

Oral History Cover Sheet

Name: Jack Lentfer

Date of Interview: October 28, 2006

Location of Interview: Maritime National Wildlife Refuge, Homer, Alaska

Interviewer: John Cornely

Approximate years worked for Fish and Wildlife Service: around 12 years
(1957-1964 & 1972 to 1977)

Offices and Field Stations Worked, Positions Held: Fairbanks, Alaska working all over the territory/state

Most Important Projects: identified fish species and distribution in Yukon River prior to water development projects; planted rainbow trout in a lake across from Kachemak Bay; in Homer, Alaska worked on a weir on the Anchor River monitoring salmon; River Basin Studies on the Susitna River; Copper River spawning ground surveys on salmon; Bradley Lake Project concerning propose dam; Grayling Study on Chatanika River; polar bear work

Colleagues and Mentors: Gordon Watson, Theron Smith, Tom Wardleigh, Bob Scott, Roger Allin, Ron Skoog, Bob Rausch, Dick Hensel, Chuck Evans, Bob Burkholder, Lee Miller, Thor Larsen (Norwegian biologist), Savva Uspenski (Russian biologist)

Most Important Issues: polar bear work

Brief Summary of Interview: Mr. Lentfer grew up in Livingston, Montana and helped in his dad's taxidermist shop. He received his undergraduate and graduate degrees from Montana State College at Bozeman in Wildlife Management. He started working for the Montana Fish and Game before being drafted into the military and then returned when his military service was over and continued to work for the Fish and Game for about a year before going to Alaska and working for River Basin Studies. He would transfer to the Alaska Department of Fish and Game twice in between working for the Fish and Wildlife Service. He has served on the Marin Mammal Commission as a commissioner and also worked on the Polar Bear Treaty Act. He and his wife volunteer with Earth Watch and he discusses several of the trips and work they've done since retirement from the government.

JOHN: This is John Cornely with the Fish and Wildlife Service Heritage Committee; we're working on the oral history project. It's the 28th of October, 2006 and we're in the Education Center of the Maritime National Wildlife Refuge in Homer, Alaska. I'm here with Jack Lentfer today and we're going to chat about his career with the Fish and Wildlife Service and some of his background.

JACK: Okay, well I'll start with where I grew up I guess. I was born in Livingston, Montana; south central part of the state, 1931. My dad was a taxidermist there and I kind of learned the business working with him and his brother, my uncle. And, of course, introduced to fish and wildlife things at an early age; most of the guides in Montana at that time brought their trophies into my dad's shop, so they were always around telling stories. And kind of kidding me, as I'd be painting lips on a bear, and they ask me what I do on the back side of bear, if I paint there also, type of stuff. My dad was an avid fisherman, great duck hunter, liked to hunt big game also, and hunted deer and elk there, and I grew up hunting and fishing. So anyhow, I went to school at Bozeman, Montana State College at the time, and enrolled in a wildlife curriculum and graduated there with a B.S. and a M.S. in Fish and Wildlife Management. Did a master's thesis problem on mountain goats in the Crazy Mountains in southcentral Montana; worked on that for a couple years. This was a herd that was started from a transplant about twenty years earlier, so we had information on the numbers, sex and age of animals that were released. And State Fish and Game Department provided flying time, so I could survey

periodically and then we spent two summers in the mountains there; took one winter trip in and collected a goat for examination; stomach samples, reproductive tracts and so forth. Anyhow, after that I worked for Montana Fish and Game for about six months, and then the draft finally caught up to me; two years in the Army. Back with Fish and Game, worked as a biologist for a year, a big game biologist in the south central part of the state, worked in the Gravelly Mountains in the Bozeman/Red Lodge area; that general area. And then I was on the register for federal Fish and Wildlife jobs and had a job offer in Alaska; took me about five minutes to make up my mind, packed all my gear in a little Studebaker and drove up the Alaska Highway. Gordon Watson was the Fish and Wildlife [Service] person that hired me, it was actually an office or branch of River Basin Studies. As I recall, in Alaska they sort of fell under Bureau of Commercial Fisheries at the time, just a kind of funding organizational set up, but never the less it was Fish and Wildlife people I was working with. We had an office at Lake Hood in Anchorage, and it was the aircraft services had their office there; Theron Smith and Tom Wardleigh were the supervisors and chief pilots. Bob Scott was there, he had the game end of things, Roger Allin did the fisheries stuff, Ron Skoog and Bob Rausch were biologists working for Bob Scott. The first project I was involved in, I flew with Roger Allin down to a lake across Kachemak Bay and we planted rainbow trout; this was about the first day in July in 1957. And the rainbow trout, the people go over to catch trout as result of that transplant. I stayed here in the Homer area then for about three weeks, I guess, working on a weir at the Anchor

