

Interview of Keith Beseke, Upper Mississippi National Wildlife Refuge Employee

INT: Why don't you start out by telling us who you are and a little bit about your beginning history of Keith Beseke? So where were you born?

Keith: I was born right here in Minnesota...in Minneapolis, Minnesota. I spent my whole career working here on the river, in this area.

INT: Where did you go to school?

Keith: I went to White Bear lake High school, a Suburb of the North part of the city. I graduated from the University of Minnesota.

INT: What did you graduate with? What kind of degree?

Keith: The first time I graduated with an aeronautical engineering degree but now I'm an environmental engineer. I went back to school in biology and I went back to school in civil engineering. I've been going to school all my life it seems like.

INT: What was your first job?

Keith: My first job was working on the river for the Environmental Protection Agency. For seven years...doing water quality monitoring in the States of Minnesota and Wisconsin. Then they closed that office and asked us to move to Chicago.

(CUT/fix the sound)

INT: We got as far as when they were going to move you to Chicago.

Keith: That was in 1979 and that's when I came to work for the Fish and Wildlife Service and became a refuge. I had worked with all the people of the Fish and Wildlife Service and they wanted to hire me and I wasn't going to Chicago, it's hard to get me East of the Mississippi River there's too many people. So the opportunity came to work in the Regional office, Region 3. In the Twin cities to do the Master planning for the Minnesota Valley National Wildlife Refuge, which had just been established by Congress.

INT: What year was that?

Keith: 1979. And I did that master planning and then I got involved with the Refuge that we're sitting on now, Trempol National Wildlife Refuge with the master planning because they needed some help and I got to work with Bob Dresline who I'm still working with today on my last day here on before retirement. Then the Fish and Wildlife Service seemed it fit to send me to Euro management training all over the country. Then I came back to do the master planning, in the early 80's, for the Upper Mississippi National Wildlife Refuge where I'm now stationed, in the complex. After that I got the opportunity to come down here to Upper Miss in 1986 to basically build everything we

master planned. That's especially true of Trempol over here. We basically completed the whole master plan using a lot of Corp of Engineers funding. I've had the rare opportunity of spending essentially 30 years of working on the river. The Minnesota River, the Upper Mississippi River...planning three refuges and building a lot of what we planned.

INT: What was the title of your position while you were doing all that.

Keith: Well, I'm an Environmental Engineer, that's my title, but I have a background in Fish and Wildlife Biology that I got when I was in EPA, I got to go back to school.

Then when I got to the Fish and Wildlife Service they seemed fit to send me to management training so I'd qualify for the Fish and Wildlife Biologist. Though I am a little unique in that I have a background in Engineering and Fish and Wildlife Biology.

INT: When you were doing the management training, were they sending you to other refuges?

Keith: Yeah, they sent me all over the country.

INT: What were some of the places?

Keith: I worked quite a bit of time at Shurburn National Wildlife Refuge; I worked at Litchfield for wetland management districts. Other times they sent me to Penn State to go to the management training classes. Then I got to go to the Refuge Advance Management Academy. And I got to spend time in Washington including a stint in a Senators Office; I got to work as a legislative aid. I got all over the country. It was kind of like; I got to say good-bye to the wife and came back a year later.

INT: Do you remember who was the Secretary of the Interior when you started?

Keith: I can't answer that one...they come and go.

INT: How about chief of the Fish and Wildlife Service?

(BAD FILM/SOUND)

We were talking about the Lower Pool aid projects and why we are expanding those efforts.

When I talk about the success of the Island Project I kind of focus, when I talk to the public, about some of the historical pictures we have. Showing the island loss and why we're trying to put them back and what we're trying to do. But we have one picture of the phase two project that we constantly use with the public where we show what it was like after the problem, what occurred, the loss of islands in that area. What was their right before we put the project in and then right after we completed the project we show that aerial photograph of how the Islands are back But more importantly is the 500 to 700

acres of aquatic vegetation and flowing channels that are occurring as time goes on. The picture before that shows absolutely nothing...no structure at all.

EMP started in '86 and again due to our success, congress extended the program, it was a 10-year program, but they extended it another 5 years. We had kind of a slow start. I've been here the whole time. Now congress not only extended the program, but has made it a continuous program forever and ever. And has adjusted the amount. It was originally 19 million dollars a year, but now they adjusted it in inflation it's at 33 million dollars a year and I assume it will keep adjusting. So we are in this program forever now and we'll be trying to reverse the impacts on navigation on the system. In our area of the Upper Mississippi National Wildlife Refuge. Since I've been here in '86 there have been 30 EMP projects. Another one that's behind me is the Trepol National Wildlife Refuge. Where we, in the Master Plan, the impacts on Trepol are the same as the river, we can't get water off here due to the locks and dams. The locks and dams don't allow us to get the low flow like we have in the summer because they keep it elevated to maintain the barge traffic up and down the river. Trepol is a backwater of the Upper Miss. Which has been isolated by railroad tracks and dykes. Before the navigation system was even put in. We can't get the water off this refuge either... Because of the navigation system. So what we had to do in our master planning we subdivided this impoundment and with the EAP Program we put in cross dykes and we put in pumping stations. Mother nature doesn't allow to get the water off any more, but we can do it with pumps. The reason we are losing the lower part of the (wind blocks out sound). As you can see behind me, we are gaining some of it back, and this project has only been in for three years and we have what we call Pool Aid down at the lower part of the lake right now. We're approaching our goal of getting 50 percent of the virgin vegetation back from that 700-acre pool. Again this water has not been off the refuge since the locks and dams were closed in the late thirties, so we're talking sixty years here.

INT: Have you seen the plant community change?

Keith: Well, the river's always changing and the plant community is always changing. If you look at the historical print, and that's what we tend to do with the public. Looking at the refuge history we can look at the aerial photography and the GIS's we can illustrate to them that even though there is a huge cycle of vegetation that some of the trends, like the lost islands and the lower pool have lots of emerging vegetation, over time, the trend is down. We are losing the diversity of the ecosystem here on the river. And that is what EMP is addressing. EMP came into being because not only we could see it, but the public who is using the refuge, we have three and half million visitors has seen it all. They've seen the island loss, they've seen the loss of aquatic vegetation that has impact

their hunting and fishing they are very concerned about it and they are the ones who started with Congress and the Corp.

INT: So, this EMP project, we are the only ones in the country that have that kind of program?

Keith: Probably the only one in the world. We are in an effort that is only beginning to restore the impacts that man has done on the river. And we have to do this in some places like Trempol, artificially and some places were used in this program and it's fostered other things. The success of this program has fostered the Corp, I think, to take a look at how they are operating the dam. We are now using it as an example. It's taken us 30 years to get there, my whole career. We are using the lock and dam itself in pool aid to draw down water. To try to get back and reverse the loss of the emergent vegetation primarily. We are in the second year of the draw down. It took us about 5 years of meeting with all our partners and task force to talk about why we wanted to do this, why we wanted this tool in our bag....to manage habitat. We needed this in addition to the islands to put some of the, what we call the river process back to work. The habitat dictated by the physical system and not having both flows has had a huge impact on this river. We've had conferences here on river systems and everybody is coming to look at this. This is kind of a first generation of trying to restore the impacts to a river system in the world that man has put on it. It's not just navigation, it's other things as well: the runoffs from the uplands and all those problems that lead to the water quality and everything else. I think that Congress has declared this to be a national, significant ecosystem as well as national significant navigation system. They are now starting to spend hundreds of millions of dollars in the navigation system, each year. They are now starting to put a little money into restoring the impacts. Using things like the EMP program giving the Corp more money to manipulate the locks and dams, to benefit habitat as well as navigation. Hopefully in the future giving Corp more money to do their business in a better way that doesn't impact our business. (wind blocks sounds).

