April 2015

ewcp

Ethiopian Wolf Conservation Programme

Annual Report

Prepared by Eric Bedin, Jorgelina Marino,
Claudio Sillero-Zubiri & EWCP Team

A letter from our Founder & Director

A familiar theme runs through this annual report. The dreaded rabies virus raised its ugly head again, and we found ourselves immersed in yet another emergency. EWCP intervened quickly to avoid widespread mortality among Ethiopian wolves in Bale, and as soon as the laboratory confirmed rabies a joint Emergency Response Team convened with the Ethiopian Wildlife Conservation Authority and Bale Mountains National Park started vaccinations in the Sanetti Plateau. This was followed by interventions in Morebawa and Web Valley. Some 120 wolves were vaccinated, representing roughly a quarter of the world's population. As no packs went extinct, and subsequent breeding was good, the worst affected populations are already on the way to recovery.

Elsewhere things were not so dire, and through the tireless work of our teams and the deployment of new Wolf Ambassadors we kept to our targets for key monitoring, disease management and education and awareness campaigns. We continue to promote sound conservation practices that deliver value to the farming communities sharing the land with the wolves. In parallel, EWCP works with regional government agencies equipping and delivering effective protection for new Afroalpine protected areas.

Our work is informed by strong science, carried out by our field teams and supported by many excellent collaborators in Ethiopia and beyond. Thanks to a bespoke android app we now capture all field data in Google Nexus 7 tablets, improving the accuracy and delivery of all data streams and enabling rapid response to emerging threats.

A key EWCP objective is how we communicate our aims and activities and generate awareness for Ethiopian wolf conservation. Our new look website is now also accessible from mobile phones and tablets, and we maintain associated Facebook and Twitter portals. We take a long-term view, and two key elements of our programme are to nurture future Ethiopian conservationists, and firmly establish the wolves as a flagship for Afroalpine biodiversity, chiefly in the Ethiopian highlands but also internationally.

The work reported here would not have been possible without the wonderful encouragement we get from our donors and supporters, and we would like to thank you all warmly for your amazing support. The Born Free Foundation, the Wildlife Conservation Network, the African Wildlife Foundation, CEPF and many other donors continue to provide the much needed support EWCP requires to protect the wolves and their Afroalpine habitat. On a difficult year such as the one we have just emerged from, the swift response to the rabies emergency with funding appeals to support the vaccination operation made a great difference. I remain confident that if our friends worldwide continue to support our efforts and those of our Ethiopian counterparts, we can secure a future for rare and endangered Ethiopian wolves.

Claudio Sillero
Founder and Director

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Our Vision

To secure viable and ecologically functioning Ethiopian wolf populations and habitats across their present distribution, to extend the species presence to suitable ranges, and to emphasise its role as a flagship for the conservation and sustainable use of the Afroalpine ecosystem and biodiversity, on which present and future generations of Ethiopians also depend.

Executive Summary

EWCP turned 20, and here we celebrate our two decades, although in what it was a rather tumultuous year, with an outbreak of rabies killing 33% of all known wolves in the Sanetti Plateau, and some in Morebawa. As no pack went extinct as a result, and breeding was good across Bale, we are optimistic about the future. Seven Wolf Monitors worked intensively looking for carcasses (they found and sampled 22 dead wolves) and observing the affected packs. Using Nexus tablets and our EWCP Android app, data was recorded and disseminated more efficiently than ever –and are also displayed in our website. Monitoring threats across all other wolf populations continued and intensified, with the support of an expanding team Wolf Ambassadors (now totalling 13). Recurrent and emergent threats include habitat loss in key wolf areas, new roads crossing most Afroalpine ranges, negative perceptions due to livestock predation, undesired effects of increasing tourism, and worrying signs of environmental degradation from firewood collection and grazing.

Controlling rabies remains our main priority in the Bale Mountains. We vaccinated more than 3,000 domestic dogs in 46 villages, and organized an intensive vaccination campaign to tackle dogs following the seasonal movement of livestock into the mountains. We responded swiftly to the rabies outbreak with a joint Emergency Response Team with partners the Ethiopian Wildlife Conservation Authority and the Bale Mountains National Park. In total 106 wolves were captured and vaccinated in the Sanetti and Morebabwa, and another 14 were vaccinated orally (as part of an experimental trial). Over half of the wolves that consumed the oral vaccine developed a response, providing the scientific bases for a more proactive approach to rabies control.

On the bases of the knowledge gained from our monitoring work, we develop education, outreach and capacity building activities. The education teams targeted 17 schools close to wolf habitat across Ethiopia, participated and organized community events (including Wolf Day), field trips for children and experience-sharing visits for local leaders. Our outreach work included the Fuel Saving Initiative in North Ethiopia, designed to address the problem of unregulated firewood collection in the highlands, kick-starting two fuel-saving stove producers. We also focused on building capacity to monitor wildlife and diseases in and around the Arsi Mountains and Borena Sayint National Parks. We trained vets as part of rabies alert networks, so that EWCP and government are informed quickly and accurately. We also supported seven Ethiopian researchers from three universities, and collaborated with five other academic institutions conducting research that it is relevant for the conservation of the Afroalpine ecosystem and endangered species.

We thank all our donors and supporters, acknowledging their extraordinary generosity and support proffered during this challenging year. Finally, we honour with sadness and gratitude our friends Zegeye, Rebecca and Biniyam that sadly left us.

Celebrating EWCP 20th Anniversary

Zelealem Tefera, Born Free Foundation Ethiopia

Can you see the wolf? ... No I can't, where is it? Far in the horizon was the answer. This dialogue took place when Claudio and I were looking for wolves in the Guassa Plateau in 1995. Then I was a regional expert for wildlife conservation in Amhara Region North Shoa Zone. I was amazed how someone could spot an animal so far away just by the slightest movement it was making, and even know what the species was. The love and intimacy that has grown between the wolves and a man and the resulting conservation actions now span twenty years. The Ethiopian Wolf Conservation Programme (EWCP) was set up to protect the Ethiopian wolf from extinction. Fewer than 500 individuals live in highly human-dominated landscapes, with the safest strongholds in Bale and Simien Mountains. From its inception in the 1980s EWCP (and its predecessor the Bale Mountains Research Project) has focused in the conservation of the unique Afroalpine habitat by using the wolf as a flagship. In the early 1990's it was the only field biodiversity conservation initiative in Ethiopia, managing through a difficult period when other conservation projects were discontinued.

EWCP's contribution is not limited to the protection of the Ethiopian wolf. Unlike other conservation projects EWCP has contributed to training and building Ethiopians capacity in the field of conservations biology, a profession which is sadly neglected. I would go as far as saying that more PhD and MSc studies have been carried out on Ethiopian wolves than on any other Ethiopian endemic, and this was possible by the support and supervision provided by Claudio and EWCP. I nclude myself as a pioneer beneficiary of the programme, initially as a collaborator, then as a graduate student and later in an active role running the northern Ethiopia component of the programme and as Frankfurt Zoological Society country representative (EWCP's longest serving NGO partner). EWCP's ecological monitoring and environmental education components are the longest running such activities in the country, and other similar conservation projects are learning from EWCP's experience.

▶ Young Zelealem standing next to *Lobelia rynchopetalum* in the Sanetti Plateau, 1986 © JC Hillman

In a nutshell, I would say that in the last 20 years (and the period preceding its formal existence) EWCP has contributed tremendously to our understanding of species and biodiversity conservation in Ethiopia, and we are grateful for those who founded the programme, working tirelessly in difficult conditions to save one of our nation's unique flagship endemics, the majestic Ethiopian wolf.

Monitoring

Objective: To monitor and assess Ethiopian wolf demographic trends with a focus on the Bale Mountains and other selected critical populations, as well as measuring levels of livestock (grazing stock and domestic dogs), persecution and habitat loss affecting wolf status. The team also records all new settlements and crop planting in protected areas.

▶ Pack Composition Table. Close observations of focal packs enable us to establish with certainty the age and sex composition of packs and their breeding success.

Web Valley

pack	group size	adult males	adult females	subadult males	subadult females	pups
Alando	8	4	2	1	1	3
Bowman	9	4	2	2	1	4
Mckenna	10	5	2	2	1	4
Megity	12	5	2	3	2	4
Megity 2	3	2	1			4
Megity 3	3	2	1			5
Tarura	10	4	2	2	2	5
totals	*55*					*29*

Sanetti Plateau

pack	group size	adult males	adult females	subadult males	subadult females	pups
Bagadasa	7	3	2	1	1	4
Garba Gurracha	6	4	1	1		5
Batu	7	2	2	2	1	4
BBC	7	3	2	1	1	5
BBC2	6	3	2		1	3
Quarry	4	2	1		1	3
totals	*37*					*24*

East Morabawa

pack	group size	adult males	adult females	subadult males	subadult females	pups
Genale	4	3	1			2
Genale 2	5	1	1	1	2	2
Osole	8	2	2	2	2	4
Huke	7	2	2	2	1	2
Weshema	5	2	1	1	1	?
Fotora	3	2	1			2
Fulbana	7	4	2		1	?
totals	*39*					*12*

Wolf monitors detect an epizootic early and closely report its progress

The worst is over, and the future is bright!

By Jorgelina Marino & Eric Bedin

Last year our monitoring report ended up with a word of caution: as healthy wolf populations reached high densities in the Bale Mountains, the chances of a rabies outbreak were becoming worryingly high. Sadly this omen became true, when on 10 July 2014 our wolf monitors discovered the first of several wolf carcasses. Since then, they have worked tirelessly tracking the outbreak, informing the subsequent intervention, and following the affected wolf families.