River. We were monitoring salmon going up stream, and the steelhead that overwintered and a few of them had come back down to saltwater, and so they don't all die as salmon do when they go the opposite direction. After that, drove into Anchorage and up to Fairbanks where four of us took a riverboat from Fairbanks, headed for the mouth of Yukon. And I was with, as I mentioned, River Basin Studies, and we were on a project to get some idea of what was happening in the way of fish species and distribution in the Yukon River prior to water development projects that might occur there; Rampart Dam was one of them that did materialize but a lot of study went into that. But this was just sort of a prior broad base study, the entire system there. And what we did was stop at Eskimo fish camps and native fish camps as we went down the river and determined what species of fish they were catching, what was on the drying racks; mainly salmon and a few sheefish. Identified them as a species and got some estimates of numbers they were catching, and then in the backwaters, we had a little hand seine that we used, and we'd collected minnows of whatever species and saved them all. And anyhow, we got down near the mouth of the river and we swamped the boat, lost all our specimens, lost all our notes other than the field diary I had in my pocket. And we were floating down the river. I managed to come up on the top of the boat, it was overturned; I was riding the boat upside down. And the other three people in the boat were downstream from me, I could kind of keep track of them; the wind was blowing upriver and I was riding along behind them. We passed an Eskimo fish camp and I was able to catch their attention by hollering,

and they came out and pulled us in and got warmed up and taken care of. They salvaged our boat and a little bit of gear, but that was kind of my introduction to Alaska river boating.

JOHN: How did those villages, when you were checking what they had on the drying racks, were they a little bit defensive of that?

JACK: They were completely open; I don't think some of these hard feelings had started to develop by then. We were just different people that came along and as I recall they were very receptive to what we were doing and answered questions nicely. And in order to get compensated for our personal loses, we had to write a little account and it got published in the federal register and voted on by Congress, to reimburse us for cameras and underwear and whatever else we lost along the way.

JOHN: Very interesting.

JACK: After that I was involved a little bit with River Basin Studies on the Susitna River out of Anchorage, met Dick Hensel, who was working as a temporary for River Basin Studies and he and I have been good friends ever since; we still hunt together. After that, in the fall of that year, Hensel and I were doing some Copper River spawning ground surveys, checking on fish, salmon coming upstream to spawn in various tributaries of Copper River, where they also have water development projects planned. And then the River Basins worked just continued for several more years; I worked on the Bradley Lake Project, which is a dam proposed for Bradley Lake at the upper end of Kachemak Bay here in the Homer area.

And they didn't develop that for another 30 some years, but never the less, that's when the first studies were done back then. I did another one on the Cooper Lake on the Kenai Peninsula here, they eventually put a dam in there.

JOHN: These were all hydroelectric dams?

JACK: Hydroelectric development, yeah. It was the Army Corps of Engineers and the Bureau of Reclamation, they sort of divided the state up and some agencies did some of the dam sites and other agencies did the other. And one of the short comings to me at the time, these two development agencies had the responsibility to go ahead and evaluate these sites for hydropower, and then Fish and Wildlife Service, or River Basin Studies, was pulled along to evaluate the effects on fish and wildlife. And we could almost tell by just looking at a site whether or not it had potential for hydro-development, never the less, we had to go in and do these fairly detailed studies; so you're just sort of doing studies for study sake, you knew what you had probably wouldn't have any real use, except on the big Yukon River, the Rampart Dam Project. We did really do extensive studies there; we did waterfowl surveys, moose surveys, fisheries surveys, and I was involved with all of that. And eventually the project was not developed; primarily because it would have produced much more power then there was a need for. And so our fish and wildlife studies sort of backed up the fact that they didn't need the dam or shouldn't have the dam, but never the less it was something else that killed it in the end. The Yukon Flats have produced more waterfowl than all

the other refuges combined around the country, is my understanding, and we were able to quantify a lot of that. Chuck Evans had joined River Basins at that time, he did a lot of flying, just a fine biologist, and he and I formed a close friendship. I was involved also in Chatanika River out of Fairbanks, a grayling study there; they had a ditch they wanted to draw the water out of for water development. Copper River was another area that they had dams purposed on and I did a lot of salmon work there, Bob Burkholder was one of the pilots, he was a Predator Control Agent, and he helped me with a lot of the flying.

