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TELEPHONIC INTERVIEW TIME (15:39)

**CHANNEL ISLAND FOX RECOVERY (HOST – DAVE HARRELSON WITH ROBERT
MCMORAN)**

This transcript was produced from audio provided by the USFWS Ecological Services Program

P R O C E E D I N G S

(Music plays.)

DAVE HARRELSON: Hello. My name is Dave Harrelson, and I'm on the phone today with Robert Moran. He is a fish and wildlife service biologist with the Ventura field office in California. He's been working with a remarkable success story about Channel Island foxes. Hello, Robert. How are you?

ROBERT MCMORAN: I'm doing great, thank you.

Dave Harrelson: Robert, first of all, could you give us some background information about Channel Island foxes, and why they're so special?

ROBERT MCMORAN: Yeah, I sure will. I'd like to first just start off with saying thank you so much for having me. It's such a pleasure to be able to speak about the remarkable story of the island fox. This is one of the stories where we really see how the protections of the Endangered Species Act, and the strategic recovery actions by the U.S. Fish and Wildlife service, and our partners quite literally brought these iconic animals back from the brink of extinction in under two decades.

First I'll tell you a little about the fox itself, and what makes it unique to us here in Southern California.

DAVE HARRELSON: Okay, thank you.

ROBERT MCMORAN: So, the island fox is a relative of the mainland gray fox. It weighs approximately three to six pounds, and stands about 12 inches tall. For perspective, that is smaller than a housecat. Island fox are omnivores, and they feed opportunistically on a wide variety of seasonally available plants and animals. And although primarily nocturnal, the island fox is more diurnal [active during the day] than the mainland gray fox. We believe this diurnal behavior may be a result of the historical absence of large predators, and the freedom from human harassment on the island.

The islands for which the island fox do inhabit, include the six largest California Channel Islands off the coast of southern California, and are recognized as distinct subspecies on each of these islands, supported by morphological and genetic distinctions. Island fox are federally endangered on four of these islands, being San Miguel and Santa Rosa islands, which are managed by the National Park Service; co-managed by the National Park Service and the Nature Conservancy on Santa Cruz Island; and on Catalina Island, they are managed by the Catalina Island Conservancy.

DAVE HARRELSON: Robert, it's my understanding that in the early '90s the four subspecies of Channel Island fox that you identified for us suffered really dramatic population declines due to a couple of different threats. Could you explain what those threats were to us?

ROBERT MCMORAN: Absolutely. Unfortunately in the late 1990s island fox population started experiencing these massive declines. On the northern Channel Islands these declines were the result of, kind of a hyperpredation event by golden eagles, and that included San Miguel Island, Santa Cruz Island, and Santa Rosa Island. And to the south, Catalina Island experienced a massive decline as a result of canine distemper virus. The canine distemper virus is – Catalina Island is an island that has many thousands of visitors per year, and the points of access to that island allow for the unregulated bringing of dogs and other various animals onto the island. With no measures in place to actually ensure that these dogs are vaccinated, or whatever animals may be coming over, there is a very high potential for these animals that are brought over to Catalina Island to bring disease or parasites that could potentially effect the population. As was demonstrated in the late 1990s and early 2000s by the canine distemper virus.

On the northern Channel Islands, the predation event as a result of the golden eagles has a little longer of a story to go with it because in the 60s or so, DDT was released off the coast of southern California. And as a result of the DDT, the bald eagles, which are native apex predators on the island, actually experienced the effects of the DDT by having thinned egg shells, which did not allow for the recruitment of bald eagles back into that population. So with time, with no recruitment, we ended up losing our bald eagles on the northern Channel Islands. It is believed that as a result of the loss of the bald eagles on the island, golden eagles were then allowed to move into these islands, and remain on the island. Rather than being transient, as they once were thought to be. It was this year-round residency with even nesting golden eagles on these islands that was allowed to occur as a result deer and elk on Santa Rosa Island, pigs on Santa Cruz

Island, and other ungulates that have now all been subsequently removed. With the non-native prey availability occurring at times of the year that it would not be available, that in itself allowed for the golden eagles to remain on the island. And once again, I'll reiterate that these island foxes are more diurnal than the mainland gray fox. So it's believed that diurnal behavior is a result of not having a top terrestrial predator, such as the golden eagle. So essentially the island foxes would be standing out in the open, and were probably some of the easiest targets for a golden eagle to capture. That's kind of where we have – that is essentially the result of the massive declines. Both the canine distemper to the southern island, Catalina Island, and the predation events on the northern channel islands by golden eagles.

DAVE HARRELSON: Right, and just to clarify for our audience. The behavior is more oriented towards scavenging and fish than terrestrial species.

ROBERT MCMORAN: Correct, and there is some speculation that they may have eaten, or killed an island fox at some point or another. But it was never at a level that would have a population effect like the golden eagle had.

DAVE HARRELSON: So okay, you have this situation where we've experienced a massive decline amongst the foxes on the island. How did we go about approaching recovery?

ROBERT MCMORAN: So I guess I'll start with giving you an idea as to what the massive declines were, and how we started to bring them back from those extremely low population levels. An example of this is on San Miguel Island, which in 1994 was estimated to have 450 individuals, was brought down to only 15 individuals by 1999 and 2000 as a result of the golden eagle predation. Similar declines such as this were noted on the other islands as well, with Santa Rosa Island having well over 1,000 individuals on that island, and also declining down to only 15 individuals.

