ORAL HISTORY INTERVIEW

LARRY PETERMAN

JUNE 2017

INTERVIEW CONDUCTED FOR

FISHERIES DIVISION

MONTANA FISH, WILDLIFE AND PARKS

HELENA MONTANA

INTERVIEW CONDUCTED BY MARGIE PETERSON

[Beginning of Recording #1, 6/16/2017]

INTERVIEWER: This is Margie Peterson. I'm in Helena interviewing Larry Peterman for the Oral History Project for Fisheries. Today is Friday, June 16, 2017 and we are talking at the Fisheries Headquarters in Helena, Montana. So Larry, do you want to give us a little background, when you were born, where you lived and went to school, a few things about your biography.

PETERMAN: Sure, I can do that. My name is Larry George Peterman and I was born in Sheboygan, Wisconsin, on June 27, 1945. My parents were Leslie and Lucille Peterman. My Dad was of German heritage and my Mother was mostly Norwegian. I lived in Sheboygan until I graduated from high school. I graduated from South High in Sheboygan in 1964. From there I went to college at Wisconsin State University in Stevens Point, Wisconsin and I graduated from there in 1969. I also married my wife in 1969. Her name is Barbara Ann Peterman, her maiden name was Huibregtse. She was also from Sheboygan, Wisconsin. We then moved to Bozeman, Montana, where I went to school. I got my Bachelor of Science degree from Wisconsin State University in Biology and my major professor was Dr. George Becker, who was pretty well known in the Fisheries field back in the Midwest. I also had a class from Jack Heaton, Jack started his career with Fish, Wildlife and Parks, or Fish and Game at the time, in Montana and then he got a PhD and was teaching there. He has since moved back to Montana. Barb and I moved to Bozeman in 1969 and I started a Master's Degree program at MSU in September of '69. My major professor there was Dr. Richard Graham, that's Pat Graham's Dad. [Patrick

Graham was a Director of Fish, Wildlife and Parks.] He [Richard] has a long history in Montana and then he went on to become the Cooperative Fishery Research Units Leader in Washington, D.C. There are lots of stories related to that. I got my Master's Degree from MSU in Fish and Wildlife Management in 1972. It took me four and a half years to get a Bachelor's and two and a half years to get a Master's so a little longer than normal. The emphasis of my degree was in Fisheries and I started work for Fish, Wildlife and Parks, which was called Fish and Game at the time, on March 8, 1972.

INTERVIEWER: So, if we could go back a little now, could you tell us about your children.
PETERMAN: Sure, my son is Eric Peterman. He was born on November 12, 1974 and Gwen Peterman Gist was born on September 20, 1979. They were both born after I started working for Fish and Game. Eric is a pharmacist at St. Pat's Hospital in Missoula and Gwen works in hospital management at St. Charles Hospital in Bend, Oregon. Barb and I have one grandchild, Kemper, who is 7 years old now. His parents are Gwen and Tyler Gist.

INTERVIEWER: Do you have any brothers or sisters?
PETERMAN: Yes, I have a brother Jack Peterman, who lives in Cleveland, Wisconsin, and he's retired. And my sister is retired, she lives in New Berlin, Wisconsin, her name is Judy. She's seven years older than I am and Jack is seven years younger than I am.

INTERVIEWER: Were any of your jobs that you had before you started with the department applicable to what you did here at FWP? Were they in the same field?
PETERMAN: Between when I graduated from Stevens Point and before I started MSU, I worked for six months at the New London National Fish Hatchery in New London, Minnesota, for the Fish and Wildlife Service. I worked as a Fish Culturist.

INTERVIEWER: Was there anything else you did before FWP?
PETERMAN: Well, not really related to this. Well, I was a Special Game Warden in Wisconsin while I was going to school. Before that I worked in maintenance jobs in factories and stuff like that.

INTERVIEWER: When did you apply for your first job with this department?
PETERMAN: The first job that I applied for was a Fisheries Planning position in Livingston.

INTERVIEWER: How long did you work there?
PETERMAN: I started in March 1972 in Livingston and I was a Project Biologist conducting fisheries inventory and planning on the Upper Yellowstone and its tributaries. I worked there from March 1972 to April 1974. Ralph Boland was my immediate supervisor but I worked in the Environment and Information Division (EID) which Jim Posewitz was the Administrator. Ralph Boland was the Assistant Administrator and that was not your typical department's fish and game division. It was a combination of wildlife, fisheries, and information. The information arm of the department was located in the EID. We worked on projects that expanded beyond and brought together the different disciplines. Not just fisheries, not just wildlife, but more of ecosystem and drainage type of projects.

INTERVIEWER: Was Jim Posewitz under the Director here rather than under .. did he report to the Director?
PETERMAN: Yes. He reported to the Director.

INTERVIEWER: So, you and Poz started working together a long time ago.
PETERMAN: As a matter of fact, he hired me. Interestingly enough, he's from Sheboygan, Wisconsin, too and I used to buy parts from his Dad at Martin Pontiac. His Dad owned Martin Pontiac. And I had never met Jim until I was interviewing for the job. The fish chief for Wisconsin was Lee Kernan and he was also from Sheboygan, Wisconsin.

INTERVIEWER: You worked in Livingston in '74. Did you think about going to Helena?
PETERMAN: No, I applied for and got a job in Miles City as the Aquatic Project Leader for the Lower Yellowstone instream flow studies. That was from April '74 to July '78.

INTERVIEWER: So you were in Miles City for four years. What types of projects did you work on, as project leader?

PETERMAN: It was a project that was initiated because of the Yellowstone moratorium, and there's a whole history of what goes on in the Yellowstone River related to instream flows and Allenspur Dam and coal development and the North central Power Study and Montana/Wyoming aqueduct study. There were considerable pressures to develop the coal resources of eastern Montana, have mine power generating plants; the North central Power Study called for 42 major power plants in Montana and Wyoming. To feed those power plants, water was planned to be taken out of the Yellowstone and supplied to these power plants and a dam built south of Livingston at the Allenspur site on the Yellowstone to provide the water for that. The citizens obviously were concerned about the water grab and the development in a very rural area. So the Legislature passed a Yellowstone moratorium which put a halt on major water permits for the development until there was a chance to study and a chance to determine how much water the state needed rather than the needs of all of the out-of-state interests.

INTERVIEWER: This was the Yellowstone trial that Poz had talked about.
PETERMAN: Yes, he covered that probably pretty well.

INTERVIEWER: So, you were involved with that from Miles City.
PETERMAN: I was the Aquatic Project Leader for the Lower Yellowstone and that involved developing techniques to sample fisheries, develop project proposals and get grant money to fund a variety of studies, hire people to do the studies, actually go out and do field research and fish sampling, and then compile all of this information in an instream flow proposal that could be submitted to the Board of Natural Resources at the end of the Yellowstone moratorium. The 1973 Legislature passed the water use act which allowed for state agencies to apply for water and leave it in the streams. And there's a lot of story behind that. Maybe later on we can get into it.

INTERVIEWER: Yes, we can do an overview now and then go back to these interesting stories in more detail.
PETERMAN: The legislature extended the moratorium for a year and we put together an instream flow reservation. The components of that, the studies were fisheries, instream flow, paddlefish and sturgeon migration, aquatic invertebrate studies, and hydrology studies. They

were brought together and developed into an instream flow proposal for 8.2 million acre-feet. We were eventually awarded 5.5 million acre-feet. A substantial portion of the mean annual flow was allocated for instream purposes. It took four years to get all that put together. Then my job was over. I started out in the Upper Yellowstone in a permanent position. I went to a contract position down in the Lower Yellowstone because I thought it would be real interesting work. And then was able to get back to a permanent position afterwards. In the meantime, I sank an electrofishing boat in the Upper Yellowstone and I sank a seining boat in the Lower Yellowstone.

INTERVIEWER: Was Poz with you when that happened? He sank a boat too, no, it was a trawler. Sounds like it was part of the job, ha ha.
PETERMAN: Yes, so I sank two boats and after that I think they wanted to get me out of the field. And when I was working for the fish hatchery I drove a truck in the pond once then too.

INTERVIEWER: When was the trial, was that '74?
PETERMAN: The [Yellowstone River] trial was in '78.

INTERVIEWER: Okay, that was later. You worked through the trial? I have a copy of the Life magazine that Poz had, we copied the cover and the Yellowstone River article. I can add it to your file as well.
PETERMAN: Yes. I'll go over that paper I gave last month to the AFS [American Fisheries Society] and some other things. There are dates in there.

INTERVIEWER: So, then Miles City…
PETERMAN: Oh, I also developed large river surveys technique which was boom electrofishing. Dick Vincent did electrofishing for the trout rivers and he used a technique called mobile electrofishing where they throw the electrode out and net the fish as they bring it in. It wouldn't work for the Lower Yellowstone because the river was much too big. So we developed boom electrofishing boats which were much larger with fixed booms in front with

electrodes. I relied heavily on the experience from Wisconsin because they did a lot of the initial work there. Some in Washington, but mostly from Wisconsin.

INTERVIEWER: So you were still in the Miles City office when you did that?
PETERMAN: Yes.

INTERVIEWER: From Miles City, then where did you go?
PETERMAN: Then I went to Helena. I took the job of Water Resources Supervisor. The person who had that before me was Liter Spence. And Liter did pioneering work on the Huddleston Mining District, a fisheries person but he actually did pioneering work in telemetry for elk monitoring and he was also in the EID and he was the one who ultimately put the entire package together for instream flows and the application for it and submitted it to the Board of Natural Resources. Actually the Department of Natural Resources and Conservation, five minutes before the deadline. At 4:55. He got that in.

INTERVIEWER: So he worked for Poz as well?
PETERMAN: Yes he did. And I took that job after Liter left.

INTERVIEWER: He was in Fisheries when I worked here. What was he doing then?
PETERMAN: He came back. He left and then we hired him back again to do this job again.

INTERVIEWER: When you came in '78, you were still in EID or you were in Fisheries?
PETERMAN: I was in Information and Education. [The name had been changed from EID, Education and Information Division.]

INTERVIEWER: So, to get the timelines, how long were you there before you went into Fisheries?
PETERMAN: I was there from 1978; July 1978 through April '86.

INTERVIEWER: And you worked for Poz that whole time.

PETERMAN: I would have to look; there was a point when Information and Education Division was disbanded.

INTERVIEWER: Yes, we have that in Poz' interview. So you were the Water Resources supervisor from '78 to '86.

PETERMAN: The Water Resources Supervisor position was responsible for securing instream flow reservations, not only on the Yellowstone but also on the Upper and Lower Missouri. We secured instream flow reservations there. Also during the adjudication process that position was responsible for filing and defending all pre-1973 water rights held by the department and Fred Nelson was instrumental in getting that put together. So we were able to file on all the water rights the department had, whether it was for hatcheries, or game ranges, or administrative buildings. Also filed the Murphy's Rights which were instream flow rights enabled by special legislation to allow the department to file for instream flow rights on the 12 blue ribbon streams and I've got a whole history of that if you want to get into that. That's an important aspect of blue ribbon streams and the Stream Protection Act and the 310 Act.

INTERVIEWER: So what was the 310 Act?

PETERMAN: The 310 was the Streambed Preservation Act. The Stream Protection Act applied to state and local government entities, or subdivisions of those and the 310 Act applied to the private sector. I can go over the history of that from that talk I gave.

INTERVIEWER: Yes, and what you personally did. We will go over that.

PETERMAN: We refiled on our Murphy's Rights. Also there were 473 prior water rights that we filed on and that was done by April 30, 1982. Also worked on hydro development. We established a process for tracking hydro development, tracking changes and assessing and providing comments when they were required on changes in operation or relicensing. When FERC, the Federal Energy Regulatory Commission, required relicensing when their licensing came up, we would have a voice and a spot at the table in looking at the relicensing procedures. We also put together a small hydro handbook because at the time the PURPA, the Public Utility Regulatory Policies Act, was passed in '78 and that spurred a big run on small hydro

development. So we put together a handbook for the staff in the field so they'd have procedures for evaluating all of the 100's of small hydro applications that were spurred by PURPA. There were a lot of other things going on with that too.

INTERVIEWER: We will definitely get into that. Today is an overview of your positions.
PETERMAN: We also intervened in the Kootenai Falls Hydroelectric Project under this umbrella. And that was the Northern Lights Project and they were planning to put a dam and a hydro plant on Kootenai Falls and that was a major project with a tremendous insult to the river. And that went all the way to FERC proceedings and a FERC hearing in Washington, D.C. Stan Bradshaw was the attorney at the time.

INTERVIEWER: He was the attorney for the department?
PETERMAN: Yes. And there are a few stories on that we will go over later on. The Northern Lights Project was one of the first hydroelectric projects that FERC (Federal Energy Regulatory Commission) denied a permit for. And they denied it on the basis of fisheries and recreation and cultural values. It was appealed and the appeal was turned down with even stronger language in the appeal than they had in the original document. So that was very significant event. There were two individuals I was supervising at the time, Fred Nelson and Kenny Frasier, on the Missouri reservations. I supervised quite a few on the Lower Yellowstone.

INTERVIEWER: From April of '86, what did you do after that?
PETERMAN: I became the Special Projects Bureau Chief from April '86 to October '89.

INTERVIEWER: Was that in the Fisheries division and not the EID? We want to get down when you moved to Fisheries.
PETERMAN: I'll have to look when they disbanded EID and then I was transferred to Fisheries. The entire staff was transferred to Fisheries and some went to Wildlife. They transferred the functions and units of the EID.

INTERVIEWER: Sounds like you were already on a lot of special projects. What are some of the main projects you worked on then?
PETERMAN: I supervised the Water Resources supervisor and Montana River Study coordinator, which we had at the time. Included oversight of several special fisheries projects that we had, doing inventory and planning, doing special research, moving projects to areas that needed an intense look at the fisheries. We had a couple of those projects, doing baseline studies, we had cooperative projects with the Forest Service on cutthroat management and habitat renovation and things like that. That position oversaw that. Oversaw the instream flow program and was heavily involved in water policy, the development of water policy with the Governor's staff and DNRC.

INTERVIEWER: I think that's when I was working here.
PETERMAN: The Reserved Water Compact Commission, that position was a representative on that. I carried some of the projects I was working on as Water Resources supervisor into this position because I was mostly familiar with it and there was the hydropower relicensing and hydropower activities, monitoring state and federal legislation and also began coordinating the activities under the Northwest Power Act. That's when that really came into being and Northwest Power Act had responsibility for primarily salmon mitigation and hydropower, federal hydropower mitigation because a lot of the federal dams had little or inadequate mitigation associated with them when they were built. And Montana's role in that related to Hungry Horse and Libby dams. They were federal dams which didn't have sufficient mitigation so that was our avenue into the Northwest Power Act. Streamflows are extremely important to salmon migration and they get water out of two of the headwater reservoirs, Hungry Horse and Libby. So the salmon flows would influence and potentially impact the resources at the headwaters. So we were involved with the Northwest Power Act, the Northwest Power Planning Council and the Columbia Basin Fish and Wildlife Authority. We were involved in those entities for two reasons. One, to get adequate mitigation for the impacts associated with Hungry Horse and Libby and the other thing was to protect our interest in light of the demands for downstream water releases.

In that position we were one of the founding states in the Missouri River Natural Resources Committee, a committee of all the states along the Missouri River. We had the original founding meeting here, the first meeting of that organization. The MRNRC looked at all the issues in the Missouri River Basin, hydropower, endangered species, streamflows, recreation, all those things on the Missouri River. I believe the committee is still functional.

INTERVIEWER: Who was the Director at the time that was going on? I can find it.
PETERMAN: It'd be a good thing to have, the timing of that. My position also coordinated the Species of Special Concern. We started getting into that in that era, the development of native species restoration starting with the grayling restoration committee. And also implemented the electrofishing safety and water safety courses. I did that with Dick Vincent. Dick had the mobile electrofishing and I had the boom electrofishing and we got Mel Kraft from Canada to come down and do water safety. That was the start of getting the design and safety criteria for construction of the electrofishing boats and also for the water safety. Our people worked on waters all the time, in all sorts of conditions and fortunately we haven't had any major accidents. We had people when Mel Kraft came down, we would rent a pool and go over the whole water safety thing and then go to a pool and have them jump in with waders on, jump in with electrofishing equipment on, and make sure that they knew what to do and knew the importance of wearing life jackets. They'd be in the pool and we'd throw them a life jacket and they'd try to put it on and they couldn't. So that was a significant aspect of that.
Then we developed safety guidelines for electrofishing and also for boat construction. It was interesting because we got some electricians to look at our boats and the first thing the electrical inspectors told us, they said "there's no way in hell I'm getting in that boat in the water." So we had to expand out to Wisconsin and other places who had worked through some of these issues to get someone who understood what the process was, not someone who wired houses for a living. Someone who could design this equipment. We have electrofishing safety classes now and water safety classes now and defined criteria. That was pretty important.
[End of Recording #1, 6/16/2017]

[Beginning of Recording #2, 6/16/2017]

INTERVIEWER: Larry, we're up to 1989. When did you move into being the Administrator of Fisheries?
PETERMAN: I became the Administrator of Fisheries in November 1989 until October 2001.

INTERVIEWER: Oh, long time.
PETERMAN: About 12 years.

INTERVIEWER: Maybe give us a little overview of some things you worked on as administrator.
PETERMAN: Well, that position was responsible for strategic planning, funding and development of the sports fish and native fish management programs, fishing access, habitat protection, fish disease monitoring, aquatic education. The whole gamut of things there. It's also a member of the Director's staff, member of the department management team, the administrator and the regional supervisors and director's office make up the management team for the department. Prepare and allocate and administer the budget, you are responsible for the budget. The budget at that time was about $6.5 million with 100 FTE's (full-time equivalent employees) in the Fish Division. In that position you became a lobbyist for the department and represented the department on fishery issues at the legislative session. Preparing testimony, sometimes testifying, responding to requests, and that sort of thing. Represent the division at statewide meetings with conservation groups, sporting groups, federal and state agencies, and also is the representative of fisheries in the professional societies, whether it be the National American Fisheries Society, the Association of Fish and Wildlife Agencies or the International Association of Fish and Wildlife Agencies. Those entities -- the division administrator is the fish representative there. Also in that position one of the things that I carried along was the department representative for the Columbia Basin Fish and Wildlife Authority. That organization is made up of four states, Oregon, Washington, Idaho and Montana, federal agencies, associated with the Columbia River, the Corps of Engineers, Fish and Wildlife Service, Bureau of Reclamation, BIA, and 13 Indian tribes. And that something quite frankly I think Jim Flynn was director at the time and he didn't want to do it, it was time consuming and it wasn't

related to what his priorities were. So I did that. We can get into different aspects of things that happened.