Over the past 12 months seven wolf monitors followed 20 focal wolf packs in three core areas (Web Valley, Sanetti Plateau and East Morabawa) and visited other 28 packs in peripheral ranges. In total they made over 800 focal observations, recording some 4,000 sightings of wolves and wolf groups. Because of this intense monitoring, when rabies started killing wolves in the Sanetti Plateau, we knew the inner lives of many wolf families well, which enabled us to react accordingly and to accurately tally losses as well as new litters.

Tracking the route of the disease (Box) proved fundamental to guide the vaccination intervention that followed -starting in Sanetti, the epicentre of the disease, and moving to Morebawa as soon as rabies was also confirmed in that population. It was with relief

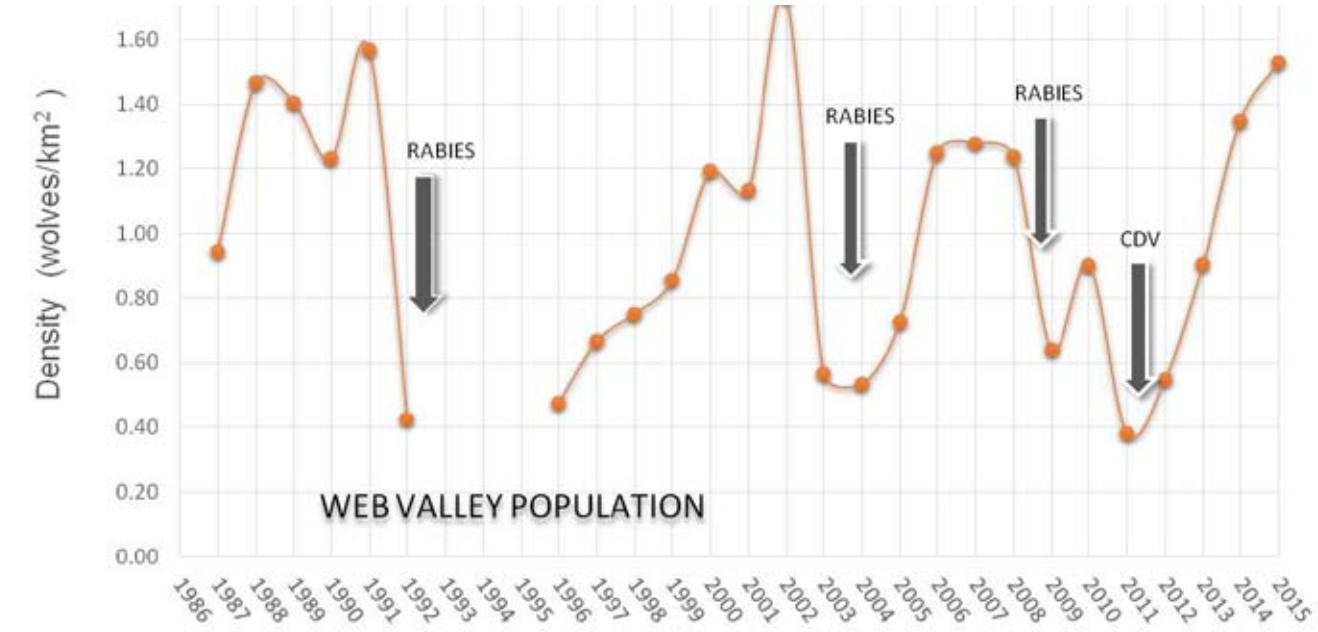
that the monitors looked, without success, for dead wolves in the Web Valley.

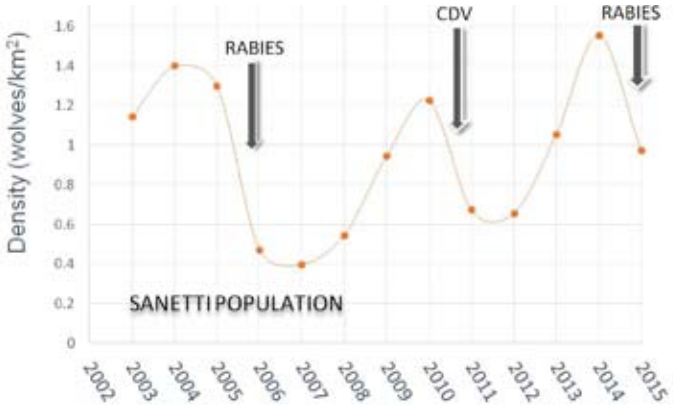
The total number of wolves in the focal packs of Web Valley, Sanetti Plateau and East Morabawa was 131 adults and 65 pups (see Table). Another year of careful monitoring thus contributed a new data point to our long-time time series, helping to put these results into context (see Figures). Both Web and Sanetti populations had been growing on the previous years, propelled by unusually high pup survival, and recovering fully from past disease outbreaks. This year, however, the Sanetti population declined by 33% as a result of the rabies. Luckily no pack went extinct, and as all of them bred profusely, we hope for a quick recovery (24 pups were born in six packs, compared with 18 on the previous year).

In the meantime, wolf numbers in Web Valley remained stable, as the population is probably at current capacity and reaching historically high densities. The large *Meggity* pack split up giving raise to two new packs, which managed to establish a territory in the crowded valley and to breed successfully (see packs news). With the addition of these breeding units, and a sustained breeding success, many pups were born in Web Valley this year (29 compared with 20 on the previous breeding season) (see Table).

It has been arduous and exhausting work for the wolf monitors this year. But they know that their work is invaluable, and that without them many more wolves might have died under the persistent threat of disease infection. They also have good reasons to be optimistic, as they witnessed another record year of breeding success.

▶ Time series showing long-term trends in wolf density in two core wolf populations in the Bale Mountains.

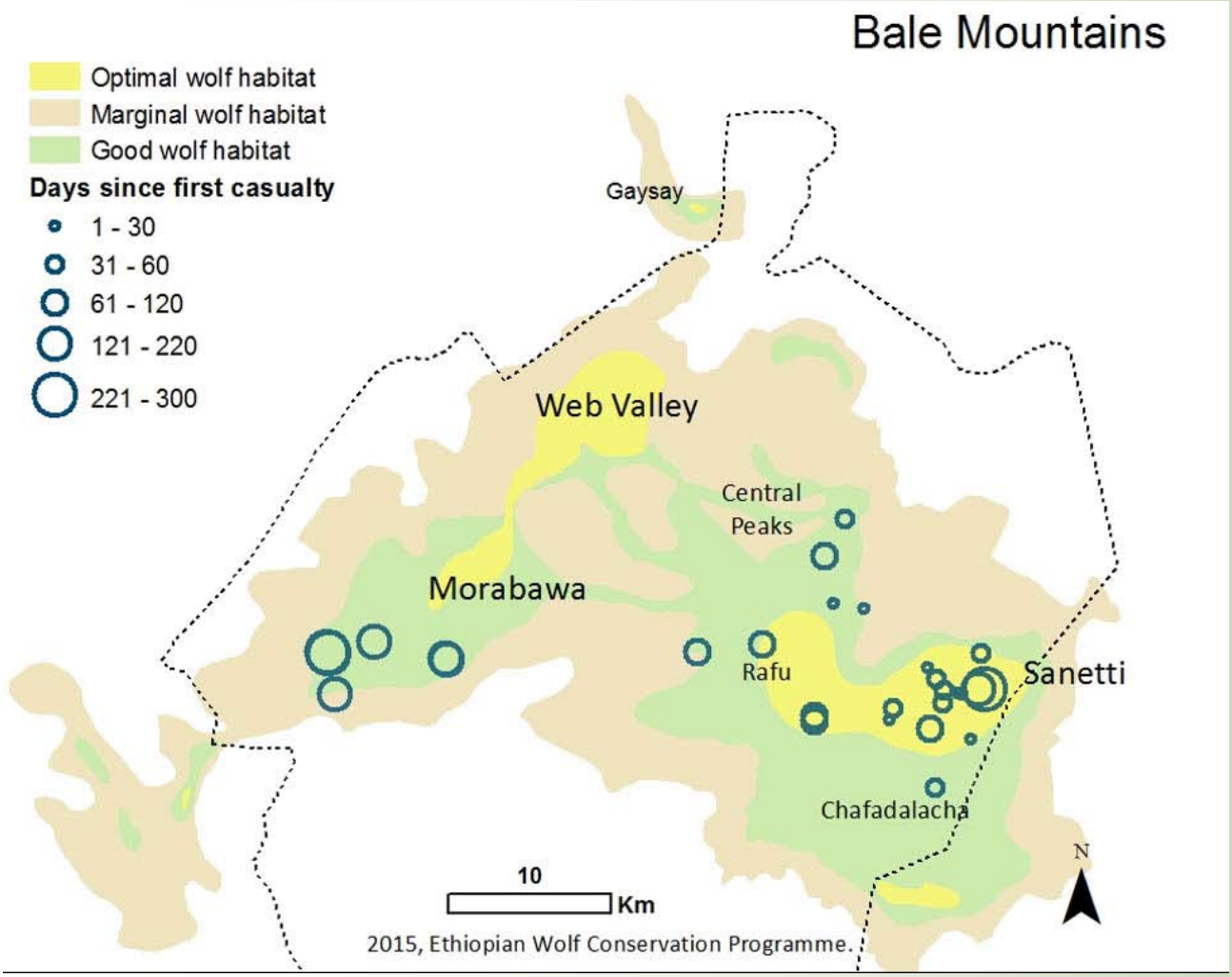




▶ Summary of main demographic parameters in two core wolf populations in the Bale Mountains.