INT: What was the hardest part of your job? The most important impediment that stop you to be able to do your job.

Keith: My hardest part of working on upper miss refuge is the amount of public meetings; we have several a month, amount of agents, amount of coordination we have to go through in order to make anything happen. Like I say, we have to do a draw down took five to six years. We have to produce a video to show the public why we're doing it. We had to convince the navigation industry that we can do this and they can still do their thing. They not only said no to start with, they said hell no. But they found out ways we can find compromises. And then the recreational interest is 3 million, 3 and a half

million visitors they were concerned would they be able to run up and down the river. Will they still be able to use the resources? Some of them obviously saw the positive side of this, better water quality and better fishing and those things. But the average user out there is just running up and down the river and, to a certain extent he cares, he's there because it is pretty. What he doesn't understand is, to keep it pretty you've got to do things. You have to show the public all the time in the refuge what you're trying to do and what you're trying to accomplish.

INT: Can you talk a little bit about authorization and then the re-authorization?

Keith: Well I think we kind of covered that already. It's authorized forever, and it's at a 33 million dollar level right now. And these projects are going to be going on past me, after tomorrow and the next person that we train in. But like I said earlier it's a tremendous job, a tremendous opportunity to restore habitat and see what you've done by the end of the day. After 16 years, in spite of all this negotiation, I'm going through a nostalgic trip here this week. You look back, at well, 30 projects that I've been involved in, and you can see not only those projects that I've been involved in, but other things I've been in involved in, a new visitor center, or the trails that we planned in the master plan, all of that is coming together. We have actually seen tremendous progress in a lot of ways when you look back over the 16 years that I've been on the station but the 30 years I've been involved in the river. Day to day you get frustrated, you don't think you're ever making progress. But, when you get a chance to look back on your career, it's tremendous how many changes...at least in our case it's all been good. The river itself still needs a lot more work and a lot more funding then we're out now to offset the impacts of man, but that seems to be happening. Congress is talking about more and more money for the navigation system and looking at that, I think there was a realization on the side of the users, the navigations industry and the recreational people that we are starting to look at a discussion of equal.

Maybe not in funding, but in resources the ecosystem as well as the uses are critical, not to sacrifice one over the other.

INT: Do you think the EMP project helped bring that out?

Keith: I think definitely. I think EMP showed that we can do things to start with....successfully. And that helped, but it just showed, at least in this upper part of the river where we work with different groups, it showed that there were things that could be done to compromise in working together that everybody can be happy. It's just a better way of doing business on the river. I think that the most positive thing that has happened up here, besides the habitat is all the groups working together. Just the public seeing all of us at the front of the table talking about it together. Instead of the Corp doing one thing

and destroying the river and the Fish and Wildlife Service going in and trying to fix it, we are all up at the table talking to the public about how we're doing this together. And that has carried over to the Corp looking at things they're doing, they understand our mission, so now they're trying to adapt things we're trying to accomplish into their program. A lot of times you aren't talking more money, you're just talking about doing things better. Some of the habitat projects are actually being built Corp funds....it helps them out because they have to get rid of the materials ... and at the same time we can build an island. And then we can top soil it and seed it when we impede upon it. Now the partners have developed a pool plan through each pool. And that's a vision on where we want to go on the habitat side. Navigation has always had their vision, where they are going with the navigation system and what they want to do. Now there is an environmental...I couldn't even put a dollar on what's that going to cost. It shows the people where the river has been and it shows the people from a biological standpoint where we want to go with the ecosystem so it is sustainable.

INT: What was one of the low points in your career?

Keith: I don't know if I had a low point.

INT: Master Plan?

Keith: No. I think the low point, if you want to call it the low point, the frustration. The frustration right now of the EMP. The Readjustment of priorities in this country after 9-11. The EMP is, for the first time getting a little reduction funding instead of a little increase. That is frustrating. Because, since this program is now funded forever, we're looking at the projects pool plan vision, we're looking at a bigger scale. We're ready to go we have essentially enough projects ready to go out for bids until 2010 and it would be great for the system not to wait because it's going to be more costly. You know, it's frustrating you wanna get going but you gotta take it. Like I said, if you look back you see your progress, but day to day you want to go fast, you wanna get more done.

INT: I want to ask a question about Weaver Bottoms because every time I go out, that was a project that didn't work as well as expected. How would you describe it?

Keith: Weaver wasn't built under EMP authority. It was build under the Corp LM (?). It had a different objective. It's main objective was to get rid of sand. The Corp had to unload some of their disposal sites so they could use them in the future. They needed a place to put sand and they tried to use that sand to build some islands in this case. But they built these islands focusing on getting rid of more sand, so they were higher. It was the first generation attempt. It accomplished that part of the objective, getting rid of sand efficiently, it worked very well. From a habitat standpoint, Weaver Bottoms used to be a tremendous biological area, filled with emerging vegetation. It was going downhill before

the project. And the projects was supposed to reverse some of that. It's not going downhill any faster than some of the other backwaters on the river, but the project itself hasn't reversed it. Now, with all the new islands we've built, we're looking at new ideas for continuing with it. The other thing is, with the success of the draw down of pool eight and the response of emergent vegetation, we've always known that pool five, which contains Weaver is one of the key pools that we want to get to a draw down. That will definitely bring back emergent vegetation, there's no doubt in my mind and it will bring it back in Weaver because that's at the lower part of the pool. I don't know if that will be the next pool. The problem with pool five and doing a draw down is the cost to do the pre-dredging for the navigation channel to continue is going to be high. But if we can combine that with building some islands then and we're seeing a residual to that cost, in other words (wind) and that's becoming apparent pool aid also. We will be moving ahead with when we get the draw down in place. I think we'll work a lot better. We just combine all our tools we have to restore habitat. I think Weaver will be a success. It's just a matter that it's just not there yet. The Corp wouldn't call it a failure; they saved a lot of money, federal taxpayers money. But from a biological standpoint we are very concerned with effects of it. And we need to continue that. And that's kind of what the pool plans looked at in pool planning.

INT: Then it's just an outreach situation of explaining that to the public?