Of course statehood came along in '59, and the State Department of Fish and Game got organized by about '61, and in 1964 I transferred over to Alaska Department of Fish and Game and got into the bear project there working on both brown bears and polar bears. And in '69, we split the project; the polar bear project became a project unto itself, and I took that over and moved to Barrow on the northern tip of Alaska. And my family and myself moved there for three years and I concentrated pretty much entirely on polar bears, although I was also charged with being an area biologist. So I was keeping track of caribou and wolves, and there was still a bounty on the wolves. So a native would bring in a wolf for bounty, and I'd do the paperwork for that and I got well acquainted with Eskimos there; formed some good friendships, went hunting with them. And for the polar bear work, I went to Wainwright, teamed up with the best polar bear hunter there, and he and I traveled up and down the coast. And up until that time, or at that time, polar bears were being hunted primarily by guided hunters using aircraft out on

the ice. And I observed that for two or three years, went out with a few of the guides and saw how it was being done. And in my mind there's a better way of doing it, and that was to provide for hunting from the ground without the use of planes. But bears were hunted by two planes working together, the two guides would find tracks of bear, follow them from the air until they spotted the bear, the plane with the hunter then would land, and the other plane would slowly haze the bear past the hunter, the hunter would shoot the bear, the other plane would land, the two guides would skin the bear out in twenty or thirty minutes, the hunter would just kind of stand there, wouldn't even get his hands bloody. And they'd drag the hide back to the plane, get on the plane; it really got bad, hunters competing for bears. One of them was hiring a prostitute in Kotzebue to sleep with a hunter, they'd get the hide; that type of stuff.

JOHN: Did they do anything, with anything but the hide; I mean that's basically what they were after.

JACK: Yeah, they left the carcass on the ice; they went back to Kotzebue. And some of, you know, for some people it's a hunt of a lifetime, or they thought it was going to be. And they might get in there late in the afternoon, or say they arrived mid-day; flown from Texas or wherever. And the guide would say, "Well, the weather don't look good. Let's get you suited out and we'll go out and see if we can find a bear." And they might be back late that day, and then they ship the hunter home. If their next hunter wasn't there yet, they'd go up to the hospital or some place and talk one of the locals into going out on the ice with them and shooting a bear,

just to make a little money that way. And we tried various things to control it, and as an example, say two guides working together to take a total of six bears each, so it'd be a twelve bear quota between them. So then they'd start doubling up with other guides and so the records would get kind of messed up and it was hard to enforce something like that. And so anyway, I was thinking how nice it would be if we could just have hunting from the ground with native residents, coastal residents, serving as the guides. So one of my primary reasons in going out with a hunter from Wainwright was to see if indeed this would be feasible; if he could act like as a guide and keep people from freezing to death and so forth, and provide a good service, that'd be a nice way to go. And after taking some pretty memorable trips, I thought that would be the way to go. And I was able to convince the Alaska Board of Game that we should do that, this is in 1972, and there was a lot of political pressure against it; the guides were organized and called the governor up and say, "Hey, Lentfer sounds like he fell out of a helicopter and hit his head." Type of thing. Anyway, the State of Alaska changed it, but in December of '72, the Marine Mammal Protection Act was passed, a federal act, took management and control away from the state and placed it with the federal government. So we never got a chance to try hunting from the ground for polar bears. So with the Marine Mammal Act, I then went to work for the Fish and Wildlife Service; I wanted to stay working on bears and that's where the funding was. And working on bears with the state, we got a good program going. In 1965, very little work had been done on polar bears up until then. And Bob Bartlett, who was

the Alaska representative in Congress at the time, organized a polar bear meeting at the University of Alaska at Fairbanks. And we had representatives from four of the five polar nations, polar bear nations there, and we agreed that we needed to start doing work, that polar bears was indeed a high priority that we didn't have much information about. And the International Union for the Foundation of Nature based in Morges, Switzerland at the time, then sort of got a polar bear specialist group organized, which is composed of polar bear biologists from the five polar bear nations. And we had meetings in Switzerland about every two years, which was a neutral country that the Russians would send representatives to, and this worked out very well. We sort of bit of individual pieces of research that we'd each be responsible, report back every couple years and give a report of what we found and absorb what other people had found. We'd all try to mark bears, capture marked bears; each country took a block of numbers so we knew; whatever the number it was, we knew which country it came from, that type of thing.

JOHN: So the five nations would be the U.S., and Canada, and Russia, and what were the other?

JACK: Denmark was representing Greenland, and Norway has the Spitsbergen Island group where bears occur; bears don't come as far as south as Norway proper but those were the five nations. So the Norwegian biologist, Thor Larsen, invited me over to work with him one summer in Spitsbergen. I was the first one to successfully mark immobilized polar bears from the air in any significant number. And so we were working with

drugs, both here of course and in Spitsbergen.

JOHN: Back in those early days, what drugs were you using?

JACK: We were using Sernylan. We actually had a group from, was a back east university, Vagn Flyger, came up here the season before that to try to mark polar bears and he hit two or three bears from Super Cub. One of the bears ran into the airplane, wrecked the Super Cub, killed the bear, and the techniques just didn't work obviously.