	Web Valley	Sanetti Plateau
focal packs	7	6
wolf density	1,5	0,9
trend	stable	declining
rate of increase	0,02	-0,4
new packs	2	0
packs breeding	100%	100%
total number of pups	29,0	24,0
average litter size	4,1	4,0

Ethiopian wolf carcasses found in the Bale Mountains National Park between July 2014 and March 2015. The larger the circle, the longer the time between the estimated time of death and the first casualty detected in the Sanetti Plateau.



Tracking the outbreak

The monitoring team found the first Ethiopian wolf carcass in the Sanetti Plateau, within the range of the *BBC* pack –which we started monitoring 20 years ago. Monitoring intensified in the surrounding areas, and in August we found two dead juveniles in nearby *Garba Gurracha* pack, which finally testified to the beginning of a rabies outbreak, kick-starting the emergency vaccination intervention that followed (see "Emergency intervention to control rabies..." below).

Carcasses were found in and around Sanetti until mid-October 2014, signalling the end of a first wave of infection. In January 2015 dead wolves started appearing in Morabawa, another core area for Ethiopian wolves in Bale. The sequencing in the lab of the rabies virus found in the retrieved carcasses showed that this was indeed a separated rabies ingression into the wolf population. While the vaccination team moved to Morabawa, three juvenile wolves were found dead in Sanetti as late as March 2015. No further carcasses were found since then.

In total, between July 2014 and March 2015 we found 22 wolf carcasses (eight of which tested positive for rabies; others were too decomposed to provide suitable samples), and observed six sick animals, effectively signalling this as the most strenuous and hectic year in the life of EWCP. None of the dead or sick animals had been previously vaccinated against rabies.

Packs' news

By Alo Hussein

Thanks to the swift vaccinations there were no pack losses this year. Indeed, we had many puppies, and the mega Meggity pack split into three packs!

After an exceptional breeding season, we were bracing ourselves for a rabies outbreak, as high wolf density increases the risk of encounters with dogs and disease transmission. Our worst nightmare became reality when we found the first carcasses around the *BBC* and *Badagassa* packs in the Sanetti Plateau. Five months later we discovered dead wolves in Morebawa, some 20 kilometres away. EWCP reacted quickly and vaccinated many wolves. One third of the Sanetti wolves vanished during the epizootic, a high toll, but a much smaller proportion than during the 2004 and 2009 outbreaks.

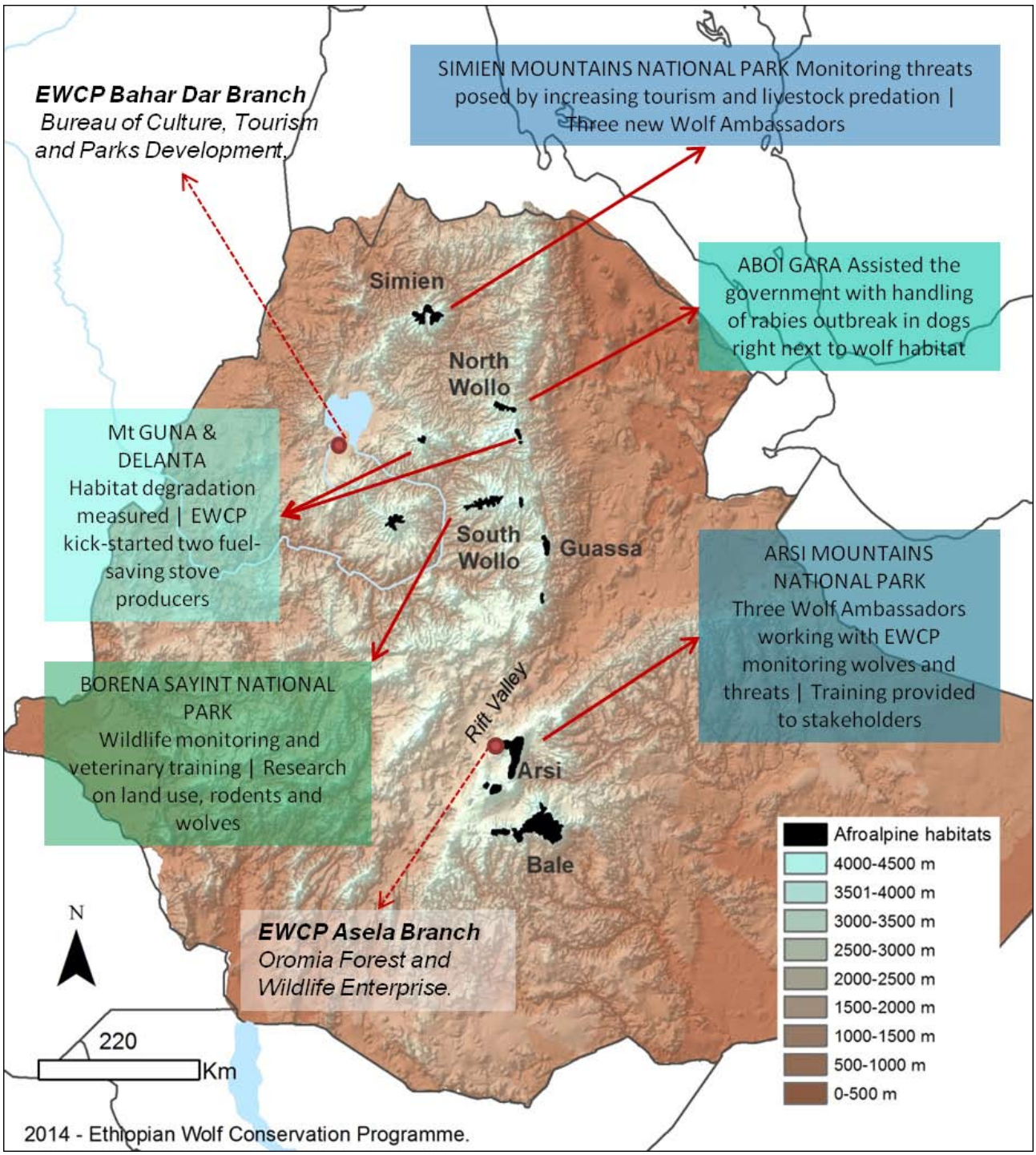
Despite these tough times, my team was able to confirm that no whole packs had disappeared in Sanetti, and that all had bred after the epizootic. The *New BBC* pack -a recent split from the good old BBC pack- lost its litter in late March 2015 (from rabies) but it is still defending its territory. Out of three adults, two were vaccinated this year thus protecting and saving the family nucleus.

In the Web Valley wolves have reached peak density, packs are large, and wolves are starting to explore neighbouring territories searching for breeding opportunities. The 'mega' *Meggity* pack split up, giving raise to two new groups (MEG#2 and MEG#3)! –this is the first time such 'multiple' fission has been recorded. The two new packs are composed of three and four adults, and each had four puppies. Despite desperate raids from the main family on the dissidents, they successfully delimited their own territories. At the other end of the Web Valley, the *Genale* pack also split up, and the new family settled nearby in the isthmus linking Web Valley with Morebawa. It will be challenging next year to monitor all these new pack families, but also exciting to assess their movements and behaviour.

Meg#2 and Meg#3 packs, are eagerly waiting to be named. A wolf sponsor anywhere?

When wolf packs grow very large social tensions emerge. The alpha female may try to suppress a subordinate female attempt to breed. But occasionally the younger female would attempt to muster a break-away group to settle and breed nearby.

©EWCP/Harry Harrington



At a glance, EWCP monitoring work in wolf populations outside Bale. Note the location of a new EWCP office in Arsi, in addition to the regional office in Bahar Dar where the North Ethiopian team is based.

What's going on elsewhere

Monitoring threats in remote wolf populations

By Jorgelina Marino and Gebeyehu Rskay

While wolves in the Bale Mountains continue to suffer from recurrent rabies epizootics, other small populations are at the mercy of increasing demand for arable land, pastures, and sources of firewood in Afroalpine communal lands. Monitoring these threats and their impacts upon Ethiopian wolves is the work of EWCP monitoring officers and a growing team of dedicated local Wolf Ambassadors reaching deep into the most remote mountains (see map).

With the addition of three new Wolf Ambassadors in the Arsi Mountains and two in the Simien Mountains, EWCP now supports 13 Wolf Ambassadors across five

Women collecting *'charranfe'* bushes near the Borena Sayint National Park in South Wollo, which they use for cooking, heating and lighting. Plants are removed with their roots, disturbing the soils and limiting the potential for regeneration. ©EWCP/Eric Bedin

New roads and the advancing agriculture threaten the narrow Afroalpine corridors connecting the South Wollo highlands. ©EWCP/Jorgelina Marino

Large numbers of livestock graze in the meadows of Delanta, distubring the wolves and making the meadows less suitable for rodents, the wolves' main prey. ©EWCP/Jorgelina Marino

wolf populations. The vital information they collect is alerting us of emergent problems and help us to adapt our monitoring and conservation priorities to the specific needs of each wolf population.

These are some of our findings:

• Extensive *Erica* bush fires affected nearly half of the wolf habitat in the **Arsi Mountains** in Jan-Feb 2015. Three new roads were built across the National Park (one passing at only 500m from a den with five pups). The Wolf Ambassadors will be closely monitoring the affected packs.

• A new road traverses the small Afroalpine range of **Delanta-Gubalaftu** in North Ethiopia, with potentially serious consequences for this small population (with not more than 25 wolves). Roads have being built in high mountains all across Ethiopia, and we are concerned about their environmental impacts. As a first measure, we will install road signs to diminish the risk of collisions with wildlife in key wolf areas.

• The increasing popularity of the **Simien Mountains** as a tourist attraction is creating problems for the wolves. Open garbage pits among them: in May 2014 a wolf was found dead near the Chennek campsite, apparently chocked with an aluminium container picked from the camp's garbage pit. Park authorities intervened and the system of waste management has since improved. Our Wolf Ambassadors report that wolves are less frequently seen around the campsite.