Keith: Right, but not only the public, but also there is the Weaver Bottom (?) but there is also a water level management group that really wants to see draw down in that pool. They are frustrated just like I am because stuff doesn't seem to happen fast enough; they are saying lets do it. And we have started that effort, but again we want to go to all the public and show them why we're doing draw downs, show them more of what's happening in pool eight, why we see this, why these plants are even found we're doing all the monitoring up on that one. You have to take these things step by step. The draw down seems to be the most successful thing. It's something I've dreamed about my whole career, to get to the point where we are using the locks and dams to draw down pool. In other words, to put back this river process that's gone. Even though we're only doing it to a minor impact, you know maybe a foot and a half or maybe three feet in some pools, but you have to get the low flow back to these rivers. People always get confused with locks and dams. They do nothing for the high flow. It flows through here just like used to. But once you get down to a lower level, they stop that process essentially. The river used to dry up, in fact before the locks and dams went in, we were doing fish rescue on upper miss. They were providing fish to 38 states throughout the country from the fish that got trapped. When they put the navigation system in, one of the mitigations that they did was

the fish hatcheries of the service got the janoa (?), which is no more. And those hatcheries were created to offset the impacts of the lost fish rescue program that the states had. There are other things that we haven't talked about.

*****DAY 2 OF THE INTERVIEW*****

INT: Well, here we are, day two of the interview, and this is Keith's last day at work. And let's see, what's today's date?

Keith: 8-16-02

INT: So let's just start off with, what will you miss most about your job?

Oh, you don't want to talk about that? We can talk about something else?

INT: No, let's talk about that. We were on projects last time, but we'll go back to projects again sometimes. Well, there are a lot of things I will miss about the job, but the main thing I will miss of course, much more so than I thought, it the people. We had a get together last night with the YCC crew and we have get togethers all the time and we work and suffer through all the crisis of the refuge all the time together. And that has built up a relationship, that, after 16 years of being on the station that's unbelievable. It's really been a sad week in a lot of ways. Like I said, it's been a week where I've been running around the refuge reminiscing. The key things I'm gonna miss are: the closeness of the people, The refuge family, the refuge system. I know I'll be coming back and seeing people, but it won't be the same not working with them everyday. It's just gonna kind of be a rebirth in my life. I guess, but uh, I don't know how I can explain missing the people. I thought I could explain it better, but I don't know how to put it into words. It's special, that's all I can say. And that's what makes refuges special. It's the closeness, it's the mission, it's what you care about. You care about the river; I've been working on it for 31 years. You care about it deeply and the people around you care about it, and that's a bond that you just can't break. And the umbrella around that is the refuge in this area. I've been so focused my whole career on certain refuges. But it seems to be the same with people who have worked around a lot of care a lot about the system. But you know when you're working with someone and you know, maybe you're having problems with them, and you know in your heart that they care about the same thing you care about, you kind of overlook things and you get the job done. And that's what makes refuges special. Unfortunately once you leave the field and move up in the fish and wildlife service that gets lost. You're not as thrilled about the system once you leave. Maybe that's why I went back to the field after management training I don't know. But the fields were myI guess I've always been thrilled about buying a piece of land and

putting a sign around it and knowing that it will be there for all time. And I guess that's what holds us together and then we try to manage that peace of land so that future generations just like we do.

INT: That's a good time to talk about these projects because you just mentioned that you worked on the refuge...well, the river for 30 years. So why don't you just tell us about some of those projects.

KEITH: Well, we've been covering the projects, but we basically just talked about Pool A Island and Trempol. But over the last 16 years when I've been building these master plans that we've been talking about. They said the other day that I was involved in 30 projects. All of them are unique and special some of them are more traditional projects like Rice Lake up in Minnesota Valley. We basically, in Minnesota valley... The Problem with Minnesota Valley is getting the water off the river in the summer. The watershed has been so drained. Over in Rendue County where they have over 150 drainage ditches, so we get this pulse of water in the summer that never used to be there, it floods these backwater marshes and therefore the aquatic plants can't grow. The big key is getting the water off kind of like we talked about with Trempol, that's what we did with the Long Meadow Lake Projects and the Rice Lake Project. Rice Lake historically used to be a marsh that grew in wild rice every year. Used to attract the Indian before us, but when you look at the history, they used to take thousands and thousands of muskrats every year; year after year there was resources there. And in modern times, we took the refuge and looked at that. This rice has just not been here. We put in a water control structure so we could get the water off. In the summer the rice would start, then it would get flooded off. The first year we drew the water off, the lake was full of wildlife. The response was there. It was amazing to see that. We had to compensate for man's impact to the watershed, but after we did that we got the wildlife back.

You go down to the other end of the river where I worked, the Savannah district, our lower district, pool 13 we had this spring lake project. It was a 4 and half million-dollar project down there. There were a lot of similarities to Trempol, but it's open to the river. We did put in some pump stations; we did some dividing. The whole Savannah district, pool 13 we had 4 or 5 major projects in that pool. If you go look at it today after 16 years, like I said I was down there this week, it's just, sit back, you've got a new visitors center overlooks this big project, the marsh, we're able to move water in and out. It's a beautiful site; we'll be able to tie in an interpretive trail. We've got a new bike trail that's going by. We went from a station of two or three people to making all these major changes.

INT: Wasn't Spring Lake a place that was diked to farm?

KEITH: Yes, Spring Lake was just like Trempealeau, it was an agricultural district, one of the few on Upper Miss. Pre lock and dam. So, when we purchased it, once it flooded it's...the dykes now on the bottom are open, it's opening the river and that happened in the flood of 65. We are repairing that. The dykes on the upper part of the river...the upper part of the complex is dyked off from the river, at a very low level dyke. A two to three year flood level dyke and we move water in and out there to manage aquatic vegetation. The lower lake though, is open, and we actually manage it with culverts and inlets for Fisheries. The project's relatively new, but all of it seems to be working...it keeps people busy.

I don't know what other projects to talk about...we did the lake on Alaska project, one of the early ones. Lake on Alaska is in pool 7 the Lacross district. In my tenure, when we first started working in the Fish and Wildlife Service in the late 70's the public was screaming that they wanted us to dredge off the lake that it was too choked with aquatic wild salary. Well of course the Service wasn't excited about that because we had 70-80 percent of the canvasbacks going through the flyway were here feeding on that lake in the at one time in the fall on the wild salary. It was a critical component and this led to a lot of conflicts. Well then the drought of 88 came in and the vegetation died back and all of a sudden the waterfowl weren't using the lake. The lake is also fantastic for attracting fishery for bass and sunfish. Of course they didn't have the vegetation so they weren't there. Then the public was screaming: you have done something to get the vegetation back. This is the same public...so it was.... And we did do the lake on Alaska project; we put some islands on the lake to try to, again, have that shelter affect. We did some dredging so that flow through the lake would make it to isolated areas of the lake on the black river to provide oxygen, especially for fisheries. The material we dredged mostly went to highway construction on the bluff. It was a very complicated Bureaucratic project. We had the Highway Department, the Core of Engineers, the Fish and Wildlife Service, the DNRs and the public were involved. A very wonderful public in a way, because they really care about the lake and the refuge that live around it. It's almost like an urban refuge in Lacross. All of that is working well, the oxygen is working, the vegetation, since aviated is coming back ever year, that would have happened even without the project, but the islands themselves are creating a shelter...(inaudible) but the islands are just a small component. Now the lake is back, the wild salary are back, the fishing is good, the waterfowl are using the lake. And the vegetation hasn't come back so

its choking out the wild salary. Everybody seems to be happy again. And this is just one of the cycles of the river that just happens in spite of man's best effort.

INT: Last night we went to Polander in pool 5A and that was pretty exciting.

