

>> LORI YOUNG: So hello and welcome to this session of our Wildlife Webinar Series entitled Mule Deer Status and Conservation.

My name is Lori Young and I am the Wildlife Training Coordinator at the Bureau of Land Management's National Training Center in Phoenix, and I want to thank you for joining us.

Now I would like to introduce Linda Cardenas. Linda is a Wildlife Biologist with BLM's Washington Office, Division of Fish & Wildlife Conservation where her primary role is serving as the Bureau's National Liaison to the Rocky Mountain Elk Foundation.

She works closely with BLM state, district and field offices to further the Rocky Mountain Elk Foundation's partnership by aligning mutual wildlife conservation priorities and identifying opportunities for the partners to work together to conserve elk, other wildlife and their habitats on public land.

Linda is also BLM's interim liaison to the Intermountain West Joint Venture, assisting with sage-grouse restoration efforts across the west.

And she works closely with the Mule Deer Foundation, other national wildlife conservation partners and state and Federal fish and wildlife agencies to leverage resources and help ensure effective collaboration on national wildlife policy issues.

Linda has more than 30 years' experience working in both the private and public sectors for the U.S. EPA, the Department of Energy, Department of Defense, and the BLM.

She lives in western Montana with her husband and three border collies where she enjoys hunting, fishing, horseback riding and raising sheep.

I will now turn the program over to Linda to introduce our speakers.

>> LINDA CARDENAS: Thank you, Lori, good morning and good afternoon to our colleagues at the M street office in DC. Thank you for taking time to join us today for this important webinar so that we can all come up to speed on the current status of knowledge regarding mule deer populations and conservation practices and needs for ensuring herd health across the west.

This is our first joint webinar with the Western Association of Fish and Wildlife Agencies, Mule Deer Working Group. We have two great speakers with us today who are going to share knowledge from their perspective.

We have Steve Belinda, who is a Certified Wildlife Biologist. He's a policy advisor and consulting biologist for the Mule Deer Foundation. He's also owner of Beartooth Strategies which is a consulting firm which prioritizes environmental policy, habitat management, Government relations, energy development and land use planning, as well as GIS and mapping.

He's also the Executive Director of the North American Grouse Partnership. Steve has over 27 years of experience in professional wildlife management in policy including 16 years as a wildlife biologist for the BLM and the U.S. Forest Service.

Steve resides in Red Lodge, Montana and spends as much time as he can hunting, fishing, camping and hiking with his family and dogs.

We also have Jim Heffelfinger with us today, who is going to begin the presentation. Jim is the Wildlife Science Coordinator for the Arizona Game and Fish Department. He's worked for the U.S. Government as a Federal employee, State wildlife agencies, universities and the private sector.

Jim has co-authored more than 200 publications including scientific papers, book chapters, TV scripts, magazine articles and the book, Deer of the Southwest.

He's also an adjunct faculty at the University of Arizona and the current Chair of the WAFWA Mule Deer Working Group.

And with that I'm going to turn the presentation over to Jim. And thank you for joining us.

>> JIM HEFFELFINGER: Thank you, Linda. I appreciate everything you did to make this possible. I think it's a great opportunity to share some of the things that the Mule Deer Working Group has been working on.

What I'm going to present today is really the collective work of not only the current mule deer working group members but for the last 20 years we have had a rotation of a lot of really good people doing work and working hard for mule deer. And this is really a culmination of all of their work from all of those years. I'll cover four topics today: one is the Mule Deer Working Group, who we are and how we came to be; also the current status of black-tailed and mule deer throughout North America; and major factors affecting that species throughout their range. And we'll follow up and look at some of the products of the Mule Deer Working Group that was produced that I think helps practitioners on the ground deliver conservation with mule deer in mind.

Let's start out using Arizona as an example of what was going in a lot of western states. In the late 1990s, there was a general decline; not everywhere but in a lot of places throughout the mule deer and black-tailed deer range. And when directors got together at their annual meetings and started to talk about what kinds of things were affecting their agency and what some of the hot topics were, general declining mule deer populations came up as something that a lot of jurisdictions were experiencing.

So the directors of the Western Association of Fish and Wildlife Agencies convened and assembled a Mule Deer Working Group which has a mule deer expert from each of the 23 western states and Canadian provinces that make up WAFWA. We started meeting two to three times a year and talking about the kinds of things that were affecting mule deer populations; what some of the factors that were contributing to - possibly contributing to the decline in mule deer at that time and started working towards solutions.

Right off the bat, at the beginning, we developed a Mission Statement. And the Mission Statement focused on finding solutions in a collaborative way, across state and provincial boundaries and thinking more landscape level and more big picture and how we can serve the species across the landscape rather than state by state and province by province. That really guided a lot of what we did throughout the years.

We began early on and developed a set of 7 ecoregions throughout North America. And ecoregions were areas within which mule deer populations responded to similar ecological conditions, management issues were fairly similar.

So we can look at mule deer conservation from a Southwest Desert perspective or a Chaparral or Colorado Plateau kind of woodlands perspective. And that guided a lot of what we did from then on.

We also developed five goals. The first one was just to increase funding and management for research for mule deer. As I said, foster regional approach to management and research activities.

>> JIM HEFFELFINGER: Okay, and so No. 3 was increased communication among mule deer biologists and agency administration and that's important. A lot of times biologists are doing good things and their administration may not be up to date on what's really going on.

