ORAL HISTORY

of

Ray Bentley

Pilot / Biologist - Pacific Flyway
Corvallis, Oregon

And

Philip Thorpe

Pilot / Biologist - Central Flyway
Denver, Colorado

Interviewed by
Mark Madison
On September 27, 2005

Oral History Project
U.S. Fish and Wildlife Service
National Conservation Training Center
Shepherdstown, West Virginia

Oral History – Ray Bentley & Philip Thorpe
FWS Positions: Pilot/Biologists – Pacific Flyway
Interviewed by: Mark Madison
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RB: Ray Bentley. [spells name]

PT: Philip Thorpe [spells name]

MM: Ray, why don't we start with you. When did you come to work with Fish and Wildlife?

RB: I started with the Fish and Wildlife Service in early 1999.

MM: What had you done prior?

RB: I worked for four years prior with USGS Biological Resource Division. My position there was a biologist and then I did some incidental flying for them also.

MM: And Philip, what about you?

PT: With this job in 1997, in April of 1997. I had just completed my Master's Degree at Montana State in Bozeman and several other wildlife jobs prior to that with the Fish and Wildlife Service, Forest Service, and State Agencies.

MM: So you _____[indiscernible].

PT: [Laughs] That's right.

MM: All right, and Ray, let's start with you. What exactly is your job?

RB: Well, I work as a pilot biologist based on Pacific Flyway. Probably a crucial or important thing that I do is the annual waterfowl population surveys conducted in May, July, and again in the first week of January. I also fly for the Fish and Wildlife Service in the capacity as pilot biologist in various other mission profiles. I just completed a four day survey of brown pelicans on the Oregon/Washington coast. I also do an annual marine mammal survey/census. I also do some work with raptors in the spring, shorebirds in the spring and late fall. Anything. The aircraft is basically on call after the waterfowl work is done for any, in support of any natural resource or research program. Then, we are also involved in a pre-season waterfowl banding program. My particular station is in south-central Alberta. That is conducted throughout the month of August.

PT: Pretty much similar duties. I am based out of Denver/Lakewood, CO. I am a central flyway biologist or pilot biologist, and starting in the summer I fly in May and July in southern Saskatchewan, band in Saskatchewan in August. In September, I typically fly a Rocky Mountain population of Sandhill Cranes that are in the Montana, Idaho, Wyoming area, Utah, and that part of the west. I do light goose productivity surveys, which is part of the western central flyway light goose population and we speciate and age birds, one

of the more important things of the survey is getting the Ross' Geese out of the snow geese, so we get a handle on the species composition of Ross' geese in the central flyway. We do mid winter surveys in Texas. Every three years, I go down to Mexico for the interior highlands and lower west coast survey of waterfowl survey. We survey pretty much whatever we see though. The main objective is duck, but if we see egrets, herons, storks, and other concentrations of shore birds and things like that we take note of that too. That is every three years. I have gone all of the way down to the Guatemalan border and I take part in the Central Flyway Windy Harvest Survey that is done every year. That is the main thing and little things in between.

MM: What type of airplane?

PT: I fly a Cessna 206 on wheels.

RB: Cessna 102-182, both on wheels.

MM: Have you modified the aircraft in any particular way? (inaudible)

RB: The actual aircraft itself is not particularly modified. There is some lift enhancing devices that are installed. They are actually factory add-on's to the aircraft. The principal modifications come in the data acquisition systems that I have on board. Currently, they are simply a laptop computers which we can record data and view our records and information onto the laptops in flight and then at night, or in our hotel rooms, or in our office setting, we essentially analyze and synthesize that data into tables, graphs and report-ready products.

MM: Do you usually fly alone or do you take someone with you?

RB: It depends on the mission profile. Most bird surveys or waterfowl surveys consist of a right seat observer, pilot observer, and left front seat. Frequently, in my case, I frequently have for my winter surveys a trainee or someone in the back seat in some capacity of observing, although it is difficult to observe much from the back seat. Telemetry surveys, I typically fly alone. There really is not always a need to have someone there, although because they are quite long and tedious, it is nice to have company on occasion. I would say in my case it is usually a crew of two.

PT: Similar. Yeah. Mostly a crew of two. Occasionally, I have had people sitting in the backseat doing telemetry or as a third observer.

MM: Is it hard to observe and pilot sometimes?