Keith: Yeah, that is a backwater lake. Just like Lower Pool 8 and Trepol or whatever, it's been aging. If you go back and look at Doc Green, the old biologist that was here in the 40s and 50, of the vegetation that was here on the lake. Of Course after it was flooded, again we have tremendous emergent vegetation, but then the water never came off, so the emergent vegetation gradually died away. And you can see that in the refuge documentation and the whole structure of the lake has changed. So unlike the other island projects, the only one that might be comparable would probably be the Weaver Island. We went instead of an island complex along the main navigation channel and working with the flow of the river, we built an island complex right in the middle of this wide-open lake. We call them lakes on the river, but they are really just wide-open wind slips, 3 to 5 feet. We put this island right in the area of the lower flow; it's a complex of 50 plus acres. It's a very tight nit island with inner islands that provide isolation and low water flows. And this whole complex, the whole goal is to try to get emergent vegetation re-established in Polander, which is a closed area on the refuge, so birds will use it. Well, when we put the island complex in, which, the project is just being completed this year, but it's taken a couple of years to build. Immediately, the island structure itself caused a response in submergent vegetation. Not only inside the island complex, but up through around it. Because again it has changed the physics, the flow physics around the complex. You still get the hook flow through a straight slew, and then back up through the channel and that's where the deep water is, where the paddlefish are and the sturgeon and such. But the island complex itself is right in the middle and it's come back in vegetation. Inside the complex now we are starting to see pretty good responses of emergence. Again, the island is new, but it looked pretty spectacular out there and I think it will be a good project. My biggest concern when we were going into is it is very costly to build these islands. It's the nature of doing work on the river, it's just marine construction itself is a very costly; everything's got to be brought in by plants. Polander was, I don't remember the total cost, but we had a couple million dollars going into that project. One thing that off set the cost was we used sand from the core navigation channel when building the base of that island. That money was paid out of the core O&M funds that they used to maintain the navigation channel. And not out of the habitat funds. The habitat funds were used to topsoil the island, to put in the vegetation and that

sort of thing. So again, it was one of these combined funds sources. The core needed to get rid of the sand so that their disposal area would be emptied. And the sand that didn't go into the islands went into a gravel pit in the uplands. It's a win-win situation for the river, and the refuge.

INT: And that's one of the ways the EMP has changed, they didn't use the dredge disposal ...(inaudible)...?

Keith: Well, they didn't use it to make islands. Since the suits during the early 70's against the Corp, they were looking at better ways to use the sand. So they developed what is called the grate study in this area. And that is a cooperative thing where we work with the Corp and the agencies to find better places. And try to use this stuff beneficially. That process is started; EPA just gave it new avenues to use that material. We have now that dredge material going into...in some area we just have it deposited and contractors come and get it, take it away. They love it, they get it and we fill these areas, like the Lansing site, and within weeks it will be gone. We can't put it in fast enough. So it has found a really good way of getting this material out of the flood plain or we use it in the flood plain, it will reverse some of the impacts of the locks and dams...like building islands.

INT: You mentioned the great study where you involved in the great study?

Keith: I was involved in great, but I was working for a different agency then. I was working for the Environmental Protection Agency. Great was kind of...when I started with the service Great was being finished up, the T's were being crossed and the I's were being dotted. But the implementation of Great came when I was here. .more of what it means. The Great study, I think, kind of lead to the...we'll call it a movement...but more focus on the river. In the 70's the river had pretty good vegetation since the 70's it has been going down hill. Again, not linear, but.... When the public or anyone comes up to me and wants to start talking about the river, the first question I ask them when I get the chance is, how long have you been on the river? How long is your familiarity with the river? Because, going back to the Lake on Alaska vegetation study. Wherever you came in on that you're going to have a different view, If they came to the river in 1988 when the drought year was here and we had the loss of vegetation on the river and that's their first year, and they look at the river now they will go, oh the vegetation looks spectacular, what are you guys talking about the river vegetation being bad? But if they were here in

75 or even an old timer who was here in the 50's, they know what the vegetation was. The 70's had...compared to where we are today...there was tremendous more vegetation. Again, emergent is the key, emergent plants. That's what's nice about the GIS that the EMP has developed through the USGS. That whole system, the refuge history...we can show the public...again, the loss of vegetation over time. And hopefully, now that we've developed these tools that we didn't have 20 years ago in the master planning hopefully now they will use this information to illustrate this more. Some of the key things I talked about, showing the island loss over time in lower pool A and other ones slides we used showing them... We did some small-scale draw downs...water level management and task force over in pool 8. We did produce one slide showing the area we drew the water off and the plant response over that summer, using PowerPoint, as they see the change over time, it's amazing. Discussion over with when you meet with the public. They understand why we want to draw it down, what the plants are gonna do. They may not agree with us because they want to run their big yacht up and down the river, and they are just worried about doing that. But, at least you are not arguing over the biological reason for drawdown. They understand that. Or you're not arguing over why you want to put islands back. If they were here in the 50's they know the islands are lost. But if they came to the river in 1990 they have no knowledge of that because the islands have never been here. So I guess that's why history is important and why we do videos like this. History is critical and this refuge is an old refuge it's been since 1924. So we have a lot of history. And the public that we deal with, or even our new agency people that come out to the river are not familiar with that. We have to show them every time. And now we are starting our new master plan, which, fortunately I won't be here for. Because of the complexity of the river it will be a hot issue no matter what decision we make. But at least if we use the GIS that has been developed through the EMP, and that's where a third of the money went, we can show them. We can show them how many birds are being produced on this refuge by the breeding counts and the population. And then we can make a decision. The other problem we have out here is the forest. Before they put in the locks and dams that cleared the forest out. The forest is pretty even-aged out there and we keep telling them that is a problem and we have to manage it. We need resources to do that. GIS will set us straight and it will also tell us, if we're going to make this change in the forest, we're going to get this kind of response. Talking about what I'm gonna miss and talking about birds...The thing that makes this refuge special to me biologically and it doesn't happen very often. You probably haven't experienced this yet, but you will. Every once in awhile there is a unique event that happens during migration on this refuge. I remember one day pulling over and watching

tree swallows go by and I mean miles and miles and miles of tree swallows. For over an hour they went by and I don't know how many tree swallows were in that....swarm. It was almost like the movie the Birds. But it was gorgeous. It was an event that I have never seen again and I will probably never see. A couple years ago I remember we had staging in here of nighthawks. And they were everywhere. Not so much on the refuge...they were flying over the refuge....but adjacent fields...you'd look out there in the evening and they were everywhere. Just...I mean just...who knew how many hundreds of thousands of these swallows and nighthawks. These area unique events that we only see.... The hawk migration we were just barely touching on. Look at the changes on the refuge in the bald eagle. Since 72 we had one bald eagle nest on the refuge. Now we are approaching a hundred. We are producing a hundred young every year. The staging in the winter is in the thousands. You can do a small loop drive and see 500 eagles in the winter on the refuge. It's becoming very noticeable to people. To people who say, we want DDT back, I think this is one of the clearest example of why we don't want DDT back. There is obviously a change and it wasn't our management that changed it. I think the elimination of pesticides made this growth in response. And it's not just eagles... You know everyone complains about cornrods (?) on the refuge now the population is so high. Well, it's high; we're seeing a migration in the thousands. The Fish and Wildlife Service is hearing this up and down. But again, if you go back and look at the history of this refuge, we're still only...even though there are thousands now 20 – 30 years ago we were putting up cornrod platforms because they were...it threatened an endangered species in the state...trying to get them to stop here and roost here and nest here and we considered them critical. And now everyone want to shoot them. But yet historically we only have 5-10 percent of the number of cornrods coming through here. I think the future looks bright, but I don't see why this is a problem. Unless you've got a fishpond and you're trying to raise fish. But it's not a problem to the river, it's an opportunity.