INTERVIEWER: So, 2001, what came next?
PETERMAN: Then I became Chief of Field Operations, Deputy Director in charge of field operations. I did that until January 1, 2009 when I retired.

INTERVIEWER: So that was in the Director's Office, as Deputy Director. Then you retired in 2009. And we know you really didn't retire. Were you off work for a period of time before you did your contract work?
PETERMAN: Yes, I stayed retired 2009 and 2010. And half of 2011. And then July 1, 2011, Exxon Mobil's Silvertip Pipeline which crosses the Yellowstone at Laurel, ruptured during a high water event. That event spilled 63,000 gallons of Wyoming crude into the Yellowstone. And I followed it. Then the end of July I got a call from Rob Collins, who was the lead supervising attorney for the Natural Resource Damage Program, under the MT Department of Justice. I'd known him for a long time because that program worked on the Clark Fork settlement for Arco. And I got a call from Rob and Mary Capdeville, and Rob said, "Peterman, do you want to go back to work?" And I said, "No. I'm going to Sportsman's Warehouse, buying some fishing lures and I intend to go fishing." And he says, "Well, we've got a problem here. You've heard about the spill. And we need someone to help us get started on it." Well I didn't know what to say. "So about four or five months is all we need just to get us started." And I said, "Well, I could do that." I have a pretty long history with the Yellowstone. So I did and four or five months turned into five years. There's a lot of history going into that too if you want to get into that sometime.

INTERVIEWER: Yes, we definitely do.
PETERMAN: We got a $12 million settlement and I completed a restoration plan and ended my contract with them on June 30, 2016. So I am currently retired again.

INTERVIEWER: So as you look back on your overall career with Fisheries, it sounds like you had some incredible projects you were involved in. I suppose it's hard to pick what you enjoyed most. You can think back over it. Maybe it's just something you should think about.
PETERMAN: Maybe I should think back about it because I had the fortune to be in the position or in the location or have the opportunity to be involved in these things.

INTERVIEWER: You had the expertise to do it as well.
PETERMAN: It was an environment in which it was possible to accomplish these things. In addition, without the vision, courage and leadership of Jim Posewitz, the Yellowstone instream flow reservations probably wouldn't have happened or have been nearly as successful. I was fortunate to have been involved with these efforts and to have a skillset that was useful.

INTERVIEWER: Do you think maybe the Yellowstone trial was one of the better accomplishments you were involved in?
PETERMAN: That was huge. That was big. That was an enormous accomplishment.
[End of Recording #2, 6/16/2017]

[Beginning of Recording #1, 6/22/2017]
INTERVIEWER: This is Margie Peterson. Today is Thursday, June 22, 2017. I'm at Fish, Wildlife and Parks office interviewing Larry Peterman. This is our second session and we're going to go over more details.
[End of Recording #1, 6/22/2017]

[Beginning of Recording #2, 6/22/2017]
INTERVIEWER: So Larry, last time we talked you mentioned Murphy Rights and I thought you could give us a little more detail of what that entailed.

PETERMAN: Sure, Murphy Rights were instream flow rights that the legislature drafted to grant Fish and Game the authority to file on twelve blue-ribbon streams for instream flow rights. A little bit of background there – in 1959, George Holton, Bill Alvord, and Joe Halderman got

together and looked at the status of all the streams and rivers in the state. Because there was a lot of development going on at that time and everybody thought, oh we've got a lot of streams, we lose one here or there, it's not that big a deal. So they did an assessment of the fishery and the habitat conditions on all the streams and came up with 450-some miles of streams which they considered top quality or blue-ribbon streams. There were twelve rivers that encompassed those. The Madison, the Gallatin, the Yellowstone, Rock Creek by Missoula, the Flathead River, the Missouri River, Smith River and there's probably one or two others. Those are the blue-ribbon streams. And they came up with the blue-ribbon concept of classifying the streams that were the highest quality of streams around. It was adopted by the Commission but it had no real legislative direction or authority or backing. It was something that the department came up with and the Commission said that's a good idea, we'll classify those as blue-ribbon to give them a higher status and more visibility if things are going to happen on those particular streams. The Big Hole was another one that was on there. When they started talking in the mid-60's and late 60's about getting some instream flow protection, Representative Murphy from Kalispell, a Republican from Kalispell, drafted legislation and used the blue-ribbon classification as the basis for saying that these streams that are so valuable we have to protect them, we have to protect the instream flows in them. That's where the streams came from and he developed legislation that said that Fish and Game could file on those and it passed in 1969. The reason it's called Murphy's Rights, of course, is because Jim Murphy was the sponsor. It did a couple of things. First, it recognized at least in those rivers that fish and wildlife were beneficial users of water. Prior to that they were not recognized legally as beneficial users of water. The other problem with getting instream flows is that under the prior appropriation doctrine you could get a water right but you had to divert it from the river and put it to a beneficial use like agriculture or municipal or industrial. If you have to divert water from a river that negates the value of your instream flow. So the other thing it did was allow the water to be appropriated and left in the stream. So that's the Murphy Rights in a nutshell.

INTERVIEWER: So, that was incredible. There was George Holton, Bill Alvord, and Joe Halderman.

PETERMAN: And then they published a pamphlet on Montana's Blue-Ribbon Streams. So it went from a concept being developed, adopted by the Commission and ultimately a decade later having instream flow rights allocated to those streams.

INTERVIEWER: So, it didn't have to go to the courts? It was just a bill from the legislature.
PETERMAN: We filed at the time on the Murphy's Rights in the courthouses because that's how water rights were done at that time. Then the 1973 Water Use Act says that, okay from now on out, we're going to set up a system where you apply to DNRC and you're issued a water use permit. And all the previous water rights prior to 1973 will have to go through a statewide adjudication where they have water judges and water masters and clerks and look at all the water rights and decide who gets what and then go through a court process if water rights are challenged, to figure out who has the rights. We took the twelve Murphy's Rights and filed them under the Water Use Act, under the adjudication portion of that. So it got adjudicated through the 1973 Water Use Act.

INTERVIEWER: Thank you, Larry. That was a great explanation of that and a very important issue as well. I've heard it referred to before but I didn't understand the legislature was involved. Okay, you wanted to go over in a little more detail today on the Upper Yellowstone.
PETERMAN: Yes, I worked there for two and a half or three years. Started in March of 1972. Filled in a position in Ecological Services, called Education and Information Division at that time. Later it got changed to Ecological Services. I was hired there to be the fisheries biologist on a three-person planning and inventory project. This project was designed to be moved to different drainages that needed a more comprehensive look at what the resources and the issues were. So, in addition to myself, Kerry Constan was the wildlife biologist, he was also the project leader, Bob Martinka was the bird biologist and I was the fisheries biologist. So we had a three-person crew and would move to different places. Moving into an already established area of a biologist, fish biologist, wildlife biologist, and putting this type of project on top of that didn't always fit in initially because there were turf issues and stuff like that. We had to work with the biologist there to make sure we knew what they were doing, they knew what we were doing, and try to complement each other. It worked real well. Denny Workman was the fisheries biologist

and he was great to work with. We established that project there and took a comprehensive look at all three of those wildlife resources: fish, birds, and big game. That was done in an ecological fashion; we took an ecological approach to it. That was before ecosystem became a buzz word. We were doing this ecosystem approach to natural resource management. We were also a little bit different because we had separate funding sources from fisheries and wildlife divisions and we had the information arm of the agency within our division. And that doesn't mean that they didn't talk about the whole department and what everybody was doing. But it was an inside track into the magazine that we were able to utilize. The other thing that was a little bit different, particularly in fisheries, we had the funding; the way we set the funding up was we had funding for fish technicians to assist in the electrofishing, data collections and things like that. It wasn't a very common thing to do at the time because funding wasn't that abundant, but we rearranged and put the emphasis there. In the Fisheries Division, they had an electrofishing crew which usually was a three-person crew; it was usually manned by biologists. The biologists would come from different regions or areas and shock the Madison, the Gallatin, the Yellowstone and other rivers and spend the spring doing those population estimates and then again in the fall. They had elected to, instead of hiring fish technicians, they needed another biologist. They conducted business that way. We had fish techs where we had one biologist on a boat and then two technicians. And then when the biologist was doing something, the technicians could do other things. The way it evolved now, there are a significant number of fish techs out there working but there wasn't the funding available to do it at that time. So we were able to do it and it was much more efficient way to conduct business. From a fisheries standpoint, we looked at a comprehensive view of the drainage as far as the mainstem and the tributaries were concerned. Previous to that the emphasis, and rightly so, was on the management of the mainstem game/fish populations and how many there were, the size of them, what they were doing. Were they in good shape or bad shape? They had a long-term population monitoring sections. We took the approach of sampling a lot of different areas in the rivers to see how the fish populations up and down the river; where they changed. And we also looked at whitefish and suckers, and non-game species. In addition, we looked at the tributaries and tried to figure out what the relationship was between the fish populations in the tributaries and the mainstem. Streams like the Shields, Mission Creek, Trail Creek, Emigrant Creek, Tom Minor, Cedar Creek, Bear Creek,

we sampled all those to see what they looked like in relation to the populations in the mainstem. Found out some interesting things. We found some pure Yellowstone Cutthroat populations in tributary streams that spawn in tributary streams but reside in the mainstem. We were wondering how they could stay pure Cutthroat when they're all mixed up with the Rainbows in the mainstem. There were a couple of issues that we became involved in while I worked there. One, there was a logging project proposed on Cedar Creek and Bassett Creek downstream from Corwin Springs. It was proposed to be logged in a drainage called Slip and Slide because of the very unstable geologic characteristic. It was really a very lousy logging project. It had a lot of issues with ecological ramifications to it, sedimentation, eroding, all this stuff. And a segment of the population didn't want them to have anything to do with it, they were ranching and everything else. So I got myself inserted into that without checking with my superiors which didn't go over real well.

INTERVIEWER: Who was that? Jim Posewitz?

PETERMAN: The regional supervisor was Leroy Ellig, he didn't know about it, he got blindsided and the Forest Service came down on him and asked him, "What are you doing?" I met a few people on that project that were real significant. Two were Paul and Jessie Shields who owned the dude ranch up the headwaters of Cedar Creek. And they were extremely influential with the ranching community up there. They carried a lot of weight. They didn't always agree with their neighbors. But they were real helpful. The other person was Hank Rate. Hank left the Forest Service and began a surveying business. He had a little place at the mouth of Cedar Creek. I had given some talks about my concerns with the project. And he came up to me after one of those talks and said that he never told this to anybody but there was a run of Yellowstone Cutthroat up Cedar Creek. I said, "Really? Do you mind if I look and sample that?" He said no. So I worked with him and we found a substantial spawning run of Yellowstone Cutthroat coming out of the Yellowstone and running up Cedar Creek, spawning there. I monitored the spawning run success and the outmigration of the young fish. There was a spawning area that had some problems with culverts. But that population had sustained itself over hundreds, maybe thousands of years doing that. I stopped there about three years ago and saw him. He's quite stoved up actually. He's still there. We used that information essentially to

combat the logging sale. It was starting to run into problems of its own and this certainly didn't help them much. In the final analysis, the area was not logged and down the road other people after I left solved the culvert passage problem, they got instream flows in the creek, they worked on water leasing in the creek so there were better flows. For the next thirty some years other biologists worked on improving the spawning for the Yellowstone Cutthroat in the various tributaries. The reason that we determined that the YCT were able to sustain themselves in a genetically pure form was there they spawned at a different time than the Rainbow and in a different place. Rainbow generally are spring spawners well before high water, some however spawn in the fall. The Yellowstone Cutthroat spawn after the peak of high water and they spawned in tributary streams. So there were a few but not many. They were separated in time and space. It was pretty neat to see those fish there. Then we started looking at Tom Minor Creek and a few other creeks and found some similar types of phenomenon going on. Downstream, as far as Mission Creek. I'd given a talk there to the ranchers on Mission Creek when I was down there. And Gordon Britton owned a ranch there but he was a history professor at MSU. Two other people who were significant were Len and Sandy Sargent and they were up Tom Minor Basin and they were just getting started then. They eventually were founders of the Cinnabar Foundation. They had a place up Tom Minor Basin.
[End of Recording #2, 6/22/ 2017]

[Beginning of Recording #3, 6/22/2017]
PETERMAN: Len and Sandy Sargent eventually became founders of the Cinnabar Foundation. And Gordon Britton is on the Board. Last year they created the Jim Posewitz Conservation Award and Gordon nominated me for that. I got the first one.

INTERVIEWER: Congratulations! You should have been the first one to receive the Jim Posewitz award – so fitting since you were friends and worked together.
PETERMAN: It was because of the work we did down there about forty years ago.

INTERVIEWER: So you received the first Jim Posewitz award. Wow.

PETERMAN: The other significant people there were Ray and Boo Hurley. Ray Hurley was a fishing guide, had a nice lodge just south of the Interstate bridge there. He was very active in conservation issues and causes. And all that stuff came together when they proposed Allenspur Dam. They proposed that dam when I was down there. That was the beginning of all that. John Bailey was very active in that as was his Dad, who had founded the Dan Bailey Fly Shop. Just some of the people down there that carried on for a long time.

INTERVIEWER: Working with all the creeks, Mission Creek culverts and so forth, that had to be some of the beginning of landowner sportsmen's relations, working with ranchers, etc.
PETERMAN: That was part of it but everyone was doing it as well. Most of our work was done by electrofishing, small creeks by backpack or mobile electrofishing, using a fixed generator, walking up the stream with lots of stuff. Then on the Yellowstone with mobile electrofishing, Dick Vincent actually pioneered that. We had Boston whalers and we used an outboard jet motor on the Yellowstone. On the Gallatin and the Madison, they just walked behind the boat and held it. But the Yellowstone was too big and powerful to do that. We had a motor on it and at the time we didn't have very good equipment. We had to scrounge whatever was available. We had a Boston whaler that we set up for electrofishing. A generator which worked sometimes. And an old 35-horse Evinrude outboard. That was the first boat I sank.

INTERVIEWER: Oh my. Do you remember how that happened?
PETERMAN: Yeah, oh yeah. We were floating, we did a section, the Mallard Rest section, where we start at Mallard Rest and took out at Pine Creek. At the KOA campground at Pine Creek which sometimes he let us take out there and sometimes he didn't. He was kind of off and on. Anyhow, we did that section and the fish tech at the time was Glenn Erickson. He was a wildlife biologist but didn't have a job at the time so he worked for me as a fish tech. We had to get another person on the crew because it took a three-man crew. I had been hounding Kerry Constan for a year and a half to come help out. He never did. He helped on one, on the Beaverhead and they pulled the electrofishing boat up and dropped it on his foot and broke his toe. So he didn't want anything to do with that. So I finally convinced him to come along

electrofishing. And we were down, about half mile above Pine Creek on a bend and there was a big snag with a sweeper sticking out.

INTERVIEWER: What's a sweeper?
PETERMAN: A sweeper is a log that sticks straight out, out of a snag. Generally there's room to go under it, but not enough. So we were working around and we'd done it several times before and just as we were starting to maneuver around the sweeper, the motor quit. We got sucked under the sweeper, everybody ducked. Glenn Erickson hung on to the sweeper. I ducked under it. Kerry fell out of the boat. Actually the motor hooked on the sweeper and flipped it so he wound up in the water, Glenn Erickson was hanging on the sweeper and I crawled back in the boat and got a landing net and tried to maneuver to shore. I told Glenn after I scooped his lunch out of the water, let go, I'll get you. Then we had to find Kerry. We found him later on the bank. He had made it to shore. He floated a little ways. He was very upset. Very upset. He says, "You fisheries people, first you break my toe, then you try to drown me. I'll never get on a boat again." So that was the one and only time Kerry went on a boat. It was an unsinkable boat, it fills with water and tips upside down and bobs up again. Boston whaler. Actually we effectively sank it. So I spent two and a half years up there. I think we sank the boat the second summer I was there. Then the North central Power Study, the Montana Wyoming Aqueduct Study, the coal fields, all that stuff was starting to really gain momentum. The emphasis for Education and Information Division shifted to the coal fields. Next time I will talk about that.

INTERVIEWER: Good. So this was still between '72 and '74.
PETERMAN: They (USBR -- U.S. Bureau of Reclamation) proposed Allenspur Dam, they got reports out and then everything started to happen.
[End of Recording #3, 6/22/2017]

[Beginning of Recording #1, 9/15/2017]
INTERVIEWER: This is Margie Peterson. Today is Friday, September 15, 2017. I am continuing our Oral History interview with Larry Peterman at the Fisheries Division in Helena.

Larry, I believe we are starting today with your Miles City job from 1974 through 1978. Can you tell us what your title was?
PETERMAN: Yes, my title was Aquatic Project Leader and I began that position is April 1974.

INTERVIEWER: When you moved there, what was the project you were involved with?
PETERMAN: It was the Aquatic portion of a fairly comprehensive study to look at the resources of the Lower Yellowstone, the aquatic resources, waterfowl resources, furbear and wildlife to determine the effects of water withdrawals and coal mining on those resources. And also to develop an Instream Flow Proposal that we could submit to DNRC (Department of Natural Resources and Conservation) during the Yellowstone moratorium.