PT: I do not find it to be that difficult. I guess it takes getting used to, but it's a perfect example of a need for multitasking. I always look at it as the primary objective first and foremost is safety and operation of the aircraft, and the crew, and the safety of the crew and that sort of thing. There is sort of a prioritization of duties. The flying part of the position really calls for elemental multitasking because we are dealing with the physical flying of the aircraft, the navigation, dealing with air traffic control in certain situations, navigating in and around controlled air space in certain places. Then comes the

navigating on the survey transects or if you are not on transects, then navigating the aircraft or maneuvering the aircraft into a habitat region in appropriate configurations to put on a cruise survey to put most of your targets onto the observer side of the aircraft. Then next in priority, I would say, would be probably the identification and classification of the social groupings of the resource that you are looking at, whether it is waterfowl or whether you are looking at mammals or raptors or whatever. We identify to species age and sex cohorts and then also go down to, in most cases, some sort of a social grouping, all of that being done simultaneously by the left seat pilot. Not to say that it is difficult, I don't think of it as difficult, but certain tasks do drop off as the work load comes up, so sometimes I will drop off on the identification briefly to devote more time to, again going back to the primary objective, which is aircraft operation, safety of the crew. My mentor had said, "They are just duck." So if you have a power line or something coming up, you forget the duck and worry about the power line. That has become another thing that you have to deal with. Not only do you have to fly the plane and navigate and worry about your duck identification, but we have all become computer support people in the plane, so we are constantly checking to make sure the computers are both running, that the observer is recording properly and that his is working, because in most of the planes, he can't see it. You get some older people that are not real computer literate and so you are having to teach them how to use computers, recording, making sure it is recording and getting the famous "blue window of death" occasionally when the computers lock up or something like that happens, so the computers have been a nice addition to the planes, but they have also become a big headache. They area mixed blessing. Also, as Ray had said, you have to worry about your observer, too. If you have one that you have flown with for a while, it makes life a lot easier because he knows the routine, or she knows the routine, and you don't have to worry about if they are getting sick, or if they are not doing something. If you get a new observer, you have to worry about if they are identifying species correctly, if they are not feeling well, all kinds of things that you have to constantly be monitoring there, but really, once you have done it for a few years, it all blends together and becomes routine.

RB: There is a learning curve when you bring new people on, especially new observers. They can quickly become overwhelmed, especially in survey situations where there are large numbers and multispecies and during training flights, it will take several passes, lots of circling, lots of pointing things out. Then there is an error bar associated with that early data with the trainee that hopefully will tighten up as they gain more experience. It isn't something that you can just come in off the street and pick up. There is quite a bit of experience, and you just have to get in the air and learn to quickly and accurately as possible enumerate and classify species.

MM: Are your observers usually primarily NSA or Fish and Wildlife Service?

RB: Mine are mostly Fish and Wildlife or USGS. I would say that most of them have some experience in waterfowl identification and biology, at least from the ground level when they start. Usually that is the case and that certainly helps. Any experience, any background experience, even if it is from a harvesting standpoint, duck hunters typically you can bring along quite quickly as an observer as that is what they have been doing recreationally.

PT: Yeah, I fly with Federal and State.

MM: In talking about observation, the only major complaint is that you guys have to observe from the top down (laughter) to do the opposite all the rest of the time. (Indiscernible). What is the challenge with that type of observation.

PT: It is certainly different. I know when I got the job, I had been working with ducks for a number of years professionally and doing ground based surveys and when I got in the plane and looking down on them, there were some species that I just did not recognize and couldn't believe that I could not recognize these species, so there are different characteristics that you learn that you don't see on the ground that you only see in the air. It certainly took me a while to learn those new characteristics.

RB: Yeah, it's different, for sure. There are field marks that you observe from the air that you wouldn't consider field marks, and you won't see those in any field guide or any bird book, or anything like that because most people, like you say, are not looking at a 60^{o} or so angle down. Also, another challenge, if you call it that, and it is an issue, is that we are counting these targets at a relatively low altitude, so you have the resource itself can become a hazard in certain situations in case of waterfowl when they are coming off of the wetlands in large numbers and you are actually flying through these flocks trying to count and miss birds at the same time.

MM: Are you counting individuals or are you counting groups and then extrapolating from there?