The other migrational changes, the bird changes are the swans that use the river that attract people. They weren't here 30 – 40 years ago. It tells you the habitat is changing. The diving ducks now are our primary waterfowl on this refuge. Like I said, the canvasbacks, high populations. But if you look at the historical data these same closed areas now, we have the same number of birds using them in the fall. We may have 4 or 5 hundred thousand birds using these closed areas in pool 8 and pool 9, but it's been a total reversal between diving ducks and paddlebacks. And that tells you the change in habits. We have the same number of birds, but now 80 percent of them are divers, it used be 80 percent were paddlebacks.

INT: Is that because of the locks and dams creating deeper waters?

KEITH: right. It's the change of...the loss of emergent vegetation. The loss of the islands, the reversal of the whole system over the 60 years of lock and dams.

INT: When you talk about Canvasbacks, that's one that's had hunting seasons and non-hunting seasons?

KEITH: Right.

INT: Talk about that a little bit.

KEITH: Well, that's a flyway situation, but, you know their population cycle. Right now, I believe this year we will have a quadrant on canvasbacks this year, if what I hear is right. But it's based on their historical population of canvasbacks in the flyway. So the refuge is here. Like I say it's a migration refuge. It's here; it's become critically important because...especially when you get down to Iowa, Illinois, and southward, you use a lot of the wetland. The canvasbacks historically did not use the river. They used Lake Questina and some of these.... they had a different route. Somehow, those sites, the wild salary died, the fingernail clams died, became unusable. But at the same time, the river had developed vegetation and the birds found it and started using it. And now, if they lose the river they've got nothing. Well, for canvasbacks they are trying to restore some of these historical areas and having some success. But other birds, you know, if we look at...to me, working on the flood plane, working the river, what we don't take credit for is the amount of dickybirds that come through here. It is tremendous. Three to four weeks, in the spring or the fall, depending on which way the birds are going, these woods are alive. And unbelievably alive. You can go out and see almost every species that is in this area moving from the breeding ground to the winter ground. And it's not just the refuge, it's the bluff lands adjacent to the refuge. They are using this corridor. But once you leave the refuge and the bluff lands, everything else for these birds is gone. It's in agriculture. This is the breadbasket of the United States. The Midwest has drained everything and there's not much habitat for them. So this refuge to me has just become extremely critical. Looking at the North-South orientation and the loss of everything, especially when you get down into Iowa and Illinois. All the refuges there, we don't have the corridor there that we have throughout the north. I'm hopeful that the future...that is recognized now and that the future looks bright that maybe we'll start getting some of these agricultural lands out of the refuge. After the flood of '93 and '97 and the weather, we've had a lot more willing sellers than we've ever had before. The best thing that could happen to the Lower Mississippi River is to buy this agricultural land that is behind

the dykes, break the dykes and let that flood plane reclaim that land. And that is what came out of the Galaway report after the flood of '93 is do that as much as you can instead of constantly paying these people to restore their houses, restore their farm land. Instead, let's get them out of the flood plane; let's let the river have that. And at the same time, that migration corridor is critical. And we really need it done. Fortunately we have forefathers in the upper miss that established this refuge. We kind of are intact. If there is a house out there in the refuge system, it's this one. If it wasn't in the refuge system there would be houses (I'm not sure what he is saying here). Just like the laurel river. If people won't understand the value of the refuge system, they come to upper miss and then take a trip down river.

-----BREAK-----

INT: OK, we are going to start again and you are going to tell me about what you won't miss. Or, you are going to tell me about paddlefish.

KEITH: Or I can tell you about people I worked with.

INT: Or you can tell me about the people you worked with.

KEITH: Well, we better tackle those one at a time. Let's talk about people, and family. That's a hard one to talk about. Certainly on your last day you don't want to people you won't miss, but we'll talk about the people who have been special to me. You know that a lot of us moved around and go, but not as much as they used to. And I'm a good example of this; I've spent my whole career here. Essentially on the rivers. But people like Bob Dresline of the Wanowa district and he worked at Tempol, we've been working together since the late 70's, well, since '79. We talked about Tempol. I mean we worked together; we go out hunting together occasionally. We'll probably be seeing each other the rest of our lives. And those people are special. We seem to develop the same interests. And we've had a lot of different managers here. Jim Fisher was the last one. We got Don Haltman who will be coming in after I'm gone. But, um, Jim Fish I didn't meet until he came here about ten years ago. He was very fun to work with. He let you do your job and tried to help ya do it. And Don Haltman, actually graduated from the same High school as I did, graduated. Graduated with my wife. And I think he'll be good for the system because he definitely knows what refuge family is. But we'll let his....he's in the regional office now and I've sort of worked with him...but we'll let him lay his

own course. I don't know. There's other people I have worked with, Ron Papykit sure learned....when I worked up there I learned that he was pretty energetic and special. I think the Ron Papykits and the Bob Greslines were kind of the old refuges and I was the new kid on the block. Even though we're the same age, I came on the scene....They'd probably been on the refuges ten years or something. They were the ones that kind of gave me the feeling of what the refuges are about. Being an engineer a biologist, I could tell them the engineering side, but they helped expand my biology side a lot, and that was important. When it came to birds I was a pretty good biologist. There are a lot of other areas. With Bob...you go hunting with Bob on the prairie and you have a programmed time to stop and collect seeds. Because the dogs will be on point and the birds will be ready to get up and Bob's on the ground collecting seeds out of a forb that he can plant in a prairie or something. Then Jerry Shotsgill, he was a very close friend of mine, worked on this refuge. Actually before I came down here worked with me in planning. Really kind of taught me a lot about the importance of Upper Miss and the importance of the refuge system and at the same time kind of laid my background and problems in the Fish and Wildlife Service in the management. When you leave the refuge how things get unfocused on the important things. And the important things to us out in the field is what's happening on the ground. What decision we make, how does that help? What's happening on the ground? Turning dirt in my case for habitat projects. We tend to try not to do something if it's counter-productive. Jerry Shotsgil was special. Or John Lions, of the McGregor district. I just saw him at my retirement party again here. He's the one who taught me about the flyway, the Mississippi flyway, and why this refuge is important. Kind of the stuff I just sheepled about. I think it's probably a John Lions story, the refuge. He can probably speak it better than I can. But John Lions taught me about law enforcement on the refuge and what that means and dealing with people. Ed Kroger at Minnesota Valley is another one. He's the one that hired me. He's kind of like me, a planner, more of a visionary of where we are going. Tend to always be planning everything and always have ideas and how to accomplish things. I guess opinions as they are referred to here, as you are getting in this video. I think I got a lot of that from Ed Kroger. Those are the people I've worked with on the biology side. But there have been a lot of good people in contracting. In my job we have to get things done. And like I said, yesterday too there have been a lot of people in the Corp of Engineers who I have worked with all my life. I remember when I was with EPA the Corp was gearing up because of the NEPA and the passage of the Clean Water act and all that with the environmental movement in the early 70's was happening, so the Corp was hiring a lot of biologists. Staffing up with a biology shop. Those people are the people

I'm working with today and I saw them come on board. Don Palls the engineer's side of it, he used to work for the Fish and Wildlife Service as an engineer. So again, the key people, and maybe that's why I was somewhat effective in that area of working with the Corp, is to me they care just as much about this refuge and habitat on this refuge as I do. And I think that's what's made the St. Paul district to the Corp, I think, successful. They had to learn some of that from us, they had to be forced into it, but again, if their mission allows it, if their mission was expanded they would do more to help the refuge in the St. Paul district because they understand our mission as well as theirs right now. And most of them will be retired soon also, so, it's interesting.