INTERVIEWER: Did you have employees under you that you were their leader?
PETERMAN: Yes, anywhere from two to eight direct reports. The project was intended to develop, well, let me back up. When we went down there, there was very little information on the mainstem of the Yellowstone River or the tributaries other than the paddlefish fishery. Most of the work that was done prior to us coming down there was to monitor and regulate and study the paddlefish fishery, which developed in the '60s. There wasn't much information available on the rest of the river. So one of the things to do when we were faced with the significant threat of water withdrawals and coal development in the area was to develop a program where we could get funding to study various aspects of the ecosystem. One of the aspects of the job was to develop project proposals and secure funding and negotiate contracts for the various aspects of the aquatic studies and then to hire and supervise the fishery and aquatic resource projects on the lower river. Also to conduct an instream flow assessment for the Lower Yellowstone. By Lower Yellowstone I mean from the mouth of the Big Horn River down to the confluence with the Missouri. I think it was something like 380 miles. Then in order to do that we would have to develop fish sampling techniques for the large river because at that time most of the work in Montana had been done in the western part of the state on rivers which were much smaller. And the sampling techniques in western Montana would really not work in eastern Montana. So we had to develop sampling techniques for large rivers. Then prepare and defend the portion of the Yellowstone River instream flow reservations from the mouth of the Big Horn River

downstream. In addition to working with some of the energy companies and the Bureau of Reclamation and the Fish and Wildlife Service to develop project proposals… I was part of that team, doing the aquatic part and Jim Posewitz in Helena made the contacts on his level so we worked that out and got several major projects going. In addition, at the same time we started looking at what type of sampling equipment would work and we had two boats at the time, Mike Haddix was hired a little bit before I was down there and he had ordered some boats and began outfitting them. We looked at how we would outfit the boats for electrofishing large rivers. In western Montana, primarily they use mobile electrofishing where you threw an electrode out and pulled it back in and draw the fish in that way. For large rivers, we went to a boom electrofishing setup where we had booms with electrodes out in front of the boat and negatives attached to the side of the boat. We used a Coffelt electrofishing unit and designed the boat around that unit. And it worked very well. We had a lot of help from Wisconsin because they were into boom electrofishing and I had visited back there with the people, Gordy Priegel, for example, who was instrumental in designing their boats. They used a different electrofishing unit but we were able to adapt ours and get it to work fine. So in the first summer we got effective electrofishing equipment working. We had three years to get all of this accomplished because of the Yellowstone moratorium, deadline. Eventually they extended the moratorium for one year because it became apparent that no one was going to get their applications done in a three-year time period. The other thing we developed was a gill netting process where we could effectively capture sturgeon and paddlefish. We took large mesh gill nets, like four-inch mesh gill nets which we had ordered. They were floating gill nets and we would drift them down with the current and capture the fish that way. And we also used that in the Tongue River to monitor spawning runs there. In developing that technique that's actually where I sank the second boat of my career.

INTERVIEWER: Oh really? Well we do have the story of where you sank the first one. Ha.
PETERMAN: The second one is where we were developing the techniques at Intake. There were a few snags below Intake. We were able to catch sturgeon and paddlefish, actually captured a few Pallid Sturgeon in addition to Shovelnose. And one thing we learned by doing that since there were snags in the river you shouldn't fasten the net to the boat. And we did and

it got hung up and the boat sank. We got it loose and drifted toward shore and nobody was injured or anything but that was a lesson learned.

INTERVIEWER: Yeah. So you all jumped into the water?
PETERMAN: Well, kind of fell into the water and hung on the boat and cut the line. Anyhow we salvaged everything but the net.

INTERVIEWER: So you got all your equipment?
PETERMAN: Yes. Anyway, we were developing that technique and we used that and were electrofishing on the Tongue. We started out sampling various parts of the river and identifying species compositions, fish abundance; found sauger spawning run going up the Tongue, a major Shovelnose Sturgeon spawning run going up the Tongue and we also found a large school of blue suckers in the Tongue which is a fairly unusual fish. As a matter of fact, when we caught them I had no idea what they were. So we keyed them out and talked to Dr. Gould at MSU and determined they were Blue Suckers. But it became apparent that we couldn't do the tributaries and the mainstem with the staff we had so we got funding for a Tongue River fisheries project and I believe Bob McFarland did that. We did some work in Powder River and found spawning runs there. We got funding from industry for that and Bruce Rehwinkel was the project biologist for the Powder. And that was run out of the regional fisheries office.

INTERVIEWER: So Bruce was in Miles City with you?
PETERMAN: Yes. So, we developed a technique for capturing small Shovelnose Sturgeon, very little ones, year or two old. We would take a standard experimental gill net and set it off the lowermost end of an island where the water converged and put it out with the small mesh downstream and we able to capture probably the smallest sturgeon that were captured. That was kind of neat. Anyway, we did that type of thing. We had to pull together a request for instream flows and have a biologically defensible argument and data for it. Once we got what we thought was sufficient data we started pulling it together and pulling together an instream flow application for the Lower Yellowstone. The middle and upper Yellowstone and the tributaries up there, Liter Spence was working on and once we had an instream flow determine for the

lower river he could go to the upper tributaries and determine which amount of water had to come from different areas to make up that. And they had information for instream flows on the upper Yellowstone but really not much in the tributaries. So they determined a quantity of water that was needed from each source.

INTERVIEWER: So what area of the state would that be if someone was not from Montana, the tributaries…
PETERMAN: That would be the southcentral and southeastern part. The towns along the Yellowstone starting with Gardiner, Livingston, Big Timber, Reed Point, Columbus, Billings, Custer, Hysham, Forsythe, Miles City, Terry, Sidney… The major towns.

INTERVIEWER: Good, that helps some know where we are talking about.
PETERMAN: The only south flowing tributary is the Shields. The major north flowing tribs are the Boulder, the Stillwater, the Clarks Fork, the Big Horn, the Tongue and the Powder. Those are the major north-flowing tributaries. So we developed an application for instream flows for the Lower Yellowstone using a variety of studies, resources and rationale.
[Break]
The adjusted mean annual flow of the Yellowstone at the time was 8.8 million acre-feet. We developed an instream flow proposal for the Lower Yellowstone for 8.2 million acre-feet which was just about the mean annual flow. Ultimately we were granted 5.5 million acre-feet which is a substantial amount of water. It's not a uniform flow but it varies depending on the time of year. Our instream flow application was based several resource considerations. First of all for March and April, those flows were based on the flows required for successful Canada Geese reproduction on the lower river. There's estimated thirty percent of the breeding populations in the central flyway portion of Montana comes from the Yellowstone another fifteen percent comes from the Tongue and Power River areas. A significant area for Canada Geese production. They generally nest on islands and security of the islands depends on the flows in the side channel so predators can't get across. Tom Hines was the waterfowl biologist down there and he determined what flow levels were appropriate for securing successful Canada Geese nesting. So the March and April period were based on Canada Geese reproduction. The May, June and July

flows, the Yellowstone is free-flowing so there's a natural spring runoff, or spring rise, spring flood if you will, that occurs when the mountain snow melts and comes out in the springtime. There were two considerations for the instream flow during the May, June and July period. The first consideration was that in order to maintain the channel structure, the islands, the side channels and the meandering nature of the stream and the riffles and all that every year there needs to be a flushing flow, the high flow that comes down that maintains the channel structure. Those are called channel forming flows and they are based on the flows that reach bankfull. Once it reaches bankfull, that's your channel forming flow. Over-bankflows aren't really necessary for channel forming. But bankfull flows are… that's called the dominant discharge and its based on the one and a half year flood frequency. Thus we determined what that was and you can't have that for the whole three-month period but we identified where a twenty-four or forty-eight hour (I can't remember which), say for a forty-eight hour period that flow would have to be met. You would have to have an ascending limb of the hydrograph where it gradually goes up to the flow and then a descending limb of the hydrograph where the flows fall off. In addition to that we looked at paddlefish passage around the Intake Diversion structure. Across on the right bank of the structure is Joe's Island, it's a Bureau of Reclamation Island. There's a side channel that goes around Joe's Island. We would electrofish the entire five-mile side channel and during the ascending limb of the hydrograph where the flows were coming up and identify that point at which paddlefish started entering the side channel. Based on when they were entering and able to move through the side channel we identified the flow of 45,000 cfs (cubic feet per second) which was necessary to make that passage occur. It was also a part of our high flow application.

[Break]

PETERMAN: The next time period we considered for aquatics was August, September, October, November. That's the rearing period for most of the fish. The water is warm, the aquatic productivity is the highest and that's when fish put on most of their weight in preparation for the winter. For that time period we used the concept that most of the food production occurs in riffle areas and in order for that to be effective the riffles have to be covered with water. And we did surveying, we developed some sonar techniques for surveying large rivers using some Raytheon Sonar equipment and we determined the flows where most of the riffle areas would be

covered with water. That was later called the Wetted Perimeter Method which I think they still use to look at instream flows in rivers. The flows from August through November were based on food production in riffle areas, the wetted perimeter concept. The winter period, December, January, February, that's probably the lowest flows in the river. Probably the period of most stress for the fish. It's frozen… you might have a couple feet of ice over the river and temperature hovers just above freezing in the water. That's when the fish are least active and under the most stress. We thought any water withdrawals during that period would be detrimental and we asked for the median flows during the winter months of December, January, and February. And that pretty much rounded out our instream flow request. Amounted to 8.2 million acre-feet over the entire period and that's what we put together. We gave that report to Liter Spence who at the time was the Water Resources Supervisor and he compiled that information with the information from the upper and middle river and put together the application for instream flows.

INTERVIEWER: He was in Miles City also?
PETERMAN: No, he was in Helena working with Poz at the time. He delivered the application to the Department of Natural Resources five minutes to spare before the deadline.

INTERVIEWER: Oh really? Was that on purpose? Or just how it worked out? Ha.
PETERMAN: Just how it worked out. They had applications from conservation districts, they had applications from DEQ [Department of Environmental Quality], they had applications from Fish, Wildlife and Parks, from industries, Bureau of Reclamation put in applications, they had a number of competing applications.
So after the application was submitted and everyone else's applications were submitted, they had to do an EIS according to MEPA. The Board of Natural Resources and Conservation which was the decision-making body for the water reservations… held hearings in August and September of 1977. They were held in Billings and Helena on the water reservation applications. It was a contested case hearing where testimony was given, cross-examination, the attorneys were present. Intake Water Company had Henry Loble as their attorney and Urban Roth represented I believe Tenneco. Urban Roth was a corporate attorney out of Butte. Two very high caliber

attorneys. The contested case hearing went for two months and generated thirty six volumes of testimony. After they digested that they made a decision on December 15th of 1978. As a result of that, they allocated 5 ½ million acre-feet of water to the Montana Fish and Game for instream flows in the Yellowstone River and 61 of its tributaries.

INTERVIEWER: Where were the hearings at?
PETERMAN: The hearings were in Billings and they finished up in Helena.

INTERVIEWER: That's an amazing amount of water.
PETERMAN: After the testimony was given, I assisted Liter in some follow up stuff and I also finished up the projects that we were doing down there. I wrote a final report on the Ecological Implications of the Yellowstone River Flow Reservations, May of 1979 when it was finally published. It discusses the water issues and the moratorium and all that through our application and has most all the information in that report.

INTERVIEWER: It must have been a great feeling to be so successful.
PETERMAN: It was for everyone. It was a huge team effort. I don't want to take undue credit for that, I was part of a team that did that and the leader of that team was Jim Posewitz.

INTERVIEWER: Well you had a big part in keeping it in the right direction.
PETERMAN: So I was in that position until July of 1978. That's when Liter Spence left the department and I applied for and got his position of Water Resources Supervisor in Helena.

INTERVIEWER: Then Liter came back later, right?
PETERMAN: Yes, I hired him back later for that same position. I had that position as Water Resources Supervisor from July of '78 through April of '86. I was there during the deliberations and that position was in Helena so I moved the family from Miles City to Helena.

INTERVIEWER: Did you have a family at that time and they moved with you.

PETERMAN: Yes, my son, Eric, was born in Miles City and my daughter, Gwen, was born in Helena. In the beginning of that I monitored the Board deliberations and was also finishing up report writing for the lower Yellowstone projects.

INTERVIEWER: So you were basically in the whole project, you just kept going after you were successful getting the amount of water, then you moved into the job to monitor how it went.
PETERMAN: I moved into this, the Water Resources Supervisor, before they allocated but during their deliberation. After it was allocated I then finished up the report writing and closing out the projects on the lower Yellowstone.
[Break]
As the Water Resources Supervisor, taking over from Liter Spence from July of '78 to April of '86. The position had three basic tasks: secure instream flow protections through water reservations. Now we did the Yellowstone water reservations but we still had the Missouri basin, we had the Clark Fork basin, the Kootenai basin; those areas which did not have the same level of water reservation protection. There were Murphy Rights gathered in those areas and in some blue ribbon streams but it did not have water reservations. The decision was made to look at securing instream flow reservations in these other areas. In addition the other task was to file for and defend all the pre-1973 water rights that were held by Fish, Wildlife and Parks in the statewide adjudication which was called for by the 1973 Water Use Act. We had a new process for issuing water, allocating water through water use permits and reservations but everything prior to 1973 had to be adjudicated. They started a statewide water adjudication process which I think is still ongoing.

INTERVIEWER: How many people worked on that with you? That is a big area.
PETERMAN: Primarily Fred Nelson and myself, he was assigned almost full time to that. He worked with the different regions in that to go through and identify all that. Also Bob Lane the attorney was instrumental in it and eventually we hired a contract attorney, Steve Brown, who was involved in that as well. In addition to the adjudication filings, this project represented fish and wildlife interests in water development and hydroelectric projects.

INTERVIEWER: So you were working with the Missouri, Clark Fork and Kootenai, tell us the towns that were near there for those who do not know Montana.
PETERMAN: Clark Fork would be Butte, Missoula area, Drummond. Kootenai would be Libby, around Libby. In addition to that, after the water reservations were allocated for the Yellowstone River, immediately after that there was a legislative session. And for several legislative sessions after that there were significant attempts to overturn the water reservations from industry and from agricultural groups who were really… because it was such a novel concept that you could have water rights and leave it in the stream… there was a lot of opposition to that. For the next several legislative sessions, part of this position was to analyze the bills affecting water reservations and water rights and prepare testimony, work with the attorneys and then give that testimony to whomever was presenting it, whether it would be Jim Posewitz or Jim Flynn at the time.

INTERVIEWER: So Jim Flynn was the Director at that time. So were they some of the lobbyists from the coal industry trying to get it turned?
PETERMAN: Western Environmental Trade Association which was really the lobbying arm for much of the industry. They were significantly against it. Stockgrowers were really concerned with it. The upshot of that was that instream flow reservations were, over several sessions, limited to half the median overflow for future ones. That came about in particular to keep the legislation and Senator Jack Galt was involved in that. He was on the other side and he was a very honorable person. I remember one meeting with Poz and Flynn and Senator Galt and one or two others over in DNRC building, the old hospital at that time. After a couple of hours of going back and forth and discussing it, Senator Galt says, "Well, hell, let 'em have half of it and call it good." That's how that was determined. Riding back in the car, somebody said it's a wonder the legislative process works at all. And someone else said it's a good thing it doesn't work any better than it does. That's the agreement and that's what they stuck with. So, part of the job was to look at and work on those types of issues. The water reservations… first of all, it was maintaining the Yellowstone reservations that we had through solutions to legal problems and negotiations. Once we had the water reservations we had to make sure they were workable and functional. We worked with the other parties, we worked with DRNC as issues came up and

we'd resolve whatever issue came up. We established a process where we would object to water rights applications, water permit applications and have them conditioned to our instream flow reservation. Pretty contentious at the time with Fish, Wildlife and Parks objecting to water rights and that's what their fear was all the time. But we said the only thing we are objective is we wanted to make sure you know that there's instream flow reservation here, and that in a low water year, it could affect your permit. Just make sure that the language is in there that you recognize there's an instream flow reservation. It was pretty contentious to work through some of those issues but our goal was to have… because there was such a public effort to get the reservations and to heighten the awareness of this, we didn't want that to continue through the normal permitting process. We wanted the water reservations, instream flow reservations to be looked at as just another water right. Okay, we're not any different than anyone else, the only difference is that ours stays in the river. So you have to deal with senior rights and what we're saying is this is just another senior right you have to deal with. It's different so that's why we're bringing it to your attention. Gradually it became part of routine business.

INTERVIEWER: Sure, at first it was so controversial, it had never been done before. The water had always been taken out for their uses.

PETERMAN: We tried to get it to be part of the normal way of doing business. And now there's a couple of water rights specialist in the department, Mike McLane and I think there's another one in Lewistown and maybe one more I'm not sure. They work on water rights. And because we have water rights in all these areas and they work on water issues, allocations. So this project was working towards getting the Yellowstone water reservations as just a normal way of doing everyday business and it took a while to do that. In addition, now that we had the Yellowstone reservations, the question was what do we do now. Fred Nelson and I sat down and developed a long-range action plan for securing instream water flow reservations, where we'd go first, second and third, how we'd work through this and how to fund this process.

[Break]

PETERMAN: So we worked on the direction to go for instream flow and water reservations. Fred Nelson and I developed the report, "The Determination of Instream Flows in Montana, An Action Plan." This laid out the direction to go and allowed us to develop proposals and solicit

funding for instream flow determinations on the upper Missouri tributaries above Canyon Ferry, the wild and scenic portion of the Missouri, the Marias River, and selected Kootenai River tributaries. Also water reservations were being prepared for the Clark Fork River above Bonner. The ones that came to fruition were the Missouri River reservations above Canyon Ferry and the wild and scenic portion of the Missouri. Those things were accomplished. We prepared an application for the Clark Fork but DNRC determined that there was no water available for appropriations in the Clark Fork because of the hydropower rights at Thompson Falls. That they took precedence over any other allocations. We argued that if that was the case our instream flow application is the only one you can approve. You can't approve any others but an instream application. They were negotiating with power companies, they had tribal rights going on in the Flathead and they had Forest Service reserve rights going on and that, they were going to resolve instream flows through both processes. The Clark Fork was not pursued. We just couldn't get a process going for it. And the same thing with the Flathead and the Kootenai because of their hydropower issues, reserved right compact commission issues and things like that. We did do the Missouri and as a result of that many places now on the Missouri are off limits for future appropriations because existing water rights and instream flows are basically taking most of the water. Fred Nelson and I and the water rights attorneys worked on existing water rights through the adjudication process and eventually filed for 473 prior department water rights by April 30, 1982. Those were some instream flow rights, we filed on the Murphy rights, because they were prior to 1973, there were water rights associated with fish hatcheries, department properties that had irrigation rights, game management areas, water rights associated with Freezout Lake State Park and headquarters and things like that. We filed on all of those that were prior to 1973. Fred Nelson was the major player in pulling that information together.