JOHN: He was a squirrel specialist right?

JACK: Yeah, he was a little mammologist. So anyway, the next year, the first question people asked was, "Well how many are you going to kill?" And I'd have to answer, "Well, I don't think I'll kill any." And we used a helicopter, had fixed winged plane as a backup, safety backup, carried fuel for the helicopters. And I had a very, very good guy to work with, Lee Miller, still lives down the road here, an Indian. He and I went to, first we went to Tin City and worked in the Bering Strait, and the weather was so bad there we didn't catch a single bear and we hardly got out. And then I had to convince him, "Well, let's go to Barrow." And we went up there and we tagged 31 bears that first year and that broke the ice, so to speak, we were going to town.

JOHN: That drug, is that one that you use an antidote?

JACK: No.

JOHN: Or is that one that you just have to wait?

JACK: You just wait until it wears off, yeah. And we were very careful at first to either stay with the bear until it woke up or get a real good location on him and come back and check him the next day. And to get out of Barrow, we had a fixed wing, usually a [Cessna]180, would fly up to about 6,000 feet and we had the radio locators on the coast, and they could give a range and bearing and we could go out the next day and we'd find where he's no longer there. And after several years, we got the first GPS system in one of the Service planes here, costs us \$30,000 at the time.

JOHN: Wow.

JACK: If you can imagine that. But then we just put a fix on it, fly right on out the next day and check things out. So it was a great project working, living right in the middle of your study area, there's only two phones in Barrow at the time, so I could be hard to find if I was busy doing other things; I think only one flight a week. Anyway, the end result we found that there were a number, twelve or more populations or sub populations, major populations. And one of the things we were interested in was should each country be responsible for the bears that lived offshore or on its coast, or did we need an overall plan for the entire Arctic Basin because these bears were just roaming around the whole Arctic Basin; it turned out there were several sub populations in each country was therefore pretty much responsible for the bears that ranged offshore from its coast, or responsible with the country adjacent to that. Alaska shares a population with Canada and shares another population with Russia,

and we do have cooperative agreements with both those nations now.

I stayed on polar bears until 1977, and then went back to the state of Alaska and I'd been flying a couple hundred hours in helicopters every spring and we had some near misses, and one time it wasn't a near miss, we hit the ice with the helicopter, totaled the helicopter and got into some whiteouts and so forth. I just thought it was time to move on and went back with the State Fish and Game Department as a Regional Supervisor for the Game Division in southeast Alaska. And the biggest issue there was logging on the Tongass Forest, and we got a deer project started where we found that the old growth forest supported far healthier populations of deer than forests that had been logged. Mainly because the trees intercept the snow and keeps the vegetation open for the deer to feed on, plus a mature forest has understory that provides good food for the deer. You get a logged area and after 30 years or so, the trees all grow up together, the ground is shaded, so there's nothing left for the deer to feed on, and bears also do better in an area that's been unlogged. So stayed there for seven or eight years, and then took, kind of a sabbatical and spent a year at the University of Tromsø in northern Norway for a chance to do some writing, get some papers published and that sort of thing. And then back to Alaska, took an early retirement, worked as a consulting biologist, but also, off and on during this time, I served as a scientific advisor to the Marine Mammal Commission. And after I left State Fish and Game and Fish and Wildlife Service, I got on the Marine Mammal Commission as a Commissioner. So any issue relating to marine mammals kind of came through

my desk in Alaska; I was the only Alaska representative.

JOHN: So talk a little bit about the makeup of that Commission and where its authority or whatever comes from.

JACK: Okay, the Marine Mammal Commission was part of the Marine Mammal Protection Act passed in 1972. They have three commissioners, and they are people who have a broad background in marine biology; they don't necessarily have to be marine biologists. And then they have a nine member scientific advisory committee and these are the people who are hard core marine biologists. And I was on because of polar were included as marine mammals, sort of arbitrarily, and that was a backlash against the hunting from the air here in Alaska and conservation thought well we'll just arbitrarily call a polar bear a marine mammal, we'll include it as an animal that has to be protected by the federal government instead of by the state, which allows this hunting. So the other issues here in Alaska, well sort of backup, Alaska has, I think, more coastline than the rest of the country; the rest of the 48 states combined. So there are a lot of marine mammal issues including fisheries conflicts, native use conflicts; Marine Mammal Protection Act provided for take by natives and stopped all take by non-natives. And it also said that the take by natives could not be regulated unless the species were declared depleted and it cannot be declared depleted unless it goes through sort of a judicial hearing type thing, a very involved procedure. And so eventually, well under state regulation, natives were regulated as far as the

