Oral Interview With Bruce May April 21, 1995

Bruce May Kalispell, MT (406)

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The interview took place at Bruce May's residence in Kalispell, Montana. Bruce was a fisheries biologist retired from the Montana Fish Wildlife and Parks for about five years.

- AW: Well, Bruce, let's start out with your early history -- where you grew up and how you got into the fisheries business.
- BM: I grew up in a little town outside Cincinnati, called Mack, Ohio. It's actually just a crossroads community. We had a bunch of little creeks and wood lots around the cornfields. Me and my buddies would spend most of our summer days running up and down the creeks fishing for yellow bullheads and bluegills and creek chubs and things like that. In high school we got to be serious bass fisherman; there weren't a whole lot of good bass waters so we used to sneak into these private lakes at night in the summer and fish with jitter bugs and hoola poppers. I became hooked on fish. After that I went to school at Ohio State and graduated with a Bachelor's and Master's Degrees. I went down and worked in North Carolina for a few years and started applying for jobs throughout the west. I was real fortunate when a position came open in Montana. I was hired and started in Dillon and stayed there a few months for orientation and then I moved to the northwest and started working with Joe Huston and Bob Schumacher on the Libby Dam project and the impacts of resident fish populations. We started developing a mitigation plan to help mitigate the losses to the river fishery on the Kootenai. Probably the thing that was most I guess endurable during my career with the department, it seemed like everybody I worked with were real sincere and dedicated to the resource; they cared a lot and were willing to go the extra mile. We all seemed to get along pretty well; sort of like a family. Had a lot of good times together and worked hard and got a lot of important things done. I guess history will judge; it was a wonderful outfit to work with.
- AW: That's what's come across in many of these interviews -- the way we felt about each other

and many times we worked long hard hours and didn't complain. You knew everyone else was doing the same thing.

- BM: Yeah, everybody camped out a lot working on different tributary development projects and then our big sampling programs on Lake Kookanusa. I shouldn't pass this overview up without saying what a wonderful person Art was to work for. Everybody thought Art was fair and a real professional, but a real human being who cared about the people who worked for him. I think some of that is lacking now.
- AW: Thank you.
- BM: I never had a chance to say that to you before.
- AW: I appreciate that. You had an added distinction, you mentioned the work you were doing in the Libby area was contract funded. Your job was, and contract jobs were thought of as not as secure as the ones on fish and game funding, because the funding depended on another agency. But how many years were you able to stay on contract funding?
- BM: About 21 years. I managed to hang out here in northwest Montana on contract and I enjoyed working. Once in a while it got a little tenuous at the end of the contract. We always were able to come up with the money or start another project so it really wasn't as insecure as some people thought it was. Compared to my Father who was a carpenter and had to change jobs every six months.
- AW: Secure, from that standpoint.
- BM: Everything is relative in this world, as y'all know. I enjoyed working. I was stuck up in Libby far away from everybody; my supervisor Joe would come up every couple weeks. I had a project outline that I had to do but I had a lot of freedom and at the same time a lot of responsibility to do the work. I'm sort of a self-starter and I enjoyed not a lot of close supervision and able to run things like I wanted to, as long as I got the work done. Plus we did a lot of different things. We worked on developing spawning runs for cutthroat in tributaries both above the dam and below the dam. We had one experimental tributary where we ran the fish trap and got some real good information on the life history of westslope cutthroat. We did a lot of sampling following the change of fish population in the reservoirs. Probably the most important thing we did with Joe and Bill Bothman who was our field man at the time. We pioneered night shocking on the major river systems in Montana. I think we were the first ones to do population estimates on the large rivers at night. The reason we had to work at night was the river was so deep and wide that we couldn't collect enough; we couldn't get enough fish marked to make a decent estimate. So we found out, and Joe pioneered this work, that if we went out at night the fish seemed to come in and lay along the banks more. In the shallow water they weren't near as spooky and we were able to collect lots and lots of fish and get enough marked and tagged to make a population estimate. So

that was a real, interesting technique that we developed that I believe is being used not only in Montana but I believe other states that are sampling large river systems -- they can do it at night. Thanks to the work that was pioneered by Joe and the rest of the folks in Libby.