[Break]

PETERMAN: The other aspect of this position was engaging in hydropower development and hydropower licensing and other water development projects to make sure fish and wildlife interests were considered. We developed a filing system for all hydroelectric projects currently in the state. Several projects were undergoing FERC relicensing. FERC is the Federal Energy Regulatory Commission. Projects have fifty-year licenses and when they get relicensed and they look at every aspect of the operation. We became involved in intervening in licensing so we

could have fish and wildlife interests, streamflows, storage levels considered in the relicensing and hopefully it becomes a condition of relicensing and then the hydropower operator has to take that into consideration when they operate. In addition to that, there were some major relicensing that was started… the Montana Power Company dams on the Madison and Missouri, all those started relicensing. I believe Chris Hunter was hired to follow up on that. He did major work on relicensing. I was part of some of the initial relicensing efforts. In addition to that there was federal legislation, PURPA, in 1978. It was the Public Utility Regulatory Policy Act and that gave preference and incentives to renewable energy resources. That spurred a significant interest in people filing for water rights and for hydropower applications on a lot of small streams all through the west. Because small mountain streams have a steep gradient, they would propose to divert high up in the drainage, put all the water in a pipe, take it downstream and run it through generators. It was called a small hydro project. From our standpoint dewatering two or three miles of streams, or one or two miles of streams, was obviously not a very desirable thing to happen. That was a major workload because we, in the applications, would determine what instream flows were being needed and then participate in the hydropower application process. So Fred and I developed a Small Hydro Handbook for department personnel to use because we had hundreds of applications for those. We went through that process on each and every hydropower application that was filed.

A major intervention that we did on a hydropower project was the Northern Lights Kootenai Falls hydro project. That project was by a rural electric coop, the Western Montana Electric Coop. They proposed to build a dam on top of Kootenai Falls and drill through the falls and dig out a tunnel underneath it to put a hydropower project there and release the water below there. That would be a huge impact, not only to fisheries, but to the cultural resources, the tribal resources, everything else there. We were highly involved in that intervention process. We opposed the project. Stan Bradshaw was the attorney. We participated in the FERC hearings in Washington, D.C., for a number of months. Eventually FERC denied the hydropower permit, one of the few they ever denied. It was appealed and upon appeal, the appeal was actually stronger than the initial ruling. They said we stand by our initial ruling, in addition to that, they pretty much put a stop on that. That was a big deal. First time they used fish and wildlife and recreation as the reason for denying a hydropower permit.

INTERVIEWER: Do you remember the dates?
PETERMAN: Early '80s. Two stories with that, on the hearing. Bruce May was the biologist up there and he was testifying in the court, and the utility attorneys were grilling him unmercifully, and they said, "Well, 20,000 fish can die but we can buy 20,000 fish a year and put them back in there, or we can build a hatchery. It wouldn't have to be a big hatchery." And the attorney said, "Well, if you get a bathtub, could you put 20,000 fish in the bathtub?" And Bruce looked at him, and said, "Well, you could if you didn't have any water in it." And the judge just burst out laughing. And that pretty much ended that line of inquiry. When I was back there in D.C., one of our star witnesses was Sue Perry, an aquatic invertebrate person. We were riding the subway, we figured out how to ride the subway, what color to take to get us where we wanted to go and coming back from the hearing, I think she was finishing up her testimony. She was pregnant at the time. We're in the subway and she said, "Oh, my gosh, my water broke." So we got out and didn't know what to do and flagged a cab down, told him the situation and he said he'd take her to the Women's Hospital. We got ahold of her husband, he was not happy. She had her baby there in D.C.
In April 1986 to October 1989 I was the Special Projects Bureau Chief in Helena.
[Break for lunch.]

PETERMAN: In that position, supervisor responsibility was supervising the water resources supervisor and the Montana river study coordinator and several fisheries projects.

INTERVIEWER: Who were in those positions?
PETERMAN: I believe we hired Liter Spence back and I think it was at that time, and the Montana river study coordinator was Janet Decker-Hess, Janet Hess-Herbert now. She was instrumental in developing the program to identify and categorize streams, working closely with the Northwest Power Planning Council. At the time, we were having a small hydro boom. Janet worked to identify areas that should be protected from hydropower development. We took that to the Northwest Power Planning Council to get that implemented. There's a number of rivers in northwest Montana that are off limits to hydropower development and Janet was instrumental in

getting that done. The research and special projects bureau in addition to supervising those positions included oversight of several fisheries special projects, baseline studies, cooperative projects with the Forest Service who had a number of special fisheries projects out there that were under the direction of this position. And I oversaw the department's instream flow program and from there participated in the development of state water policy, water policy committee, reserved compact commission, and things like that. Monitored legislation as it pertained to some of those issues. Because hydropower relicensing was increasing, this position took over some of those responsibilities for FERC relicensing. Monitored state and federal energy legislation because that was becoming more of an issue. In addition, the Northwest Power Act was becoming much more active and this position coordinated the division's activities with the Northwest Power Planning Council. It was the representative on the Missouri River Natural Resources Committee and we established the charter for that and had the first basin meeting in Montana. That's the MRNRC and its still functions today. Resource agencies along the Missouri River, the entire length of it, can look at common problems, any solutions we could develop, and also any issues with water management and restoration.

INTERVIEWER: Do you remember having trouble with the legislature trying to get involved and change things?
PETERMAN: Yes, we usually have trouble with them, it's an ongoing thing.

INTERVIEWER: Sure.
PETERMAN: My position served on the Columbia River Basin Fish and Wildlife Authority. It's an organization consisting of four northwest states, Oregon, Idaho, Washington, Montana, 13 Indian tribes, Fish and Wildlife Service. They represent the natural resource issues, fishery issues, wildlife issues, in the Columbia Basin. We're part of that because what they do down there for salmon operations affect Libby and Hungry Horse reservoirs because we have the major upstream storage reservoirs. We try to make sure when they call for water it doesn't adversely affect our resources. And my position coordinated the Species of Special Concern program. We started to get more actively involved in that. We started the arctic grayling conservation committee and started looking at the arctic grayling, the river arctic grayling in the Big Hole and

a few other places, maybe the Sun River had a couple. That is ongoing today and they declined to list the species because of the conservation issues that evolved. There's much more going on now. We had legislative contract authority to spend money so if we had a contract come in between legislative sessions, we asked for an amount of contact authority from the legislature that we could use rather than going back each time. It's called legislative contract authority, about a million dollars that this position oversaw. There were issues with the operation of Canyon Ferry, Hauser and Holter and Montana Power had proposed power peaking at Holter and actually tried it for a couple of days. Power peaking is where they released a lot of water when demand is high. So the river would be full at one time and then almost empty. And that of course was a big deal. Canyon Ferry was doing a few things that also fluctuated water levels and Hauser would do an operation and not let anyone know about it and would cause water level fluctuations. It got to be a fairly contentious issue. We pulled together all of the interests and determined what instream flows we would need down below Holter and determined the water levels that would be best. We got everyone together and it took a long time and a lot of meetings to get Bureau of Reclamation, Montana Power, anglers, and other groups together and eventually we worked out an operating plan for the reservoirs that would give them the flexibility they needed in drought conditions or flood conditions, yet at the same time maintaining adequate instream flows. I'm not saying optimum, I'm saying adequate. That allowed the fisheries to really flourish now and they still follow those operating guidelines. They have a meeting every year to go over the snow pack forecasts, if they have any maintenance issues coming up, if they have any things like that they would discuss those so everyone would know what was coming and was aware of it. At one time, Holter had a lot of ten-foot drawdown every year to do some repairs and we talked to them and they figured out a way to do that without drawing the reservoir down. They were good at it, the dam operators were good at it, they would do things that I wouldn't do. Somebody went over in a bucket on the side of the dam and worked on it. Ha, ha. I wouldn't do that. That was a big deal and it really did a lot for maintaining these reservoir operations.

INTERVIEWER: So the late '70s to the '80s was an integral part of getting procedures in place that are still being used today. A crucial time, getting people to work together and support each other in their problems. Lot going on.
PETERMAN: Yes. It was a lot of things that weren't functioning as well as they should. A lot of new things like water reservations. Then we completed and submitted instream flow reservations. By we, I mean the department and Liter Spence and Kenny Frasier, Chris Hunter, it wasn't me that did it, but the group that did it, the team submitted instream flow reservations for the upper Clark Fork and the Missouri above Fort Peck. I mentioned earlier the effort to designate streams to be protected from hydropower development. Janet Decker Hess was instrumental in getting the information together for that. The other thing we did which I think is really important… we developed and implemented electrofishing safety and water safety programs for the fisheries division. Prior to this we didn't have any set of standards for building boats or operating, everybody just did what they did.

INTERVIEWER: There were no safety regulations before that? People just knew what not to do but it wasn't in a manual somewhere.
PETERMAN: Right. Dick Vincent and I got together and early on put together a water and electrofishing safety program. Dick was the one who developed the mobile electrofishing technique and I was the one who worked on boom electrofishing. So we had two different types but they have a lot of common issues. We saw things that needed improvements so we got Mel Kraft from Alberta, Canada, one of the associates come down and talk about their water safety programs. They had two of their staff drown in a storm on one of their lakes so they developed a pretty comprehensive water safety program. We got them down and Dick and I worked through the electrofishing safety boat construction guidelines. This is how you build it. And this is what you have to do in order to have a safe operation. We ran it by the electrical engineers for Colfelt Electrofishing Inc., the people who build them. We made the mistake early on going to a house electrician and they didn't get it. It's a different type and not something they were familiar with. We went to the electrofishing equipment manufacturer, went to Wisconsin, saw what they did and the safety guidelines they put together. We borrowed from them and put together a set of design criteria for electrofishing boats. What you have to do, this is the emergency cutoff

switch, this is what you push, this is where you buy them, these were the kinds of things to do to shutoff in an emergency and then we had the booms made out of certain material, and the wiring certain material. And then established operational procedures, how many people in a boat, waders that don't conduct electricity, wearing gloves, hearing protection. We had operational guidelines that we used; two out of three of the crew members had to be up to date on CPR and a first aid kit along. I'm sure they've expanded those criteria since then. That was the start of it, in that period, mid to late '80s. We also had the water safety portion of it where we had a day where we had electrofishing boats and a day of water safety. Water safety involved anybody that gets in a boat puts a life jacket on. That wasn't always followed. You'd have to wear it in hot and cold weather working on boats electrofishing or otherwise. We provided float coats for them. We had different types of hearing protection and we had a water safety class where we would rent a pool. The people would get in with waders, simulate falling in and swimming in waders. Most people drown trying to get out of waders.

INTERVIEWER: Did you give these classes just to the Fish Division or the department?
PETERMAN: We started with the Fish Division and other agencies asked to participate and we opened it up to others who wanted to come. Whoever works on the water. Taught them that the waders won't pull you down in the water. Waders don't weigh that much once they're in the water. You can put a belt on, you can have different types of waders. We had a simulation where we had a backpack with a weight on it which simulated someone with a backpack shocker falling in and able to get out of it. In the end we had races with waders on. And then we would take a person in the water and throw them a life jacket and tell them to try to put it on which is virtually impossible, it's very difficult to do. That was the water safety portion, it was pretty good. They have continued to do that. It's pretty important.

INTERVIEWER: Does every region have biologists who electrofish or are there some specialists who go to each region?
PETERMAN: No, every region has its own electrofishing crews. Now if there's a special project going on they may call folks from other regions to help but each region has their own

electrofishing boat and equipment and staff. One of the things we worked on was developing a water leasing program and that was very controversial.

INTERVIEWER: Were you the first ones to think of water leasing?
PETERMAN: Yes, us and TU (Trout Unlimited). Leasing from a landowner and leaving it in a stream so they couldn't divert it. Because I was the water resources supervisor before that and working with Liter and Poz, I was generally involved in those negotiations. We did develop a pilot water leasing program and still have a water leasing program. It enabled you to lease water from a willing landowner and leave it in the stream for a certain period of time. And he got paid for it.

INTERVIEWER: Did that have to be a bill in the legislature to authorize payment, etc.?
PETERMAN: Yes, now Trout Unlimited gets involved in both water leasing and purchase of water rights. I might have to look it up, when I was the fish chief. In addition, they were going to develop a rereg dam below Libby which would take up five miles of river and put an extra generator in and power peak with the main dam and then use the rereg dam to even out the flows. We eventually defeated that proposal.

INTERVIEWER: When did you become the Administrator of Fisheries Division?
PETERMAN: November 1989. I worked pretty hard on that (Rereg dam) and eventually it didn't happen. Lot of local opposition against it, the region was totally against it and I was able to work through some of the policy committees like Power Planning Council who also opposed it.
[End of Sept. 15, 2017]

[Beginning of Recording #1, 10/2/2017]
INTERVIEWER: This is Margie Peterson. I'm meeting again with Larry Peterman and today is October 2, 2017. We are meeting in Helena at the Fisheries Division. Larry, I think we're going to start today with your job as the Fisheries Division Administrator. Do you want to just tell us, and what dates you started in that position.

PETERMAN: Sure, I became the Division Administrator in November of 1989 and was in that position until September 2001. About a twelve-year-period. Administrator, the Fish Division Administrator is also referred to as the Fisheries Chief, or Fish Chief. That position is responsible for strategic planning, funding and development of fisheries programs, acquisition and management of fishing access sites, habitat protection, disease monitoring, aquatic education and just the major elements of the Fisheries program. Also is a member of the management team, all the division administrators and the director's office are members of the management team, as are the regional supervisors. During my tenure as Fish Chief the budget for the annual budget for the division was approximately $6.5 million and we had over 100 FTEs (full-time equivalent employees) in the division. The division administrators also played a support role during legislative sessions by providing testimony, actually giving testimony on certain bills that affected fisheries and participating in the House Bill 5, or the Capital budget. We had a significant role in the Capital budget because we had the Fishing Access Site program and the hatcheries. The hatcheries are a major part of capital programs in fisheries. That basically describes the position. When I took the position, we looked at several issues that were immediately facing fisheries in the state. We were having significant issues with illegal introductions, also referred to as bucket biology, where anglers would like to have their favorite fish in a nearby water, but they didn't so they would go and get those fish and bring them there and plant them in whatever lake they wanted to. It was a very difficult situation. Jim Vashro took on the role of trying to delineate which lakes had illegal introductions and the numbers were in the 100s… of lakes where fish were illegally introduced. Perch, Northern pike, walleye, bass, species like that. Even certain forage fish. Certain elements of the angling public were involved; not very many but it doesn't take very many to establish the fish. In most cases it was detrimental to the existing fishery. That was a big problem that we had. We established a program to try to combat illegal introductions. We did it through information, we did it through pamphlets, we did it through signs, we did it through rulers we gave out that said, "stop illegal introductions" and that sort of thing. We made movies, video spots, and talked to all the local angling groups. So we made a big push to try to stop that. I think we may have slowed it, we didn't stop it. Today it's still a major issue.

INTERVIEWER: It's like being more reactive because you don't know until you find the fish there. So did you have an information officer in fisheries who helped with public relations?
PETERMAN: No, we used the department's Con Ed information office. As the information arm. But the people associated with the division, both at division level and regional level, would be the ones who talked to the groups to explain the issues.

INTERVIEWER: And it's still being done today?
PETERMAN: Yeah, it's still being done today. One of the most visual ones were when they put walleyes into Canyon Ferry. I think early '90s, '90, '91, was when Mark Lere was working out there and they found two or three juvenile walleye in their spring sampling. That was the start of it. They rapidly expanded fishing for walleyes, for large walleyes, was pretty spectacular in the early couple of years. They didn't have a lot of fish and they had a lot of forage. The first species to be impacted were white suckers, the second species were yellow perch, and of course rainbow trout that we were stocking.

INTERVIEWER: Were the perch more during the ice fishing season?
PETERMAN: The perch was a substantial winter ice fishery, a lot of people used it, a lot of people took families out there. And it was a summer shoreline fishery. It was a very popular fishery. Unfortunately that was one of the major fisheries that were impacted.

INTERVIEWER: Did they change the regs for the walleyes that you could have?
PETERMAN: Yes, they didn't have a limit for a long time and then the management plan put a limit on it. One of the big issues there and then the walleyes showed up in Hauser, which is a natural extension cause it's just downstream. Holter previously had walleyes since 1950s but they were always in relatively low numbers. The problem with Canyon Ferry is that with the rocky shoreline there's unlimited spawning potential. In the early fishery, it showed 10, 12, 13 pound walleyes coming out but that soon changed when they ate themselves out of house and home. And then the walleyes became much smaller. That was one of the major issues in the early '90s, because there was a lot of dissatisfaction with the fishery. We were struggling to maintain a trout fishery and ultimately had to overwinter fish, hold them a year to get them big

enough so when you put them in the reservoir, so they wouldn't be eaten right away. They'd be big enough to avoid the predators. What eventually happened in the management of Canyon Ferry, Hauser and Holter, the three reservoirs, was the development of a fishery management plan which was pretty significant undertaking by the Fisheries Division and the regions. The two regions, Region 3 and Region 4.