• In places like **Delanta** wolves and people coexist in close proximity. We recently observed that wolves adjust their foraging behaviour to avoid humans and livestock, with potential energetic costs (see research article). We will intensify education campaigns seeking to change the behaviours of shepherds, who frequently chase wolves away.

• Reports of jackals and wolves interacting aggressively are increasing in ***Aboi Gara*** (North Wollo), including an account of two wolf pups killed by jackals. Research is needed to understand competitive interactions between these two canids, and the implications for Ethiopian wolf conservation.

• In **South Wollo** Ethiopian wolves have stopped using the areas under strict protection within the Borena Sayint National Park, possibly because tussock grasses are very tall and became unsuitable for rodents and/or for wolves to hunt. This year, for the first time in decades, the local communities harvested *'guassa'*

grasses and firewood within the park, as part of a government's sustainable use initiative. We will be monitoring rodent populations in 'control' and newly-managed plots to assess the level of management under which wolves and rodents might thrive.

• Livestock predation by wolves and jackals in **Ras Dejen, Simien Mountains** peaks when livestock is left overnight in the mountains, for example during Easter time in April-May. A study in the **North Wollo** also showed that the cost of predation can be significant for the household economy, and that having shepherds reduced losses. We will work to promote good husbandry practices and tolerance across wolf populations.

• Sadly, the single most important threat goes unchecked in many areas: the conversion of Afroalpine habitats into barley fields. This is a growing problem in Delanta and also threatens narrow habitat corridors connecting Afroalpine areas in South Wollo, Ras Dejen (recently annexed to the Simien Mountains National Park) and along the mountains linking Aboi Gara with Abuna Yosef in North Wollo.

Going digital

The fight against rabies, from the Ethiopian highlands to your browser

By Jorgelina Marino and Eric Bedin

Since the first wolf carcass was found in the Bale Mountains National Park in July 2014, EWCP has worked frantically to contain the spread of rabies. With permission from the Ethiopian Wildlife Conservation Authority we set up an Emergency Response Team. Battling wet and blustery weather above 13,000 feet we were able to capture and vaccinate 130 wolves (including oral vaccines), securing protection for the whole wolf population.

Such an emergency put our newly-devised digital monitoring system, funded by the ***J.R.S. Biodiversity Foundation***, to its greatest test so far. Wolf monitor teams, with Google Nexus 7 tablets and the latest version of the EWCP Android App (developed by ***WildKnowledge*** in the UK), walked the valleys and meadows of Bale looking for carcasses and sick wolves, and kept a close watch on the packs already vaccinated. The data they collected was processed straight away, and the emergency intervention adapted accordingly.

Away from the field, EWCP staff processing permits, sending samples to labs and contacting donors to support the emergency intervention, greatly benefited by the rapid turnover of information. Using our new website, the information was displayed in the form of interactive maps in the ***Wolf Mapper*** www.ethiopianwolf.org/wolf-mapper).

During the emergency we produced maps to visualize the distribution of free roaming dogs within wolf range and dog vaccination campaigns. Crucially we monitored the spread of rabies, from its epicentre in the Sanetti Plateau to the more remote Morabawa population, where the last wolf vaccinations were conducted in March 2015.

Some components of the digital data cycle still require fine-tuning, and there are challenges that will not go away any time soon -such as an unreliable internet connection-, but we have made good progress in the right direction. Having data readily available for analyses and display during the current disease outbreak, not only made our work easier but also enabled supporters and partners to keep tabs on us, making them feel part of the large EWCP family.

▶ Gebeyehu Rskay uses a Nexus 7 tablet to gather detailed wolf behavioural observations in Delanta. The EWCP app enables rapid data collection and error-free recording of complex behaviours, using standard codes that Claudio Sillero developed in the 1980s. ©EWCP/Jorgelina Marino

Disease control and prevention

Objectives: a multi-pronged approach to reduce the threat that diseases pose to the survival of the Ethiopian wolf, with the following objectives: i) assess the prevalence and threat of canid pathogens to wolves, ii) gather information on health status, diseases and causes of mortality; iii) investigate a vaccination scheme to protect Ethiopian wolves; iv) prevent disease transmission from domestic dogs.

Emergency intervention to control rabies in the Bale Mountains

by Claudio Sillero and Eric Bedin

EWCP intervened quickly to avoid widespread mortality among Ethiopian wolves in Bale, thanks to the early detection of infected wolves (see monitoring section). As soon as rabies was confirmed in brain samples from the carcasses found in Sanetti Plateau (by the EPHI and APHA laboratories in Ethiopia and the United Kingdom respectively), an action plan with immediate actions to tackle the outbreak was developed and authorized by the Ethiopian Wolf Conservation Authority (EWCA). The plan followed policy and routine methodologies identified in the Bale Mountains National Park (BMNP) Management Plan and the National Action Plan for Ethiopian Wolf Conservation. The most immediate response was the vaccination of wolves around the infected packs, using 2ml of Merck's Nobivac Rabies vaccine.

Vaccination started on 11 August 2014 with an Emergency Response Team composed by EWCP staff (capture and logistic teams), EWCA (veterinarian) and BMNP (expert and scouts), under the coordination of Claudio Sillero (EWCP Director), Eric Bedin (EWCP Coordinator) and Fekede Regassa (EWCA Veterinary Officer). After a first wave of infection in the Sanetti Plateau, rabies was confirmed in samples from the Morabawa population, and the vaccination team followed promptly. Wolves were also vaccinated in the Web Valley, to safeguard this important population. For the last vaccination campaign in the Web Valley in early March, EWCA authorized Leta Edea (EWCP vet) to be in charge of the vaccination, recognising the professionalism of the EWCP team.

▶ Claudio, Leta and Fekede handling an anaesthetised wolf. Traps are checked regularly, day and night, minimizing stress and avoiding unnecesary injuries to the wolves. After each trapping campaign the team goes back to Dinsho for a much needed rest. ©EWCP

In total one hundred and six wolves were vaccinated in Bale between August 2014 and March 2015, representing roughly a third of the Bale population. As no pack went extinct as a result of the outbreak, and breeding success was good, the Sanetti population may be already in the way to recover.

We are grateful to WCN and the Born Free Foundation that were able to step in and raise emergency funds for the vaccination operation at very short notice. Additional emergency funding was provided by the Zoological Society of London, the Critical Ecosystem Partnership Fund, Lobelia Press, Zoological Society for the Conservation of Species and Populations (ZGAP), John Stuelpnager, Houston Zoo, Saint Louis Zoo, Jan Richardson, Meryt and Peter

Harding, the French Association of Zoo Vets (AFVPZ) Dakota Zoo Conservation Fund, and many others.

We were able to start vaccinating quickly thanks to the generous and efficient support of the logistic teams of Merck MsD Animal Health (Rabivac IM vaccine) and Virbac (SAG2 oral vaccine). All biological samples were analysed by the Ethiopian Public Health Institute in Addis Ababa and the Animal and Plant Health Agency in the UK.

Oral vaccination as a tool to prevent rabies in wolves

By Eric Bedin

Widespread oral vaccinations have been used successfully to control rabies in wild carnivores across the world, and we are currently investigating whether this approach would offer a long lasting solution for rabies on Ethiopian wolves. In 2011 a small-scale pilot was conducted by Chris Gordon (former EWCP Field Coordinator) and Leta Edea (EWCP Vet Officer) that had confirmed the safety of the vaccine (SAG2 live attenuated rabies virus vaccine), showing promising results.

Recently EWCP rolled out a second oral vaccination trial on three packs in Web Valley. Two experiments were involved: a diurnal trial with baits offered to targeted individuals, and a blind, indiscriminate trial at night time. In June 2014, to obtain a baseline reference of blood antibodies, 14 wolves were captured in *Bowman* and *Tarura* packs. In August, baits containing the vaccine and a biomarker were distributed individually to these wolves, and in September ten wolves were re captured to test sero-conversion for rabies (seven of the wolves captures were observed eating the bait). A third pack, *Genale,* was offered baits laced with the vaccine during six nights in August, and six wolves were later captured and tested.

Albeit small, both experiments provided encouraging results, with 50% of the tested wolves showing sero-conversion. The results will be presented to the Ethiopia Wildlife Conservation Authority in a forthcoming workshop, hoping they will pave the way for a pro-active policy to secure the future of the Ethiopian wolf.

Subpopulation	Pack	Wolves vaccinated
SANETTI		**44**
ago-14	Badagasa	5
	Batu	2
	BBC	6
	Garba Guracha	8
	Lakota	10
	BBC2	3
	Quarry	10
WEB VALLEY		**22**
sept-14	Bowman	2
	Genale	6
	Tarura	1
mar-15	Alandu	5
	McKenna	8
MORABAWA		**40**
oct-14	Osole	8
	Fotora	3
feb-15	Fulbana	5
	Wesema	4
	Waota	5
	Leliso	4
	Gurati	2
	Duna	4
	Huke	5
	TOTAL	**106**

▶Whenever a wolf carcass is found, a detailed post mortem is conducted and brain samples tested for rabies virus. ©EWCP

Pack	Wolves captured & biomark-positive	Titres		
		<0.25	>0.25 - <0.5	>0.5
TARURA	4	1	2	1
BOWMAN	1			1
GENALE	3			3
TARURA (2011)	4	1	1	2
Total	12	2	3	7

▶Wrapping meat around the vaccine pouch. On previous experiments we confirmed that wolves prefer meat over other commercially available baits. ©EWCP/Chris Gordon

▶Wrapping meat around the vaccine pouch. On previous experiments we confirmed that wolves prefer meat over other commercially available baits. ©EWCP/Chris Gordon

Fifty percent of the wolves captured after the oral trails showed raised levels of rabies antibodies in blood (titres) that would indicate they developed resistance to rabies (i.e., titres level 0.5 or more). The presence of the biomarker confirmed that these wolves had consumed the vaccine.