- AW: That was one question I was going to bring up. Until that time, the shocking system of marking and recapture. But that was strictly daylight work in somewhat smaller rivers. Your work up here with Joe, being done at night, took a certain amount of additional intestinal fortitude for the entire crew I think. You used underwater lights at night, too, which may have helped attract fish.
- BM: Yeah, it's like anything else, you know, when you first go out there's the fear and trepidation of the unknown. Once you've done it enough and feel comfortable with it then it gets to be rather routine, in a way, but still, you have to be more alert at night. The main thing you have to do is to really know the river well; you have to know where the big rocks are, you have to know where the ripples start and where they end so you really have to become intimate with the river; at least the Kootenai, the way the configuration of the bottom is to go out there and do a good job and under safe conditions so you don't lose anybody. We, when we first started, we had a few interesting incidents, not accidents, where we almost got caught sideways on the rock once up the bridge coming over the Fisher River and I thought the boat was going to tip over. Another time we banged into the bridge culvert pretty good up there. It only took a few of those lessons to make you realize it was real important to get out and survey the river in the day time and in different flows so you knew where the hazards were.
- AW: And that's the person who was operating the boat--all that on him, because the rest of the crew who were dipping fish and looking into that pool or lake where the fish appeared were blind as far as where the boat was.
- BM: Yeah, but it was amazing some nights you'd go out and seem to me we did our best when the fish would be concentrated more in the quiet water and along the shore in the back waters and if we had a dark rainy evening sometimes you'd go down there and it was just incredible that fish were coming up so fast; you couldn't net 1 out of 10 of them; so under the right conditions it's really an excellent technique for collecting fish and getting basic populations. Information on numbers and estimates in the spring and fall; every year you could consistently get annual mortality rates and age composition and good information like that; that you need to manage fishery on large rivers that has lots of fishing pressure.
- AW: You were in the Libby area during the gas supersaturation project, weren't you? Would you like to say a few words about that?
- BM: Well, that was pretty wild. When they first, I believe it was, they closed the gates on Libby Dam and they started running the water through the spillway, stilling basin, and it fell about 120 feet or more and then during the fall of course, air got trapped in it and it went down in

this cup shape. In the stilling basin it rolled over on itself and there was enough water pressure to force the air into supersaturation. Right below the dam there the concentrations depending on the time of year and flow would run 125 to 135 percent total gas saturation. Of course, the next day or so after they started doing this they had sculpins, whitefish and a few trout scattered all up and down the river; obviously it caused a lot of concerns with us and with all the local people too. There's a lot of hyperbole going on and we tried to keep our cool and not get or make too many rash statements. I thought we played it pretty well altogether. Because we could have easily gone out and said all the fish are dead in the river. But we didn't get a chance to go in and sample for about six months and finally they dropped after spring runoff in the summer, they dropped the water, the flow went down and it was in the middle of December before we could get in and sample. It so happened we had a cold spell and it was about 10 to 15 below on the river and we were out night shocking for about four nights. With ice flows coming down the river, it was a pretty interesting time. Anyway, we found out we couldn't do population estimates but we could get some species composition data and catch rate data and it seemed to indicate that the whitefish had suffered the most mortality. Some trout mortality but we couldn't pin it down or anything. At least there was quite a few fish left and alive in the river and that was good to know.

- AW: Yeah, that was a project that, where a late winter one could have been lethal if you had dumped the boat.
- BM: Yeah, that was a real dangerous time.
- AW: That's come out in several of these interviews. The things that we did that now we look back and say they were quite dangerous and probably today with OSHA regulations you probably aren't allowed to do the same things. I think we're extremely fortunate we wound up without killing anybody.
- BM: Yes. Especially in December when it was 20 below zero. The boat, you know the engine could have kicked off real easy and we'd been in trouble if we got into one of the tight spots on the river in front of a bridge pillar or something. Somehow the Lord looks out for drunks and foolish fish biologists. That was a pretty interesting time. We spent a lot of the next two or three years, Joe and I and the other folks that worked there, we laughed and called ourselves the world's experts on the affect of gas supersaturation on large inland rivers. We did a lot of good work and presented some papers at AFS meetings. We learned a lot and I think we helped add to the knowledge of the impact of gas supersaturation on resident fish populations. That was real satisfying.