PT: Yes, as best I can depending on how many there are. In the May survey when the birds are spaced out and smaller numbers on the breeding ground, you really do just say one pair and might have groups of 40 or 50 in some cases, but most of the time, you are actually counting birds and speciating. On winter surveys, you have larger flocks and everyone probably does it a little differently, but I try to still count up to about a hundred. You know, I count up to 10 and count up to 100, and then you take that and say, well if that is 100, then there is 100, 200, 300, up to a thousand and then after a thousand, there is 1000, 2000, like that. I try not to get much bigger than 1000. The smaller, I think, your estimating unit, the more accurate you are, but we have been shown in some of Texas estimates to be within a couple hundred birds of some pretty big flocks.

RB: We have some rather crude software programs that we can use for training purposes to teach observers what a hundred birds looks like, what 500 targets look like, but I use that every year prior to the mid winter surveys where there are large numbers just as a refresher, just so I can go back up and go, "Okay, this is what 200 targets looks like." Another technique that I use on my mid winters is if I come to a refuge system or a large concentration of waterfowl, we will keep the aircraft high so that the research stays down on the water, and doesn't flush them up, and we will get an assessment of what the total number is and we kind of almost do this by consensus. We will come up with a number and we will say, "Well, I come up with 22,000 birds." So then we have this 22,000 number in our head and then we will go down and do a couple of low level passes and try and pick out percentages, because what the problem is, if you did a single low level pass, you would have 22,000 targets of mixed species going this way and that way. So then we

will transcribe onto our recording system, ducks 22,000, 50% mallard, 30% widgeon, 10% green wing and hopefully that all adds up to 100 when we are done.

PT: And that's exactly how we do it in Mexico, too, when we get lots of big flocks, we will do the same thing. We will fly over and both get a number and fine tune it and we will say there are 20,000 birds and then go down and do several passes through them, and then say, "Well I got a whole bunch of widgeon and that and that and that," and then break it down into percentages. I think that is actually more accurate then, like Ray was saying, buzzing through because you don't get an accurate count.

RB: You just get overwhelmed. Even if you are experienced, you are just overwhelmed by a huge concentration. Some of the records systems out on the West Coast will easily have 50,000 birds in December.

PT: We also, when there are mixed species of geese, I will have my observer count light geese or dark geese and I will count the other ones, "You get the light geese and I'll get the dark geese." It kind of breaks the workload up that way too.

MM: When you guys are in Mexico, (inaudible), or flying in Canada, have you noticed any differences with other governments _____? We are some of the few service officials that really work in an international setting (Becomes indiscernible). I'm just curious if you've noticed any difference.

RB: You do more in Mexico, so …

PT: Mexico has some problems just because when a president is reelected or elected, the whole government changes, so it would be like all of us being in the job for four years and then gone and a new government comes in, so there is not as much institutional knowledge in the Federal government. Now Ducks Unlimited and some other non-profit and NGO types have good institutional knowledge and we deal with some of the universities and Ducks Unlimited down in Mexico as people have been around for a while. We tend to deal with them more than the Federal government. We deal with the Federal government more because we are supposed to. We try to keep them in the loop, but we would sponsor a change on their part. Canada is just like the U.S. in terms of management, I think.

RB: Yeah, from what I have seen. I worked with DU on the banding program and in my particular place where I do my pre-season waterfowl banding is on Ducks Unlimited managed wetlands, so I work closely with those folks. It's just a name change really.

PT: I deal with the Canadian Wildlife Service now with banding and that is a fully cooperative effort. I have been dealing with Dan Neiman, who I think now is the ranking member of our whole survey group in terms of having the most years in, who has over 30 years of dealing with waterfowl survey in banding and things like that, so it's nice working with somebody with that background.

MM: Earlier Ray had mentioned doing some mammal surveys. How is that different?

RB: It is really not different and I get the question, you know, "Which do you like?" and to be perfectly honest, they are all targets in different habitats and so, bigger or smaller, but they are still just targets. What changes are the flying conditions as far as the habitats you are flying in and the weather conditions. Actually the marine mammals that I do are just tag-on in conjunction with our annual brown pelican surveys and since we are surveying in-shore reef systems for pelicans, the elephant seals and sea lions and things are on those same rock outcroppings and so it really isn't any different at all. It is one of my favorite surveys though, but that is simply because the weather is usually good. It kind of represents the end of one season prior to going into the winter waterfowl season, and so it's good weather, real beautiful scenery on the Oregon/Washington coastline and they are very visible.