INT: well, it's interesting that a lot of these people have spent their whole career here. Which is different than other refuges.

KEITH: Must be a mid-west thing,

INT: Must be

KIEHT: mid-west attitude.

INT: Or it takes so long to learn

KEITH: And the refuge itself is, you know, we keep going back, looking at historical things because when we plan, always have to look at the past in order to plan the future. You know, Upper Miss, in the early 70's and stuff, was one two-man field district office. If you go way back I guess we had a lot of part-time people we had a bigger staff. But, the staff on Upper Miss, up until the 1990's had grown significantly, slowly but surely until we were up to about 30 employees. Then through the 90's we've lost some. We went back, and now we've gained some. A lot of temporary employees again, but we've gone a lot of way from a total staff of the Upper Miss complex of maybe 10 - 15 people to now double. But the master plan I did in the early 80's really, again said that we needed about 50 people on the refuge. Again going back to the comparison of Yellow Stone, which has less visitors than we do. They've got I can't remember... 700 employees. So the refuge system, either we've got really good employees or...you know. But Upper Miss, I'm sure the new master plan will illustrate how shortly staffed it is compared to the resource. A good example I've used in the past in speeches. Is we've got the Afugee mounds National Park surrounded by Upper Miss, it's only a few thousands acres. We are a couple hundred thousand acres; they have a staff that equals ours in number of employees. That is an inequity that maybe will come out in 2003. It's not just Upper Miss, it's everywhere. But we'll let other people solve that one. Ask another question, I can give you another opinion.

INT: Well, you mentioned managers; do you remember some of the biologists or biotechs that you worked with?

KEITH: Well, Yeah. You know Eric's been here along time and now he's going to be the new CCP planner. And we'll hire a new biologist. You know we go down to the meetings with the states what is called the UMRCC, the Upper Mississippi River Conservation Commission. That's all the biologists on the river. The refuge is kind of the history on the river, even though the states are managing the same lands somewhat. It was always kind of we had the Eric Nelson hour because we've got that long-term history of what's going on especially in Upper Miss. Before Eric there was Cathy Cheep, she was a biologist. Cathy died on the Pomare River doing aerial surveys. Because I lived quite a ways from the refuge and because of my lifestyle, I actually stayed at Cathy and Mike's house a lot. She was the first biologist when I came down here on the river, she lived here along time. So of the personnel, the one thing about Upper Miss is you come here, and unlike other stations it take you a couple of year just to learn the acronyms of all the agencies and all the commissions we deal with. So there for people tend to stay longer, although that's probably true in the refugee system, just because it's more expensive to move people. So maybe that's what creates this nice family. We've been working together for along time, like Bob and I have been working together since '79, even though it wasn't at the same station. But the last 16 years. John Lions actually moved back here from Washington. He gave up; I think a GS14 job to come back to Upper Miss as a GS7. Retired as a GS12 and he was here forever. He got tired of Washington, wanted to get back to the mid-west. You tend to come in as the district managers come in and stay 8 to 10 years. I don't know if that's because we get things...there are rewards even though they are slow. We get the EMP program, so much construction, I mean we get...or it just gets so busy that you don't get a chance to look for another job or whatever. Jim Nissan has been here along time the Lacross district manager. And even Ed Briten who I think has been here about 6-7 years already. John Mondell he's the newest manager on the district, but he's really coming back to the district, he used to be in the LaCross district. So he's got a historical perspective. You should probably interview John when he retires in a couple of years about the river and the refuge system.

I don't know if I answered your question.

INT: You did. What about um...Can I take a break for a minute?

KEITH: Sure.

-----BREAK-----

INT: One of the things we haven't talked about yet I don't think, it's been two days I can't remember. In the time that you've been here, you've seen some invasive species here on the refuge?

KEITH: Yeah, I'm not the expert on, but there have been, like everywhere else, major major changes and it's stuff that's outside of our control. The obvious one is the zebra mussels. We can document, visually for the public a lot of things. The loss of islands, the loss of vegetation. You can take pictures and show the difference over time. It's real hard to document the changes that are occurring on the bottom of the water, through photographing. The impact of zebra mussels ...we have them just like on lake Erie on the river...but the story, we don't know. Their story is not all bad, the river water is cleaner because of this but they're four-feet thick down there. It would be a major disaster if we could illustrate to the public what is happening with this invasive species. And those zebra mussels is just one example. But you know, that's led probably to the next future of the refuge and the major crisis is going to be the loss of the mussel habitat which has been a problem over time on the river anyway due to the locks and dams stopping fish from migrating. These were becoming barriers, we were losing mussel species anyway and we had a few endangered mussels, but now with the zebra mussels, which, affixed to them, bury them, submerge them, all this. You know, it's a major concern on what's going to happen to higgins eye mussel and all that. There's an exotic species, that, who knows. We're working with the fisheries people and we're working with the ES office and, you know, the Janoa fish hatchery is trying to breed higinseye mussels and stuff and restock them back to the river. We're looking at habitat projects of how do you build mussel habitat using the EMP projects that the native species will like, but won't be attracting the zebra mussels and we are going to introduce in the pool A phase 3 we are going to so an experimental area, but if the changes happen so quick we might not even be able to respond in time. We've got (inaudible) you know we are doing the introduction of the beetle and stuff. The biologists can talk more about this, but that seems to be, at least looking around here where they've been introduced maybe we'll be able to have a biological control that will keep...the plant will be here for ever...but will keep in balance with everything else. We've got milfoil, I remember back in the 70's where Carl Corshcun with research division then and now with USGS was saying that the river was...milfoil was going to take over the river. We had the ear on milfoil, well that