So given those numbers there, you can see that the declines were very much extreme in that, essentially, by the year 2000 the island foxes had declined by over 90 percent. So with that, it was apparent that the island fox populations on the northern Channel Islands were in need of immediate conservation action. It was at this time that the park service would need a multidisciplinary group of experts, called the Island Fox Conservation Working Group to evaluate the available island fox status and to develop strategies to recover the island fox populations to viable levels once again.

This group, which will really convey just how topnotch of a group this was, was a loose affiliation of public agency representatives, landowners, conservancies, zoological institutions, nonprofits, and academics concerned with conservation for the island fox. And as a result of the wide variety of individuals involved in this working group, that group itself was further divided into subject matter groups such as, management of wild populations, management of captive populations, island husbandry, veterinary issues, policy issues, and educational outreach needs. This group has met almost annually since 1999, and continues to meet to exchange this information.

So getting back to the original question now, I thought that was really important to give you an idea as to the partnerships that were involved in the initial brainstorming, essentially, to figure out what the next steps were. As a result of those working group meetings, they recommended the emergency actions of captive breeding, golden eagle capture and translocation, removal of golden eagle non-native prey base, restoration of bald eagles to the northern Channel Islands, and CDV vaccination testing to prevent future outbreaks. All of which were initiated almost immediately.

That's really important to understand because our partners really took the first step in trying to alleviate this really catastrophic event that everybody was witnessing. As a result of this partnership, and all of these activities, the fish and wildlife service ultimately listed the island fox in 2004. We were fortunate at the time, that once again, these partners that we have and were involved with prior to the actual listing, had already undertaken many of the actions that we have now identify as being the necessary components as part of our recovery plan.

DAVE HARRELSON: Could you please identify some of those partners for us?

ROBERT MCMORAN: Absolutely, yes. So I'll start from the south and work north. It was Catalina Island Conservancy for Catalina Island, which is our southernmost listed subspecies. Then we have Santa Cruz Island, which is the Nature Conservancy, and also the National Park Service. Then Santa Rosa and San Miguel, which is the National Park Service along with the land managers.

There was just an incredible group of academia folks, just too numerous to mention. A veterinary group, which all were just fantastic in allowing this collaborative process to identify the needs for disease and parasites, etc. Then also the Institute for Wildlife Studies, which has been instrumental throughout the process of identifying, really, the cause of decline as well as being a partner throughout the recovery process as well. Of course we have the Friends of Island Fox, who have also been readily available to support in any way they can.

DAVE HARRELSON: So we've gone from an absolutely catastrophic situation and ultimate listing for federal protection in 2004 to a point today where we've achieved quite incredible recovery. Can you tell us about the current status, and how much of a change that has been? Because this is really a fantastic success story.

ROBERT MCMORAN: Absolutely. As identified in the recovery plan, the recovery criteria and objectives, many of those have already been met. For example, the captive breeding occurred on all islands. I think it's important to note that all remaining island fox were brought into captivity on San Miguel and Santa Rosa Island. However, due to the success of the program, all captive breeding facilities closed in 2008, and that was due to the complete success of the program itself.

The golden eagles that inhabited the northern Channel Islands, which were responsible for the massive decline, were removed in 2006, and all of the golden eagle prey base was removed in 2014. So we have now removed the threat itself, being the golden eagle, and also its prey base which allowed for the golden eagles to remain on the island at times which they would have otherwise moved on.

All island foxes on the islands are vaccinated for rabies, and CDV when available. The land managers continue to monitor the island fox populations on all islands. And in preparation for any future unusual mortality events there are both a golden eagle management strategy, and epidemic response plans in place.

I would like to go into now where we are with population numbers to give folks an idea as to really what have these measures accomplished. The numbers of individuals now occupying San Miguel Island, for example, which was reduced to only 15 individuals, hovers around 500 individuals; believed to be to around its historical population estimate. Santa Rosa Island, which also declined to 15 individuals is now above 1,000 individuals or thereabouts. On Santa Cruz and Catalina they too are above 1,000 individuals.

This success is really in less than two decades. It really is an incredible story here.

DAVE HARRELSON: Robert, what does the future hold here?

ROBERT MCMORAN: So the future at this point, is really the first step toward the ultimate goal of removing this species from the list of federally threatened and endangered species. The initiation of the status review, which we initiated in March of 2015, and upon completion of the status review we may publish a proposed rule to change one or more of the subspecies statuses under the endangered species act.

DAVE HARRELSON: So they would go from their endangered status down to a threatened status?

ROBERT MCMORAN: That is what we will determine through the status review. It is quite possible, that if warranted a final rule would be published within approximately one year, and identify those species which we believe have met the recovery criteria for complete delisting or the down list from endangered to threatened, or if they need to remain where they are currently, as endangered.

DAVE HARRELSON: Well Robert, it's quite a story you've been able to share with us. Often times we do struggle with listed species, whether they're endangered or threatened, to get them to turn the corner, and come back to population health, and environmental habitat health. But it seems that with the Channel Island foxes you have had an incredible success.

ROBERT MCMORAN: Absolutely, and I think I'd like to really mention that these incredible efforts have been taken that changed near tragedy into a true recovery

success story for the island fox. It's the recovery effort that was put forth by the land management agencies, the working groups, Friends of the Island Fox, Institute for Wildlife Studies, The Fish and Wildlife Service; they've all demonstrated this amazing success of working as a team. All four fox subspecies were essentially brought back from the brink of extinction to near historical population levels.

DAVE HARRELSON: All right, well thank you Robert.

ROBERT MCMORAN: Thank you Dave, once again, for this opportunity to speak with you.

DAVE HARRELSON: And for the US Fish and Wildlife service, this is Dave Harrelson. Thank you for listening.