Wolf eating bait during the day-time trial. A biomarker was incorporated to verify if the animals had actually perforated the vaccine pouch, confirming that the vaccine had entered the blood system through the oral mucosa ©EWCP/Eric Bedin

Canine distemper virus, another potential threat to Ethiopian wolves

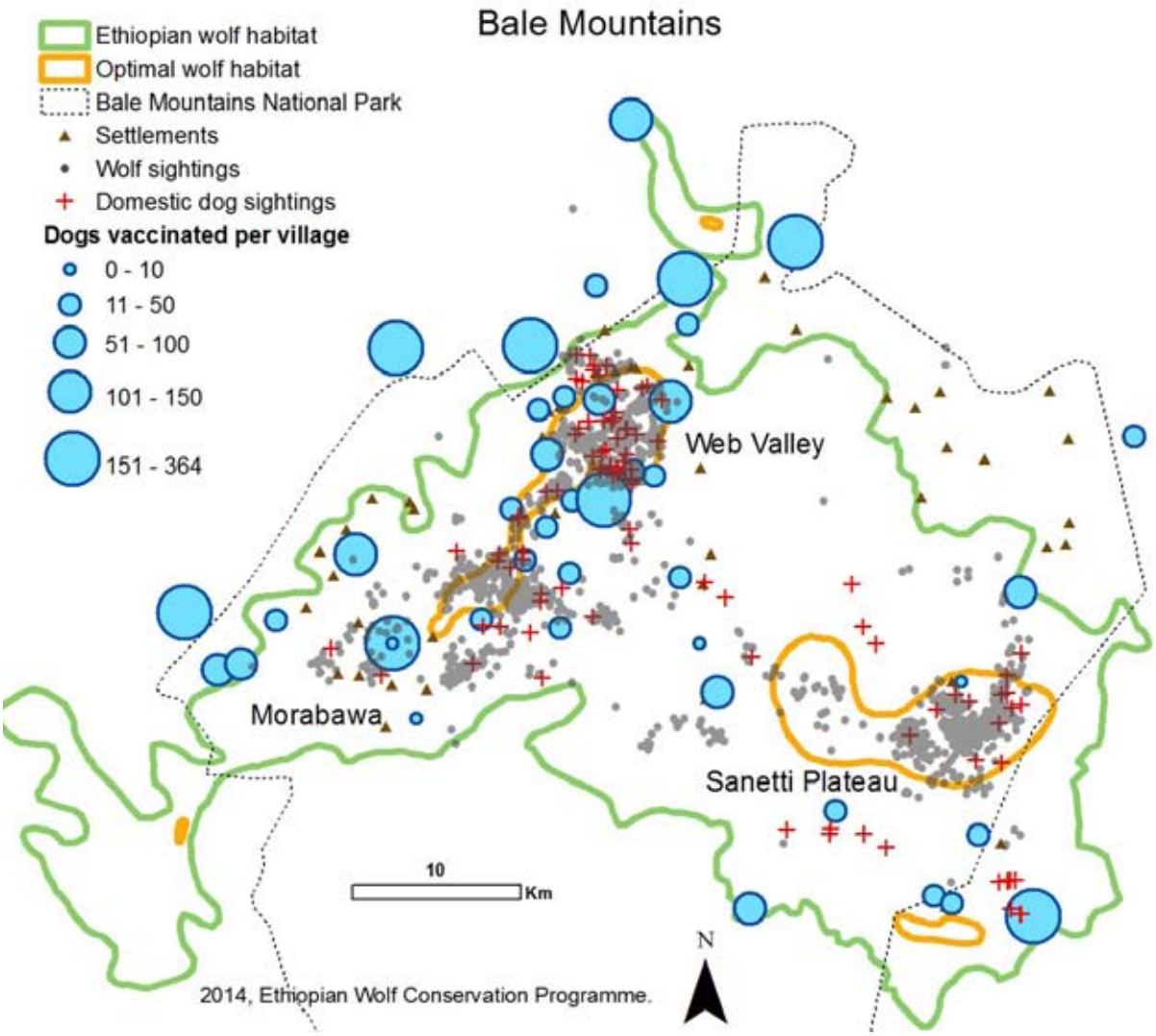
by Eric Bedin & Claudio Sillero

Canine Distemper Virus (CDV), a common pathogen in domestic dogs, also affects wild carnivores, including black-footed ferrets, Island foxes and lions. CDV killed over 60% of the Sanetti Plateau wolves in 2010, changing our perception of the threat posed by CDV to the wolves. Prompted by this realization, and with the permission from the Ethiopian Wildlife Conservation Authority, we carried out a small trial to test the effectiveness of Puppy Nobivac vaccine, manufactured by Merck. We tested it on five wolves from *Tarura* pack in August 2014. These wolves were recaptured a month later to test for CDV antibodies. Sadly, the results were less encouraging than what we had expected, and we are discussing them with virologists, considering that the dosage originally advised might not have been adequate. Six month later, the vaccinated wolves were observed to be healthy and the *Taruras* were breeding, confirming that at least the vaccine was safe. Given the severity of CDV, we will consider running another trial in the future using a different dosage.

Fighting rabies in all fronts: vaccinations of domestic dogs in Bale

by Muktar Abute and Eric Bedin

Since 1996 EWCP vaccinates domestic dogs in and around Bale Mountains National Park, targeting villages close to those wolf packs that are most exposed to interactions with dogs, but also covering other communities along the edges of wolf habitat. Between April 2014 and March 2015 our wolf monitors sighted domestic dogs in wolf habitat in 91 occasions, the majority concentrated on the Web Valley surrounded by numerous villages along the valley walls. Logically, these villages were the focus of an intensive dog vaccination campaign. In total we vaccinated 3,375 domestic dogs



Domestic dogs are regularly seen ranging in wolf habitat, most frequently in the Web Valley. EWCP vaccination campaigns reach many villages to reduce rabies incidence in dogs living close to the wolves. Map indicates reach of vaccination campaign during April 2014-March 2015.

in 45 villages over the last 12 months (see map). It is quite likely that the high vaccination coverage achieved in the Web Valley contributed to save these wolves from the rabies outbreak affecting Sanetti and Morebawa.

Even for the very-experienced EWCP vet team catching local dogs is notoriously difficult. Sometimes owners are reluctant to get their dogs vaccinated, but with perseverance our vaccination campaigns have gained widespread support across Bale. ©EWCP/ Lorenz Fischer

Rabies awareness is growing with each year that the vet team visits the local communities. In 2014 this was helped by the involvement of park scouts and EWCP Community and Education Officers, working tirelessly to spread the vaccination message during the rabies outbreak. The team was pleasantly surprised when locals in a remote corner of Morebawa brought their dogs for vaccination spontaneously, while they were vaccinating the wolves.

Thousands of dogs live and roam around wolf habitat, and present a clear risk as disease vectors. The wet season (April to October) is marked by seasonal herds of cattle, goats and sheep entering the park, accompanied by hundreds of dogs. Some come from far away, where our vaccination campaigns do not reach. For this reason we are setting up a second vaccination team, in an attempt to minimize the number of unvaccinated dogs that enter the park during seasonal livestock movements. Dogs will also be vaccinated against canine distemper, another common virus that can be as lethal as rabies for the Ethiopian wolves.

▶ EWCP North Ethiopia team visited local markets in Delanta Sanka, Kimer Dingay and Mokesh to do practical demonstrations of the MIRT® stoves, handing out a specially designed brochure. EWCP Education and Outreach Officer Fekadu Lema, in the new project vehicle. ©EWCP/Fekadu Lema

Community education and outreach

Objective: The EWCP education campaign seeks to involve local communities in the protection of Afroalpine natural resources; continue with the development of a conservation education and extension campaign at school and community levels in Bale and other critical wolf areas.

Saving fuel, saving wolves: Fuel-saving stove suppliers established in Mt Guna and Delanta

By Fekadu Lema and Jorgelina Marino

The uncontrolled extraction of *'charranfe'* bushes, dominant Afroalpine vegetation north of the Rift Valley, is degrading wolf habitat in several populations. Firewood collection, a task mostly performed by women and children, is as a result becoming more time consuming, increasingly occupying time available for other activities. It was with great excitement that we announced our 'Fuel Saving Initiative' to promote the use of MIRT® stoves, which consume half of the firewood required by traditional cooking methods.

These stoves also cook faster, and reduce indoor air pollution. Thanks to our efforts and with the support of GIZ (German Corporation for International Cooperation), these fuel-saving stoves are now being produced locally in two wolf areas. This followed a long process that involved choosing and training the producers, and the complex logistics involved in setting up their workshops. These entrepreneurs started to trade the stoves, and are targeting consumers on the fringes of the wolf areas. Simultaneously, EWCP is advertising the benefits of fuel-saving stoves in many local markets and schools with practical demonstrations, and organizing a system of subsidies to support buyers in target areas. After a very successful year, EWCP secured a grant extension from the Critical Ecosystem Partnership Foundation to help more stove producers start up their businesses.

Investing in the future: educating the children of highland schools

By Habtamu Mulugeta and Fekadu Lema

▶ Arsi Wolf Day art] School children exhibiting their artwork during Wolf Day in Arsi ©EWCP/Habtamu Mulugeta

Students with exercise books and leaflets in Hibret Fira school ©EWCP/Fekadu Lema

Shilmat Admassu with farmer from Mt Guna conducting local environmental assessments ©EWCP/Gebeyehu Rskay

North Wollo farmers visiting the Guassa Community Conservation Area ©EWCP/Fekadu Lema

EWCP has been working with local schools in the Bale Mountains for many years and it is expanding its education campaign to other regions across Ethiopia. Always choosing schools high up the mountains, those closest to Ethiopian wolf habitat. We work with 13 target schools and every quarter the EWCP Education Officers of Bale, Arsi and North Ethiopia hold a meeting to share their experiences on how to captivate the children and best transmit education messages about wildlife and the environment.