taking of cubs and females with cubs, and this did not occur under the Marine Mammal Act. The act, although it was to conserve marine mammals, in some cases it didn't do so directly, so these were things that came up with regard to the act. And I mentioned the fisheries conflicts and development projects, Arctic Refuge development of oil and gas. The Arctic Refuge is one of the areas utilized for land base denning by polar bears more than any other area in the state. And bears are sensitive to disturbance when they're in the dens and if a bear breaks out of the den in midwinter when their cub is too small to stand the cold, that cub is going to be lost, so it's a pretty serious development. That includes seismic exploration, go back and forth, disturb denning habitat with their activities plus all the actual drilling sites and the support, airplanes coming and going, and the pipelines that go to and from drilling sites and so forth; that was another major issue the Marine Mammal Commission has been involved with.

JOHN: So you were one of the three commissioners?

JACK: I was one of the three commissioners.

JOHN: Where were the other two?

JACK: One was from Florida and the other one was from California during the time I was on.

JOHN: Okay.

JACK: And the person who replaced me is at the University of Alaska. So that's kind of a thumbnail sketch I guess.

JOHN: Okay.

JACK: Well I'll get a little more specific here, and I think one of the highlights of my polar bear work was just living in Barrow; moved up my wife, myself, and we had three young children there, lived there for three years, kids started school there and they were the minority. And I think; gives them a little different perspective on things. My wife worked in the hospital as a nurse, we had an Iñupiat, babysitter, she taught the kids to speak a little Iñupiat; Inuit babysitter it should be. And they actually knew more Eskimo than I did. We were sitting around Sunday morning breakfast one day and I said, "Well let's say a word in Eskimo." Back and forth with my oldest daughter, and "and see who can last the longest." And we went along for a while and she finally said, "Dad, can't we start talking in sentences?" [chuckling] But anyway, regarding the work, one of the off standing things was traveling with a polar bear hunter, a native from Wainwright, Benny [unintelligible]. And we'd take a little tent and snow machines and go out in mid-winter and it was dark all the time there, and you're best traveling was at night when the moon was out, you had a clear night. But there were also little huts that we could sleep in at night and he knew where they were and could find them in the dark. And we had a little light, we'd go in the hut, very tightly built and light a lantern in a Coleman stove and that would heat it up and we'd eat raw, frozen fish, or raw, frozen caribou dipped in seal oils, just slice it thin, kneel there in the middle of the hut and slice this meat off. No dishes to clean, no dishes to wash up. And I asked Benny, "Well where did the lumber come from?" It was real, tight,

clear lumber. He said, "Well those were whaling ships that froze in the ice, they salvaged the lumber and built these huts." And they were a day's dog team trip along the coast when they used to carry mail with dogs. And the native people there knew where they were and utilized them. And the climate is so dry in the Arctic that they last forever, they just don't rot. I'd panic, but Benny would say, "Well let's put up the tent and make some tea and maybe sleep a little while and think about it." So we'd do all that and things would look better when we woke up and we'd take the snow machine motor apart and fix it in the cold or do whatever we had to do, and it was really an experience traveling with him. Another thing we had to do was mix oil with the gas for the snow machines, might be 30 below and Benny would siphon that gas from one container to another to do this mixing. And he'd use a hose and suck the gas up until it just about hit his lip and get it over into another five gallon can to mix oil with, and at that temperature, you're stirring forever to get the oil to mix with the gas and of course bring the stuff into the tent and warm it up; these are all part of the traveling.

And then I mentioned earlier the international aspect, we did go to Switzerland every a couple of years. And Savva Uspenski was the head Russian polar bear biologist and he invited me over to Wrangel Island to work with him one spring, so we communicated back and forth and decided what kind of project we wanted to set up and work together on. And then I was working through Ron Skoog, who was with the Fish and Wildlife Service back in Washington, who was working with the state department to get this all set up. And at that time, to go into

Russia you needed to have a Russian person accompany you from, say Moscow or wherever I might fly into commercially, into their remote camp. And so rather than going around the world to do this, we set it up where I could take a U.S. plane and land out on the ice and have a Russian plane come out and meet me on the ice, in the international waters. And we thought it was all going along well, and then the state department got a message that came to Ron Skoog, which came to me, and said the expedition had been canceled, they weren't going to work on Wrangel Island that spring, so that was kind of end of it. So I saw, I guess it was Belikov, who was Uspenski's assistant, at a meeting six months after that or whenever. He said, "How come you didn't show up on Wrangel Island? We were waiting for you, all set to go." And the Russian government just arbitrarily just shut that program down without even informing their own biologists of what was going on. The Cold War was still in place and that's just the way things were working then. And I always regretted not getting over there and working with those guys, of course now the Fish and Wildlife Service people work routinely with the Russians.

