Story of a lone

FEATURE

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Director of Animal Care

Above: A Washington Fish and Wildlife Department Wildlife wolf biologist and two technicians prepare to fit yearling Ruby Creek female wolf F36 (now known as Ione) with a GPS collar on July 15, 2013. After being collared, F36/Ione was released back into the wild. Photo by special permission of Rich Landers – The Spokesman Review.

In 2011, a cattle producer reported hearing and seeing wolves west of the town of Ione in Stevens County. Through capture efforts, Washington Department of Fish and Wildlife (WDFW) was able to confirm that a family of five – two adults and three pups – had taken up residence in the area. Given the name "Smackout" pack after a nearby mountain, this wolf family went about their daily "wolfy" business of raising and providing for their young and avoiding humans and their activities.

The following summer, WDFW confirmed the presence of more pups and by winter of 2013, the Smackout pack, which at the time, consisted of twelve members, had become one of the more stable and prolific families in the state.

Wolf families are cohesive with extremely complex behaviors. Each pack, much like a human family, is rich with traditions (i.e. hunting strategies) which are passed down from generation to generation. Life for a wild wolf is not an easy one, so it is important that young animals learn as much as possible from their family members before venturing off on their own. While one could make the case that a wolf relies on atavistic (relating to or characterized

by reversion to something ancient or ancestral) memory for his or her survival, research has shown that wolves learn much of their survival skills from their family members. Typically, offspring will stay with their parents and young of the year until just before sexual maturation – which for wolves occurs at approximately 22 months of age. Dispersal rates are highest in the fall, in correspondence with an impending breeding season which occurs in the winter, and it is during this period that most new pairs are formed.

While this model is typical for a stable, simple wolf family, the loss of one of the parents (or breeders) can disrupt the integrity of the family group. In the case of the Smackout pack, an adult male (believed to be the breeding male) was struck and killed by a vehicle and soon after, three new packs appeared on the landscape and were believed to have originated from Smackout: Carpenter Ridge, Dirty Shirt and Ruby Creek.

The Ruby Creek pack consisted of two black-phased females (presumably sisters), who at the time of dispersal were about a year old – younger than typical dispersers. How far wolves will disperse is dependent upon myriad factors and while some will travel hundreds of miles in search of a mate and/or unoccupied territory, some will establish a home range close to their natal territory. It has been observed that males typically disperse further than females, so it was not surprising that the Ruby Creek females' new territory bordered that of their suspected mother and remaining siblings.

New packs are formed when dispersers meet up with unrelated wolves of the opposite sex, establish territory and start up a family. Unfortunately – and uncharacteristically – the Ruby Creek females began hanging around with domestic dogs and becoming quite habituated to human activity. The females were routinely seen by the residents of Ione and because of their high visibility and celebrity-like status, they were dubbed "Thelma and Louise."

During the 2014 breeding season, one of the females actually bred with a local rancher's livestock guardian dog, prompting WDFW to capture, spay and release her. Regrettably, she was later struck and killed by a vehicle, leaving her pack mate, F36, on her own.

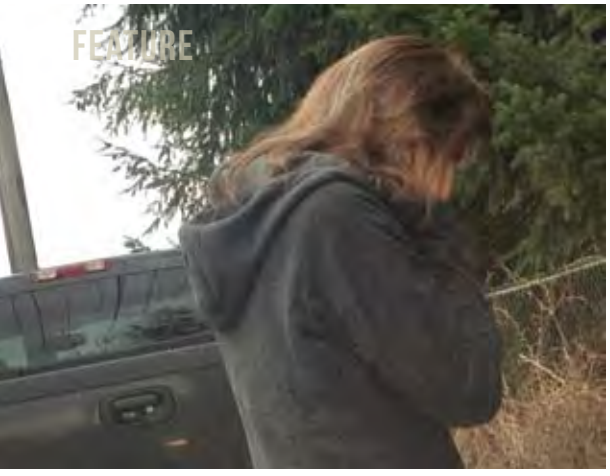
As previously mentioned, life is difficult for a wild wolf – even those living in a family – and for a young wolf on his or her own, chances of survival can be further compromised. In the case of the remaining Ruby Creek female, she was becoming increasingly bonded to the producers' dogs. She became a daily fixture on the farm and often, the producer would find her curled up outside the dogs' kennels when he would come out in the mornings to begin his day. GPS collar data showed her movement and even though she sometimes traveled up to 15 miles a day, she always returned to the ranch and her dog companions.

In the beginning, the producers were very concerned for their dogs and farm animals – they had never had to deal with wolves before. As time went by, however, they developed a sense of empathy, compassion and respect for her and her place on the landscape. They recognized, as did WDFW, that this situation could not continue. Although F36 had not killed livestock, having a large carnivore that was habituated to human activity would serve neither the recovery process nor the community.

Around the time this was happening, emotions regarding wolves were already running at an all-time high in the state. The Huckleberry pack had been involved in sheep depredations and a lethal removal order had been issued for four young of the year. During the removal operation, the breeding female was mistaken for a pup and was shot and killed. For several reasons, the removal order was put on hold, and both those opposed and in favor of wolf recovery felt as though the situation had been handled extremely poorly. Shortly after, the breeding female of the Teanaway pack was illegally poached.