Our exercise book with an Ethiopian wolf and a conservation message printed on the cover, proved to be very popular among the school children. We also produced a leaflet about Afroalpine conservation and a manual specifically designed to help teachers with environmental education in highland schools.

Another good way to engage with the young generation is through the projection of documentaries in the classroom. Moving images captivate the children's attention and convey a new vision of nature. During projections classrooms were crowded, with children packing the windows to catch a glimpse of a wolf running in the highlands. Projections were always followed by many interesting questions.

In North Ethiopia we are supporting Nature Clubs to fulfil their inspirational role. Working with club coordinators we funded and helped the implementation of small-scale conservation projects at each school. Projects should emphasize any future environmental and economic benefits of conservation, and included planting trees (either indigenous species because of their conservation value, or *Eucalyptus* a fast growing firewood alternative) and growing *Guassa* (grass used for thatching and rope making) which is heavily harvested in Afroalpine communal lands and can be easily grown.

The Wolf Day is annual tradition that started in the Bale Mountains in 1997 with the purpose of bringing people together to celebrate Ethiopian wolves and their Afroalpine habitats through sport events, quizzes, poems and drama. Wolf Day was also celebrated this year in the Arsi Mountain with the participation of four schools from Meraro, Galama and Kaka. Sport activities were capped by speeches about Ethiopian wolf conservation from invited guests.

© Chris Gordon

Community outreach events at a glance

May & December 2014 Education trips to Sanetti Plateau
EWCP organized two nature discovery trips with children from Dinsho Primary School and Addis Ababa International Community School. The students observed wolves and other Afroalpine biodiversity, with attended a talk about EWCP in the Wabe Shebelle hotel in Goba.

July 2014 Fuel saving workshop, Debre Tabor, North Ethiopia
In collaboration with GIZ Energy Coordination Office we organized workshop with representatives of local governments and communities to discuss and evaluate the problem of firewood extraction in Afroalpine areas, and the benefits of fuel saving stoves.

August 2014 Local Environmental Assessments, Mt Guna, North Ethiopia
A simple environmental assessment protocol, specifically designed for communities to assess the status of their Afroalpine natural resources (e.g., firewood, water and pasture) was implemented by 180 people. They became more aware of environmental problems and the consequences of unregulated land uses.

August 2014 Teachers Workshop, Bahir Dar
A two-day workshop with teachers and Nature Club coordinators from nine target schools in North Ethiopia, to discuss gaps in environmental education, coordinate future activities, and to present a manual with classroom activities.

August 2014 Stakeholders and partners meeting, Goba, Bale
EWCP participated of this meeting with local communities, together with park managers, NGOs (Frankfurt Zoological Society, Farm Africa), and woreda and zone administrators to discuss the threats and potential mechanisms to protect BMNP.

October 2014 Experience sharing visit to Guassa Community Conservation Area
Representatives of local communities living close to Afroalpine areas in Wollo visited this protected area to witness and learn about the benefits that derive from the sustainable management of natural resources, including community-based tourism.

October - November 2014 Itinerant rabies awareness campaign, Bale
As part of the Emergency Response Rabies Team, EWCP Community Officer and three BMNP scouts visited neighbouring communities during 40 days.

November 2014 World Tourism Day, Bale
Celebrated at the Dinsho lodge in BMNP Headquarters with more than 100 participants. The EWCP Community Officer attended a panel discussion and presented the project to the guests.

December 2014 Meraro Wolf Day, Arsi Mountains.
An annual celebration of the wolves and their Afroalpine habitat, celebrate in the Arsi Mountains for the sixth time.

January 2015 Tourism for Biodiversity Conservation and Community Development, Bale
EWCP supported financially this event organised by Madawalabu University in Robe. The EWCP Education Officer talked about the achievements and vision of our late colleague and friend Zegeye Kibret. T-shirts highlighting the Ethiopian wolf were distributed to the marathon organiser.

Community outreach

Research and Capacity Building

Objective: EWCP relies on strong science to inform and develop conservation actions towards the completion of its main objective: to assess, address and counteract threats to the survival of Ethiopian wolves and their Afroalpine ecosystem. EWCP is committed to building capacity in Ethiopia in the ecology and biodiversity conservation field, both within our organisation and the Ethiopian conservation community in general.

Training vets to create rabies alert networks

by Leta Edea

A crucial part of veterinary training is to conduct post mortem assessments following standard practices. Leta Edea extracting a brain sample from a wolf carcass to test for rabies ©EWCP/Eric Bedin

Last year I reported on training EWCP provided to staff of the Simien Mountains National Park and Menz-Guassa Community Conservation Area to help enhance their capacity to detect wildlife carcasses and to collect biological samples. Aware of the potentially catastrophic consequences of a disease outbreak among Ethiopian wolves, in October 2014 we also trained staff from the Arsi Mountains National Park and the Borena Sayint National Park in South Wollo. Both are new protected areas needing to enhance their ability to monitor wildlife.

In Aksta, South Wollo, I conducted a two-day workshop with a vet from the Amhara Regional Government, the park's vet officer, and five vet technicians from local governments surrounding the park. I replicated this fruitful experience in Segure in the Arsi Mountains, with two vets and three vet technicians working locally. I focussed the training on the detection and processing of wildlife carcasses to test for rabies, canine distemper and other pathogens that kill Ethiopian wolves. Participants performed post-mortem examinations, collected and secured samples, and completed standard post-mortem reports. Necropsy kits were donated and a specific alert response system was agreed in each occasion, which will trigger as soon as a dead wolf is found and that will involve park managers, regional governments and EWCP.

Increasing the capacity of protected area staff to monitor wildlife

by Eric Bedin & Jorgelina Marino

Borena Sayint and Arsi Mountains National Parks (AMNP) are relatively new protected areas with important wolf populations. To support their work we organized two training events (November and December 2014 respectively) for park scouts, experts and Wolf Ambassadors, and donated several sets of field equipment for the experts of Borena and Arsi. Training included mapping and geo-location, use of binoculars, GPS and compass, and collection of standard data, followed by 2-3 days of field practice observing wolves and counting wildlife along transects. Between January and March 2015, three four-day wildlife monitoring sessions were organized in collaboration with the AMNP, to assess the status of wolves and other wildlife in the areas heavily damaged by extensive fires.

The training of Wolf Ambassadors remains one of our top priorities, and we recently inducted three

Monitoring wolves in South Wollo during a training session. From right to left: Abebaw Abayeneh (Wildlife Expert from the Amhara government), Shimeles Ababa (Wolf Ambassador) and three members of BSNP staff. ©EWCP/Jorgelina Marino

new Wolf ambassadors in Arsi and two in the Simien Mountains. Wolf Ambassadors are members of the community that act as wolf watchers and protectors, alerting EWCP and local governments of events occurring inside the wolf habitat. After three years of training, the two Wolf Ambassadors in Borena can collect good quality wolf data and they also learnt how to monitor and identify Afroalpine rodents, as part of a study to measure wolf prey. We also organized an annual monitoring workshop in Bahir Dar, where Wolf Monitors from all wolf populations gathered to discuss their work.

Ecology of Ethiopian wolves in a changing landscape

By Girma Eshete

Ethiopia's contrasting landscapes are rich in wildlife including the rare and endemic Ethiopian wolf, a

The South Wollo highlands provide a good natural experiment to assess the impact of land uses upon rodents. A comparison of wetlands with and without protection. ©EWCP/Jorgelina Marino

natural icon of the Afroalpine ecosystem. The future of the wolves depends on the management of this awesome landscape, balanced with the needs of local people. My doctoral research focuses on land use in and around Borena Sayint National Park in the South Wollo highlands. To understand the interactions amongst land uses, wolves and their rodent prey, I am combining ecological and socio-economic surveys.

I completed a rodent trapping study (totalling 2,311 captures on 4,500 trap days), which would indicate that livestock grazing is resulting in lower rodent abundances (trapping success was 22% in grazed and 30% in un-grazed areas). Interviews revealed that several carnivores (golden jackals, spotted hyaenas, leopards and Ethiopian wolves) preyed on livestock and this was perceived as a problem by the local communities. From 300 respondents, 48% reported losing livestock, yet 70% reported a positive attitude toward wildlife. I have also been collecting wolf dropping to study Ethiopian wolf diet in South Wollo.

After a field season of hard work, I'll be at Leiden University over the next few months analysing data to quantify rodent density under different land uses and livestock predation. The ultimate objective of my research is to contribute practical guidelines for habitat management and the mitigation of human- wildlife conflict, to support the conservation of the Afroalpine ecosystem and its charismatic flagship species, the Ethiopian wolf.

How wolves adapt to live with humans

By Gebeyehu Rskay

Ethiopia is the cradle of humanity, and it is in this context that we should understand the challenges brought about by the coexistence of humans and wildlife. High up in the mountains traditional lifestyles persist, and people's livelihoods are still closely entangled with natural resources. For example in Delanta the highlands of North Wollo there is a small isolated populations of Ethiopian wolves that daily interact with people and their herds using the ever-shrinking Afroalpine pastures.