- AW: Do you remember what the Corps of Engineers solution was to that stilling basin that caused the gas supersaturation?
- BM: Yes. Once they got the generators installed, they could run the water through the generators and that way it took the energy when the water comes through the generators; it takes most of the velocity or energy out of it and it comes through the stilling basin and doesn't plunge into that big pool. So it comes through the penstocks of the generators and it solves the problem.
- AW: It probably doesn't entrain air here on its way to the generators like it does on a free fall off the face of the dam?
- BM: Yes.
- AW: From the Corps of Engineer standpoint, as I remember, they had an ideal solution to the stilling basin. Instead of a bunch of concrete or rocks the water just fought with water and it did a wonderful job of taking energy out, it just happened to put a lot of gas into the water.
- BM: Yes. We still had some problems, now and then, if the prediction of inflow during spring runoff was low and sometimes they had to spill some, if they had to spill they tried to run the generators a lot so the concentrations never really got up to the lethal level after that.
- AW: Just a small portion went through the spillway?
- BM: Yeah. So, maybe it might get up to 110 or 115 percent but it didn't seem to affect the fish population, especially the trout, at that level. Since most of the trout were more sensitive when they were juveniles it appeared less--. Nearly all the spawning was in tributary streams.
- AW: Well, after your tour at Libby you were transferred to the Kalispell area? Had different responsibilities?
- BM: Yeah, that was where I became, forced to enter the modern age of fish biology and get familiar with computers. We had a pretty big project, a real interesting project. It was a fundamental goal to determine the impact of water level fluctuations on the biota of Hungry Horse Reservoir. Developing a model of the reservoir fluctuations and how it impacted depths, wetted bottom, surface area, temperature regimes, and how this was transferred through primary production of the insects plankton fauna in the westslope cutthroat trout growth. It's a long-term study, I think I started on it in 1983 and I worked on it until 1990. We contracted with folks down at MSU, to do the modeling for us and we did the data collection. It was a real interesting study; we sampled year round; followed the spawning runs of bull trout and cutthroat up into the south fork of the Flathead and the Bob Marshall. One of our more tougher jobs was going up every summer into the south fork for a week to

ten days, angling, mostly dry fly fishing where we marked and released cutthroat. We'd make recapture runs either by angling or by using scuba gear to count the number of fish with tags in them, which are the marked fish versus the number of unmarked. During the study we'd go up for a week or two sampling; we'd stay, either camp out or stay at the cabins around Hungry Horse. We had a real good crew and I really enjoyed being out like that -- getting away from the hustle and bustle of Kalispell, which was a culture shock moving from Libby. It was a real interesting study. It turned out that the information we collected and the modeling that was done is being used by the Corps of Engineers today. They tied into interfaces with their system analysis model so that when they devise a scenario for reservoir operation they can plug our model into it and come up with some pretty good ideas of what impacts the different reservoir operations will have on the biota of Hungry Horse Reservoir. So it's been real useful and practical.

- AW: Now if the regulations would just let them put some water in Hungry Horse, they could take advantage of the information.
- BM: Anyway, I enjoyed working in Kalispell. It's a gorgeous area.
- AW: And when you retired from that job you were still on what we call soft money? Contract money?
- BM: Yeah. That may be my most famous claim with the department.
- AW: None of us had famous claims. But one thing that's come through in all these interviews, if you had it to do over again, can you think of anything you'd rather done professionally than what you did?
- BM: Absolutely not. It was wonderful experience, with wonderful people, in what used to be the last best place. And we never ran out of beer.

End of Tape.

Transcribed by Margie Peterson March 13, 1996