

Interview with Dave Caswell
Of Canadian Wildlife Service
By Dr. Mark Madison April 16, 2004
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MR. CASWELL: I am currently with the Canadian Wildlife Service in the Prairie/Northern Region. My official title is Chief of Waterfowl Management, for our Division. The area that we look after is the prairie, northern region which is Manitoba, Saskatchewan, Alberta, the Northwest Territories so we have a big hunk of property where the birds breed in and come on down to the States. It's a good junk of property and there are a lot of cooperative programs, and a lot of people involved.

From my personal perspective, I grew in place called Delft, Manitoba, which is well known for research. Al Hokebaum was the Director there. He was a well-known biologist and waterfowl person. As a young fellow I worked in the field cleaning pens and cutting grass and doing all of that sort of stuff. At Delta I was exposed to a lot of graduate students, etc, doing research on waterfowl, etc. I never really thought that that was going to be my career. I thought I was, or intended to be an oceanographer. So I went to university and went through Physical Sciences. Then I was going to go on into Oceanography. I decided that I didn't really want to be out in the middle of an ocean. A lot of other things were going on, on the prairies. I went back and picked up all of the biological sciences courses. I worked in Ontario for a couple of years as an avian biologist. Then I went to the States, actually, and took a graduate degree. I was then hired by the Province of Manitoba. At that time I was what they called the Avian Research Specialist. I worked on waterfowl and upland game birds, etc. This was at about the time, 1973, that the federal government was doing a lot of expanding. At that time they hired a bunch of what they called Population Management Biologists. Kent Brace was in Manitoba. Dan Nighland in Saskatchewan, and Bruce Turner in Alberta. These guys were the core of the waterfowl management group in the CWS, in the prairies at that time; in terms of the guys who were actually going out in the field. That was also the time that the CWS took over the air grounds. It's been documented that the fellows would come up on planes from the USFWS and try to find out where in the prairies the birds were and to try and develop a survey system. They knew at the time that they needed to correct for what they were doing from the air so they actually developed some ground surveys which were all transects. They actually picked them in areas... [Phone rings, tape stops]

.... When the USFWS actually set up [unintelligible] in the 1950s and were applying surveys across what they called the 'duck factory' at that time. I could talk about a lot of stuff that went on back then, but it was before my time. There was obviously a lot of Canadians involved in it like Jay Bassar from Manitoba and Kooch from Ottawa working with the fellows. They realized that they needed some correction factor from what these fellows were missing from the air, which makes sense. So they started an air/ground

component which was to correct for the visibility rating. They'd have a crew go out on selected air grounds, count the birds on the ground and do a ratio of what they saw from ground to the air and extrapolate that across the rest of the surveys. They started this in prairie Canada in 1961. Staff that ran the air grounds in that period were basically USFWS staff but they were enforcement people. I don't know what they didn't think they were supposed to be doing during that period of time, but they sent them up to Canada to work on the air grounds. And actually later, in August, they'd work on banding too. They send these fellows up to Canada to band. In 1973 said they were expanding and were hiring waterfowl population people. They took over the air grounds in 1973. There wasn't a lot of air grounds. Like I said, there were maybe thirteen per Province. So we were running about twelve or thirteen air grounds apiece. They were all off line, so we started doing it in 1973. I wasn't with the CWS at that time, but I was dealing with the flyways and using the data, etc. I was hired by CWS from the Province in 1978. That's when I went federal. In 1979, there was a study down in the mid 1970s indicating that these air ground transects that were off line were actually, maybe biasing the survey in the sense that when the pilots and observers were flying along, they'd come along and say, "Oh, by the way, we've got an air ground over there." They'd cut off the transect, cut off and swing around pick up the air ground and come back and do the survey again. So the statistical point of view this is not the same way they were doing the transects and it turned out that the air grounds were actually, probably a little biased. When they were originally picked, they were picked because of good concentrations of waterfowl. Obviously, a lot of the transects do not have a good concentration of waterfowl. It's variable with high and low densities. So you need a sample about the whole thing. In 1973 we went out. Some of the fellows actually flew the air grounds for us and marked on where they had rows. You need some type of way to get around them. We went out of the ground and checked various potential air grounds on the transect lines. We picked a whole set and put on the lines. We got them on lines in the 1970s.