No. 4 was to integrate past and current research and that was important because especially when we have new biologists coming on, they are not always aware of the breadth and depth of research and management information that exists even within their own agency. And lastly to provide timely information to directors, commission and the public and that became important that the Mule Deer Working Group began to produce a lot of materials that really helped inform the public about what was going on, what was affecting mule deer populations.

And one of those, getting into the status of black-tailed and mule deer populations, one of those is an annual range-wide status of black-tailed and mule deer that we put together in July of every year. We have done this for about 6 or 7 years and this is a document that has one page for each of the 23 jurisdictions. And talks about just what the status is in that jurisdiction.

Because the truth is when someone comes to me and asks how are mule deer doing throughout the west it's like asking a kindergarten teacher how are your students doing? There are some that are really excelling and doing great and some that are really faltering. So you can't really answer that in one answer.

So the best way to do that is just to look through each jurisdiction and see how they are doing. And you get a good feel for the status of mule deer and black-tailed deer throughout the west.

In general, I talked about that decline in the mid to late '90s that precipitated the Mule Deer Working Group being formed. Those populations after that decline have stabilized and most have increased there are even a few that are at population objectives. In fact, if you look at last year's status document

and you read through all of those jurisdictions; you see that 11 of them are stable mule deer populations; 11 are actually increasing, and only 1 is declining.

So there's -- they are still most below population objectives but really stable or increasing mule deer and black-tailed deer populations throughout most of their range. But there's still a perception of widespread decline. We still hear about mule deer declining and mule deer declining. The truth is they did decline in the late '90s but they have stabilized and are increasing fewer than we would like to have on the landscape but certainly not the dire decline we saw at the end of the 1990s.

So let's talk about the factors affecting mule deer throughout their range.

When we assembled in the first few months, the first few meetings, we started talking about what things were affecting mule deer, and came up with seven issues that we could focus on and we could talk about.

And we ordered those in order of priority starting with long-term habitat change, weather relationships, harvest effects, the nutritional plane of the habitat, and then predators, elk and deer interactions and herd health. And those are in order of what the experts thought were priority at that time. So we'll look through each one of those and talk a little bit about -- more about those now.

But I'm going to start at the bottom. I'll start at No. 7 and work our way up to the most important issues so that we can talk a little bit more about those.

So No. 4 was herd health and that's parasites and diseases both. In most deer populations, there's a lot of parasites a lot of diseases that are resident that really don't affect the number of deer on the landscape - they don't drive population fluctuations.

There's a few that sometimes will reach that level; Hair Loss Syndrome in black-tailed deer along the Pacific Coast was one case where an exotic louse was brought in, not native to North America, and ran rampant in some of those deer populations. And irritation to the skin and also the itching and biting actually created the syndrome of hair loss.

In the winter, it seemed to be worse and that's when some of the mortality was. So it appeared that there was some population-level effects to that parasite which is normally unusual in the parasite world.

Also on the disease side CWD, of course everybody hears about that. And for years we thought CWD probably was something endemic in some populations and really not causing any population level effects. But recent research and modelling and actual management experience indicates it does have an effect - it can have an effect on the abundance of deer and population fluctuations and there's a lot of work recently on that.

And same with Episodic Hemorrhagic Disease, especially in the northern-tiered states and the Great Plains. A few years ago there was a very dry summer and they had a lot of mortality from EHD that fall because of populations just don't have that exposure that disease as much as some of the southern populations.

So herd health is lower priority because it's something that we monitor, we pay attention to but it's normally not something that day-to-day in most jurisdictions driving deer populations.

There was a lot of talk about elk and deer interactions because elk populations in general were increasing and mule deer populations were decreasing. And some people saw that correlation as possibly a cause and effect. And about the time we were assembled as the Mule Deer Working Group, Fred Lindsay and some others had done a west-wide summary of a mule deer and elk interactions and trying to get at this idea of whether there was some competitive interactions between those two.

What they found basically is that you can't broad brush that issue and generalize it. It really depends on the individual population. You have a lot of elk and a few mule deer- a big elk population piling down onto winter range or do you have a lot of mule deer and just a few elk out so it really depends on the population level details as to whether elk and mule deer are competing. Normally they wouldn't be but there are some cases where elk could in fact get the amount of nutrition available to mule deer.

Predator relationships was on the top of a lot of peoples' lists; not necessarily the biologists. When we got together and talked about what's precipitating this big decline throughout so much of the range in the '90s nobody really felt that all of a sudden predator populations had doubled or all of a sudden predators were eating twice as many deer. And suddenly in the '90s causing this widespread decline throughout the range.

So although predators are killing animals all the time that didn't seem to be a logical explanation for the decline that we were all talking about in the '90s. But since it was really at the forefront of the a lot of the public's mind we actually tackled that first and we did a summary of black-tailed deer and mule deer and predator research out there. There's been a lot of work on white-tails and predators but not a lot summarizing the effects of predators on mule deer and black-tailed deer.

So we put that together in a Wildlife Society Bulletin publication and we looked at the research that had been done and we tried to look for similarities where predator management programs actually affected deer populations. Because we were getting some pressure from the public to do some predator control and fix this declining mule deer population. So we looked for cases where predator control actually did something and the similarities in that work was in: No. 1 predation has to be limiting deer abundance at that time.

If habitat and nutrition is limiting the deer population, obviously reducing the predator population won't do anything. Also the deer have to be below carrying capacity because if they are at carrying capacity and the habitat can't support any more animals, then saving animals from the jaws of predators is not going to result in any more deer the next year; It will just be another source of mortality that removes them from the population.