For my MSc thesis I researched the behavioural mechanisms Ethiopian wolves might develop to cope with human disturbance, focusing on their foraging ecology. Between December 2014 and March 2015 I conducted 43 focal observations, totalling 141 hours, systematically recording the behaviour of individual wolves, including their responses to the proximity of people and livestock. I discovered that wolves segregate from humans and livestock temporally and spatially. The period wolves were most active foraging was in the

early morning, before livestock and shepherds reached the moorlands. A second foraging peak occurred after they returned to their houses in the late afternoon. I also observed that wolves reacted to the presence of dogs and people harvesting *'charrranfe'.*

Our findings are cause of concern, as they indicate that the time available for the wolves to catch rodents is limited. On the other hand, wolves were observed hunting rock hyraxes *(Procavia capensis)* frequently, an unusual behaviour considering what we know about the diet and foraging ecology of wolves elsewhere. EWCP has proposed to remove an illegal settlement in the core wolf area (where hundreds of sheep and goats stay overnight) and work to implement alternative fuel-wood technologies to give the wolves a short-term relief, allowing them more hours to forage freely. In the long run, improved livestock and land use practices are paramount to secure the survival of these threatened wolf populations.

Are natural resource uses conflicting with Ethiopian wolf conservation?

By Jorgelina Marino & Girma Eshete

The livelihoods of the highland people of Ethiopia are a mixture of small-scale subsistence agriculture and pastoralism, with strong dependence on Afroalpine habitats for firewood, pastures, construction materials and water. Understanding the ecological and socio-economical aspects of natural resources uses is central to achieving a balance between the immediate needs of people and the long-term term provision of ecosystem services in highlands.

A socio-economic survey in the North Wollo highlands showed that the attitudes of local people towards conservation are diverse and complex. Negative perceptions were more acute among people living closer to Afroalpine habitat, for fear of losing access to natural resources, and among landless families who aspire to own land. Families with more livestock perceived conservation as a way to ensure extra fodder in difficult years, but also developed a more negative attitude towards Ethiopian wolves due to livestock predation, than families with smaller herds or living further away from Afroalpine habitat.

The pros and cons of Afroalpine conservation are not always evident to local communities and governments alike. Ongoing research by EWCP is seeking to demonstrate the ecological benefits of excluding livestock from Afroalpine ranges.

Published by Eshete G, Tesfay G, Bauer H, Ashenafi ZT, de Iongh H and Marino J 2015. Community resource uses and Ethiopian wolf conservation in Mount Abune Yosef. *Environmental Management 56:684-694.*

Ethiopian wolf reproduction

By Claudio Sillero

In collaboration with the College of Veterinary Medicine and Agriculture at Debre Zeit, University of Addis Ababa, we are developing research on Ethiopian wolf reproduction with the ultimate goal of assisting future wolf meta-population management. One of the techniques currently explored is the banking of semen. Taking advantage of a wolf capture operation during the recent vaccination intervention Dr Alemayehu Lemma and several colleagues joined us in the field to implement a pilot study. They extracted semen from

▶ It is difficult to photograph a wolf in Delanta as close as this one. Many people and stock use this small Afroalpine range, resulting in elusive wolves that may struggle to find enough time to forage @EWCP/Jorgelina Marino

▶ Dr Alemayehu and Dr Fekede do a quick sperm motility assessment under a microscope in the relative warmth of a Land Rover ©EWCP/Eric Bedin

▶ Highland mutualism. Alpine chats *(Cercomela sordida)* alert giant molerats of danger, while they benefit from the insects uncovered by the burrowing activity © EWCP/ Lorenz Fischer

four wolves, fine-tuning their collection and freezing protocols. The samples are now stored in Debre Zeit, and the next step will be to assess the quality of the semen once it is thawed, with a view to potential future use of frozen-thawed semen in an eventual artificial insemination programme.

Giant molerats – habitat engineers in the highlands of Bale

By Jan Šklíba and colleagues

Fossorial rodents can have a profound impact on their environments due to a combine effect of herbivory and soil perturbation. This is likely the case of the giant molerat (or root-rat) *Tachyoryctes macrocephalus*, an important prey of Ethiopian wolves in Bale. We recorded several ecological parameters together with molerat activity to evaluate the impact of molerats on vegetation and soil characteristics. Their activity significantly reduced vegetation cover, but not plant biomass, with large species such as *Urtica simensis* and early successional plants such as *Salvia merjame* being promoted. Molerats also impacted soil properties, and soil samples with lower density also tended to have higher nutrient concentrations, likely a consequence of molerats filling abandoned tunnels with soil and partly decomposed plant material. The multiple impacts of molerats make it a keystone species of the Afroalpine ecosystem in the Bale Mountains.

Our Team

Zegeye Kibret

By Claudio Sillero

Last October I received a phone call from Edriss in Dinsho that shook me to the bone. Our dear friend Zegeye had passed away, while in an ambulance heading to Shashamane Hospital. He had been unwell for some time, but no one had suspected that his life was at risk. As EWCP Education and Public Relations Officer, Zegeye was a stalwart supporter of the Ethiopian wolf cause, and the most wonderful spokesperson the wolves could have. Zegeye was considered by many in Bale and elsewhere as a role model for budding conservationists, but also as a dreamer, and a pioneer. His friendly smile and outgoing personality made him

immensely popular, and people were drawn to him by his warmth and charm. As a key player in the EWCP team, Zegeye was involved in many conservation issues in Bale. He worked in local schools, teaching conservation principles, and he was the organizer or the annual 'Wolf Day' and 'Rabies Day' celebrations throughout the Bale highlands. Zegeye was the editor of EWCP quarterly the *Jeedala Gazette*, helped establish the Bale Beauty Nature Club in Goba, and frequently appeared in the local and national news discussing conservation issues.

We are struggling to come to terms with the realisation that this bright young man, whom I often thought of as a mischievous little brother, is gone. It's a sad time for us, and a great loss for the wolves. Zegeye was their champion.

▶ Zegeye and Claudio with our neighbours in Wolla village, Web Valley ©EWCP

Research Capacity Building

Girma Eshete, a PhD student in Leiden University and formerly at Mekelle University, works for North Wollo Zone Land Use Planning, and recently joined the EWCP team. Based in North Wollo, Girma is studying wolves in the context of landscape changes. He has conducted community interviews on perceived human-carnivore conflict, and involved park scouts and experts in his work so that they can assist with additional data collection.

Kassaye Wami, from the Ethiopian Wildlife Conservation Authority (EWCA), started an MSc course at the Wondo Genet Forestry and Natural Resource College at the end of 2013. He recently completed his thesis on *"Farmers perception and adaptation strategies toward climate change in the case of Bale Mountains National Park".*

Gebeyehu Rskay, North Ethiopia Wolf Monitor, is doing a MSc in zoology at Bahir Dar University Topics on Ethiopian wolf behaviour and conflict in a human-dominated landscape. He is currently carrying out field work in Ras Dejen (Simien Mountains).

Anteneh Tesfaye Mengesha, our counterpart at the Bureau of Culture, Tourism and Parks Development in North Ethiopia, is doing a MSc on Wildlife and Ecotourism Management at the University of Bahir Dar. He completed his first academic year and is now doing field work.

Muktar Abute, EWCP Vet Officer in Bale, has been studying at the Veterinary Faculty of Debre Zeit University of Addis Ababa. He attends summer courses and does other courses remotely. All going well Muktar will be awarded his diploma in 2017.

Tariku Mekonnen Gutema, a PhD at CEES, Oslo University, is working on the behavioural ecology of the African wolf in Menz, where African wolves were discovered in 2011. EWCP assist Tariku with field logistics and he is co-supervised by Claudio Sillero.

Addishiwot Fekadu, a MSc student at Addis Ababa University supervised by Professor Afework Bekele, completed her thesis on *"The impact of livestock grazing on rodents in the Web Valley of Bale Mountains National Park, Ethiopia".*

Ryan Burke, a DPhil student at the University of Oxford, is studying the role of mammalian community composition and intactness in driving ecosystem processes in the Ethiopian Highlands. Working in collaboration with EWCP.

Joseph Saviour, a BSc student at University of York, completed his thesis on *"Human attitudes towards and conflicts with the Ethiopian wolf in Bale Mountains National Park".*

Megdelawit Ayele, a recently graduated veterinary student at the College of Veterinary Medicine and Agriculture at Debre Zeit, University of Addis Ababa, carried out her research project in Bale, on *"Community perception of the role of dogs in the decline of Ethiopian wolf populations at Bale Mountains National Park, Ethiopia"*, with logistic support from EWCP and funding and a grant from the Born Free Foundation Ethiopia.

News

Wolf Mapper

The Wolf Mapper transports you to the remote Highlands of Ethiopia to discover the life of the wolves and the work of EWCP to protect them from extinction.

EWCP joins "One Health" initiative

The One Health Initiative www.onehealthinitiative.com is a global effort that explores efforts to address the links between animal health, human health, and our environment. The work that EWCP does to combat rabies through dog vaccination is a good example of this holistic approach to health.

EWCP two decades combating rabies has been acknowledged by a recent invitation by the College of Veterinary Medicine at Ohio State University to join their One Health Partnership to combat rabies in Ethiopia. Led by Dr Wondwossen A. Gebreyes at Ohio the RIGHT Partnership (Rabies and Infections of Global Health in the Tropics) also includes the Ethiopian Public Health Institute (EPHI), University of Gondar and the U.S. Center for Disease Control and Prevention (CDC). RIGHT is currently implementing a One Health model project for the prevention and control of rabies in North Gondar.