JOHN: Yeah, and some of the state folks go with the Fish and Wildlife Service occasionally. I know from Alaska, from the state of Washington, some folks have gone over there.

JACK: And another international aspect, I was working on an international polar bear treaty, which was drafted in 1973 and the IUCN [International Union for Conservation of Nature] through the polar bear group had put together earlier

drafts and it ended up then the IUCN sort of ran the meeting or the chairman was from the IUCN, which was held in Oslo. [Norway was one] of the polar bear nations and it was held in their capital. And I attended that as one of the U.S. Delegates and it was interesting when we kind of started out. The State Department had sent people there, and of course the Fish and Wildlife Service did and they were both vying for chair of the delegation. And finally it was the Fish and Wildlife [Service] representative and he prevailed or the Department of Interior I guess it was, shared the meeting; the state department people were kind of sitting off to the side, which is the way it should have been because it was a biological issues that we're dealing with. And anyway, we did come up with a treaty that all five nations eventually ratified, took effect in 1976 I guess it was when we ratified that treaty and it's still in effect. Since then, well the Marine Mammal Act was passed before that and one of the things that has occurred since then is trying to reconcile to the two documents, the treaty with the Marine Mammal Protection Act. They call for some different things and one doesn't really satisfy the other, and they're still sort of working that all out.

JOHN: And was this treaty a treaty that was ratified by the Senate?

JACK: Yes, yes it was.

JOHN: So theoretically it should, the Marine Mammal Act should be amended to adjust to the treaty.

JACK: That's right. Getting back, well one question people ask when you work with bears, "Well did you ever get

chased?” Or whatever. And yeah, I got chased once. I was working with this man, Lee Miller, that I mentioned, and we’d been following a bear in rough ice in a helicopter on a very, very cold day. And because the ice was rough, I couldn’t get a good fix on his rump to shoot him with the dart gun out of the helicopter for quite a while; my gun was just sort of in and out of the helicopter. And I finally hit him, finally got a shot and hit him, and it took a while for him to go down but he finally just lay down but he was still active. And so I shot him a second time with just a very light dose of sertraline and five minutes later he was down, and she had yearling cub with her. And I just jumped out of the helicopter to go up and immobilize the cub from the ground, it’s a smaller target and the cub just huddles up next to the female and you just walk up and shoot them from 50 feet away. Well as it turned out, the female was just tired from being chase so long; the first drug was frozen, the first dart, the drug was frozen and the second dart had so little drug it didn’t affect it. So I got within 60 or 70 feet and that bear was just up and chasing me, and Lee was still back at the helicopter getting gear ready and so forth; we just got sloppy. Normally he would accompany me up to the bear, I with a dart gun and he with a rifle. So I started running, not back to the helicopter, but across, in front of the helicopter so Lee would have an open field and hollered at him and he immediately saw what was happening. He got the rifle out and shot once in front of the bear and that didn’t stop it, and so he did hit the bear and broke it down and it was about three feet behind me when it stopped, and it was very sad to have to kill a bear but it was the only time it ever happened. And we

immobilized the cub, it was too young to just turn lose on its own, took that back to Barrow, which had a research lab there, a Naval Arctic Research Lab and they had physiologists working out of there and we kept the bear as a captive animal for quite a number of years and the physiologists did various types of work; they were interested in change hibernation and sort of justified that by saying, “Well may be sending people to outer space one day and what we learn about hibernation and may have some relevance” and this type of thing, there were some benefits that we gained from it. And we had other close calls, we got caught in whiteouts a couple times when we were flying. A fixed winged aircraft is inherently stable but a helicopter isn’t. And if you’re in a helicopter, you’re in bad shape.

JOHN: This is one time, you did hit the ice?

JACK: Yeah, right, we were chasing a bear at low level and the governor on the helicopter malfunctioned so it kept the engine from revving up and the guy, if he’d been higher, he could have apparently auto rotated down, but he couldn’t do that and he just went down and hit a big chunk of ice, probably as big as a small garage and skidded off of that and hit the main ice and it just completely wrecked the helicopter, and we came out of it with just minor injuries. As it turned out, our cover, we had a 180 flying cover, and the ice was so rough there we didn’t think he could land any place close and got the gear out of the helicopter prepared to spend the night, but he was able to land a few miles away and walked into us, and so we got off the ice that day. That was the end of the helicopter, they hauled the

engine out to figure out what went wrong, but they left the rest of the plane there; that was kind of it.