MM: What is the hardest survey?

RB: I think the May survey is tough, not because of the difficulty in counting, but a lot is riding on this and there is a lot of weight put on the data that we submit and so the necessity for accuracy, is to me higher. I really try to do the best on all of them, but on that one, I really try and tighten the error bars and follow our standard operating procedures. Also in May in the prairies, the weather can be an issue and it isn't the counting of the birds, but it is all the extraneous things that you have. The schedule you are trying to keep, the weather and you have lots of things you are trying to coordinate. And it is long too.

PT: Yeah, it can be three or four weeks dealing with that, every day.

RB: So I think that the May survey is more intense, probably the one we put a lot of effort and money and time into, perfecting and tweaking.

MM: When you guys came into the pilot biologists, who mentored you?

PT: Doug Benning was my mentor out of Denver.

RB: It was administratively mentored by Elizabeth Huggins for about six months and then I actually flew with a former pilot bio from the service named Skip Lacey for a little while. In this, there is a mentoring process of approximately a year and a half or two years or something. It is nonspecified how long, it is kind of like how you progress in our unit and you usually are farmed out to several people because they would like you to experience how different people do things. So in actuality, I spent one season with Phil in Saskatchewan…

PT: Mentoring each other.

RB: You sort of mentored more. It was my airplane, but his survey and that kind of thing. Phil also mentored me on my first banding program, so I learned a lot of valuable stuff there that I use in my banding programs now. We were just comparing notes earlier that a lot of things that I took from the first year with Phil, I now, when I am mentoring prospective band station leaders, I say this is the best way to do it.

MM: Was there some good advice you guys got from mentors?

RB: One thing I picked up from Mr. Lacey was regarding low level flying operations. We were in the aircraft one day, and he said, "Ray, you know there really isn't anything different between low level flying and 'high level or regular' flying, just don't run into anything." That was basically it in a nutshell. The airplane flies the exact same whether you are low or high. It is just there are more things to run into, so don't run into those and you are good to go.

PT: Yeah, I think that is probably the most valuable lesson that I got was how to survive at low level. I knew how to fly, it was a matter of how you are below a lot of things at that elevation, power lines and towers and all kinds of stuff that normally you don't have to watch out for or think about, so that was the most valuable thing from Doug was how to survive at 150 feet.

MM: Have you had any dangerous incidents?

PT: You are gonna need to turn that camera off (laughter).

MM: Anything you would like to share with the camera?

PT: So far, in terms of hazards and things, no. I have been fortunate enough to either see them or have other people see them and I think we all, when we get into the plane, the more people in the plane, the more people we brief on, "Listen, we are all in the plane together and if we hit a power line, you're going down too." So it's an incentive for you to look out as much as for me.

RB: We spent a lot of time in training and then, kind of like, you talk to people and say, "Have you ever had a hair-raising this or that?" and if the answer is no, then actually we are doing our job correctly, so the answer hopefully is no. Very seldom do things happen. We had an engine issue in 2006, but … If it is uneventful, then it is very successful. Our unit has a pretty good record. I'm sure some people can talk about some issues (laughter).

MM: You guys haven't been in service that long …….. have you witnessed any changes (Becomes indiscernible) in your job, your equipment?

RB: We keep getting cut back with funding issues and so my flying, I'm having to truncate my surveys a little bit, trying to save money here or there, shortened surveys, fewer surveys, all with the caveat that they are going to be reinstated at some point, but I haven't identified when that point exactly happens.

PT: I do mostly core migratory bird stuff and so far, nothing has been reduced too much, except for our July survey which had been cut. In terms of technology, when I first got the job, we did not have the computers, we just used recorders and so we have gone up from using recorders to the computers and the computers actually knowing, for our May survey, where we are and so we don't necessarily have to break down the survey by segments and things like that. When I first got the job, Doug had me fly the whole

survey without using the GPS or anything, just using the maps the way he used to do it, and so now, a lot of times those maps are just between the seats, just in case, and I have a lot more stuff that tells me where I am, what is going on, in terms of fuel and time and everything and it is just going up from there, I think. It's getting easier.

MM: Any other changes?