Also if you're going to use predator management you have to reduce predator densities intensively enough to yield results. You can't go in and remove a few mountain lions and trap some coyotes and think that you're doing something good for the deer population.

Also the timing has to be just strategic so it's just before the period of time when you need the lower predator densities if you're going to have any chance in affecting the prey population.

And also control has to be focused on a fairly small scale. You can't go to a large landscape and remove a few predators and think that you're yielding any kind of reduction in overall predation pressure. We put all that together in the publication and that was very useful to communicate to the public and agency administrators and other agencies about predators and what relationship any kind of management has to do with mule deer management.

And so harvest effects was No. 3. If you notice I skipped over No. 4 because we'll talk about No. 1 and 4 together because they are interrelated in having to do with habitat. We recognize that harvest effects certainly affect deer populations.

Doe harvest reduces deer populations that's why we have doe hunts to reduce deer populations to within the carrying capacity of the habitat or just to maintain them so they don't exceed the carrying capacity of the habitat. That's especially if you have a deer population coming from summer range down on to a more restricted winter range. You want to make sure you don't have more deer going down to the winter range than the winter range can support throughout the long winter. So doe harvest certainly affects populations but that's a management effect we're normally doing on purpose.

Also the effects of doe harvest on a population has everything to do with what percent of the does are you removing and how much recruitment do you have into that population to replace that.

It's just a simple basic wildlife management of input and output of the population and what doe harvest effect is on the deer population.

On the buck harvest side of it, buck harvest buck-only harvest certainly affects the age structure of the bucks and the sex ratio. If you have an intensive buck harvest you're going to lower the age structure of the buck segment of the population you're going to have wider buck to doe ratios.

But there's a perception by some of the public that lack of fawn recruitment, lack of number of fawns is because there's not enough bucks to breed all the does and that's just not supported by research.

Both modeling and management experiences looked at decades of data that have shown that there's no meaningful biological relationship between the buck to doe ratio on fawn recruitment into the population.

(Background noise).

>> JIM HEFFELFINGER: So weather relationship is No.2 that was obvious. Even though there's not much you can do about weather patterns and that affecting the population there was a recognition that that was really one of the major factors driving populations. And that's because if you have wet years you have a lot of nutrition for the does, more milk production, more hiding cover for the fawns. You have predators that have full bellies full of rabbits and rodents and other prey.

And also if you have a lot of winter precipitation deep snows you have stressed populations in the north lower nutrition and higher incidents of disease and parasites. So there's this overarching weather relationship that really affects all of these other things that we're talking about.

And then the last two that I've saved that are interrelated and that's habitat changes and -- long-term habitat changes and nutritional changes in the habitat. And we broke that down into some of the major things throughout mule deer, no matter what ecoregion you're in, major factors affecting those long-term changes which of course affect how many mule deer we got on the landscape now compared to back in the 1950s. We'll go through these in detail that's why I wanted to save these two for last.

Just to run through the list we have fire suppression most people are familiar with that, excessive herbivory, water availability and hydrological changes, non-native invasive plant species, human encroachment, woody encroachment, and timber management and we'll look at those individually.

So the fire suppression a lot of people have heard a lot about this in recent years. Deer are species that love disturbance and they throughout history had frequent fires and disturbances to the habitat. And that shrub component that comes up with disturbance and the forb component on the ground are so important. That's really what makes good deer habitat is a heavy shrub component, a lot of good forbs.

And when you have these forests maturing and maturing and the canopy gets closed they close up and you don't get the sunlight to the floor, the shrub layer disappears, you don't get as many forbs. And then through a decade or two decades or three decades people are remarking how we just don't have as many deer as we used to have.

And these long-term changes are often hard to notice in any one person's career but it's happened throughout the west and resulted in a lot of deer habitat that just can't support as many deer as possible.

And we've had these big catastrophic fires which are not good there's been loss of life in some cases and a lot of loss in property. But from an ecological perspective, opening that canopy in most of the ecoregions and getting sunlight to the floor has really rejuvenated deer habitat because you have the shrub component back and nutrients in the soil and you have those forbs.

Excessive herbivory. Towards the beginning, there's no doubt overuse by livestock in any individual year removes that nutrition that year. Chronic overuse year after year, which we termed overgrazing, can change plant communities; the ice cream plants disappear, the less palatable plants become more numerous and through decades that certainly changes the quality and the nutrition level in deer habitat through time.

It's not just domestic animals. We have to be mindful of the native ungulates too, the deer and elk populations that are too high can, in some respects, be worse because they are focusing on those plants that are important. So just like we pay attention to domestic grazing levels we need to pay attention to our management of native ungulates and what they are doing to the habitat.

We have had a lot of changes in water availability and seen hydrological changes through time. Certainly increasing aridity throughout the West and we have tried, as managers, to supplement some of that with man-made water catchments and water sources to some degree which can be extremely important especially in the Desert Southwest, Intermountain West, and some of our arid range lands that having free water available can allow them to use more of the dry vegetation that doesn't have its own free formed water. So that's a management tool we have used through time

We have a lot more issues with non-native invasive plant species: yellow-star thistle, cheat grass, the Sonoran cactus picture is red brome that invades the Sonoran desert, which normally doesn't have a lot of grass. In a lot of cases, it's not just the invasion of the non-native plant species but the fact that they change the fire cycles.