INTERVIEWER: Region 3 is Bozeman and Region 4 is Great Falls.
PETERMAN: And at the time Region 3 had Canyon Ferry and Region 4 had Hauser and Holter. Now I believe Region 4 has Canyon Ferry, Hauser and Holter because that's a logical unit. There were a lot of competing interests, a lot of people and different interest groups didn't really want to compromise on what they had. Of course they thought they could manage it better than the department. It took several years but we finally developed a Fisheries Management Plan for those three reservoirs and the river below – the Missouri. That established goals and objectives for the major species, the rainbow, the walleye, the perch, and targets to manage towards. And they still today operate on that management plan system for these three reservoirs. The change when they revise it, it changes a little bit, but the basic concept is the same. So that started the Fisheries Management Plans and then we went to other bodies of water -- Tiber, Fort Peck, the major water bodies have management plans now – Flathead Lake.
[End of Recording #1, 10/2/2017]

[Beginning of Recording #2, 10/2/2017]
PETERMAN: So with the development of the management plans, they identified goals and objectives for the species, and has regular meetings with the public after every year of sampling to tell them where we were at. One of the more difficult plans was the management plan for Flathead Lake. That was in '90s, early to mid-'90s that we developed a management plan for that. The issue surrounding Flathead Lake was that it is controlled by two separate jurisdictions. It's controlled by the state of Montana through Montana, Fish, Wildlife and Parks and the Salish Kootenai tribes. So the north half is state and the south half is tribal. The Fish and Wildlife Service was involved because around that time the bull trout were classified as a threatened species. So the Fish and Wildlife Service had jurisdiction over the bull trout. Now the issues

surrounding Flathead Lake was that the state was managing both for native fish and the sport fishery. The sport fishery was Lake Superior whitefish and lake trout. The tribes and the Fish and Wildlife Service were primarily interested in bull trout, the native fish. So that was a very contentious setting and it took a number of years to develop a management plan that was accepted by all parties. I believe we hired Ginny Tribe to help facilitate that. And eventually we developed a management plan. It wasn't accepted very well by the Service and after a while the tribes didn't think enough was being done to eradicate lake trout. So there is another management plan that has taken a different direction. More intense management, even netting of lake trout. We have management plans on rivers, on lakes. Another issue that arose during the 12-year period and actually the early '90s was a proliferation of specialized angling groups. Back in the '70s, there was Trout Unlimited, but mostly conservation organizations or sportsman's groups which were interested in hunting and fishing and wildlife management with a very broad area of interest. This period saw specialization of both wildlife and fisheries groups. You had Pheasants Forever, Ducks Unlimited, Wild Sheep Foundation, Mule Deer Foundations, and Rocky Mountain Elk Foundation. On the fishery side of things, you had Trout Unlimited, Fly Fishing Federation, Walleyes Unlimited, Bass Society, etc. All these interests were specialized interests. Interested either in coldwater or warmwater, specifically walleyes or specifically northern pike and that sort of thing. There were a lot of issues surrounding the management because there were a lot of different desires out there.

INTERVIEWER: And the groups weren't working well together at that time?
PETERMAN: The groups weren't working well together and they weren't necessarily worked well with the department because they wanted the department to see things their way. And of course the department's mandate is much broader than that. So in the early '90s we started what we called an Angler's Forum. We invited all of the interest groups to the Beartooth for a two-day session which became the start of the Angler's Forum. Groups like the Bass Society, Walleye Unlimited, Trout Unlimited, Fly Fishing Federation, FOAM, the Fishing Outfitters Association of Montana. We had the Montana Wildlife Federation, we had individuals who were instrumental in fisheries but not necessarily aligned with any group.

INTERVIEWER: The Beartooth is the place up on the Beartooth Mountains that the department owns?

PETERMAN: The Beartooth Wildlife Management Area just up from Holter Reservoir, a few cabins and fairly rustic eating room where you could hold a conference. Get people there and they are away from everything else. You can't run out and get lunch, you're there. After you're done they had to spend the evening together. It was a good place to have it. We knew we couldn't get agreement at that meeting but we tried… collectively to identify all the issues facing fisheries management in the state. Cold water, warm water, habitat flows, reservoir operations, anything that was… we had a list of issues that the groups and the department thought were important. Then we started working on the goals of the department to address each one of the issues. We got agreement on the goals, or if we couldn't get agreement on a goal we just left it. But we found areas that all the groups could agree on. Then we said we'd follow up with an action plan and I think it was maybe six months later we reconvened the Anglers Forum. It became a regularly scheduled event where we would get the groups together, go over the action plan we had, progress we made, what we were doing, what the groups could do, what legislation we had coming, the budget, and stuff like that. It was a forum for communication, a forum getting some collective actions going on certain activities. We did this for the 12 years I was there and I think it carried on beyond that.

We mentioned the issue of bull trout and it being classified as a threatened species. The state has management authority over all species, the federal government, Fish and Wildlife Service, has authority over threatened and endangered species. There's an area of co-management, actually an area of potential conflict of management between the state and the federal government, recognizing that we started first with the arctic grayling. The arctic grayling in the Big Hole River, which is really the only remaining area that the native grayling exist in. They used to exist in the Big Hole, the Upper Missouri, the Madison, the Sun River, the Smith, down through about Great Falls. Now the only area they exist is in the Big Hole River.

INTERVIEWER: Is that from predation?

PETERMAN: Well, they are a glacial relic.

INTERVIEWER: Oh, I imagine a lot of people didn't realize that.
PETERMAN: The glaciers pushed a lot of populations south and when it retreated and things warmed up those populations were trapped there. Those who could adapt did but some faded out of the picture. Grayling is right on the edge. It needs cold water, clean water, a sensitive species. Irrigation and turbidity and warming water certainly play a role. And they are very easy to catch. In some cases they were overharvested. It's a relatively easy thing to fix. But streamflows, cold water and turbidity is much harder. When we looked at it, clearly they would quality as an endangered fish because there were so few of them left in a very limited area. But we thought that, let's get together outside of the Endangered Species Act and see what we can legitimately do to maintain the arctic grayling. And then make the case that we were doing everything that needs to be done. We have more flexibility and more public support when it's not endangered. So we developed the arctic grayling committee and that has persisted through the years. There were special projects, special people assigned to that, working with the Big Hole Watershed group, instrumental in doing positive things for grayling. And as a result just a year or two ago, the Service said it isn't warranted for listing because of the efforts that are going on. So after I left, all those other efforts that continued really made a substantial difference.

INTERVIEWER: Is the population growing?
PETERMAN: It's growing. It needs a lot of protection but its still around. They recognized that it's probably the best way to work through it. Still being challenged by certain groups but it's a really positive development. So we did a similar thing with bull trout. Established a Bull Trout Restoration Task Force and that was a governor-sponsored task force with quite a wide representation. It met regularly and developed an initial bull trout restoration plan.

INTERVIEWER: Where they mostly in the Flathead?
PETERMAN: Flathead, Blackfoot and some in the Bitterroot, some in the Clark Fork lower down. So there was a significant effort by the state to do that. In addition, the feds were developing their own restoration plan for the entire range. We were developing a Montana restoration plan. The feds were developing a northwestern restoration plan which included Montana, Idaho, Washington, Oregon where they existed. One of the issues was that we were

arguing that Montana should be looked at for delisting separately from the other states. Our populations were in better shape, we had a plan that we were moving positively towards that. Whereas we saw restoration in some of the other states as a long, long way off. So we didn't want to be tied to that when our populations were recovered. The feds said, no, we need to treat everyone the same. That was contradictory to some other ESA (Endangered Species Act) decisions they made notably on white sturgeons. But regardless of that, the fish was listed as threatened and I don't know the status now.

INTERVIEWER: So they didn't let Montana have different rules for the bull trout?
PETERMAN: They wanted the delisting to be all or none and we were arguing for ours to be looked at separately. So we started similar programs for cutthroat trout, westslope and Yellowstone, and worked with other endangered species. The pallid sturgeon was listed as endangered and rightly so, there aren't a lot left. And we participate with North Dakota, Montana, Fish and Wildlife Service to try to maintain those fish. White sturgeon were listed as endangered in the Kootenai River and that was a separate population that was listed there because of Libby Dam and several other things. We worked there on recovery efforts also but that's mostly a tribal, state and federal effort. We started the bull trout, cutthroat trout, the grayling initially and those efforts are still ongoing.
[End of Recording #2, 10/2/2017]

[Beginning of Recording #3, 10/2/2017]
INTERVIEWER: Okay, we are recording.
PETERMAN: So we prioritized management of native species, emphasized them and when Chris Hunter took over as Fish Chief after I went to the Director's Office, Chris became very involved in the management of native species. He really made some substantial progress on that.

INTERVIEWER: So that was 2001.
PETERMAN: He established the native species program and carried it to the next level. We also became involved in continuing in the FERC licensing of hydropower facilities in the state; notably the Montana Power Company, Madison/Missouri system where they had Hebgen and

Ennis and Hauser and Holter and the five dams at Great Falls. There was substantial effort put into that by Chris Hunter and the regional folks to make sure operations were continued and the reservoir operations we developed were actually enshrined in the FERC licenses. During that period Chris also worked on the Noxon Cabinet Gorge relicensing and that was a pretty extensive effort. During the early '90s, the Natural Resource Damage Assessment program became very active in the Clark Fork, addressing the Arco settlement. That was related to trying to recover 100 years of damages from the Anaconda Company and then finally Arco mining in the headwaters of the Clark Fork and smelting at Anaconda. That led to virtually a dead river from the headwaters down to Milltown Dam. There were a number of years involved working with NRDA program put together a state case for settlement. Ultimately there was a settlement there, thanks in large part to Rob Collins, from Natural Resource Damage Program who was the lead supervising attorney and also a bull dog when it came to negotiations and court appearances. The department and the biologists went through the actual hearing process, which eventually led to a settlement which was, I might check the figures, but I think in the neighborhood of $360 million. And it is being implemented now to correct the problems associated with the mining.

INTERVIEWER: The state has done some excellent cleanup. Milltown at Bonner. That just got removed.
PETERMAN: Yes as part of that process, Milltown Dam was removed. That was a huge part of the settlement. Then the Natural Resource Damage Program reestablished the stream channel there, working closely with the Region 2 fisheries staff.

INTERVIEWER: What were the timelines that they have to get the reclamation completed by?
PETERMAN: They had some timelines but others are open-ended because it's experimental and the big issue remaining there is the Butte pit is filling up with toxic water. When it reaches a certain level the outflow is going to have to be treated in perpetuity.

INTERVIEWER: Is there anything they can do to not have so much water?
PETERMAN: No, its groundwater and it's a long-term legacy there.

INTERVIEWER: Yes, they had that awful bird die off there last spring, the snow geese migration landed on the water there.
[End of Recording #3, 10/2/2017]

[Beginning of Recording #4, 10/2/2017]
PETERMAN: Okay, I talked briefly about the Stream Protection Act in the early '90s. The Stream Protection Act is an act that requires a permit issued by Fish, Wildlife and Parks to any state or local government entity that does any in-channel or streambank work or alterations. Over the years that had become fairly controversial between Fish, Wildlife and Parks and particularly the highway department because they are one of the major customers. In 1994, we had a vacancy in that Stream Protection Act coordinator position. So what we decided to do because of the difficult working relationship that had developed over the years we contacted the Montana Department of Transportation (MDT) and asked if they had an individual who would offer to fill that position for a period of time to try to improve our working relationship. We did have a volunteer to do that from MDT. That individual was a bridge engineer. We interviewed him and decided to fill that position for either six months or a year. But it was a substantial period of time that we had somebody from MDT in that position actually looking at their projects. His name was Todd Tillinger. Todd was an excellent person to work with, very knowledgeable and he had a good environmental ethic. He also understood how the Highway Department worked and that dramatically improved our working relationship between FWP and MDT over the administration of the Stream Protection Act. Todd went on to work for the Corps of Engineers in their 404 Permitting Process. He went back to Highways and I noticed that he was their 404 coordinator for the state. He went back to permitting sometime after he left us and after he left MDT. I thought that was a real significant improvement by actually having one of their people see the permitting issues we faced from our side and also he would bring the MDT perspective over and could discuss what limitations they had in what they did. That was a real positive development.

INTERVIEWER: Do you know if they do that now, if they have someone from Transportation work with Fisheries? And what would impact the rivers and streams?

PETERMAN: I think MDT has some biologists over there now but we still do the permitting. So, another issue that arose both out of the Angler Forums and what we had been noticing on the rivers was the increasing popularity of Montana rivers. As a result of the movie, The River Runs Through It, the Blackfoot with Norman McLean, that really highlighted the quality and the experience of fishing Montana's rivers for wild trout which a lot of people didn't know previous to that. That really sparked interest and increased use on many of our popular rivers.
Increased fishing pressure wasn't necessarily impacting the fish populations because most of the fishing on the rivers now is catch and release. Compared to in the '70s when there was a significant harvest component. In the '70s the regulations meant something, regulations today don't mean a lot on rivers because most of the fishing is catch and release. There are other issues associated with catch and release.
Conflict on rivers was an emerging issue. The use of rivers was an emerging issue and the commercial use of rivers was an emerging issue in the early '90s. That commercial use was outfitting use.

INTERVIEWER: Wasn't that when the outfitters and guides organized themselves, and those became more popular.
PETERMAN: The FOAM (Fishing Outfitters Association of Montana) organization existed prior to that but they became a significant player in the discussions that were happening because they represented the commercial interests and the Board of Outfitters that administered by Commerce that does the actual licensing of outfitters. But the conflict that was occurring was not only between outfitters but more between outfitted and non-outfitted angling public. The anglers felt that they were being squeezed off their favorite rivers, twenty years ago you had a lot of space and now you have boat after boat after boat coming through and creating quite a bit of social conflict on the river.

INTERVIEWER: The boaters didn't respect the bank anglers too?
PETERMAN: Some of the outfitters are very competitive and want to get their clients in the best spots. They would monopolize holes or you'd have a group of outfitters with walkie talkies, one – I'm coming around the bend and two – okay you can have my spot. So there was a lot of

social conflicts happening. So we developed river conflict workshops where we would discuss the issues and possible solutions. Ultimately through the Commission's authority, we developed river management plans which addressed not only the fisheries which was the easy part but addressed the social conflicts happening on the rivers, which is the difficult part. We started with the Big Hole and the Beaverhead rivers in Region 3. We hired a river conflict coordinator that worked on those issues and eventually developed and the Commission adopted a river management plan for the Big Hole and the Beaverhead. That limited the growth of the outfitting industry there to what had historically been there. Some people said it was way too much to begin with and should have been cut back. They limited new outfitters from coming in and they also had sections of the river that rotated on a daily basis that would be off limits to outfitters. So if you wanted to go on the Big Hole on a certain day and didn't want to have to compete with outfitters there was a section of river that was open to the general public but not to outfitters.

INTERVIEWER: So did they have to get out at fishing access sites to make sure they didn't get to that section of the river that was off limits?

PETERMAN: They couldn't use that section of river. It was established then and it's still ongoing I'm sure with modifications. There are other rivers, I'm not sure where the process is right now but there are other rivers where crowding has become an issue. The Madison, Bighorn, sections of the Missouri. One case with the other rivers now that the department is having is that during a drought, during a significant drought, well, I'll talk about drought a little bit. We are experiencing more frequent droughts than we have in the past due to global warming. The climate's warming and you're seeing changes in streamflow, you're seeing snowmelt coming a month earlier, in March instead of April, which is a significant change. March has significantly higher temperatures now than they were back in the '50s. You're getting earlier snowpack and lower late season flows. We noticed that lower late season flows coupled with higher temperatures during severe droughts were causing mortality in the streams, the streams were nearly dry and people were still fishing the streams. And causing increased mortality. So we developed a process to limit angling during a drought when certain criteria were met and that criteria would be temperature, maximum temperature, duration of temperature and streamflows. If those criteria were met then we would limit angling. We would limit

angling to the early morning hours, we would have hoot owl restrictions where in the afternoon no fishing would be allowed, it would be allowed in the mornings. In some cases on the Big Hole, for example, there were flows conditions where fishing would be prohibited. As we went through increasing drought, there were drought task forces established in different drainages. The Big Hole was one of them where we were dealing with the arctic grayling, plus recreational demands, plus streamflows, and the Big Hole working group established a way for sharing water, a way for limiting water use and what they said was if we're going to limit water use and you're going to let all these anglers on the river, that's not fair. And we said no that's not fair. When it reached its point where irrigation was significantly curtailed, we would significantly curtail angling use also.

INTERVIEWER: So the Hoot Owl restrictions started when you were the Fish chief?
PETERMAN: Yeah, and we had the Hoot Owl regulations and restricting anglers because of drought situations.

INTERVIEWER: I bet it is worse today than it was back then.
PETERMAN: Probably, the Bitterroot, the Blackfoot, places like that particularly where they have active watershed groups that try to manage flows, we try to manage the angler for the benefit of the fishery. It has greatly expanded. There are several drainages now that work very well on a local watershed basis. We started the angling restrictions there. So the Hoot Owl restrictions were a result of the increased frequency of drought and that played into river conflict where you have a number of outfitters who have just about every stream on their docket. So they can fish most anyplace. A problem occurs when the Bitterroot or Big Hole or other popular rivers are impacted by Hoot Owl restrictions, the outfitters shift over to waters that have better flows. And waters that have better flows are going to be either the Yellowstone River because the headwaters are not depleted in Yellowstone Park or dammed such as below Holter Dam on the Missouri or below Yellowtail Dam on the Bighorn. So when there's a significant drought and substantial fishing restrictions associated with that drought like this summer, we had 90 degrees all summer long, you will see a shift in outfitter use to basically three or four or five

rivers that get really hammered. That's another issue that I don't think it's being dealt with, maybe it is but I think there's historical conflict issue there that's developed around that.

INTERVIEWER: Maybe they have to limit where the guides can go.
PETERMAN: I don't know how it was addressed but they would have to do something because it's a significant shift in fishing pressure related to commercial outfitting response to drought.

INTERVIEWER: And the climate's not getting better.
PETERMAN: No, unfortunately it's not unless global warming is all fake news. Ha.