RB: There are some proposed changes on the horizon regarding our aircraft, but if they actually come to fruition will be probably quite beneficial for our safety. We are in somewhat of a transition stage from the aircraft themselves, not the data acquisition systems, but the aircraft themselves are somewhat dated technology and there are some more advanced stuff coming along that I kind of look forward to.

MM: (Too quiet to hear, but sounds like the question has to do with what kind of advice they would give to new trainees).

RB: Well, I have observers that…. I fly with a lot of different people. Frequently people who are on the ground and have never done this kind of work and they are just sure that they would love it get up there and after a long, tiring day of maneuvering, they start to have a little different idea. There are some physical demands, it's quite a long day. On the other hand, I have some other folks who really begin the observer routine and are kind of very reluctant and then after they flown a while, they start liking it more and more. I don't know about advice, but just I try to convince all of my observers and stress that the safety of the crew and the aircraft are paramount and I am not going to put anyone in jeopardy over a duck or an eagle or a seal and with that in mind, it is a fantastic way to make a living. It is one of those things that there are times when I am surprised that I actually get paid to do this. I have to pinch myself, but it's a good gig and some of my observers are of the same mind.

PT: And those are the best observers.

RB: Yes.

PT: If you like flying and wildlife, then it is great. You see a lot of habitat and the nice thing about our job is not only seeing one little area, but you are seeing the whole flyaway from Canada down to Mexico. We went down to Nicaragua three years ago, so it is great being able to see the whole expanse of where these birds go and how similar and different their habitats are. Some parts of Mexico look like their breeding grounds in Canada, so there are a lot of similarities and differences. For observers, we look for people that like waterfowl or whatever the survey is, their passion about that and if they can fly, then that's great. Not everyone can put up with the turning and twisting.

MM: That brings up an interesting point about you guys, (Becomes indiscernible).

PT: My undergraduate degree is in natural resource management, my Masters is in wildlife, so I consider myself a biologist, but I also have been flying since I was 18 and I taught flying. I actually went a couple of years, I got an Associates Degree in Aviation

Management, so both of those are intertwined. It is great to be able to do both because I like them. It's nice to be able to do both.

RB: I had a very similar, kind of a parallel evolution between aviation and biology. I had worked for several years out of college for State and Federal agencies as a biologist technician and a field biologist and that sort of thing in several capacities in pretty diverse background as far as species, with carnivores and raptors and some waterfowl and small mammals, and all the time I was doing that, I also had a passion for flying and I have been flying since I was quite young. My parents were aircraft owners and pilots and so as soon as I got out of college, I also picked up a private pilot ticket and owned a few airplanes and things like that. At some point, I eventually held a commercial license and float ratings and multiengine ratings and all of these things and I looked at that I had two passions, one was biology and wildlife, even recreational and wildlife work, and the other was flying and I was very fortunate at some point to actually have those two lines of passion converge into a good deal. I consider myself quite fortunate to have that happen because when I was a pilot, I used to think that this would be great if I could combine these two things. I did it for a few years on an incidental basis with another federal agency and eventually came to Fish and Wildlife.

MM: Is there anything either of you want to say about your work while you have a chance here?

PT: I think he just said it, having a good deal. Hopefully they will think that it is still important when we do this again in 25 years.

MM: That's another good question, why is it important? (Becomes indiscernible)

RB: Putting a qualified and trained observer in the air shortened the temporal variation or the time variation when you are trying to get an index or census or some sort of a handle on resource use and number. There are cases where ground observers can get the same data, but they are limited as far as their access and how much area they can physically cover. In a light aircraft, we can cover huge amounts of area in short periods of time, so we get the snapshot and it's very important, especially when you standardize the time that you take your snapshot and the methodology that you use and then you can compare that year in and year out to get trend analysis. I think that to this point, there really isn't a better… until there is maybe some satellite system or something, right now a light aircraft with a trained observer is the way to get those snapshots and short temporal scales over a wide geographic area.

PT: The access in some of the remote areas in northern Canada and Alaska, you just can't do it any other way. There are still remote areas all through the country, and even trespassing access and things like that on the East Coast, where you might not be able to access bays because of property that you just can't access any other way, but the air, and even if you were to access it, you wouldn't be able to see the whole water body. By the time you get to a different part of the water body, things have moved around, so it is really an ideal way to get that snapshot and cover hundreds of miles in a day.