And cheat grass will come in and become common in a sagebrush community and cure out and dry and burn. And with repeated burnings each time it burns it not only removes any recruitments of sagebrush but those repeated fires will just kill the adult plants.

And here are two pictures of a photo point, one with cheat grass coming into that community and then several years later with repeated burns it's not mule deer winter range anymore. All the sagebrush is gone so you have these changes happening throughout the landscape precipitated from non-native invasive plant species coming in and changing fire cycles which is a major impact in a lot of areas.

Human encroachment is pretty straightforward. And obviously it's not just the footprint of houses going in and subdivisions going in and removing the habitat; but it's the sphere of influence from mountain bikers and hikers and our infrastructure of roads and activity and dogs that creates much larger disturbance and eliminates the occupancy of mule deer habitat for a -- for a much larger area than just the actual footprint going in.

So we talk about the shrub community being really important and shrubs are good but we also have a problem of woody encroachment and you can think of mostly pinyon juniper encroachment into habitat and that comes in and displaces what are more palatable and more important forbs and more important shrub communities. So we worked in a lot of areas to push back that juniper and that woody encroachment which is an issue in some areas.

And timber management, timber harvest can be excellent for mule deer populations but -- and -- for mule deer abundance. But it can be detrimental; it depends on the configuration and size of cuts. Just like fires any time you open the canopy letting sunlight down on the forest floor, you're doing good things for mule deer.

But if clear cuts are too big they won't be using the center of those clear cuts so it's really the shape and extent and percent of that disturbance that determines the balance of whether it's good or bad.

In some parts of mule deer range such as the northern coastal rainforest, the black-tails there actually need some closed canopy for snow intercept. And so in some cases, opening that canopy and letting all that snow down to the ground is not a good thing for black-tailed deer in that area.



So it's important to talk about these differences. Not only among the ecoregions, but even within the ecoregions, and work with local people who have the knowledge about the best things in that area for mule deer.

So let's go through some of the products that Mule Deer Working Group has produced through the years. And just let you know what's available and where you can find it.

We started out at the beginning taking those 7 issues, excessive herbivory, hydrology, invasive plants, elk and deer interaction -- those 7 issues we wrote a book with a chapter addressing each one of those issues full of the scientific citations and the scientific backing for all of that. So it was a nice snapshot of the status of those issues affecting mule deer written by the leading mule deer people in the west. And that book is still available.

Knowing that nobody wants to read a book that a bunch of biologists wrote with a bunch of citations, we took that information and boiled it down into an easy-to-read magazine; no citations no jargon but still addressing the issues affecting mule deer through the west and that resides as a PDF. We printed about 35,000 copies and distributed them at that time. And that was a really useful vehicle for getting information out on what's affecting mule deer.

We also got together and wrote North American Mule Deer Conservation Plan and this was an overarching strategic document, like an umbrella document, about what we need to do in general to conserve mule deer on the landscape. And we produced an MOU that was signed by all of the directors of the -- directors and chiefs of the Federal agencies saying that their agency would work towards accomplishing these strategies and goals and objectives in North American Mule Deer Conservation Plan.

Knowing that habitat is different by ecoregions, we took the 7 ecoregions and then wrote habitat guidelines for each of the 7 ecoregions. So these are neat on-the-ground information on what kind of habitat attributes mule deer need and some guidelines for how to accomplish that, how to work towards mule deer benefitting in the habitat.

We have had deer and elk workshops since the early 1970s that information existed in scattered hard copy proceedings on peoples' bookshelves throughout the West. We assembled one complete set of those and had them scanned as PDFs and those are actually scannable PDF documents you can search on keywords within all of those. If you want to look at food habits or elk and deer interactions so that's a useful resource of a lot of things that didn't make it into the scientific literature but information that's still really valuable for managers.

Energy development of course is a big deal with mule deer especially mule deer winter range and recognizing that, we have pulled together the information that was available from renewable and non-renewable energy extraction and we put that together into energy development guidelines for mule deer.

That was not a comprehensive document but a good one-stop shop one good place to start that had citations and serves as a jumping-off point to other more comprehensive sources of information. But just to give people on the ground a good snapshot a good culmination of what we know about energy development and it's effects on mule deer or mule deer habitat.

We recognize that with 23 western agencies a lot of agencies are doing things in different ways to monitor mule deer populations sometimes it makes it a little more difficult for us to talk to each other. And to -- for people to understand what's going on in different jurisdictions.

So we put together a document that told mostly deer managers what are the important metrics that you really need to monitor if you're going to monitor mule deer populations through time. And what is the best way to collect that particular metric. And so it's kind of a recipe book for managers to see what the state-of-the-art and what the best methods are.

Mule deer movement -- mule deer and movement barriers is a topic of course that everybody is talking about a lot. Now a couple of years ago, we put together what was known about mule deer and movement across some of these barriers particularly highways. What kind of highway crossing structures were most effective; what has worked in places, what hasn't worked in places. Just to serve as, again, a kind of a place to start and get a good overview of that issue with sources and information you can go to for more detailed information. There's some huge documents with a lot of really good comprehensive information and our hope was this document here would lead you to all of that good information.

We worked with the WAFWA -- another committee in WAFWA, the wildlife health community, which is wildlife veterinarians throughout the west, and produced two documents; the one on the left was really geared towards state and provincial agencies who are translocating deer to restore populations and highlighting some of the disease considerations that they need to be considering, protocols for testing and so forth, from mule deer biologists throughout the west and wildlife veterinarians throughout the west.