didn't happen. Seems like milfoil here finds a balance on the river. I guess it likes it when the lakes are stagnant, but with the flowing water it doesn't seem to like it. We haven't always had milfoil. Back when the vegetation was low in the 80's it was better than nothing. It seems to be finding a balance. We've got species of carp; especially now we've got some new ones coming in. We want to keep talking about fish passage to the dams because we feel that is a problem for the historical fish; you know, paddlefish, sturgeon, whatever. We know, we're documenting it but. And keyocock, lock and dam 19, is a major major area. We have barriers on the Upper Miss, where they only go out of control. In other words fish can pass through them once every 50 years or something, but lock and dam 19 is a real barrier. But these carp are still managing to get up-river. It's going to be an interesting future of what happens with them. But, lesson learned here is to keep these things out of the country, but we never seem to learn that lesson. The fishery resource...this is the Upper Mississippi National Wildlife and Fish Refuge. In our mandate that established this refuge, we have a mission specifically for our fisheries. And so I talked about working with other agencies, this is one place, they keep trying to divide, say organizational structure and the Fish and Wildlife Service so the divisions will work together. But we just went through a period of 10 years here where I thought...we'll call it ecosystem management...but we don't need that in the field. We work with these fisheries people, we work with EES people. I mean, in the ecological service s, Gary Wiggie, I've worked with all my career even back in my EPA days. He can go to a meeting and represent the refuge as far as I'm concerned. We are e-mailing each other and talking to every time we do not have a different opinion. The same with Pam Feel, our fisheries assistant office leader. I mean, she used to work to be my counterpart for the state of Wisconsin on the EMP project, then she went to work for LTRM and the other part of EMP, the USGS department. And then eventually we were lucky enough for the service to hire her and she is the fisheries officer. So these people on the river, those two people love the river and understand the river and love the partnerships and they've been working on it all their career also. So we work together in the other divisions. The organization al structure above us has no meaning. It's not going to change the way we work I don't think, but that's just my opinion. To me, we tried very hard, when we go to other agencies or outside to the public to have a U.S. Fish and Wildlife view on an issue and not a refuge view. We just have to. We can't be going to the Corp on the EMP program and talking two different issues. When we go down the river we work with a different Corp district on our lower three pools then we work on our Rock Island district. Our coordination is not as good there, and the farther you go down the river the more problems you seem to have. There is more people fighting over fish verses duck type

argument, or whatever it might be. And I think that happens because they have less and less land to manage and it's just so critical to everybody's program that they fight for. Here we just work together better...it's not to say that we don't have disagreements, we certainly do, and we certainly have different followers, but somehow we solve it before we go out to the public. So that's what I say about Upper Miss. Even though I talk about refuge family, and that's because my heart...and even when I look at the organizations that I'm a member of outside, The Nature Conservancy, and DNR...I like to buy a piece of land and have a sign around it and try to manage it for wildlife and that's why I'm a refuge. Where the ES people are always dealing with permits...I would have a harder time in that kind of jobs. My heart's in the refuge system, but my heart is in these other offices and divisions because even with EPA I kind of was an ES biologist, I had the same responsibilities as they do. And the fishery management on the river, I mean we talked about the polander project and you know we delayed that a couple of years because there was some concern about paddlefish using that lake. We managed to work with our fishery people, did some tagging. Some of the first research on paddlefish on the river came out of that project. We learned where they used the lake and how they used the lake. The project, we made some tweaking, we tried to enhance that but the project had no impact on that. But we learned a lot about migrational paddlefish and how they don't get through the locks and dams. Some of these paddlefish will try to move all the way from pool 5A all the way up through lock and dam 5 through lock and dam 4 and up the Chippewa River and then they will move up that until they get stuck by a lock and dam. So lock and dam and fish paths are definitely going to be a future issue on this refuge. Some of the other species that we've worked with on EMP and I'll even...managing a lot of our fishery EMP projects area oriented to over wintering (mumble) habitat and the reason that came about is the research done by some of the states, mainly Iowa, down river finding that these bass...the tagged bass would move out of these wintering areas, go down 12 miles stage at specific areas in the summer and then come back to the same wintering area. And the finger lakes, the EMP project, when we built that one, which is basically what we did was put culverts strewn through the dam itself to allow flow to the backwater lakes that was that were cut off by the lock and dam. In that, we did a large moderating program with USGS to determine how the fish utilize that area and what the impact of that project were. Out of that study, came a criteria on their needs for the winter and that criteria oriented to their velocity needs, the temperature needs, and their dissolved oxygen needs. We knew they were having dissolved oxygen problems, but to solve that, what this project does is let water in from the river to the backwater. The river always has very high oxygen in the winter, it's almost saturated or

supersaturated, the backwaters are isolated, the ice has formed over them. We know we can let oxygen in just by providing flow into it from the river. The problem is, when you do that, you also let in cold water and you increase the velocity and those are two negative things, so you have to balance those things and what we learned in that project and several others is you don't need to let much in, we just need to let in a very very little. In the winter, to meet the winter needs, but in the summer it becomes different different, you need to let in more.

INT: So, who monitors that? Is that the districts on all those projects?

KEITH: Well, initially, that...there area a few EMP projects where we have large-scale monitoring and the Finger Lake is one, and the reason we focused on a Finger Lake project is the information we learned from that we can use up and down the river on EMP projects. And that's how that turned out to be. The average project that we built, the monitoring is not done that extensively. In fact, the monitoring on Finger Lakes costs more than the project, so we just can't...we just spent a million dollars monitoring and about seven hundred thousand dollars on the project...you just can't do that on every project. We talked about pool 8 and the visual changes and things you can see right away. In the phase two areas that the fisheries change, and that project wasn't over wintering fishery. That's what we were trying to solve. The state is monitoring over time. We know it takes some time for those changes, but we saw changes right away in your class. So the states do some monitoring. Down there in the Pool 8 project, in the phase one of the closed area and phase 3, Jim Nissan's staff has been documenting, putting it together in graphics and PowerPoint presentation so we can show waterfowl staging changes; what areas they use, and how that ties into vegetation. We've also, we've been using that area to illustrate to the public the disturbance factor and how that needs to be controlled. It does no good to provide birds a food resource in an enclosed area that they get disturbed out of all the time. Our enclosed areas are not...like a lot of other refuges most of our quota are not....invala....inval...I can't say the word...

INT: In violet

KEITH: ...In violet sanctuaries. People can go through them, and they can disturb the birds and send them out of there. And what we are trying to do is, we don't want to provide a food source that doesn't get utilized. What we have seen in lower pool 8 because of the habitat project now. What used to happen the bird would go into the closed area during the day basically stage there and not feed a lot. Then at night, when they weren't hunted...again this is the hunted species... they would go out and feed in

other areas of the refuge. Then they would be back in the morning in the closed area. So that showed you that the closed area wasn't meeting their food needs. Now, last year with the project in place from the response to the drawdown of the water...or the response of the plants I should say from the drawdown, Last year when the hunting season ends, the birds didn't leave, they were basically staying there, and that meant we were meeting their food needs and had through the whole season. That is a very positive way to document the changes in plant communities that happen due to the combination of the project and the drawdown. When phase three gets completed I'll be back to see what happens. We've spent on pool 8: phase one we spent 5 to 6 million dollars. And phase three is a 15 million dollar project. So it shows you how many islands we're going to be putting back. But even with that, you know, say we lost 80 percent of the islands, I don't know the exact statistic, it may have been 85, we've put back maybe 5-10 percent now even with that we've put back maybe another 20 percent. So it's still a minor, well I shouldn't say minor, we put back a third of the islands. When we talk about...a lot of the times with the public we talk about what are we trying to accomplish, what are we doing and going back to this. We would love to get this river back to the 75 plant conditions. And that's where I try to focus. Not the 40's and 50's, that was really fantastic after we flooded it. The only way we'd get it back to that is by stopping navigation for a couple years and that's not going to happen in my lifetime. And basically drawing down the pools completely for a couple years and then flooding them. And we are making some progress, and that will depend on the future and how much money is put toward the ecosystem's side of the river.