Back in that time too, we were sort of observing that there was a sort of a disconnect between what we were seeing in terms of habitat out there and what we were seeing in ducks. What was happening in the 1970s was the populations were good, but from 1955 to the 1970's whenever the ponds went up the ducks went up. When the ponds went down, the ducks went down too. It was a nice correlation between these two measures. In the 1970s in prairie Canada we started to see a disconnect. When the ponds came back up, the ducks came up too, but not to the same level as the ponds. This was doing on back and forth. We figured that something was going on out there. We started to get a disconnect between the ponds and the populations. From our point of view, being out there walking on the ground, etc., we thought that maybe something was changing in terms of the habitat. Not the water per say, because the water is always coming and going. At that time we initiated a more intense habitat survey associated with the air grounds. From the time the air grounds were established in 1961 through the 1970's time, each crew would go to every basin that had water, etc., and they'd record what the pond type was, whether it was full or half-full, they'd record cover vegetation

and obviously count and speciate all of the ducks. We developed a habitat-monitoring program. To go along with it in the 1970s what we were looking at was the basin, the vegetation in the basin, the margin vegetation, which extended ten meters out from the wet meadow zone. The impacts of these things, whether they were grazed or cultivated or burnt various things like that. There was also margin width and upland habitat conditions; whether it was in stubble, or trees and that type of thing.

We worked on that through the 1970s and initiated that program in about 1980. Basically it's complementary to what we are doing in the visibility rates, in that while we are out there counting the ducks and ticking off and recording habitat information as it is too. This started in the early 1980s. Just prior to that, we have to back up and say that we put all of those things on line and we added the habitat component to it. We actually used FWS. They'd come up in their planes, and photograph all of these air grounds for us. We had photograph of all of the air grounds. We individually marked every pond so we had a map. This was the way to go. In 1986 when the North American Waterfowl Management Plan [NAWMP] was signed we started looking at implementing the plan in prairie Canada in terms of habitat programs, etc., from a Canadian point of view. The NAWMP was the ability to put a soil and water conservation program on the landscape out there using cooperative dollars from the United States. The funding arrangement was something in the neighborhood of 75% US dollars and 25% Canadian dollars. With that, for the NAWMP we also needed some type of monitoring program to go along with this to see how we were doing. How are we doing? Are the populations attaining their goals? So in addition to the landscape monitoring, we also wanted to improve our estimates of the waterfowl populations. From a study that was done, it was basically said that 71% of the variability associated with the counts was due to the visibility rates. In 1979 with NAWMP dollars, we doubled the number of transects we were conducting in prairie Canada from sixty-five to one hundred and thirty-five. We had a bunch of students and we were able to double the program. That helped tighten up the [unintelligible] limits of both counts. We've basically running this program since then, since 1979. We've got this enormous big data set which we never seem to have had the where with all to go back and look at the details we want. But, we're using all of this information on an annual basis for generating the numbers that we want. This information under the NAWMP that was improved is also instrumental in a component of the adaptive harvest management program. It's one of the key measurements of meeting the model requirements, etc. The model predicts it and we go up and check what's going on up there. So in these aspects, Canada has been involved on the ground since the 1970's. They were just taking at the last meeting about changing the ways that they do some of the air grounds in the States. They started them in about 1972 in the Dakotas and Montana. They are thinking about incorporating some of the concepts that we put in. I don't think it will ever go into the detail that we have because it's not the same program per say.

DR. MADISON: What things do you have to reconcile to work across national boundaries? I know it's a good, long-lasting partnership and one of our oldest, but are

there any technical things that you need to work out? Does it matter about metric measurements, or any other things like that, which are difficult to reconcile? You don't see a lot of these transnational cooperative agreements. They are very hard to negotiate.

MR. CASWELL: No. There's a lot of the staff that come up from the US to Canada. Not so many of the Canadians go down to the US to work. But we're obviously involved in the flyway system. All of the Provinces have a member on each of the flyways. The Canadian Wildlife Service and all of its components are very cooperative across international boundaries. It's broader than just the waterfowl side of it too. In a sense, under the NAWMP we expanded out. This was the general habitat program. However, you have a couple of other joint programs like the Black Duck venture, which is a species oriented program. It's a big cooperative program between Canada and the US. The Artic Goose joint venture, which is a multi-species program, even though it doesn't cover all artic Geese because it doesn't touch the geese, for example, which are breeding in Alaska and go directly to the US. They don't stop in Canada. We are restricted on the international aspect, to the waterfowl that are actually breeding in Canada and Russia for example, and then coming down into the US. That's another big cooperative program in the sense that when we first started the Artic Goose Joint Venture [AGJV] there were some Canadian dollars specifically put into it. The US didn't have that luxury at the time, so it was difficult to find dollars to put into the venture. But recently there have actually been AGJV dollars coming from USFWS dollars going into the program. The AGJV was one of the instrumental ways to finally get some coordinated management programs right across the Artic. Before that, there was research studies, especially [Waykeys] and various colonies up there and some intense studies on white fronts or various other populations that have been very localized. With the advent of the AGJV in the early 1990s, for the first time we had a coordinated banding program right across the Arctic from Alaska right through to Baffin Island on small Canada Geese and White fronts. That changed the whole management of white fronts in the sense that they were managed as two populations; east and west. But after the banding and collaring program and observations and harvest, it was found that 'hey, these are the same birds!' They go down here and all of a sudden they move up from Texas to Louisiana or vice versa. It's all the same population. That changed that whole practice. Now we're in a White Goose Program with the over abundant white goose issue. Again, now mainly USFWS dollars and CWS and the research of university type people working on the ground up there, we've got a coordinated banding/marketing program and a monitoring program across all of the colonies in the Canadian Arctic. These big cooperative international programs have allowed us to do a lot more detail on a much broader aspect than we were ever able to do in the past.