And also the one on the right was a guidance document for state agencies that if they had CWD and they wanted to do some adaptive management. Say they wanted to take a few game management units do different management in those units and see whether they could affect the spread or the prevalence rate of CWD in that unit. Here is a document that we put together -- by biologists and vets talking about what are good research protocols, what would be interesting things to try based on the science that's out there of that disease.

And one of our most popular things recently has been fact sheets. We've got about 25 of them so far on the Web site. We're continuing to work on more. But these are just one piece of paper, front and back, that addresses a lot of the important issues that people talk about at public meetings or we get emails about. And things like when is it okay, is it ever okay to feed mule deer to get them through a harsh winter? Antler point restrictions, predators, competition with elk.

So we have 25 of these topics and fact sheets that we can share at public meetings and email to people. And it's basically someone saying what's the deal on predators on mule deer? And you have mule deer experts from 23 western states and provinces saying here a snapshot of this, here is what the deal is on a front and back piece of paper. So those have been popular to communicate issues to the public.

We're also currently working on reseeding guidelines for practitioners in the field to just kind of give an overview of the information that's out there about reseeding for the benefit of mule deer.

We sometimes throw a lot of seed out there to stabilize soil and for other reasons and these will be some guidelines to hopefully guide those reseeding projects to benefit mule deer and their habitat.

We're working with the University of Montana on a range-wide telemetry based survival analysis, pulling together telemetry information from all over the west. So that we can look at trends and survival rates and look at differences in different ecoregions and look at differences through time in survival rates and tie that to certain environmental variables that might affect survival that will help us model populations, and even design surveys.

A topic that a lot of people have been hearing about and talking about an awful lot now is wildlife movement and migration corridors. The Mule Deer Working Group started about a year and a half ago trying to assemble workshops throughout the west that would train biologists on how to collect, store, analyze the information that they have on migration corridors, GPS locations and how to visualize movement barriers and start to identify some of these movement barriers.

We have had one of those workshops we have a couple more planned this summer and this fall, which I'm sure a lot of you will hear more about. We had the first one last fall in October in Salem, Oregon. It was a big success. Biologists brought their laptops, brought their datasets and in the course of the afternoon were able to use some of their GPS data, in this new free software out of the Wyoming Migration Initiative at the University of Wyoming, to analyze the GPS locations to actually visualize the movement barriers.

So here is an example of northern New Mexico, southern Colorado. The managers knew they had winter range in northern New Mexico and knew the animals went up north somewhere in southern Colorado in the summer not sure where. So they went in and collared a lot of deer on winter range and let them move up to summer range so we end up with a lot of GPS locations like that which in itself is useful because you can start to see the corridors. But you can also connect those dots with linear lines and get an idea of individual deer and how they moved. And that's useful.

But we know that not every location along those lines are equally important. They stop over in what we call stopover points so they linger and they spend more time and those areas are more valuable along that migration route. We need to recognize that and be able to analyze that and we can do that with the software. So we can start looking at hotspots and looking at areas where they spend a lot of time. And we can put all of those deer -- all of these GPS locations together for that population and start to identify high priority, medium priority and lower priority corridors. So it's this kind of information that we hope will help -- be useful for policy and be able to influence policy.

In fact in early February the Mule Deer Working Group had a leadership role writing a letter to Secretary Zinke that was signed by Kurt Melcher, the current President of the Western Association of Fish and Wildlife Agencies. And the letter asked the Secretary to identify corridors and winter ranges and protect those corridors.

About a week later, he was in Salt Lake City where the Mule Deer Working Group was meeting and signed the Secretarial Order that I'm sure everybody is familiar with now 3362, identifying and protecting winter range and migration corridors.

I'm not suggesting that just because I told Secretary Zinke a funny joke about how the mule deer crossed the road he whipped out this Secretarial Order. Of course, there were a lot of people working really hard behind the scenes to produce that.

But this is really exciting for us. This is something that Mule Deer Working Group has been involved in has identified as something that's really important and now we've got a lot of momentum as you know and we're continuing to work on these workshops.

And I think we're well positioned to start assembling all of this information that's really needed to implement that Secretarial Order.

So I've talked about all of these publications. Everything that I talked about is available as a PDF in -- on [muledeerworkinggroup.com](http://muledeerworkinggroup.com) which is actually a pass-through it directs you to the WAFWA website where our Mule Deer Working Group information resides, but this is easier to remember.

And you can go on here and all of our publications and all of the information about the Mule Deer Working Group including contacts for the representatives in your jurisdiction or your area it's all available to you.

So that concludes what I wanted to talk about on mule deer. We'll have time for questions towards the end now we're going to transition to Steve Belinda, who is going to talk about the Mule Deer Foundation. And what the Mule Deer Foundation has done in working with BLM and the other Federal partners also in advancing mule deer conservation.

So Steve, thanks.

>> STEVE BELINDA: All right. Hopefully everyone can see my screen.

>> JIM HEFFELFINGER: We can. It looks good.

>> STEVE BELINDA: All right thank you Jim and first off I want to on behalf of the Mule Deer Foundation we want to thank the Bureau of Land Management for allowing us to be part of this webinar and for the partnership through the years that allow us to work on the conservation of mule deer and black-tailed deer.

-- The Mule Deer Foundation is now 30 years old and was founded in 1988. They are based currently in Salt Lake City, so in governmental terms or organizational terms they are entering late adolescence or

early adulthood. Their mission is to ensure that conservation of black-tailed deer and mule deer in their habitats.