INTERVIEWER: This year Glacier Park had fires, it was always too muddy to burn up there.
PETERMAN: The place that burned up there hadn't burned for 700 years.
One other aspect of the job that continued was the development of fishing regulations. We've always worked with the Commission, the Commission has to approve fishing regulations and the department Fisheries Division working in consultation with the regions and the angling groups came up with a set of regulations. These were presented at the Angler Forum, got a response from them. Then presented to the Commission which was an annual thing. I think now it's changed to a biennial thing with only minor changes during the off years. In the '70s the regulations on rivers made a difference because there was a lot of harvest going on and you could actually influence the size of the population and the structure of the population by how you did regulations. Whether you had a maximum size, or a minimum size or a slot limit or whatever. You could actually influence population characteristic. Now because most of the fly fishing on rivers is catch and release the angling regulations have much less of an impact. We still allow even encourage harvest on rivers because as far as the Big Hole, or the Bighorn, it's probably beneficial to take some of the fish out. But that doesn't mean that catch and release has no impact. About ten percent of the fish that are released will die according to the studies. A story about fishing regulations and how they might work. In eastern Montana there was a law that allowed fishing for ling with hoopnets. Hoopnet is a net with a series of round hoops that you stretch out, put a weight in one end, you pull it stretch it out and anchor it at the other end and you crawled on the steep muddy banks and you waded out in the river and you put it there

and a day or two later you come and you pull it up. You pull up the net and you drag it up the bank and you drag the weight up the bank and carry it on top and see what you've caught. If you do it right it can be a very effective way to catch ling. We thought for a long time, yes, you'd catch cat fish and others along with it. And we thought for a long time that it's not an appropriate way to fish. It's more like a commercial fishery than sport fishing. So we, I think in '93 but I'm not sure. We proposed to eliminate hoopnet fishing for ling and other species. It was in Glasgow so there was some hoopnet fishing there. We went up there and presented it to the Commission and there was one opponent to it. This old guy, really old, and he hobbled up to the podium and had a cane, walked really slow. He got up to the podium and explained to the Commission how he had fished with hoopnets since he was a kid. And he continues to fish with hoopnets. And if you take that away you'll take the only thing worthwhile living for in this life away. We looked at him and tried to visualize this frail old man carrying a hoopnet with the big weight up a muddy bank, ten feet high with all the stuff in there. It seemed a little incongruous that he would be able to do that. Nevertheless the Commission listened to him and denied our request. So based on the way his testimony they allowed hoopnet fishing to continue.

So the next thing we should talk about is whirling disease which was a big deal. It was 1993 when Dick Vincent, I think the spring of '93, or late '92, Dick Vincent wanted a meeting with me and the director, Pat Graham. So I set something up and he came up and he said, "you know, we've got some real problems here on the Madison." He was the fish manager in Region 3. And we said, "well, what's going on?" He said, "well, our electrofishing section, the uppermost section below Quake Lake, about five, six mile section, has continued to decline in numbers and right now we have lost about ninety percent of the fish, rainbow trout." And he said, "I don't know why. We've checked for whirling disease, we've checked for this, we've checked for that, harvest isn't the issue, flows aren't the issue. But we're starting to see a similar decline in the Ennis section which is downstream from that. A similar decline." So he alerted us to that and they were going to continue testing and continue testing different size fish. For whirling disease, they tested the adult fish that they caught and didn't find any evidence of it. We didn't know that much about the disease then. If a fish has whirling disease they aren't going to live to be adults.

INTERVIEWER: Do you want to explain a little about what that is.

PETERMAN: Whirling disease is a parasite, it's myxobolus cerebralis, that attacks young fish, juvenile fish, actually fingerling fish just after they're born until they're about fingerling. It attacks, it goes through the skin, travels through the nervous system and attacks cartilage. Young fingerlings after they're hatched until about a year old, most of their skeleton is cartilage. So it attacks the cartilage and it deforms the spine, it deforms the head, oftentimes it kills the fish. They were sampling adult fish and they didn't show it but they were survivors, they didn't get it that's why they were adult fish. So the next spring and into the summer they started sampling smaller fish and in December of '94 Dick came up and said, "We do have whirling disease. That's what caused the decline in the fish." So that was a huge deal because we saw what happened in Utah and we saw what happened in Colorado with whirling disease. That has enormous implications for how you manage fisheries and what you do and it was right before Christmas so there wasn't much activity until January. January we started looking… and January '95 was a legislative session. We had whirling disease issues, made all the headlines, legislature was there. We had a number of things that we had to get implemented as soon as we could. First of all we had to find out what whirling disease was, it's life history, how it's transmitted and what we need to do immediately to prevent the spread of it. Well in the winter there wasn't much fishing activity going on so that gave us a little time to look at that aspect of it. But immediately we had to go to the legislature with a supplemental budget request for funding to begin looking at whirling disease, research and figure out what we had to do. The Governor established a Whirling Disease Task Force.

INTERVIEWER: So that was Governor Marc Racicot?

PETERMAN: Yes. I was the chairman of that Whirling Disease Task Force. It had pretty high caliber people on that because it was affecting our wild trout fishery and a major, potentially major economic impact associated with that. We had people like Dr. Marshall Bloom from the lab over at Hamilton; he was a member of it. Dr. Carl Johnson, retired from the Center for Disease Control, he worked on hantavirus and ebola virus; pretty high caliber scientists who were on it. In addition to outfitter representatives, anglers, in addition to a number of people from different aspects of sportsmen's groups, the recreation community, the commercial community, chamber of commerce, a number of different people who would be impacted by

whirling disease. We developed scientific committees to look at the aspects of whirling disease, what it might mean, information committee that disseminated information, the right information would get out and there wouldn't be a lot of misinformation, no fake news, we wanted the real deal to get out, and a fish health committee to look at a number of different things. Jim Peterson was active in the fish health committee, he was our fish health person in Great Falls. The fish health committee looked at different things, one was to look at private pond management, to look at imports of fish, and a variety of things like that.

INTERVIEWER: And hatcheries?

PETERMAN: Yes, hatcheries. As a result of that, we established through the Fisheries Division and through Jim, development of a statewide fish health plan which we didn't have previously. That looked at certifying disease free fish that could be imported into the state and places where we would not accept fish from. Prior to that they could get them from any established hatchery. Now you could only get them from very few places and they have to be certified disease free by the fish pathologist from that state. Import restrictions of species and where they come from, private pond management because private ponds get their fish from different places. We had a subcommittee composed of those people. We also developed hatchery protocols. What we found from one body of water to another, how we disinfected equipment and made sure we aren't transporting organisms from one place to another. We really tightened up that protocol. That was all part of the statewide fish health plan. The other portion of that was to secure the water supplies of the state hatcheries so we wouldn't become infected. We had some open water supplies and, if the water became infected adjacent to the hatchery, the hatchery could become infected. We looked at those hatcheries which were vulnerable and went to the legislature, we developed plans for those hatcheries, we developed costs and went to the legislature to get funding to make those hatcheries whirling disease proof. We did work at Giant Springs even though we get the water from the springs it's within 100 feet of the Missouri River. Fish could swim up there, birds could leave droppings in it, so we put a big cover over the springs on the bottom where the spring comes up. It would capture water there to divert to the hatchery. We put a big cover over Bluewater Springs in Bridger. We worked on Lewistown and looked at our other hatcheries to determine which ones were at risk. And those that were we secured the water

supplies. At the time, Dick Vincent retired and then came back as the whirling disease coordinator strictly doing research on whirling disease. He worked out of Bozeman and set up a number of experiments to determine how whirling disease reacted in a number of species during the tests. Harrison Reservoir was the place where we got a supply of rainbow that we could test and good old town of Pony became our lab. We made an arrangement with people who had a well up there and far enough away from any source of whirling disease. We would build a garage there and use that for our experiments. We set up tanks, had water, they would make sure it was heated during the winter and we would run all our experiments in that isolated place that wouldn't have any, we couldn't spread it or get it in. We did a number of fairly sophisticated experiments there. In the end I think we gave them the garage, after five or six years of doing that. So that's where our research was. We also had research in a number of different rivers where we would put young fish to see if they became infected. And we'd look at those areas that were infected and see how the fish population responded. Some didn't show any effects, some showed significant effects and some showed a switch in species composition. We related that to whirling disease. We also had worked with Fish and Wildlife Service and through an IPA, Interagency Personnel Agreement, were able to get the services of Beth McConnell for over three years. Beth was the fish pathologist at the Bozeman fish tech center and she worked for us exclusively on whirling disease. That was a huge benefit to us. We found with whirling disease we tested the vulnerability of all the species we have here. All the salmonid species. Found out that it just wiped out whitefish as a very small fry. Yellowstone cutthroat are fairly susceptible to it. Westslope not so much. Still susceptible but not as susceptible as rainbow trout or Yellowstone cutthroat. Rainbow trout most strains were very susceptible to it. Brown trout are virtually immune to it. They get a parasite and they build a cyst or a case around the parasite and it doesn't do any damage. Probably the reason for that is that the parasite is a European parasite, northern European parasite, that's where it evolved and it transferred over to this country and spread through fish. But Brown trout also grew up and evolved in Europe, in Germany so brown trout are European fish. It looks like brown trout were imported here and were planted all over the place or spread all over the place, they're a very hardy fish. It also seems they acquired an immunity by evolving with the parasite over in Europe. Now the rainbow in the Madison were significantly impacted by it. They were primarily in mainstem spawning populations and that's

where the alternate host lived. The alternate host is the tubefex worm. Normally associated with sewage. We were surprised to find it in rivers here. They live in sediment too. We were surprised at that, very surprised. They were more abundant than we thought they'd be in sediment areas. It doesn't take a lot of nutrients to get a tubefex population going. Being mainstem spawners they were very susceptible to tubefex because that's where they were. Not many in tributary spawns. So they were really impacted by that. We also found it in Prickly Pear Creek, tributary of the Missouri and in the Dearborn. Kind of hopscotched there, whether by boats or birds or however. We found in experiments they can pass through birds and not be affected by it. The Missouri wasn't really affected by whirling disease even though a couple of spawning locations were, there are a number of different areas where the fish spawn in the Missouri but we think that may have compensated for whirling disease. But it didn't seem to impact the Missouri populations.

INTERVIEWER: Well, that was lucky.
PETERMAN: Rock Creek on the other hand was primarily a rainbow fishery.

INTERVIEWER: Rock Creek by Missoula?
PETERMAN: Yes, well when I was still in Fisheries, it changed to primarily a brown trout fishery because brown trout are immune and there were more westslope than they used to be because they were less susceptible than rainbow. I don't know how it is today but that's how we saw the initial response. And then after a number of years the rainbow in the Madison started to come back. They went through a fairly significant bottleneck, genetic bottleneck by having the population reduced by ninety percent. Either those ten percent were survivors, got infected but had some level of immunity or they didn't get infected. Probably a combination of both. What happened gradually is that there was a certain immunity that developed and the fish population started to recover.
During the course of this we had whirling disease task force meetings, we had committee meetings, we had information, there were conferences, we had several here in Montana, there was one in Colorado, there was one in Utah. We were participants in all the whirling disease conferences.

[End of Recording #4, 10/2/2017]

[Beginning of Recording #5, 10/2/2017]
PETERMAN: Okay, I'm going to add a couple of things for the management planning process. That was initiated by Pat Graham in 1988. And Steve McMullan was the Management Bureau Chief at the time. They laid out a schedule and prioritized the major water bodies in the state. They were doing that for about a year and a half. Then Pat went into the Director's Office. In '89, I took over as Fish Chief and we continued the management planning processes, both on rivers and lakes and reservoirs. The warmwater fish management plan, which was not a waterbody plan but a plan for managing a category of species, warmwater species, was developed in 1997, ran through 2006. The Upper Missouri Reservoir Operation Management Plan was adopted in 2000 and would go through 2009. The Flathead Lake Co-management Plan was adopted in 2000.

[End of Recording #5, 10/2/2017]

[Beginning of Recording #6, 10/2/2017]
PETERMAN: Another program was established legislatively during my tenure of the Fish Chief and that was established by outside influences and was designed to provide a funding source for restoring damaged Montana rivers. It was called the Future Fisheries Program. During that time it was a fairly contentious beginning but we developed the program through establishing future fishery guidelines and a process for applying for projects and a process where we would accept the project, evaluate them, rank the projects, and present them to the Commission for approval. The future fisheries program is ongoing today. It has done a lot of remarkable things. It was developed from influences and pressure from outside the department, it wasn't a department initiative but we were able to work with the sponsors and develop the guidelines and operations for the future fishery program which was satisfactory to all and really resulted in some pretty significant benefits.

INTERVIEWER: Was that like sportsmen's groups?

PETERMAN: No, it was primarily a couple of individuals who were pushing pretty hard for it. I believe TU also supported it.
[End of Recording #6, 10/2/2017]

[Beginning of Recording #7, 10/2/2017]
PETERMAN: Another activity during the '90s and continuing through 2000 to 2010 was related to the Northwest Power Planning Council, the Columbia Basin Fish and Wildlife Authority and the hydropower system in the Columbia basin. We were involved in that both at the committee level and the director's level. I was the representative to the Northwest Power Planning Council and the Columbia Basin Fish and Wildlife Authority during the time as Chief of Fisheries and also as Chief of Field Operations. Brian Marotz was extensively involved in on the ground mitigation development for Hungry Horse in Libby and the associated rivers and streams in that area. Janet Hess-Herbert was instrumental in developing a fisheries database that actually the model for this was being used today for anglers. Janet was also instrumental in identifying the streams for the protected areas which related back to small hydropower development. That was an activity that extended for probably better than twenty years.
[End of Recording #7, 10/2/2017]

[Beginning of Recording #8, 10/2/2017]
INTERVIEWER: So we've heard most of your stories as Fish Chief. This is 2001?
PETERMAN: Yes, 2001 when I went into the Director's Office. September 2001.

INTERVIEWER: Who was the director then?
PETERMAN: Jeff Hagener was the Director. We can start with that in the next interview.
[End of Recording #8, 10/2/2017]

[Beginning of Recording #1, 10/13/2017]
INTERVIEWER: This is Margie Peterson. Today is Friday, October 13, 2017. I am meeting with Larry Peterman for the Oral History Project for Fisheries in Helena, Montana. So Larry I

think we were going to start when you went into the Director's office as Chief of Field Operations. Do you want to tell us about that?
PETERMAN: Sure. I went into the Director's office as Chief of Field Operations in September 2001 and I worked there in that position until January 2009 when I retired. There are two deputy directors in the Director's office. One is the Chief of Staff and the other one is the Chief of Field Operations. It was under Jeff Hagener, the Director at the time, and his first four year term was under Governor Judy Martz and the second four year term was under Governor Brian Schweitzer. The Chief of Field Operations is responsible for supervising the seven regional supervisors and making sure that they are functioning in concert with the rest of the department and carrying out the different programs under them. Fisheries,Wildlife, Enforcement, Con Ed and Parks. [Conservation Education] That position also supervises the Field Services division which has the Land Unit and the aircraft unit underneath that.

INTERVIEWER: Land unit is where the department procures land for fishing access sites?
PETERMAN: Yes, also game ranges, inholdings, land acquisitions and trades and sometimes land disposal.

INTERVIEWER: And conservation easements?
PETERMAN: Yes, conservation easements, they acquire land either through fee title or through conservation easements. Or leases.

INTERVIEWER: So this was more than just fisheries now, you were responsible for the entire department.
PETERMAN: Yes, all different aspects of the department. The Chief of Staff supervises all the divisions in Helena, policy development and training. Chief of Field Operations has the responsibility to make sure the regions are implementing the programs.

INTERVIEWER: Who was the Chief of Staff when you were there?
PETERMAN: Chris Smith was the Chief of Staff. Chief of Field Operations is a registered lobbyist for the department, one of several. The Director, Chief of Staff, the financial officer,

chief legal counsel are the others. Every other year, the odd number years, from January through April a lot of this position and the Chief of Staff and the Director's Office and a lot of the administrators in Helena are tied up with the legislature, either through specific legislation that the department sponsors, legislation from other people that affects the department, or budgets. The operating budget and the capital budget. For that period of time, it's pretty intense. I learned quite a bit both as the Division Administrator and then as Chief of Field Operations about what to do as a lobbyist, how to be effective, and some of the key things that I think were important were honesty with the legislators, don't play games, just be very straightforward, let the sponsor of a bill that you're going to testify and let him know how you plan to testify particularly if you are in opposition to it, let him know ahead of time and why. Read and understand the entire bill, don't go in there thinking you know it unless you really do. Respond promptly to legislative requests. Doing those types of things particularly in an adversarial position I think earns credibility for the department. Let them know ahead of time what you're doing, don't blind side anybody, keep working with them. It's hard because of the number of bills and the schedule that sometimes you might testify on three bills in an afternoon. That means you have to make those contacts ahead of time. Sometimes a bill will come up and two days later testimony is called for. It's hard to do all those things and make sure you touch all the bases. That's what I thought was important. We testified on a wide variety of bills, mine were mostly fishery bills, aquatic bills that I would testify on. Budgets, during the budget process and on some wildlife bills. Urban wildlife for example was a huge issue that we were working on with Field Services. I developed and testified on urban wildlife bills. We finally got a mechanism whereby cities could develop a plan to control urban wildlife. We worked with the city of Helena extensively on that. We had an urban wildlife task force, held several hearings and developed procedures for controlling deer in Helena which was a major issue. The Commission adopted their plan and every two years they'd come in with a request for culling a certain number of animals. They did an excellent job of implementing it. They hired somebody to teach them how to census the animals, driving up and down alleys and getting a density per square mile in the city. Then instead of hiring a contractor to capture and dispose of the animals they used the police department to do it. They had the legal authority to do that, to capture and

dispatch the deer. The deer were donated to the food bank. They were butchered and the meat donated to the food bank. They've got a real good program.

INTERVIEWER: Yes, I remember when the deer started coming into town, it was crazy how many there were. So when you testified on bills, they weren't always in the same committee, right? You had to go to different committees too depending on the bill.
PETERMAN: It could be some other committee besides the Fish and Game Committee. Sometimes you had two bills scheduled for the same time and you had to figure out who would do what. I was always glad when the legislative session came to an end.