ONE HEALTH
ONE PLANET ONE FUTURE

Bale Visitor Centre

EWCP has teamed up with the Frankfurt Zoological Society to build a much needed visitor centre in the Bale Mountains National Park HQ. Half hidden in the *Hagenia-Juniper* forest of Dinsho Hill, a magnificent two storey structure is coming up. Built of timber and mud walls by Ethiopian artists Meskerem Assegued and Elias Sime the centre will have Nyala and Wolf rooms, supported by wooden sculptures. The centre displays will be organized around five themes, depicting the Afroalpine ecosystem, the water cycle, the northern forests and grasslands, the Harenna forest and the people of Bale. Once completed the centre will offer an introduction to visitors and an important educational resource to local schools and people.

▶ One of the sculptures carved out of a dead *Hagenia* tree welcome visitors into the centre and supports the structure. ©Elias Sime

Help wolves, buy a 'ky kebero' T-shirt

The Ky Kebero online t-shirt store was the inspiration of Alyson Baker from New Zealand after she visited the Ethiopian highlands and watched the wolves. It is hosted by the custom t-shirt platform Spreadshirt. All proceeds from the store go to EWCP.

Order now! ***www.ethiopianwolf.spreadshirt.com***

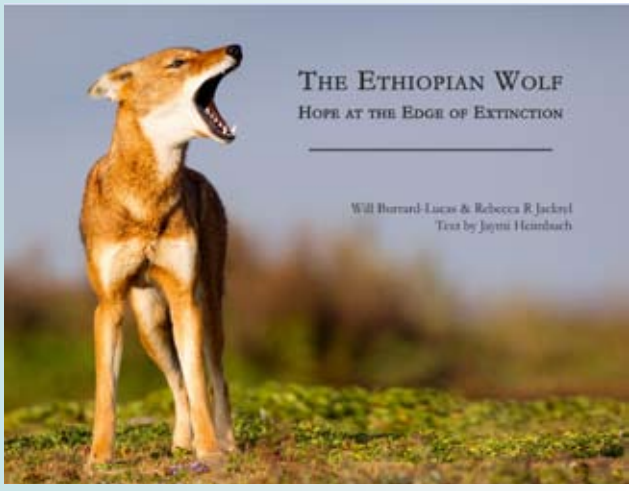
The Ethiopian wolf: Hope at the edge of extinction

This insightful and gorgeously illustrated book published by Lobelia Press is a partnership between the photographers and the Ethiopian Wolf Conservation Programme, with all profits from every book sold donated to EWCP. Lobelia Press has also donated several dozen books to be distributed in Ethiopia among supporters, schools, senior government officers and tourist lodges to promote our work.

By Will Burrard-Lucas and Rebecca R Jackrel, text by Jaymi Heimbuch
The Ethiopian wolf hangs precariously close to extinction with fewer than 450 individuals left on the planet. However, the little-known species also offers us one of the greatest stories of hope for successful conservation today. The problems faced by the wolves for survival are solvable, if we act. Photographers Will Burrard-Lucas and Rebecca Jackrel travelled to the highlands of Ethiopia to document the lives of these elegant canids and the work the Ethiopian Wolf Conservation Programme is doing to preserve the species for future generations. Witness the intimate pack lives of the wolves, enjoy the beautiful landscapes they call home, and learn how these wolves are becoming a symbol for what can be accomplished by dedicated individuals set on saving a species from extinction.

Order now! ***www.ethiopianwolfproject.com/book***

The Ethiopian Wolf: Hope at the Edge of Extinction (Lobelia Press. Hardcover, 152 pages).



▶ Rebecca Jackrel having fun behind the camera.
©Jim Goldstein

Rebecca Jackrel

By Claudio Sillero

The book *The Ethiopian wolf: Hope at the edge of extinction* resulted from the inspiration and tenacity of Rebecca Jackrel who in February 2011 trekked with me in the Bale Mountains and fell in love with the wolves and their fragile high-altitude habitat. Travelling on horseback with 12 other guests and many supporting staff the conditions weren't ideal for a professional photographer to do the wolves justice. Rebecca knew she could do better, and on returning home she conceived an ambitious documentary project with the aim of raising awareness and funds for EWCP. Teaming up with British photographer Will Burrard-Lucas and after raising funds for the project through Kickstarter, they established the Ethiopian Wolf Project online and spent five weeks in Bale, documenting the lives of the wolves and their struggle for survival.

Having returned to San Francisco with a portfolio of beautiful and poignant portraits of the wolves and the people of Bale Rebecca organized exhibits, magazine articles and talks to raise awareness for the plight of the wolves. In collaboration with Will and Jaymi Heimbuch she produced their beautiful coffee table book. Rebecca, Lobelia Press, and the Jackrel family have been supporting EWCP since. Rebecca joined me at the EWCP stand at the WCN Expo in San Francisco every year, and helped me "sell" the wolves with the power of her images.

Rebecca left us recently, after a two-year battle with cancer. Right up until the end, Rebecca remained committed to the wolves. For her selfless dedication she was awarded a Certificate of Congressional Recognition in honour of her work.

© www.callfromthewild.org

Biniyam Admassu

By Claudio Sillero

On 10 March 2015 we lost our friend and colleague Biniyam Admassu in a terrible accident during a bush fire in the Bale Mountains. For several days extensive fires had been burning on the slopes of Sanetti Plateau. While park staff and villagers were trying to control those fires, Biniyam and his team were hit by the flames due to a sudden change in wind direction. While his colleagues managed to escape with severe burns Biniyam had no chance to make it to safety in time.

Biniyam worked with as FZS Tourism Development Technical Advisor in Bale since 2007 developing various ecotourism services. He was passionate for the conservation of Ethiopia's biodiversity and had hope for a better and brighter future for conservation in Ethiopia. Bini was very much part of the EWCP team in Bale and his death is a huge loss for his friends, for Bale and for wildlife conservation. Ethiopia has lost an exceptional conservation champion.

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For a complete list of publications see http://www.ethiopianwolf.org/publications.shtml

Project Administration

The Ethiopian Wolf Conservation Programme (EWCP) is a partnership between the University of Oxford's Wildlife Conservation Research Unit (WildCRU) and the Born Free Foundation, which provides an ideal platform from which to address wildlife conservation. The EWCP operates under the auspices of the IUCN SSC Canid Specialist Group, and additionally collaborates with the University of Addis Ababa, Bahir Dar, Debre Zeit, Gondar, and Wondo Genet in Ethiopia, and Universities of Glasgow, Leiden, South Bohemia and the Zoological Society of London, among others.

EWCP operates in Ethiopia under Memoranda of Understanding agreements between the WildCRU and the Ethiopian Wildlife Conservation Authority (EWCA) at a federal level, and the Oromia Forest and Wildlife Enterprise (OFWE) and Amhara Culture, Tourism and Parks Development Bureau at a regional level. In addition, EWCP works closely with the Frankfurt Zoological Society (FZS) and the Born Free Foundation Ethiopia (BFFE). EWCP has long established and excellent working relationships with all these organisations. In addition, the Programme seeks the support and cooperation of local authorities for all field activities in all areas.

EWCP has been chiefly funded by the Born Free Foundation since its inception in 1995, with generous donations from the Wildlife Conservation Network (WCN) since 2002 and ongoing support from FZS.

Lifetime Donations

Our Donors

EWCP is deeply grateful for the support it has received over the programme's life time. We are thankful for every gift, since each contributes to the future of the Ethiopian wolf.

Here we list our major donors since the Programme began:

Lifetime donations - Founder's Circle: $100,000 and above

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We extend our thanks to our anonymous donors, and those that have given donations under $500 over the last three years.

Other donors that have given generously in the past include:

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Why Choose EWCP

The Ethiopian Wolf Conservation Programme is a WildCRU (University of Oxford) endeavour to help protect these endangered wolves and the Afroalpine habitats they inhabit. It works under an agreement with Ethiopia's Wildlife Conservation Authority and Regional Governments, with the aegis of the IUCN/SSC Canid Specialist Group.

Ethiopian wolves are only found in a handful of scattered mountains in Ethiopia are threatened by loss of highland habitats, disease and persecution. The most threatened carnivore in Africa, and the world's rarest canid, these long-legged charismatic animals need your help.

Informed by sound research, the Ethiopian Wolf Conservation Programme targets the greatest threats to the survival of Ethiopian wolves and their Afroalpine habitat. We promote this charismatic species as a flagship, thereby protecting many of the Ethiopia's highland endemics and natural resources.

If you or your organisation is interested in helping to fund our activities contact us. You can donate to EWCP specifically through the following organisations:

Contact Us

Ethiopian Wolf Conservation Programme
PO Box 215, Robe, Bale, Ethiopia
Tel: +251 221 190923
info@ethiopianwolf.org
www.ethiopianwolf.org
www.facebook.com/ewolves

Wildlife Conservation Research Unit
Tubney House, Tubney OX13 5QL, UK
Tel: +44 1865 611113
www.wildcru.org

How to Donate

In the United States

Online or cheque donations (tax deductible) may be sent via:
www.wildnet.org/donate?id=12

Wildlife Conservation Network / EWCP
209 Mississippi Street
San Francisco, CA 94107 USA
Tel: +1 415 202 6380
donate@wildnet.org

Tax Exempt ID #30-0108469
Please specify the donation is for 'Ethiopian wolves' in the 'Designation' field.

In the United Kingdom

Online or cheque donations may be sent via:
http://www.bornfree.org.uk/give/

The Born Free Foundation
Broadlands Business Campus
Langhurstwood Road
Horsham RH12 4QP, UK
Tel: +44 1403 240170
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We can also receive donations via Paypal
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No donation is too small!

The EWCP Team

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Professor Jonathan Kingdon, outstanding African zoologist, writer and artist, has been a friend and supporter of EWCP for three decades. Visiting the Bale Mountains in the 1980s. © JC Hillman

Eric Bedin, Field Coordinator

Edriss Ebu and Alo Hussein. Senior staff in Bale

Born Free is Land Rover global conservation partner @ George Logan