They are a volunteer-based organization with 150 chapters in 21 states and over 1500 volunteers.

They get their funding through mostly a local chapter model similar to other organization, but they also raise money through state, regional and national levels.

And since 1988, \$50 million has been raised and put into conservation of deer.

They also host local events, they have an annual expo in Salt Lake City. They have lots of youth programs. They produce a high-quality magazine. They have a very active Web site-active on social media. And they are involved in policy work at both the state and Federal level.

90% of all funds raised by the Mule Deer Foundation and put back go towards mission accomplishment and those funds have, over the last 30 years allowed, for 1.5: million acres of mule deer habitat to be conserved.

They also care a lot about the next generation so they have a program called MULEY, which is mindful, understanding, legal, ethical, and youth. And they have reached over 100,000 young people through that effort.

So the partnership with the BLM has been around for a long time. In 2015, the BLM and the Mule Deer Foundation entered into a National Memorandum of Understanding. It's good through 2020, and its objectives were to increase awareness and coordination for conservation of deer; identify those areas where it's a mutual priority and where we can work on projects together; collaborate on those projects, research, and most importantly communications; promote organizational benefits to both organizations constituents and to the public.

We have an Annual Meeting where we talk about how we have done through the past year. And we develop an annual work plan that allows us to work on implementation of the things we're trying to get done through the MOU.

We participate in land use planning, NEPA and other things like secretarial orders and policy guidance through the Department. We also, through our individual members, provide feedback and recommendations on BLM plans and projects.

So a couple of things we did first off in 2015 and '16, we reached out to the Mule Deer Working Group biologists which have a representative from each western state and we asked them to identify those areas, that if we were to do something in that state would provide an immediate need or immediate benefit for a local population as a priority.

And so we called them our Conservation Opportunity Areas and we produced a map for each western state and Alaska. And it's a coarse map where we can basically start to focus our conservation efforts

and our funding rather than continuing down the random act of kindness in a non-organized approach to working together.

And because of the issue, we also identified those areas where sage-grouse habitats, particularly the primary habitats and the general habitats overlapped with habitats of mule deer. And as you can guess there's quite a bit of overlap there. And again, we used local biologists at the state level to identify those areas.

And then in 2017, we -- because of the efforts and requests of the BLM, we identified areas where there was overlap on juniper habitats and important mule deer and black-tailed deer habitats.

Now, some of those habitats are supposed to be juniper habitats. But here is an example of what the national map looked like in 2015. The red circles you see are those areas identified by the local biologists. The purple areas are those areas where the Fish and Wildlife Service's Priority Areas for Conservation for Greater Sage-Grouse and you can see there's some Gunnison's sage-grouse. We also looked at Lesser Prairie Chicken areas down in the five-state southwest.

But those areas gave us a little bit of a roadmap to have our Regional Directors and our efforts within each state to maybe focus on them as a priority.

This is an example of the juniper habitat mapping. The green area is mule deer habitat as mapped by the Mule Deer Working Group. And the red hashed area is juniper woodlands as identified by ESRI through cooperation with a couple of universities. And again some of that red area is native juniper habitat but it also includes those invasive areas. So when we look at a map like this, we can sort of figure out where we want to go in and start doing some juniper work.

One of the key issues that was important to the Mule Deer Foundation was getting permanent reauthorization of the Master Stewardship Authority and that happened in the 2014 Farm Bill. The Master Stewardship Authority allows Federal agencies to enter into ten-year Master Stewardship Agreements with non-governmental organizations.

Through that you can do a payment for services or goods for services or a combination of one of those two. So if you have stewardship projects that you can't get done through normal ways, this is a way you can get that done. Or in areas where you may have some timber or some other products that could use to raise money to pay for that, you can then use that in exchange for the stewardship work.

The great thing about this is that because this was a nonprofit, anything above and beyond the cost of doing the stewardship work then goes back to the agency. So it's not out there for the organization to make money on. It's out there to pay for the stewardship and the conservation work that's happening.

One important thing about stewardship agreements over contracts is there has to be mutual interest and mutual benefits. It is a tool to help you get work done that you want to get done and that you identified in your program. It is not something that is an additional hindrance to what you want to get done.

So a lot of the common tasks and benefits of course wildlife habitat maintenance, restoration of habitats, fuel reduction and invasive species control, hydrological improvements, soil stabilization and other land management actions that move us towards a healthy ecosystem. Those are often identified through your land use plan or other project work that you guys develop as agency folks.

To date with the U.S. Forest Service, the MDF has 14 Master Stewardship Agreements. In those 14 there are 7 areas where there are active local projects. And with the BLM there's 3 Cooperative Stewardship Agreements with 10 projects, including a statewide Master Stewardship Agreement in Colorado which has a funding cap of \$1.5 million of which about \$750,000 has been funded in that agreement to date.

In that project there has been -- five projects last year that were worked on for about \$340,000. And of that about 184,000 of that came from the stewardship funding. So about 54% of that money spent in Colorado under the Master Stewardship Agreement was from the BLM and about 155 from other sources including MDF sources.

We also work on other agreements. We have an assistance agreement with the State of Idaho, BLM out of the Twin Falls District where we're planting sagebrush and bitter brush in burned areas. That project is \$500,000 over five years. To date we have planted 250,000 plants in just over 18 months.

Those areas it was done in collaboration with the local Mule Deer Foundation chapter, the BLM District Office, the Idaho Division of Fish and Game and we looked at areas that had burned and were critical sage grouse habitat and winter range for mule deer and we're going in those areas and helping restore sagebrush and bitter brush.