INTERVIEWER: I'm sure because all your other work had to take a back seat to it I would imagine. And when the legislature was done you had to catch up.
PETERMAN: Yes. And allocate the budget before June 1st, when the budget had to be in. July 1st is the new budget year. It gave us a month to clear out any issues. The other thing that was important was the legislative staff meetings three times a week. Right after the legislative staff meetings, at least once a week, sometimes a couple times a week, we would have a supervisor's conference call for the regional supervisors. I would go over what's happening in the legislature and if there was something they had to do, talk to a legislator or something like that in their area and explain some things. In that way we kept the regions involved and knowledgeable about the issues that we were facing. They wouldn't say, "I never knew that was happening." The communication with the regions was extremely important. When it broke down in the past there was a lot of tension between the Helena office and the regional offices. I worked pretty hard on trying to keep the regions as much in the loop as possible. Particularly with the legislative stuff so they knew what was happening and what was going on.

INTERVIEWER: So you were doing that from 2001 to 2009, the legislative tracking system wasn't quite as elaborate as it is now. You probably couldn't rely on that as much. Now anyone in the regions can check where all the bills are, if they are in committee, if they've been tabled or passed.

PETERMAN: Yeah, we had some of that but we had an internal system to look at the bills we were interested in. Then the regions could follow up with the legislative system but it's more advanced now. As Chief of Field Operations I thought it was real important to keep the regions in the loop on most of the things that were happening. I spent eight years in the region so I had a pretty good idea of how the regions operated. As Fisheries Division Administrator, I had a pretty good idea of how the field operations in Fisheries were conducted. And I knew how Parks and Wildlife operated and their concerns. One of the important things was to keep them in the loop and not take the position of, well knowledge is power and I'm not going to share any unless I have to… that doesn't work in a decentralized organization like this. Just breeds distrust and animosity. One of the things which was important in addition to legislative updates during the session I tried to attend as many of the regional meetings as I could. I would go there and then give a director's office report on what was happening with the current issues of the day and what we saw coming down the road. I would then listen to what their concerns were, what issues they had, and if we had to do something to address those or if we had to establish a regional workgroup from different regions if they were having common issues in different regions. We'd try to come up with some solutions.

INTERVIEWER: Wow, a lot of traveling. We have a big state.

PETERMAN: Yes. Sometimes we could use the department plane. It was a lot of travel but it was really important to do that. The other thing I would do religiously was to attend the support staff meetings. The support staff meetings were the regional support staff, regional office manager plus their staff, and the Helena support staff, division secretaries and some from the personnel and financial people. I thought that was an important part of that job. I would do the same thing, talk to them about the issues they had, that the department had, that we might be able to work on them. Just to be very straightforward with them. Important to build a certain amount of trust even though we may not agree on issues, at least we sat down and tried to work through them as best we could. The most important person in the region is the regional office manager. If you want something done as a Chief of Field Operations you called the office managers. That person, he or she, will generally be able to help you, will be able to put you in contact with people who are around. Where's Dan Vincent today, he isn't answering his phone. Oh, he's

here, I'll get him for you. They were able to find people, able to get you information. In my view, the officer manager was one of the most important people there. So, in the support staff meetings, you'd have a good working relationship with the supervisor and the managers in the regions, you also have to have a good relationship with the office manager.
The Chief of Field Operations is also responsible for House Bill 5, the capital budgets for the regions. Capital budgets do things like the HVAC system, heating, ventilation, air conditioning, headquarters, new building on campus, regional offices need repairs it comes out of that, remodel or furniture comes out of that. You have to balance the needs between the regions.
[End of Recording #1, 10/13/2017]

[Beginning of Recording #2, 10/13/2017]
PETERMAN: Another function of the Chief of Field Operations is that person was the tribal liaison within the state and there are seven tribes. That person would attend some of the different tribal gatherings and some of the training that was put on by the state for understanding tribal cultures and communication. The tribes in the state have all different levels of government and complexity, staffing and expertise in certain areas. One of the things we tried to do was we had a Fish and Wildlife Management Agreement with the Salish Kootenai. That was from a long time ago because we had joint management of Flathead Lake, the tribes have control of the south half, the state the north half. And we developed co-management agreement whereby non-tribal members could hunt on the reservation with a joint license. The revenue from that license would go into tribal management. We had that with the Flathead tribe, with the Salish Kootenai. We tried to establish a similar type of agreement with the Crow tribe. The Crow tribe has extensive land, hunting opportunities, they have a tribal license but it's hard to get, there are jurisdictional issues, they've got private lands, tribal lands. More people would hunt there if they knew how to do it. We had issues with the tribe occasionally trying to exert enforcement authority on the Bighorn River and years and years ago the Bighorn River went to the U.S. Supreme Court. The Court decided that no, the state had management authority over the Bighorn River.

INTERVIEWER: Were you working for the department then?

PETERMAN: Yes, that was early in my career but I wasn't involved in it then. Anyhow, the Supreme Court decision, it was difficult for the Crow tribe to accept that. So we tried to establish a co-management agreement similar to what was working fairly well on the Flathead reservation. We started, and we negotiated with the Crow tribe for several years to get that established. The negotiations were difficult but the goal was to establish a joint license that if somebody bought one they could hunt and fish on the Crow reservation. The proceeds would go to the Crow tribe for natural resource management. We would assist them in education or training of some of the tribal members if they wanted to be guides. If they wanted to establish a lodge and do outfitting they could then realize economic benefit on a pretty substantial resource they have down there. The talks would get difficult at times. The natural resource director at the time was Henry Rides Horse and the natural resource program manager was his wife, Laura Rides Horse, and the warden captain was Charlie Rides Horse. With the Crow tribe there are different clans and depending on who was elected all of the relatives of that person would be put in different government positions. So you had a series of people in the positions who were members of that certain clan and if a new person was elected as head of the tribe all those who were there were gone. And a new set of tribal members took those positions. So we tried to get the negotiations completed during one period where one person was there because if everybody changed, you'd start from scratch. The other difficulty we experienced was that the Crow tribe only hired tribal members. So if there was an area of expertise that the Crow tribe needed to implement the management plan, they may or may not have that within the tribe and they really didn't go outside for that. So that was an issue we were trying to work through with them. We usually had the meetings in Billings, sometimes in Crow Agency and we weren't getting anywhere at this one meeting and it was getting contentious. We decided to call a break, get some coffee and talk about something else. Native Americans have a real good sense of humor. They told jokes all the time. Laura Rides Horse was talking about the upcoming Crow Fair and the reenactment of Custer, it was coming up in a month or so. I don't know why, but I said, "you know, Laura, all these years you just beat the tar out of Custer all the time. Are you ever going to let him win once?" They laughed, no we can't do that. It kind of broke the ice and we got the talks back on track. And there were some tribal attorneys involved and we came to what we thought was going to be a workable framework for an agreement. At the meeting where we were

going to finalize that, Henry said, "we'll go along with that if you give us the Bighorn River back." We said Henry, that's a deal breaker, it isn't going to happen. They were very insistent on getting the Bighorn River back and that's where the talks broke down.
Another thing that this position did was work with the Forest Service on wilderness management, fish and wildlife management in wilderness areas. That was something that different people over the years worked on. Tom Flowers, when he was a warden in Choteau, worked in the Bob Marshall and worked on wilderness management issues with the Forest Service. John Fraley did wilderness type work with the Forest Service, Mack Long worked pretty extensively with the Forest Service and so did Denny Workmen and some of our fish managers on stocking schedules. Those were grandfathered in. In this position I worked with them and how we would develop stocking schedules and work with their managers and our fisheries managers. We would stock lakes, which would provide recreation opportunities but we would alternate the stocking so we wouldn't have an excessive use on one lake over a long period of time. So we would come to some agreement on that and how it would work.

INTERVIEWER: Do you remember how they got the fish in to stock the lakes?
PETERMAN: They would use aerial stocking, from the helicopters. That was grandfathered in, it happened before the wilderness so it was a use that was maintained. You couldn't stock any new waters like that. Wilderness management was another aspect of this job.

INTERVIEWER: Must have been a lot of hour, lots to do.
PETERMAN: Yes, lots of hours. The other thing that was initiated that I felt pretty strong about was energy conservation. That was when gas was $3 and $4 a gallon. I've always been fairly conscious about how much energy we consumed, managing natural resources. We had certain conservation measurements put into effect, speed limit on state vehicles, hugely unpopular. Also going with smaller trucks when it was practical. We changed the structure of the fleet. I made sure that each region had at least one car, if not a couple, because Region 6 and 7 didn't have any cars. If somebody would come in for a meeting from Glasgow they would drive a ¾ ton four-wheel drive and haul one person to a meeting. So I made sure each region had at least one if not a couple of fuel efficient vehicles that they could use.

INTERVIEWER: I suppose with the plane, if it was going somewhere and there was an extra seat, you'd let people know in case they were going to the same place.
PETERMAN: Right, tried to coordinate travel. It was difficult, it didn't always work out because people had a lot of different things they had to do. We did it when we could.
The other thing towards the end of that position, we became very involved in commenting on oil and gas leases. With the energy boom and the Bakken field and oil prices nearing $90 to $100 a barrel, there were extensive leasing activities going on both from the federal government and the state level. There were oil and gas leases being let in very sensitive areas. BLM (Bureau of Land Management) had a lease package on the Beaverhead River just below Clark Canyon Dam and surrounding hillsides and we saw that it was in the floodplains and riparian areas. We ought to appeal that and say that they had to look at environment impacts. We're the first state to ever do that. It stirred up a hornet's nest so to speak. We started doing that in different areas with procedures established. T.O. Smith was assigned to me, he worked extensively on that project.

INTERVIEWER: Was he from BLM or a department employee?
PETERMAN: He was a department employee, he worked for Chris Smith for a number of years. He was instrumental in the state wildlife plan in establishing our state comprehensive wildlife plan. He and Janet Hess-Herbert and several others were instrumental in getting that together. He was then assigned to me and we were working on oil and gas. That's how the department got involved and was able to influence where and what conditions were applied to some of these leases.

INTERVIEWER: Being the first state to do this work do you know if other states followed?
PETERMAN: Yes, at that time there was but I don't know if it's active now.
[End of Recording #2, 10/13/2017]

[Beginning of Recording #3, 10/13/2017]
PETERMAN: I think that concludes my Chief of Field Operations work. I made sure I was promoting access to our resources through the fishing access site program when I was Chief of

Fisheries and also through the lands program when I was Chief of Operations. That included wildlife management areas and land exchanges and conservation easements. The reason I believe that access is so important is that it's crucial to maintain the support of your constituents for habitat protection. If people can't get access to the rivers or the mountains or areas like that they will soon lose interest in fighting for those resources. That was a cornerstone of what I believed and I worked pretty hard to do what I could for that. Then Jeff Hagener was released in October or November of 2008. The new director was put in and I retired January 1, 2009. Had about 36 years of employment.
[End of Recording #3, 10/13/2017]

[Beginning of Recording #4, 10/13/2017]
PETERMAN: So I was retired for about two years. July 1st of 2011 was a period of extremely high flows in the Yellowstone River. The Silvertip pipeline broke at Laurel, Montana, at the peak of high water. The Silvertip pipeline is a crude oil pipeline, 12 inches in diameter, owned and operated by Exxon Mobil Pipeline Co. That pipeline broke and discharged oil for about an hour or so before it was shut off. It discharged 63,000 gallons of Wyoming crude into the Yellowstone River during the high water period.

INTERVIEWER: In one hour?
PETERMAN: Yes. The river was flowing approximately 70,000 cfs, cubic feet per second and was flooding the banks. It was over the banks and flooding the floodplain which is normal for a river to do that, in a free-flowing river. When it broke it carried some of the oil straight downstream, some of the oil went and oiled the floodplains because the water was over the banks. I had followed it a little bit in the news.

INTERVIEWER: I imagine you would wondering how they were going to fix that and what they would do.
PETERMAN: Yes I was watching from the sidelines. Then about the 1st part of August, I got a call from Rob Collins and Mary Capedeville. Rob is the lead supervising attorney and Mary is

another attorney working for the Natural Resource Damage Program (NRDP). That is housed in the Department of Justice.

INTERVIEWER: For the state?
PETERMAN: Yes, for the state. Steve Bullock was the Attorney General. Rob said, "Larry, would you like to go back to work?" And I said, "No, Rob, I'm driving to Sportsman's Warehouse to get some fishing lures and I'm going fishing. I don't want to go back to work." So Mary got on the phone and I knew both of them from the Clark Fork negotiations with Arco and the settlement and the implementation of that. So I knew them for a long time. So they talked about the spill and what happened and by that time I was sitting in the parking lot at Sportsman's Warehouse. They said, "We need somebody who has experience, who knows the Yellowstone River to help us get started. And maybe for four or five months, just help us get started to we can get our foot in the door on the oil spill." So I went up to their office the next day and talked to them and agreed to help them get started for four or five months. I didn't want to become an employee because then you have to deal with state retirement, etc. So for that short period of time I'll just contract. So I established a contracting firm, one person firm and started on August 11th. Packed up my truck and headed down to Billings.

INTERVIEWER: Was the regional office involved too?
PETERMAN: Yes, they were heavily involved from the start. It took the NRDP about a month to get approval from the governor, Brian Schweitzer. The four or five months eventually turned out to be five years!!

INTERVIEWER: Was that because of studies, negotiations, etc.?
PETERMAN: We had several years of studies, several years of negotiations. I stayed around until the draft restoration plan was developed and a settlement was obtained. Then the contract ended June 30, 2016. My portion of the project ended. They hired another individual, Alicia Stickney, to help me finish the draft restoration plan and then implement it. She's working on that now.

INTERVIEWER: Was she a contractor?
PETERMAN: No she was an employee, working on that and I think a couple other projects.

INTERVIEWER: What was it like to work with Exxon people?
PETERMAN: They had their own ideas about what the settlement should be and we had ours. Maybe I should just go and describe the spill and how the project developed. I was the Program Manager for the project. I went down there on August 11 or so. The region had been involved in the spill since July 1st so they'd been working on the spill for about a month.

INTERVIEWER: Region 5, Billings.
PETERMAN: Yes. Their work consisted… when you have an event like an oil spill, or any kind of a toxic spill, there are two components to it: one is response and response is containing the spill as much as you can and cleaning up after the spill. That's the response part of it. The other portion is the natural resource damage assessment, the NRDA portion of a spill or an event. NRDA looks at assessing what the damages to the natural resources are, how much the response mitigated that and how much is left over that has to be compensated for. That's the natural resource damage assessment. The company spends x amount of dollars on the cleanup but then there's x amount of dollars that go into making the resource whole again. Mitigating from the damages caused above and beyond the cleanup. So for the first month, Region 5 folks were involved in the response or the cleanup activities and their role was to go out and capture some fish for the fish health, fish consumption advisory (FCA), to see if the fish were safe to eat after the spill. Also they were involved what was called the SCAT analysis and that's the Shoreline Contamination Assessment Technique where they walk the flooded areas and define where the oil settled and where the cleanup should occur. Along with that shoreline assessment, along with DEQ folks, along with Fish and Wildlife folks had a major effort to define where the oil ended up and where the cleanup needed to occur and where it didn't need to occur. It was a very involved process. Polaris from the West Coast was the Exxon contractor and they outfitted everyone with GPS devices and they could track everybody's movement and when they found oil they would get a location for it and the cleanup crews would go there and clean it up. It was fairly involved process that they went through.

INTERVIEWER: Who did the cleanup crews work for?

PETERMAN: They worked for Exxon Mobil Pipeline Co. (EMPCo) That was the first month of activities that the region and the state were doing, primarily with response aspect of it. Now the two aspects, response and NRDA, there's a certain amount of tension between those two at the start of any event. The response is trying to minimize and contain whatever happened. Natural resource damage people are out there and looking at what the damages were. It's important to get out there as soon as the spill occurs to document it. But you don't want to get in the way of the cleanup people. And they can't spend the time helping you determine the damages because that's not their job. So when I got down there, I talked to the region, I learned that this was a full blown incident command situation that was set up. They had the MSU-Billings building, which is downtown; one of them is downtown, they rented the entire building for their command center – Exxon. For about three months. Any spill, any oil spill is under the purview of the Coast Guard because they are mostly coastal spills; this was an inland spill. Nevertheless the Coast Guard was out here and was one of the government command center entities. Exxon Mobile was there, the state of Montana was there and they had the incident command set up under that. They had security at all the entrances. You had to have a security card with your picture taken and verify that you are a legitimate person to get into the incident command center and also attend the different meetings and what was going on. The NRDA portion had a room, I was a representative from the state, there was a BLM representative out of Colorado, there were Fish and Wildlife representatives that cycled through there working on different aspects of the damage assessment. It would start at 7 in the morning and end up about 9 at night.

INTERVIEWER: Did you have to temporarily move down to Billings?

PETERMAN: I stayed down there during the week and came back on weekends. The command center ran all of the response activities and they had people from Exxon Mobil rotating through the command position. They would actually oversee the cleanup and then they had Exxon Mobil people there through the cleanup and then they would go but they were involved through the process for the period. In addition to the command center, there were camps set up at different

locations at Laurel, the Riverside Park, camps set up at Duck Creek fishing access site for four months; they had a couple set up at access points down the river. Those would provide river access for the cleanup boats and the people would access the river and carry the crews up and down the river to do the cleanup. Those camps also had major tents for cooking, for feeding; they had cooks there preparing meals and meals to go out with the crews. It was an extensive operation. At one point in time, there were over 1,000 people on the river and sixty boats and several aircraft which were involved in the cleanup.

INTERVIEWER: Did they close the fishing, how long was the fishing closed?
PETERMAN: It wasn't really closed to fishing. But during the high water nobody was on it for about a month and the access sites were closed, so you couldn't access the river at certain points. Access was limited. And not many people did during the first part of the spill with all the activity going on and the high water. Exxon Mobil is extremely safety conscious. They had procedures set up that you had to abide by – when we went to Duck Creek for example you had to check in through a security post, if you were within fifteen feet of the water you had to have a life jacket on. If you went in one of the boats, you had to have a life jacket and a helmet on. If they were working out in the field in the cleanup they had to have helmets. Cleaning up the spill on the islands, hauling out vegetation, oiled debris, woody debris. They had a big machine that would chop them up. People had to go into a fairly thick riparian areas and haul out the oiled material. Then in some places they used heavy equipment to do that. So they had safety meetings every day and to Exxon's credit with all the thousands of people out there they didn't have one serious injury. They had bee stings, wasp bites, somebody sprained an ankle, they really didn't have any serious injuries. When they set out a work boat, they contracted with Missoula Whitewater and two whitewater rescue boats would follow that work boat in case there was an issue. They were extremely safety conscious. When our crews went out, they went out in the boat like they always do, one boat and one crew.