DR. MADISON: I think they are a great success story. You've been doing this going on thirty years. Describe some of the changes that you have seen, changes in data accumulation, technology to carry it out. You've already discussed some of the changes in strategy and planning how you do it. Birds are one of the few fields where we actually

have people with this depth of knowledge. Often times with other divisions they hop around a lot more. I am curious what changes you've seen since 1975.

MR. CASWELL: The technology of managing and storing data is so much different than it used to be. When we first went on the air grounds it was basically going out and writing everything down on a piece of paper and away they go. For us, we started entering data into computers back in the 1970s. We developed programs so we could print out the last year's information on a sheet and we wouldn't have to write everything down as far as the habitat. You'd just go in make modifications. Then you go into the computer program and just change the individual things. It used to be that for all the data there were cassettes, card files and all this stuff that was sitting there. To be able to use it to the extent that you probably could, or should, was just a tremendous job. Now, with the advent of the computers and such, it's just completely different. The Service have developed a lot of these programs with a lot of help from Jack Hodges from Alaska, like on the moving map.

DR. MADISON: Jack has come up in every one of the four oral histories!

MR. CASWELL: This kind of stuff, for us in the Arctic programs that we're working on now...GPS units and all of that stuff has really changed the way we can do surveys in the Arctic. The early guys when they were flying along were trying to look for landscape features on maps that didn't exist. "Well, maybe there's a pond out there. Geez, there's ponds all over the place and I'm trying to associate this pond with that one!" It was hard even if they had a map at the time. Now, we just put in our "lat-longs" [latitude and longitude] and fly from point A to point B. Now, we can record the information directly to the computers. There is a time and a lat-long associated with it. We can go up and do surveys now, like on Baffin Island where I go every year now to develop the surveys and using the data to generate the information stratified to other features is just so much simpler.

DR. MADISON: It's an amazing transformation in a relatively short period. Look at the first years before the fiftieth anniversary that they are celebrating. What Fred Lincoln was doing, he basically could have been doing in the 1950s.

MR. CASWELL: Here's one of the classics that I can remember. We go up Baffin Island and we fly around and so stuff. Then the USFWS developed what they called "the fly by" at one time. It was trying to get a quick overview of the Arctic. We had Canadians like Sam Berry and Gus Gooch and various people who had working in the Arctic since the 1950s. These guys were getting ready to retire so a fellow by the name of Ron Reynolds who was with USFWS at the time thought it would be a good idea to capture some of the information from these guys before they did retire. So under the AGJV, every spring for a few years, they rented a big, high winged aircraft they could fly right across the Arctic and they'd take these guys with them. They'd record information,

etc. The feeling of going across the Arctic in a matter of four or five days that early explorers would have spend their whole life trying to see certain parts of it. Then, over the winter they could get caught in the ice in their ships and send two or three years up there to explore one little piece. Here we are, flying across in about three days; pointing out all of these areas that people were doing. It's just an amazing concept! Dewey Soaper, for example, on the Great Plains of the Kujiak where the original Blue Geese were nesting. Dewey wanted to go up and work on these birds. He was with the Canadian Wildlife Service. So he went up the fall before, stayed with the locals. The Inuits were over on the other side. He stayed there over the winter so that he could be there in the spring because there was no way he could there in spring because of ice, ice flows and various things. He would have had to come in my boat. He wanted to be there when the geese migrated up there in the spring. What these guys did in the past is just unbelievable!

DR. MADISON: That brings up an interesting point, and something you mentioned earlier. We've heard a lot, because we've been doing these oral histories here about American pilots going north. Were there Canadian pilots that regularly flew in the US?

MR. CASWELL: The Canadian Wildlife Service really didn't have... It wasn't even the CWS. It was the Dominion Wildlife Service at the time. Basically, they didn't have planes and the same numbers of people even. But these guys had enough knowledge from what they had done in the past. They were obviously working with the US people when they'd come up into Canada to develop surveys and explore and that sort of stuff. I mentioned fellows like Gus Gooch and Tom Berry who worked in our early programs.