We're also part of the Henry Mountains Habitat Partnership in Utah and that's a 10-year commitment and about \$750,000 has been committed to that to date.

So what do these projects look like? The picture on your left is a pretty typical thinning and mastication project. This one is down in southern Colorado where we go in and thin the habitat to prescription and then we deal with the slash.

On the lower right hand corner that's I think most folks are familiar with this. This is going into juniper-invaded areas and using hand chainsaws to cut and either slash and pile, slash and burn, or chip and remove those junipers that are invading sagebrush areas.

So also the Mule Deer Foundation works very closely with the state wildlife agency. They are a key participant in the mule deer initiatives that each state has.

We also work on habitat projects primarily at the state level through the big game license and tag allocation funds. Those funds are from special tags that are sold, given to the Mule Deer Foundation, sold at auction or raffled off and then the proceeds of that goes back into habitat.

And then of course the local chapter funds are developed by the Mule Deer Foundation local chapters do stay within the state. There's a funding model that MDF uses similar to other organizations.

The MDF is a key sponsor and funder of the Mule Deer Working Group they have been there from the beginning. A lot of the products Jim showed you earlier were printing and -- it was paid for by the Mule Deer Foundation and we also serve as a repository in -- on the Web site for a lot of that same information.

We also in a few states hold information awareness summits, Wyoming and Colorado recently. There have been a focus on transportation and movement barriers. And also in some states CWD is getting a lot more attention I know where I live here in Montana the Mule Deer Foundation has been part of the effort to figure out a way to control the outbreak of that disease.

MDF can also provide with their state funding mechanism a match for many Federal projects where the match are required. And you know ultimately can be another source to get information out to the masses. And to get awareness out that we need to be doing this work and who our partners are.

So how do they raise funds? As I mentioned they have a chapter banquet model similar to what other organizations have where chapters are put together at the local level. They have some sort of banquet or special event where they raise funds and then that funding goes into distribution model that MDF has to benefit the state, the area and the organization.

And then of course there are some secondary events that happen. A lot of Gun-a-paloozas and Beers for Deer, a lot of ways to provide a forum for folks who care about mule deer, to get together open their pocketbooks and build up relationships and develop partnerships.

In each state there are different ways that that funding is distributed. Some states pool their funding. And then fund priority projects based on meetings with priority action committees of which the state, the Feds and other folks are members. And some states keep that funding local and projects are funded locally.

There's benefits to both models. But the important thing is that funding is going back out on the ground to fund things that you as Federal agency biologists or state biologists want to get done for mule deer.

As I mentioned, the Mule Deer Foundation does get a limited number of conservation permits and special license allocations from states. And they auction those off. And then the money either 100% or close to 100% goes back to the state. In certain areas the MDF does keep a little bit of funding that goes towards their administration and also into their habitat project funds.

As most organizations do, MDF does work to seek grants from both local, state and Federal projects and funds across the state. We work with the National Fish and Wildlife Foundation with the BLM and Forest Service, Fish and Wildlife Service in those areas we feel we would be a good partner for habitat conservation.

MDF also works in the policy world. At the national level we work in those areas to provide recommendations, guidance on -- specifically to mule deer and black-tailed deer to participate in land use planning.



We provide testimony on hearings and meetings. We help launch new programs. The Secretarial Order 3362 on the big game migration corridors is something that MDF has been working on for over a decade with multiple administrations. And we're extremely excited and happy that the Secretary signed that and we'll be working with the Department and the agencies on how to implement that.

We work closely with the state agencies on season settings, regulations, special projects. And more importantly you know getting the word out about the needs of mule deer and the opportunities to help with conservation.

And then of course we work at the local level. There are a lot of communities out there that are taking their own initiatives at the local level.

Working with private landowners. Working on -- in cooperation with Federal and state agencies to do habitat projects at the local level. And really that's a great opportunity to get the volunteers involved in projects on the ground. And get the word out.

So the best way to get in touch with the Mule Deer Foundation is going to be to reach out to your field director. Here is a list of the current field directors, their emails, and their phone numbers. This also can be found on the muledeer.org Web site under contacts and chapters and I would recommend that your first point of contact be to one of these individuals on this list to start a discussion about partnership projects or ways to work together.

As with a Fiscal Year that doesn't match Federal Fiscal Years money comes in at different times so it's really important that you start planning a couple months to possibly a year out on projects so that there isn't this emergency ask that comes into MDF as a project that you need critical funding. It's -- we can help more if we know and we help plan and we know something is going to be coming.

And then of course if you have any questions for me or Jim, here is our contact information and I know I ran through that pretty quick because we're pushing at an hour we wanted to leave time for questions and answers so with that I'll turn it back to Linda or Lori and we'll go to questions and answers.

>> LINDA CARDENAS: Thank you guys! Nice job Jim and Steve. Thanks for sharing all of the great information.

BLM relies on our strong partnerships with the Mule Deer Foundation and other wildlife partners to get our work done and the tools, publications and fact sheets that the Mule Deer Working Group have produced are critically important resources to help the BLM have easy access to the best available science needed.

I would like to point out, though, that although we're focused on mule deer conservation here in all of these slides, anything that's done on the ground for habitat improvement is going to benefit hundreds of other species. And so you know, we're not just focused on mule deer and elk or big horn sheep.

These partners help raise money for those species. But it also benefits many other broader landscape benefits, as well.

