposal of organic waste within the State for an initial term of two years, thereafter for a term of four years; a representative of agriculture within the State for an initial term of three years, thereafter for a term of four years; a representative of municipal government within the State for a term of four years. The Chairman shall be elected from among their number.

The Council today is composed of Mr. John Hazen, the representative of inorganic industry. He is head of the Butte Water Company which is tied very closely to the Montana Power Company and the Anaconda Company. Organic industry's representative is Tom Zeien from Billings, who is manager of Continental Oil there. The agricultural representative is Winton Weydemeyer. He is a rancher at Fortine Montana and is Chairman of the Council. Municipal Government's representative is Claude Eyer who is head of the city water department at Glendive. The executive officer of the State Board of Health is Dr. John Anderson. The State Engineer's office was abolished by the 1965 legislature and the State Engineer was made Assistant Director of the State Water Board. The official representative now is Mr. Alex McDermott, Director of the State Water Board; however, he usually authorizes Mr. Everett Darlington, Assistant Director of the Water Board, who used to be State Engineer to substitute for him in the meetings. The Director of the Fish and Game Department is Mr. Frank Dunkle and he has sent me as his representative to the last three or four meetings, because these meetings have been concerned primarily with water quality and this concerns fisheries more directly than it does other divisions of the department so it is really in that capacity that I am here this morning as an alternate member of the Montana Water Pollution Council rather than as Chief of Fisheries for the Montana Fish and Game Department.

Before getting into the discussion of specific criteria, I would like to describe briefly what are criteria and what are standards. The Izaac Walton League has put out a little booklet telling citizens what they can do to achieve better water quality in their areas. I would like to pass these out now and ask you to turn to page 9, second paragraph, and read what I think is one of the best descriptions of the difference between criteria and standards. "Thus water quality criteria are essentially scientific determinations and not open for debate. Water quality standards on the other hand are determinations . . . . . that the waters of a specific stream, lake or other body shall meet the quality criteria demanded by the uses the public wishes to make of them." Therefore criteria from my standpoint as a fisheries manager are what the fish need to stay alive and reproduce, or in other words, what do we need to have in a stream for top quality trout production or sauger production or whatever kind of fish we are dealing with. These needs are essentially non-debatable. What the fish has to have to stay alive he has to have and you can't really argue too much about this point. Standards on the other hand are where the people of this state want these criteria applied. In other words, where do they want top quality fishing and where do they want to accept something less. A complete plan needs something more in addition to criteria and standards and this is how they will be enforced. In other words, if you have criteria that must apply to a certain body of water, you have to measure the things you are interested in in that body of water, so the total plan will equal criteria plus standards which is really a classification plus a plan on how you are going to monitor.

The present status in Montana is: the criteria have been adopted by the Council, the classification is almost done, and the plan is being prepared by the State Board of Health. The Division of Environmental Sanitation of the State Board of Health is the fact-finding and enforcement arm of the Water Pollution Council. Mr. Clay Brinck, Director of that Division, is Secretary for the Water Pollution Council. He has two Sanitary Engineers and one Aquatic Biologist on his field team so you can see the monitoring plan is going to be quite a problem.

The Fish and Game Department hires one Aquatic Biologist who is attached to Mr. Brinck's staff. Both agencies get benefits from this arrangement. It increases the Environmental Sanitation field team by one-third and gives the Fish and Game Department one member on that team whose primary interest is fish. Now I would like to back up just a minute and explain that Montana did not just begin to draw up criteria and standards in response to the 1965 Federal Act. Our own 1955 Act directed that a classification and criteria system be prepared and this was done. A copy of these criteria which were first tentatively adopted in 1956 are being passed out now. We are also passing out one page of the classification system that goes with these criteria. Down the left hand side of the criteria is a column headed "water uses". These are labelled A, B, C, D, and E and list the various uses to which Montana water can be put. Across the top of the page are water quality characteristics, and in the columns the quality limits for each use are described. These criteria and standards do not mean that a stream classified, for example "A", could not be used for any of the other uses such as B, C. D or E. What they do mean is that if a stream is classified as "A" the other uses must maintain water quality requirements for the "A" use. You will also note on the classification sheet, some streams are exempt from classification, that is, they are neither A, B. C. D. nor E, but something else. This is because our pollution law of 1955 contains a grandfather clause that exempts any stream from classification which has been used for 30 years or more, or for continuous waste disposal. I am sure that we in Montana could have submitted our present criteria classification to the Secretary of the Interior and thereby complied to the 1965 Clean Water Restoration Act. However, the Council decided that after 8 or 9 years our criteria probably needed some revision and I believe they were right; not only has the situation changed in some areas, but we also have better information with which to work. I am sorry that I do not have enough copies of our present critieria to pass out