INTERVIEWER: So most of these thousand people, large majority were from Exxon?
PETERMAN: Large majority were from Clean Harbor which is a contractor for Exxon that follows oil companies around and cleans up their spills. They were from Louisiana, most of the

people from Louisiana. Every day there was a series of meetings in the mornings, afternoon meetings, there were weather reports, what kind of weather to expect. If there was lightning they aren't sending anyone out in the afternoons, or they would pull them back around 3 pm. Those types of things. They had weather forecasters on staff. Experts on staff.

INTERVIEWER: Were there a lot of EMT's around?
PETERMAN: Yes, there were. The rescue boats were set up on islands.

INTERVIEWER: Curious what the Coast Guard did?
PETERMAN: The Coast Guard was out of their element on the river. They relied mostly on the contractors and the state people. They had to be there. The region was really overworked at that point because they were working day and night. First couple of weeks they weren't paid overtime, the state people weren't. They accrued comp time, which you never get to take it off. The region had an issue because DEQ and DNRC would cycle people in and out. DEQ would send somebody out for a week then somebody else down for a week. They would cycle people in and out. They tried to get continuity but with different people coming in. Exxon did that to some extent. The region lives there, they didn't have anyone to cycle in and out. They got some help from the other regions at some time. They were pretty much there day in and day out and it was stressful for them to do that. When I went down there, I knew everyone down there, knew the office manager, incredibly important person. So when I needed something I just called up them and got it.
My role was to access the damages and determine appropriate restoration actions. To do that we would form technical committees to look at the impacts and further on we would establish committees to develop restoration options. We had an ecological technical workgroup and we had a recreational working group. I was chair of both of those and we had different people involved. For the technical work groups, we looked at the aspects of impacts that we could see. On a spill like this it is important to note that this is emergency, something that isn't planned. Whatever data exists is the dataset you have to work with. In the case of the Yellowstone, they didn't have a lot of quantitative fishery data on that section of the Yellowstone.

INTERVIEWER: So no baseline for them to work with.

PETERMAN: Right. You don't know where an emergency is going to happen so you may or may not have a good baseline to work with. You don't have a study design set up because if you knew it would have a break there, you'd gather a certain type of data to evaluate it. But since it happens randomly a lot of that data didn't exist. We had to look at ways that we could determine with some reasonable degree of confidence that there was an impact and we think this is the magnitude of the impact. Natural Resource Damage Assessment often looks at lines of evidence because you don't have a before and after baseline to compare it to. You look at lines of evidence. And they point to a certain injury and then you might have to figure out the magnitude of that injury and then you develop a damage estimate. So we looked at a variety of types of impacts. One obvious one was the impact to the fish because they're in the water with the toxicant. Didn't know how to go about that until we looked at some pictures of fish that Mike Ruggles had taken when they did their fish consumption advisory collection. He noted that a lot of the fish had very significant lesions associated with them. Very significant lesions on the skin, on the tails, on the body, some were pretty gross. We looked at literature and found that lesions can be a result of oil contamination in some areas, particularly down in the Gulf. The Gulf spill (Deepwater Horizon) happened just a year before. So we were getting some indication what impacts we might expect. We looked at the fish and looked at the progression and we were confident that there was a significant fish kill but when the river is flowing 70,000 cfs and you can't get out on it and anything that's dead is long gone by the time you get out there. It's either downstream or the eagles and the buzzards and raccoons, everything else, haul away the evidence. We were fairly confident a fish kill had occurred but weren't able to quantify it or document it. Except for the lesions on the fish and what we saw there. And those fish weren't going to make it. They were in bad shape. One of the elements was fish injury and in order to get a handle on that we thought that doing a fish health assessment would be something that would give us an indication of the type of injury and the extent of the injury.

[End of Recording #4, 10/13/2017]

[Beginning of Recording #5, 10/13/2017]

PETERMAN: The fish health assessment is an indirect way to get an injury assessment. I knew Beth McConnell, who was the fish pathologist for the Fish and Wildlife Service. I knew Beth from our work with whirling disease when she worked for us under an IPA for about three years on whirling disease. Excellent scientist, excellent pathologist. I contacted Beth to see if she would be interested in assisting us in a fish health assessment on the Yellowstone. I explained the situation and she said yes. We contracted with Beth, she was a consultant at the time. She was no longer working for the Service, but doing fish pathology work. In September, we set up a fish health assessment. We took fish samples from above the spill far up as we could get, which was only about seven or eight miles, before we ran into obstruction in the channel, a big gravel bar we couldn't get over. We took fish at a sampling site at the site of the spill and downstream for several miles. We had a sampling site downstream from the mouth of the Clarks Fork and we had a sampling section downstream from the east bridge at Billings. We had a sampling site within sections A, B, and C. We collected fish from those sites and had Beth and the folks from the Bozeman Fish Health Center, USFWS, set up stations where we would bring in the fish and they would dissect the fish and get the necessary samples of kidney, liver, blood, and tissues. In addition, they would sample the lesions that were present on the fish. They would take them back to the fish health center and make histology slides out of those and Beth would read the slides. Region 5 did all the sampling and we would bring the fish in. I assisted on the sampling crews and we'd bring the fish in and the Fish and Wildlife Service would process them and later on Beth would read the slides. Then she'd give us a report. Some of the initial findings were available in Nov or Dec. Those preliminary results showed the nature of the lesions. They did an analysis of the virology and bacteriology so we would know if lesions or injury in the fish was due to a viral infection, was it a bacterial infection or was it something else related to oil. The viral or bacterial analysis would either confirm or rule out those factors. We did not find injury due to virus or bacteria in any of the fish we sampled to any significance. We did find, however, lesion injuries which were not related to either virology or bacteriology. Deep tissue lesions. We also found injury to kidneys, to liver and to blood. That led us to do another fish health, more targeted samplings in the spring of 2012 and at that time through the summer we were working and had meetings with the state technical workgroups and also with Exxon to come to some kind of cooperative agreement where we do cooperative studies. Cooperative

studies are something that OPA requires – Oil Pollution Act. OPA was the statutory authority we were working under. The Oil Pollution Act is what the Coast Guard was under. That's where their authority comes from. We did finally get a cooperative agreement with Exxon and we did a cooperative fish health study in the fall of 2012. They had their own people out there, their own fish pathologist and basically duplicating what we were doing. From a fish health standpoint, we had a certain take on the injury and Exxon's fish pathologist had a different take on it. So what you find is that you get the experts depending on which side they're on arguing different things. Just like the tobacco industry arguing that tobacco really doesn't kill you. We would argue through those differences and maybe come to an agreement, maybe not. But fish health was one aspect that we felt pretty strong about.

INTERVIEWER: So they were arguing that what you saw with the fish wasn't actually from the oil? And you knew that it was.

PETERMAN: Right. They said it wasn't as serious as we were making it out to be. With that particular injury the way the Oil Pollution Act works is that in order to restore you have to have certain projects to restore to get the population back to where it was. That will come a little later. But we did the entire fish health assessment and that aspect of the injury. Another aspect of the injury were birds. Birds that became oiled during the spill. Like I said before there wasn't a lot of waterfowl injury because the river was so high that most of the ducks and geese weren't on the river. They were off the river. There were a group of pelicans that were oiled, there were some Canada geese that were oiled, there were some ducks and dead birds that they would find. Owls and things like that. Bird injuries. The Fish and Wildlife Service had jurisdiction over the migratory birds. They developed an injury model for that and some restoration projects. The BLM had some land that was oiled and during the assessment we evaluated those injuries. We had a consultant from Stratus Consulting from Boulder, Colorado, who works on a number of these types of assessments. They did a terrestrial habitat evaluation analysis. That looks at what area was oiled, the extent of the oiling in the floodplains because the river had flooded you get all this oil on the floodplains, the nature of that and how much damage occurred there. That was the terrestrial portion the damages. How much damage was caused by the overflow in the floodplain and the oiling. DNRC had some land, BLM had some land and the rest of it was

either state land or private land. A lot of those are public resources. The other aspect to the oiling was the damage to the large woody debris piles. Now in a free-flowing river like the Yellowstone that meanders there are extensive collections of large woody debris, trees that have fallen in the river that eventually end up to be a debris pile on an island or on the shore. Those acted as oil filters, they trapped a lot of the oil. When they cleaned it up they would chop up all these debris piles and haul away the oiled debris. There's a significant ecological aspect to debris piles, they're habitat and they're used for channel forming, they're an integral part of how the river operates. That is significantly different from the Missouri down below Holter for example where you don't have large woody debris piles because it's a controlled river. Here you do. The recruitment of woody debris and the eventual disposition of that is an important ecological and hydrologic function in the river. They hauled away a lot of large woody debris, large mounds of habitat.

INTERVIEWER: So with the loss of habitat… did they recreate it during reclamation?
PETERMAN: First of all we had to determine how much was taken out and we did that by looking at their records of how many truckloads of oiled debris was taken and how much of that was large woody debris and how much was vegetation. Those were hauled away out of the floodplain. We could determine the extent of the large woody debris damage. Exxon proposed just to get debris and put it back in the river and build those again. They had data from some fairly small rivers but nothing like the Yellowstone. Our approach was to suggest getting erosion easements on land where the landowners would allow that land to erode and the cottonwood trees would fall in. We would prefer to naturally establish the large woody debris piles rather than artificially try to create it. Argued back and forth on that, eventually we prevailed with the channel migration easement concept. So we looked at that and Fish and Wildlife Service came up with some proposals to mitigate for the pelicans and the other birds. That left recreation. Recreation was significant because it affected the river for the entire summer. We were fortunate that it happened in an odd number of years because we do statewide creel census in odd number years. We were doing it in 2011. We took the results of that section of river, compared it to 2009 and 2007 and got some idea of how fishing pressure was impacted.

INTERVIEWER: And it only impacted recreation for one year? And you worked on it for five years?

PETERMAN: Right. Right. Fishing access sites were closed; Duck Creek for four months. It impacted recreation because Riverfront Park in Billings was closed for a period of time. More importantly the Riverside Park in Laurel was closed from July 1 until about the middle of January the next year. That was the site where the pipe broke, that's where they drilled to put a pipe underneath the river again. Closed until January 17 of 2012. That was the nature of the impacts. Through 2012, 2013 we were studying and defining those impacts. Also negotiating with Exxon Mobil. During 2011, 2012 we were doing a lot of work on impact and assessment that tapered off in 2013, 2014 because we were doing analysis and developing restoration. We were into the mode of developing a plan. We developed various restoration projects and at the same time were trying to get a negotiated settlement. We got a settlement with Exxon the end of 2015, early 2016. The settlement was $12 million. The remainder of 2016 through June 30, I was working with Alicia Stickney who had been hired to help with restoration plans and also to carry out the plan after my contract ended. My contract ended June 30 and the draft restoration was completed. Alicia is now working on implementing that plan, developing projects and putting the money in the ground.

INTERVIEWER: Do you remember when Exxon finally turned the pipeline back on?

PETERMAN: The pipeline was operational that fall of 2011. They had to take out the existing pipeline and directionally drill another pipeline. The problem was the regulations at that time the pipeline was originally buried only required it to be buried five feet. Of course the Yellowstone would erode during high water, it eroded around it and left it exposed and it broke. By directionally drilling the pipeline now, the Silvertip pipeline is buried about forty feet deep now. That was pretty much the Yellowstone oil spill story. It was extremely interesting. In January 2015, the Bridger pipeline broke in Glendive. It was the middle of winter, under about three feet of ice. The Bridger pipeline was owned by TRU pipeline company, a small company out of Casper, Wyoming.

INTERVIEWER: Oh, did they find it right away being that time of year?

PETERMAN: They knew it broke and they got it shut off. But it leaked, I'm not sure maybe 30,000 to 40,000 gallons of oil into the Yellowstone by Glendive. So Rob wanted me to go down there. I went down there January 15, 16, and spent the third week in January, 2015. It was 20 below zero. I started the NRDA process down there which was very different than the Exxon. They had a room at the county fairgrounds and it wasn't heated very well. You went down and grabbed a sub sandwich and brought it in. They had their people there, security was much different. I brought a letter along that said who I was and we worked there. A lot of the same people from Fish and Wildlife Service and from DEQ were there for that spill.
[End of Recording #5, 10/13/2017]

[Beginning of Recording #6, 10/13/2017]
INTERVIEWER: We are back on.
PETERMAN: So the Glendive spill was significantly different, it was under several feet of ice. It was light Bakken crude which is a highly volatile oil. A lot of the lighter components were trapped under the ice so there was no opportunity for it to evaporate or volatilize. And the lighter components showed up in the Glendive water supply. Benzine was found and it shut down the water supply for a period of days if not longer. They were forced to drink bottled water. The cleanup operations were quite different. They hired a SWAT team from Canada who specialized in oil recovery under ice conditions. They took airboats out on the ice, drilled holes, tried to find places where they could recover oil. Very hazardous conditions to work under. We asked them as long as you're doing this to grab us some water samples which they did. Of course, the Coast Guard was out here again overseeing it. After a period of a couple of weeks they couldn't recover any more oil and the oil was trapped under the ice and there wasn't much to do until breakup. When the ice broke up there was another release of the oil which was trapped under the ice. Of course, during the break up everything was flushed downstream. We looked again at a fish health assessment and got Beth McConnell to help design it. We had a control section at the Fallon Bridge, we had a section at the spill site in Glendive, we had a sampling section below Intake Diversion and a sampling section at Sidney. We took different species of fish because it was in the warmwater section of the Yellowstone River.

INTERVIEWER: Were the paddlefish at Intake?
PETERMAN: No it was too early for them. But we had shovelnose sturgeon, channel catfish, goldeye, walleye. We took fish health samples, the same type we took at the Yellowstone spill at Laurel and did the same type of analysis. The first three days was beautiful weather. The last day at Sidney a front blew in and it was snowing and blowing about 35 mph. The crews were out in boats. I was on shore with nets. The fish crews would bring the fish back and put them in nets (live cars). I would take them out of the live car and haul them to the bank where the fish tech people were dissecting them. We had big tarps around with tents and heaters. I was standing out there in the mud, my glasses were full of snow, I had three five-pound river carpsuckers in the net, I was stuck in the mud. I said to myself, Peterman, you could be retired now, why are you doing this? Ha, ha.

INTERVIEWER: Ha, how true.
PETERMAN: Yes. We got the samples and had a meeting with the Bridger people and then that project was turned over to Beau Downing. He used to work for Fish, Wildlife and Parks and the Natural Resource Damage Program hired him.

INTERVIEWER: How long did you work there, starting with January 16th?
PETERMAN: I worked on that for a couple of months and then Beau took it over. But I was able to get it started. I was working on that and the EMPCo project as well.

INTERVIEWER: Right, the other one hadn't been completed yet.
PETERMAN: No, we were still doing the restoration.

INTERVIEWER: So when the SWAT team came to suck the oil up through the ice, I imagine they were trying to get what they could.
PETERMAN: Yes, they had big vacuum trucks that they brought up there. Some of the oil came up through cracks in the ice. They would drill holes. It was a thawing period then it froze solid and there wasn't much they could do. Then it thawed out again and the ice… it got too dangerous to go out there.

INTERVIEWER: Do you know if that had a settlement with it?
PETERMAN: It isn't settled yet. Not at this time. It was very different than Laurel spill. Everything was under the ice, there was no over the bank flow.

INTERVIEWER: Sure, contained in the bottom of the river.
PETERMAN: That was the extent of my work on the Yellowstone. I'm happy to report that The Beer Jug is still on Main St. in Glendive just like it was in 1976 when I first got there. '75.

INTERVIEWER: So if you get any more phone calls, would you stay retired? Or maybe it depends on the project.
PETERMAN: Oh I don't know.

INTERVIEWER: Well, Larry, these are some great stories. We thank you very much for agreeing to do your story for Fisheries Oral History Project. This is the end of the interviews with Larry Peterman.
[End of Recording #6, 10/13/2017]

[Beginning of Recording #7, 10/13/2017]
PETERMAN: This can be inserted into the Yellowstone oil spill story. The contractors for Exxon Mobil, their scientific biological contractors, I was struck by the level of detail and precision of their notetaking. They use write in the rain books that are bound and every page is numbered. They start taking notes as soon as they get on site, the purpose, the people who are involved on both sides, and what they experience there, what they see there. Very extensive notetaking until the time they get back to their point of origin. If there's something that is a mistake they don't erase it, they just draw a line through it. It is litigation quality notetaking. When they're out there like that they have notes that can be used in court and are very hard to challenge. I think that's something that we could learn from. Our notetaking, at least initially, wasn't that complete. For the remainder of that project and for the Glendive project I started following their example so we can always look back and see, when, where, what happened. In

the heat of the moment or in the heat of the response or NRDA stuff it's hard to say, was that Tuesday or Wednesday, and who was with us that day. But if you take notes like they did you'd know and you have it all captured in those little yellow books.

INTERVIEWER: Was that something that they would show you, their notes?
PETERMAN: Yes, on a joint study they would share their notes. And we would share ours. If it wasn't a study they wouldn't do that. But if we're under a joint cooperative agreement then the information gets shared.

INTERVIEWER: So, if you had gone to court instead of settling for the $12 million it would have gone on for a long time wouldn't it?
PETERMAN: Yes, it would have gone on for a number of years. The sooner we could get money on the ground to do the restoration, the better. I don't think either side wanted to go to court.

INTERVIEWER: Larry, thanks for agreeing to be part of the Oral History Project for Fisheries. This has been very interesting and it will be interesting for those who get a chance to read it. We have saved these stories for future generations to know how much work is needed to make and keep our fishery what it is today. I'm so glad to have been a part of this and to transcribe the recordings. Thanks, Larry.
[End of Recording #7, 10/13/2017]

-End-

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ORAL HISTORY