I would also like to mention that mule deer, like other iconic western big game species such as elk, pronghorn, big horn sheep are nationally important to the social and cultural fabric of the U.S. as well as critically important to local rural economies.

And Interior Secretary Zinke has recognized this fact. As we all know about the recent orders; Secretarial Order 3356 and 3362 which was mentioned in the presentation directing public agencies to manage our public lands in partnership with state fish and wildlife agencies and nonprofits to support wildlife conservation and recreational opportunities for the American public.

So you know with that, I just wanted to add that focus here to our discussion. And I would like to open it up for any questions that are out there. So with that, we'll just open it up for any questions.

>> Hi this is Rena Tucker with Arizona Game and Fish in the southern part of the state and Jim mentioned briefly the challenge we face with non-native invasive species, particularly herbaceous species and I was wondering if folks could comment on any kind of management techniques you're seeing to maybe push some of that back or control it where it's starting to become a problem. We have Lehmann's lovegrass and it's similar -- I come from the Midwest where it's similar to cheat grass where there's a spring green-up and it seems like there's not much you can do about it once it's established and I'm wondering if anybody is hearing of any kind of management tools to address that.

>> STEVE BELINDA: Yeah this is Steve Belinda. I can't speak to the specifics of that plant but I do know that we are pushing that -- the chemical applications that work for cheat grass and Medusahead rye being included in any streamlining that happens with either of these Secretarial Orders or new land use planning or regulations that come through. Things like the use of Plateau on a larger scale for cheat grass is something that we advocate for because it's being recommended by folks who are dealing with that.

So I know it's not specific to your situation in Arizona but at least from the MDF's standpoint we are advocating for that.

>> This is Geoff Walsh

And I think someone asked about links to these plans and the one pagers. I told someone here that you can -- access this at least indirectly through the WAFWA Web site. Are there better access points than that?

>> JIM HEFFELFINGER: Muledeerworkinggroup.com takes you right is to the Mule Deer Working Group products.

>>STEVE BELIDA: All of the fact sheets are on muledeer.org Web site and they are all included about two or three times in the Mule Deer Foundation's magazine.

One of the things that Linda and I have been discussing was getting all of this information on jump drives and sending them out local offices so that you then have them available in another format.

> I guess I might add that a couple of times -- this is Geoff again. I guess I might add that when we talk about what we do to affect populations, there's been a lot of discussion about what's our role, what's the state's role and as habitat managers, we are population managers. It's just that part of our collaborative work with the states. I don't think the states would dispute that. It's just been a lot of kind of off and on we have been having some improper rhetoric about this. I mean if someone manages -- if someone managed your home, your food and water you would feel kind of managed. I'll keep on saying that.

(Chuckles). >> That's a good point.

>> Yeah, Geoff, to that, what I would recommend is folks get together with their local state folks or even at the state office level and just talk through what it means to coordinate.

You know, one of the reasons we put together an annual work plan for this National MOU is sometimes it's -- it gets put on a shelf and it isn't followed through until it's time to renew so what we do is --

>> Absolutely.

>> We sit down with Linda at -- on an annual basis and say this is what we would like to accomplish, this is what we need for coordination and partnership this year. And it really -- it prompts action and it prompts better coordination.

>> I think it's great that you brought up a lot of these things that -- a lot of these tools and information. I've seen these things developed over the years. And one of the things that came up in not only in response to the Secretarial Order but even in the past all the way back to the Executive Order on -- it was on hunting and fishing in 2008, was how do we best address the needs of wildlife in planning documents. And it just came into my mind the different mule deer regions you had up on that one map that I saw years ago I thought some things like a basic of mentioning how important --, where we are in the planning unit in relationship to mule deer conservation as opposed to just listing a bunch of laws and regulations.

It doesn't take a lot of words to say a little bit -- a lot more when you include some of these conservation plans.

>> I would just reiterate work -- a local district biologist working with the local state agency biologists is probably the best place to figure out how to work that out on the ground.

>> Yeah, this is Linda.

>> Yeah.

>> LINDA CARDENAS: I would like to just add that part of our efforts under the new Secretarial Orders are to take a hard look at our MOUs that we have with our state fish and wildlife agencies. Because some of them may be fairly dated. And this is a great opportunity with these -- you know the new

prioritization on big game management and corridor movement areas as well as winter range and recreational access it's a good opportunity for us to take a look at how we're working with our state counterparts jointly for wildlife conservation and the role of our partners to help us in that effort.

>> Yeah as I mentioned, the Mule Deer Foundation has someone for each state. And a lot of times they are working with partners that you may not know about at the Federal level. And so again reaching out to those Regional Directors and saying, you know, who are you working with? How can we maybe combine our efforts whether it's a private landowner or state lands and it might create some synergies and some bigger and better projects in conservation happening for mule deer on the ground.

>> LINDA CARDENAS: Okay. Well, if there aren't any other questions, feel free to contact me if any of the offices out there would like to talk about partnership development or ideas for working together.

As well as Jim or Steve on the technical side for mule deer conservation. And I want to just say thank you to everyone for taking time out of their day for this important webinar.

We look forward to doing more joint webinars with our partners.

>> JIM HEFFELFINGER: I think this was great. Thanks Linda.

>> STEVE BELINDA: Yeah, thank you, Linda and staff of BLM and the -- MDF looks forward to an effective partnership for deer in the future.

>> LORI YOUNG: Thank you, all. Appreciate it. Have a great day.