The Ruby Creek female situation posed a conundrum. While many called for her lethal removal, others did not want to see another breeding female removed from the population so early on in recovery. When it comes to wolves, there is often very little agreement; however in this case, almost everyone agreed that something needed to be done.

In 2011, Washington State adopted a comprehensive wolf conservation and management plan which has procedures in place to deal with "problem" wolves. F36 had not injured or killed a domestic animal and certainly had not caused injury to any human, but because she had become so habituated, she presented a unique problem. According to



On February 11, Director of Animal Care, Wendy Spencer, receives word that the helicopter carrying F36 has landed. Julie Lawrence photo. Below: Ione at Wolf Haven. Wolf Haven staff photo.

the plan, WDFW had two options: lethal removal or translocation. The former was not palpable, as she had done nothing to warrant destruction. The latter was not feasible because translocation would require a lengthy environmental public process, depending upon the proposed site of translocation. Even if WDFW opted to translocate her within her current recovery zone, she would most likely return to the ranch – wolves have a strong sense of site fidelity and can travel hundreds of miles if necessary.

One of the agenda items at the Washington Advisory Group (WAG) meeting in August of 2014 was the Ruby Creek female, as WDFW sought the WAG's recommendations on how best to handle the situation. It was during that time that Wolf Haven stepped forward and offered a third option: Sanctuary.

Typically, this is not an option we advise, recommend or advocate due to concerns for the animal's quality of life. However, after much discussion both internally and with folks on the ground who were familiar with her day to day activities, Wolf Haven decided that she might be able to make the adjustment to life in captivity and proposed the option of sanctuary to WDFW and the WAG. The proposal was met with some resistance, but ultimately, it was agreed that the Ruby Creek female would be brought in. It took six months of intensive efforts, but on February 11, 2015, F36 was finally captured via a helicopter darting operation.

F36, now named "Ione" in honor of the community that kept her alive for all those months, is adjusting to life in captivity. She is housed with a young male wolfdog named Luca who is similar in age. He is neither dominant nor high-strung, and she seems to cue off of him, which has a calming effect. His coat is almost all white, a stark contrast to her dark, ember color. Via remote camera, we often see them engaged in play. The wear pattern from her radio collar is still visible, though after this year's shed, there will be little recognizable evidence of her wild-born roots.

However, there is a certain "wildness" about her as she silently moves through her enclosure, that we do not see in our other animals. And though Ione seems to have settled into a state of homeostasis, that "wildness" serves as a bittersweet reminder of what she has lost. Even as Ione adjusts to her life in captivity, it is a far cry from her life in the wild. Although it may not be an even exchange for her loss of freedom, Wolf Haven offers what we can: an oasis of peace and tranquility, where she can see, hear and be with her own kind – other wolves.

Wolf Haven participates in two federally managed Species Survival Plan programs for critically endangered types of wolves: the Mexican gray wolf and the red wolf. Director of Animal Care Wendy Spencer serves on the management groups for both of these programs.

One of the biggest challenges facing both the Mexican wolf and red wolf captive breeding programs is gene diversity. Because each of the populations descended from just a handful of founders, with no foreseeable additional founders, genetic variability continues to be compromised. In order to mitigate low levels of gene diversity, some of the strategies that Species Survival Plan (SSP)

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Protecting gene diversity in endangered species

managers employ include increasing the population growth rate, increasing the proportion of breeders in the population, and increasing founder representation from underrepresented lineages.

When making recommendations for breeding pairs, optimizing (or better yet, increasing) gene diversity is paramount. SSP managers must take several things into consideration – genetic factors such as mean kinship (relatedness of a wolf to all other wolves [including itself] in the living population), avoidance of inbreeding, avoidance of linking rare and common lineages, as well as the degree of uncertainty within a pedigree. Logistical constraints can be equally limiting. Factors like group dynamics, age, health, reproductive status and holding space must all be taken into account.

Currently there are approximately 248 Mexican wolves and 200 red wolves in captivity; these are distributed among 55 and 44 participating institutions, respectively. Cooperators are spread out all over the country and in the case of the Mexican wolf SSP, several institutions are located in Mexico. Depending on the needs and recommendations of the programs, transferring animals among the different facilities can cause some logistical headaches.

As technologies improve, so does the potential for increasing gene diversity. One technique that has been used for quite some time with a variety of species is semen collection and banking of genetically valuable males for immediate or future artificial insemination. Semen collection allows for greater flexibility in managing a captive population because in some cases, it can help to mitigate some of the genetic or logistical factors that could otherwise compromise diversity. However, while the methodology for semen collection/banking has been well established, artificial insemination in female wolves has not been overly successful, so the implications of such techniques are not yet fully recognized.

Above: Preparing semen for cryopreservation; below: monitoring the wolf during collection requires constant attention to detail. Wolf Haven staff photos.

With the assistance of the reproductive team from Point Defiance Zoo and Aquarium in Tacoma, Washington, Wolf Haven collects and banks on a few males annually. This year we collected on our two male red wolves, 1405 (Jacob) and 1482 (Tala).

The procedure consists of a series of three "stimulations." Samples are collected and then evaluated under a microscope. We look for percentage of motility, status (on a scale of 0-5, 0 being dead and 5 being rapid, steady forward progress), color (e.g., clear, milky, urine), and approximate volume.

Viable samples are then cryopreserved and shipped to the reproductive center at the St. Louis Zoo, were they will remain in perpetuity.