INT: I just wanted to ask you a question; you mentioned USGS and that function used to be part of...?

KEITH: Yeah, research, babbitt was combined, moved out of various agencies into USGS and therefore we lost the fishery research people, component. Which, in my view is probably a bad thing to do, but it's probably not going to change. These people were focused...the biological research, of the Department of the Interior it at one time resided with the fish and wildlife service. Now it mostly has moved into USGS. What EMP funding...maybe I should explain this but...a third of the funding goes towards monitoring the long-term trends of the river, and not just Upper Miss, it covers the navigation system, Illinois river, all the way down to the open river on Mississippi down through Missouri. And why we can build EMP projects on the Mississippi Valley Refuge is that there is a navigation channel through part of that refuge. It does not include the

Missouri river, but basically Illinois and Upper Miss. So those are projects. We've had a lot of projects put on Upper Miss because they don't have to be cost shared there they are completely Federally funded because they are going on a National Wildlife Refuge. Projects that aren't on a National Wildlife Refuge the state have to cost share. So two-thirds the money go to building projects the other third goes to monitoring that project. Key pools are being monitoring like pool 8, pool 4, pool 13 are key pools, they get monitored more intensely. That has lead to the GIS system that we have. We work with them; we are linked to their computers.... You know as a planner back in the 70's, Upper Miss, we were the first ones, the Upper Miss master plan, we did aerial surveys, we did the mapping in that master plan for the refuge to show the vegetation on the refuge and use that to determine, you know, cite specific things we wanted to do on the refuge. Well now, we got LTRM we have complete mapping of the vegetation. **(Phone Rings)**.

-----BREAK-----

INT: Well, we had to take a break because we had chocolate cake for Keith on his last day here, made by Sherry and a phone call from the Corp of Engineers and hydrologists. But, before we end this, Keith, why don't you tell me a list of people you think I should interview beyond yourself, so that you could give me a list of people I should be talking to.

KEITH: Well, probably, punishment for this...Jim Fischer obviously and he's coming in today for lunch, so you can nail him down. Bob Grisline's going to be retiring soon. We need to get John Lions on tape. For the service. It would be interesting to maybe get some of the non-service people talking about the refuge. Or even some of the other divisions, Jerry (something) and Pam Fields. But I don't know what they are trying to accomplish by your videos, but, those are the ones that come to my mind quickly, Jerry Shafner of course is dead so we can't.... Jim Lenerdson the old refuge manager, we used to have...this kind of explains where the service is going...we used to have a complex manager, a refuge manager, and an assistant refuge manager. Until a week and a half ago we'd gone a whole year and half without any of the above and now we're going to have Don Altinson picked as a...I'm not sure what their calling him, Complex manager, but we still don't have a refuge manager or Assistant. **(Phone Rings)**

INT: This is Keith's last day so we're going to take another break. We'll get him later on or we'll get him when he comes back to visit.

KEITH: The phone calls are starting to come in...

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INT: Ok, what you were saying before all your phone calls was how you had a Complex Manager, a Refuge manager and a deputy manager. Do you want to add anything to that?

KEITH: Now we have none. Well, we have one part-time complex manager coming on board. But the important thing of the Upper Mississippi National Wildlife Refuge is for it to be managed as one unit. And for that to happen you can't have it managed as four separate districts, it's one continuous unit to the public. They go through lock and dam 8 as an example, they leave the Lacross district and into the McGregor district and they don't know we have an arbitrary line there, to them it's all the Upper Mississippi National Wildlife Refuge, and that's what the legislation says. It has to be managed as one unit. In some way, that's not to say you can't have some differences, but you have to have that continuity. When... I know Don Altinson will be talking to me sometime down the road, that's one point that I will be stressing. That this is one refuge, one flyway. The birds don't care when they leave one pool or the other either. Because of all the agencies we work with, it's good to have a common voice to the outside world. So, that's all I got on that.

INT: Could you just touch on... You always said that you are a complex employee and then there's headquarters employees...can you explain it?

KEITH: It's just like other areas of the refuge system. I'm complex alright, but... The complex employees worked for more than one refuge. In my case, I worked for Minnesota Valley National Wildlife Refuge, which wasn't part of our complex, but then the two refuges in the complex, Trempol and Upper Mississippi, I work for them too. So I work for three different refuges in my role. Because the EMP program doesn't recognize refuge boundaries. It's a Corp. The Money for EMP comes through the water resources act, not the services, fund. That makes me think of another thought.

INT: OK, then go with it.

KEITH: The EMP program, the one thing that hasn't happened, we've built a lot of projects, but haven't got the O and M funding for it yet. When the Corp gets done with a project, they turn it over to the Fish and Wildlife Service if it's on the National Wildlife Refuge. And then we are responsible for managing that project. One of my goals is to

make sure that O and M funding is minimal. So our maintenance responsibilities are minimal. And a lot of our projects that's very much true. Most of these items are built to last 50 years they say, but they are going to erode gradually, there's not much we have to do other than to make sure where we added stress points where we added rock is maintained. The maintenance is real minimal. The Trempol project is a big water and pumping station. Those things have very traditional Fish and Wildlife Service operation maintenance...funding. When you're working to identify that in Washington, we're assigning agreements with the Corp, that's been all through the regional office, and Washington, they're the ones who sign the agreements. But we haven't yet. We're just starting to see some funding. We've been able to maintain and keep the (inaudible) emergency flood funding money. And that has worked out very well. I think long term the Service needs to step up to the plate, or I should say Congress. Since they're the ones who have mandated the program through the Corp, but they haven't, they need to do some kind of cross funding like they do in the Everglades to make sure that the money is given to the Service to meet the congressional mandate. At this point it's kind of an unfunded mandate from Congress. We're working on that I see a lot of progress in that way and the Corp is giving us....my money for my position comes from the Corp of Engineers, they're the ones who give us funding to help them manage this program and I'm a Service employee and always have been, so that's nice. We're able to fund some of our involvement in the planning in these projects, but we haven't funded the operation maintenance yet. That's one need that...maybe it will be identified more and the Lewis and Clarke Centennial and the Refuge Centennial will see some of that. It's going to be an interesting time for the (inaudible) focus that will be on the river system here.

INT: Do you have any last words about the future of the Service or the Refuge?

KEITH: Hmmm, my last words of wisdom...Now I'm part of the problem. I'm gonna be out there enjoying the resources that I've been managing all these years. Naw...I'd like to see a lot more new, young employees. We're kind of getting to be a bunch of old crusty employees in the federal government, especially in the Fish and Wildlife Service. But the young employees will do just fine, we're all replaceable. That's all.

INT: That's it?

KEITH: that's all folks

INT: So you won't miss the refuge because you'll be back here playing on the refuge.

KEITH: Yep, just me and my little canoe

INT: OK, well thanks Keith. Say when you started working on the refuge again.

KEITH: Well I started with the Service in 1979 in the Minnesota Valley National Wildlife Refuge.

INT: and you started on Upper Miss down here....

KEITH: 1986

INT: and that was just after the EMP....

KEITH:...was offered.

INT: Was offered.

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