Well I'm fully retired now, but I'm still involved with polar bears to some degree and most recently it's been with global warming issues. And of course the Arctic, and I guess Antarctica too, the polar regions are the first to really feel the effects of global warming and on the Arctic coast, the bluffs and the shorelines around villages are being eroded just because there's more open water, the wind can build higher waves because of the open water expanses and causes more erosion. At the same time, many polar bears come ashore to den after ice forms in the fall when they can get ashore. Now the ice is not forming as early or there's more open water and bears are having to swim significant distances, and there's some evidence that they're drowning just because they're bucking rough water as they're coming ashore. So this is a very direct effect on bears, more than that, bears come ashore in the fall to scavenge for carcasses on marine mammals that are washed up on beaches there a little bit, so this is a source of food, so global warming is affecting their ability to do this. And then global warming is already affecting bears in Hudson Bay, which is further south, and there's a shorter time during the year that they can be out on the ice hunting seals. So they're just not eating, they have extended periods when they're not eating. Bears have a delayed implantation, and if a female that has a viable egg floating around in the uterus, is not in condition to carry that fetus to term, apparently it won't implant and so this is having an effect on reproduction. And they can actually correlate longer warm periods without ice with a decreased reproductive rate in Hudson

Bay, and that could probably, and probably will happen further north as global warming affects more of the polar ice cap. And some people model this, climatologists feel that by the end of this century, we may not have ice in the north polar region; we may not have ice during the summer in the north polar region. And of course this would have a significant effect on polar bears to a point where some people are talking extinction. A polar bear specialist group is still meeting, these are representatives from the five polar bear nations, and this is one of the major issues that they considered at their last meeting and they were in agreement on this point. Well here in the United States there's an organization, the Center for Biological Diversity, and I think the National Resource Defense Council has partnered with them to petition the Fish and Wildlife Service to declare polar bears threatened because of global warming. And they've sent me a petition to review and I reviewed it and made some suggestions and I'm fully in agreement. I think this is something that should go forward, that global warming does pose a significant threat to polar bears, so that's sort of the status of that. This Service is reviewing; they've had a public comment period, they've taken their public comments and in the process of reviewing those to see how they will respond finally to this petition.

JOHN: In your field experience, and in your career, have you seen; are there some examples of things that you've seen that you think are directly related to climate change in places you've been that you've actually seen lots of receding of ice?

JACK: I've hunted mountain goats right in these mountains where you see it cross Kachemak Bay here. And I was in there last fall, Dick Hensel and I in fact, not last fall, a year ago. And we go up along a glacier there, up above a glacier. And the glacier extended way down the valley out of sight when we first starting going in there 20 years ago. Now the glacier has receded a matter of, probably eight miles. And it's just amazing, I got up taking pictures; I hadn't been back in there for several years and I got pictures of that, compared them with old pictures I had.

JOHN: Well, I know you told me that you have some experience, since you've been retired, with Earth Watch and it's been a really good experience. Tell us a little bit about that, about Earth Watch and some of the projects that you've worked on.

JACK: Okay. Well Earth Watch, its headquarters is in Boston and they have another office in England, I believe. Anyway, they put volunteers together with scientists and they support scientific projects pretty much all over the world. They have a scientific review committee that sets some pretty high standards. And to volunteer, to be accepted as a volunteer, you don't have to have any scientific credentials; you just go in and do kind of grunt work, whatever needs to be done to help out on a project. And my wife and I have been on most of the projects together; the first one we went on was a termite project in South Africa. And the basis for that was somebody, a climatologist years ago, had just sort of said that termites were producing so much methane gas, that this was a significant contributor to global warming. And some guy said,

“Hey, we need some data.” So he put together a project and it was a well thought out project. And so we were over there in an earlier stage developing techniques on these termite mounds to measure the gases coming out of the mound. So it was an interesting project and got it started. And another one we worked on was a zebra project, Grévy's zebra, and most of them occur in Tanzania; it's an endangered species being outcompeted by the plains zebra there. One of the issues was the use of waterholes by the plains zebra and the cattle, we were making behavior type observations through long transects, preset transects, that they are working every year and comparing that with use by cattle and the other species of zebra and so forth. The nice part about this project was right between this last thing in Iraq, war of Iraq started and people were hesitant about jumping on airplane then, and it turned out my wife and I were the only two who showed up at the project, and so we had the local guide, and just the three of us out working together. And we had his full attention, and he had our full attention; he was anxious for us to see other things so we saw a lion take down a zebra, saw three cheetahs take down an ostrich and feed on it, and these types of things in addition of working with the zebras. Another one we were on was a crocodile project, the Okavango River in Botswana. The crocodiles there are so unpopular with the local people that they kill as many as they can and what had happened in that river, the crocs feed on fish that preyed on the most desirable fish species, so the undesirable fish are increasing now, and the desirable fish are going away. So we were working out the inner relationships there, and we were capturing crocs and marking them