However, something in the preparatory stage such as this, if it were reduced to page size, would be so fine you couldn't read it so I have just two of the columns (the ones on oxygen and temperature) on this page which is being passed out now. There has been one additional change since this sheet was typed. Under water use D-1, now reads "Growth and Propagation of Salmonid Fishes and Associated Aquatic Life, Waterfowl and Furbearers". D-2 is now "Growth and Propagation of Non-Salmonid Game Fishes and Associated Aquatic Life, Waterfowl and Furbearers, Growth of Salmonid Fishes". Comparing this to the 1956 criteria you will note that the old "D" water use has been broken in to two, D-1 and D-2. This was done because we have more information than we had the last time. Note under Oxygen the old criteria, say greater than 5 ppm. We know now that while this is sufficient to keep adult fish alive, it is not sufficient to maintain a suitable quantity of oxygen in the gravel for good survival of trout eggs and fry, thus, the present criteria for D-1, which are our best trout waters, says withing 5% of saturation. Now there are some D-2 waters where we do have trout fishing today. An example of this is the East Gallatin River near Bozeman. Brown trout move into the area from other streams but to the best of our knowledge do not reproduce in the East Gallatin. The Sanitary Engineers tell us that the size of the City of Bozeman is such in relation to the size of the stream, that even with the best possible sewage treatment, the river could not meet D-1 criteria. Thus, the classification faces facts. We cannot classify a stream to a better quality than the best present techniques can provide. The other category on the sheet that was just passed out covers temperature and that didn't even exist in the old criteria. At the time the old criteria were drawn up we didn't know enough about the cooling affect of some of the larger dams in Montana to be able to write criteria to cover them. Also at that time no one was considering installing thermal-generating plants that will likely raise a stream's temperature unless the cooling water flow is controlled. Temperature certainly is important to the fishery use of a stream. This is pointed out right at the start in our categorization of uses for warm-water fish or salmonids. Note that the criteria

allow up to a 2 degree induced change up to a water temperature of 67 degrees and a half degree change above that for D-1 streams and for D-2 streams they allow up to a 2 degree induced change up to 84 degrees and a half a degree change above that. Note also at the top of the sheet under temperature, that where damage to designated water use is not predicted or demonstrated then a greater range of induced change will be allowed. This merely means that it is almost impossible to write a criteria that will cover all possibilities of both a cooling effect of dams on one hand and the warming effect of thermal generating plants on the other hand. Whether the Federal Pollution Control Agency will accept this relaxation of the criteria or not I don't know, but we have found it impossible to write one covering all the ramifications of the problem and still fit it neatly into a little box on this chart. A lot of other water quality characteristics are described on this large chart and I don't have time to go into all of them here this morning. One other that I think would be of interest to this group would be siltation. Actually this is covered in two categories; one on turbidity and one on sediment or settleable solids. The one on turbidity allows an increase of 5 Jackson candle units on D-1 streams and 10 Jackson candle units on D-2 streams. Five Jackson candle units of turbidity is just barely noticeable in a tumbler of water on a white tablecloth Sediment or settleable solids for both D-1 and D-2 uses are limited to "shall not be increased above that concentration actually present." This of course means that we have to define what is actual. In effect this is done for us in the Pollution Law where it states "It is not the intention of this Act that wastes shall be treated to a purer condition than the natural condition of the receiving stream, provided that any municipal or industrial pollution upstream be not considered as natural." Because this section of the law leaves out agriculture, the Council has considered that upstream irrigation return flows are considered natural. However, in applying these new criteria at the head of a drainage, eventually all of the flows could be improved to a natural condition.

As required by Montana and Federal Law these criteria will be discussed at at least one public hearing. The time of the hearing has not been announced but I believe it will be in Helena and should be sometime before June 1. Any citizen who has an interest in the criteria and classification will be welcome to present a statement at the hearing. In fact for any group with an interest in water use, I would say it is essential that you present a statement at the hearing.

I would like to close by emphasizing the importance of the hearings with one more quote from the little blue book- ACTION FOR CLEAN WATER - that I passed out earlier. Again on page 9 of this book it says "Essentially the purpose of the water quality hearings is to feel the pulse of the nation to find out what uses the public wishes to make of the public water in each community, area, state and region." Thus, the end result of the Federal Water Pollution Control Act of 1965 in Montana, as in other states, will be to give the citizens of each area the opportunity to express their views about the need to enhance water quality so as to expand the beneficial uses to which the water can be put.