DR. MADISON: Let me ask you one more question about looking at the last thirty years or so. Have the challenges to the migratory waterfowl numbers changed? In the US, when we think of the 1970s, we think of the end period for pesticides and DDT whacking a lot of our birds. What's driving bird number changes further north?

MR. CASWELL: Climate right now. On populations, there are a couple of things that have happened. There is the overabundance of goose this year. You think back to a time when probably these birds were evolving that they prairie landscape was pretty unforgiving. These birds would winter down in the gulf coast and work their way up in the spring across this prairie inhabited by buffalo and not much else and go up into the Arctic, breed and come back down again. With the advent of agriculture and various other things going on up there, you've got a whole different landscape between what these birds are flying from in the winter; working their way up so they can feed on grain and can be in much better condition on the narrow stems of the new growth coming up. These birds are in a lot better condition when they get up into the Arctic. Also, when you get up into the Arctic and these birds are breeding up there; you think about the predator/prey relationship. What have you got up there? You've got foxes and other avian predators that come up with them. But you never have really large concentrations of predators

because sure, they can take advantage of these birds when they are breeding in the spring, but what do they do for the rest of the year? So there is this link where the predators can only get up to a certain number and they can't overwinter. So the main controlling factor on these Arctic goose populations is basically weather. Basically it's a boom or bust situation. You don't get a lot of years when you get partial production. You can, on Baffin Island for example. Sometimes only a certain portion of it will open up so the birds will come in and nest. But generally, if let's say it hasn't opened up yet by mid June, you're going to get a complete bust in production. So you get a bust and then you get a good production. It keeps rocking back and forth. But quite frankly, over the last decade or so, I don't think we've had a bust. Things are opening up earlier in the Arctic. They are saying open later. The birds are in much better condition when they get there. So we are getting more continuous production, year after year, after year. I think that's part of it.

DR. MADISON: That's very interesting because that's slightly different from some of the factors that are affecting numbers down here. All right, one last question and it's real easy. I get a different response from everybody, so we keep on asking. What is the best part of your job?

MR. CASWELL: I personally like, obviously with the numbers of years that I've put in, I could theoretically say, how do you phrase it? You're at the 1/14 phase in your life. That's tick me off once and I'll give you fourteen days notice!

DR. MADISON: We call it "KMA".

MR. CASWELL: Yeah, right! I enjoy all of the various aspects except on the administration side. I am getting more and more into that obviously. But the fieldwork and dealing with the people and the other agencies. And for me, I cover a lot of territory. I mean, we're involved in the waterfowl population surveys in prairie Canada, so I'm there. I'm up in the Arctic involved in the population surveys and banding in the Canadian Arctic, so I get up into the Arctic. Because of the international ness of it, we are involved in a lot of programs in the U.S. and in Mexico and South America. I get down to those areas in the winter too. I love being at the flyway meetings. Somebody's got to keep the Americans honest, and it might as well be us!

DR. MADISON: We speak the same language, and you know how bad Americans are about learning new languages! At least we can understand your criticisms! What are the flyway meetings like? I've never been to one.

MR. CASWELL: These are where all the various biologists from all the various states, and provinces, etc., get together and look over all of the information that's been collected over that particular year and in the past of course. They have two phases. One is the winter flyway meeting where you are more into providing information on the various

studies, etc., and planning what we are going to do the next year for research cooperatively. It's a funding source. The flyways contribute dollars to work on their populations and their breeding grounds. Summer meetings are more the regulation phase. How many more ducks are we going to get this year? Let's argue over that for a while. Theoretically, the Adaptive Harvest Management Program was supposed to remove all of that. We agree up front on what the numbers say. And when the numbers say it, we do it. Well, that hasn't happened. There's always a lot of tinkering going on since the advent of it. But even with that we've always been very supportive. We're not involved in Harvest Management in the regulations side. We actually set our regulations in June, or it used to be. We have to set our regulations because of our seasons and translation and everything has to be bilingual. We'd do it in June so the US could set their regulations in July. They would have the advantage of production information that was available to them. Over the time period, we've actually progressed more in the regulation phase. They don't change the regulations a lot. It's pretty well stable. But we've actually set up our process now so that in December of the year, we start planning the regulations for the next year. We have a consultation period with the Provinces. We ask what regulations they want to change and why. We go through the public consultation period. Our regulations are basically established in April, before the surveys are even conducted. That means we do have the option that if something drastic happens we can come back and make the necessary modifications. But the flyway meetings are busy and depending on the issues they can get heated. It can get intense. Or, they can just go out and say "no, we need more work and more information; get out and get it for us!" It's quite an interesting concept.

DR. MADISON: Dale, thank you so much. This was an excellent oral history.