and recapturing, this type of thing. Another one that I went on by myself was a study of black rhinos; black rhinos are a species way down in numbers. And we were doing, mainly a vegetation study because they were in an enclosure and they were starting to hurt their range. They wanted to expand the enclosure but they wanted data before they opened the exposure, or moved the animals into a new area on what the plant situation was there. There was also some competition for some of the same plants by giraffes and elephants, so that was the black rhino project. That was a good project because we were also making observations on the animals themselves and out with these local, kind of rangers that were very, very good at tracking these guys and keeping track of them. And black rhinos one that if it sees you or gets your wind, it may come after you so you want to make sure you're up wind from them and know what you're doing, and that was a lot of fun. And this last one I was on, and into Mongolia on the Gobi Desert in China. And that was a study of ground water in the desert, and the ground water in the Gobi Desert comes from Himalaya Mountains to the south, glaciers are receding there, there's less flow in the streams and they want to get somebody to know what the ground water level is before that proceeds too far. And their also trying to figure out what is augmenting the Himalaya Mountains ground water, there's some rain fall and a little bit of snowfall in the Gobi Desert in the winter. And there's some fissures that water's coming up from the ground, so we were traveling by camel back from series of lakes that were out in this one section of desert, and taking water samples where we could come on water wells, or lakes, or these fissures. And all of this went back

to a lab to compare one sample with another and see what was pure, you know what pure ground water is. When there's a lake or another source of water nearby, what's the ground water/lake water relationship, and does ground water in this location, is it the same composition as in another location? Anyhow, this is one I just got back from.

JOHN: The scientists that you work with, they are from a variety of institutions and organizations?

JACK: They are. The termite scientist was from the University of New York. The crocodile scientist was from University of South Africa. On this last one, the ground water, there's a Chinese professor and a German geologist/hydrologist retired from a university in Germany, and all top people in their field. The zebra project, there's a person from a university, I think he was in New York also, but his specialty was equine species, horse family species around the world.

JOHN: Do you know something about the process; I mean if one of these scientists needs help, they have kind of an application process?

JACK: I assume they would go right to Global Volunteers and make their proposal and then the Global Volunteers would review it. They have a good website, and as I say, they have it organized by time of year and by country.

JOHN: And as a volunteer, what's the cost to you to participate?

JACK: You contribute to the project and they start out about \$2500 per

person, and up into the, the cost is creeping open to low \$3,000 bracket now, plus you provide your own transportation to the worksite. And once you're there, the transportation and food and lodging is provided for.

JOHN: Very interesting.

JACK: And those expenses are all tax deductible; it's money to a charitable cause.

JOHN: So the money is basically a donation and that's a tax deductible donation.

JACK: Right. And if you want, you can tack and travel on your own when you're there, and we've done that; traveled all the game reserves in Tanzania and Kenya.

Another thing I'd like to mention, and of course I picked this up in the work of polar bears, but we started sampling polar bear tissues for pesticides and organic, chlorinated hydrocarbons. And found even back in the 1960's that every, if not every, almost every tissue sample that we had analyzed had DDT and PCB's and similar contaminants. And so we surmised it was mainly carried to the Arctic on wind currents. Of course there's some exchange of water, Bering Strait water flows north. And it's not getting better, in fact it's getting worse and some areas are really bad now and in Spitsbergen they're finding, I'm trying to remember which contaminant it is. Anyway, some of the bears there, the reproductive tracts in animals are being affected to the point where they have almost hermaphroditic composition and of course reproduction

is just out of the question and it's related to these containments on water. Of course it affects the food chain; the polar bear is at the top of the food chain so everything is sort of magnified as it comes up through the food web.

JOHN: So do you still think that most of this is airborne somehow, or do we really know?

JACK: You know I haven't kept up with it that closely—

[break in interview]

JACK: --but I think it's some of both.

JOHN: I would venture to say that most people have no idea, probably didn't know it exists.

JACK: And the Russians are so sloppy about the way they manage things. I mean radioactive waste is being dumped off the north coast of the Bering Sea, off the north coast of Russia and so forth. And I've traveled a little bit around Russia and you see just a lighthouse and you walk up to it and all these radioactive warning signs and all these batteries just dumped out on the ground, and a beautiful little bay with oil drums just stacked up in there. And our own north coast wasn't all that pretty 30, 40 years ago. The DEW Line Sites had all their barrels piled out there.

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Keywords: employee, biography, biologist, history, military, air craft, boats, marine mammals, Center for Biological Diversity, International Union for Conservation of Nature, banding, surveys, waterfowl, National Resource Defense Council, fishes, River Basin Studies, Earth Watch