

## On Roads, Giraffes, & Anne Innis Dagg

The story of *The Woman Who Loves Giraffes*, and what can be done to help them.

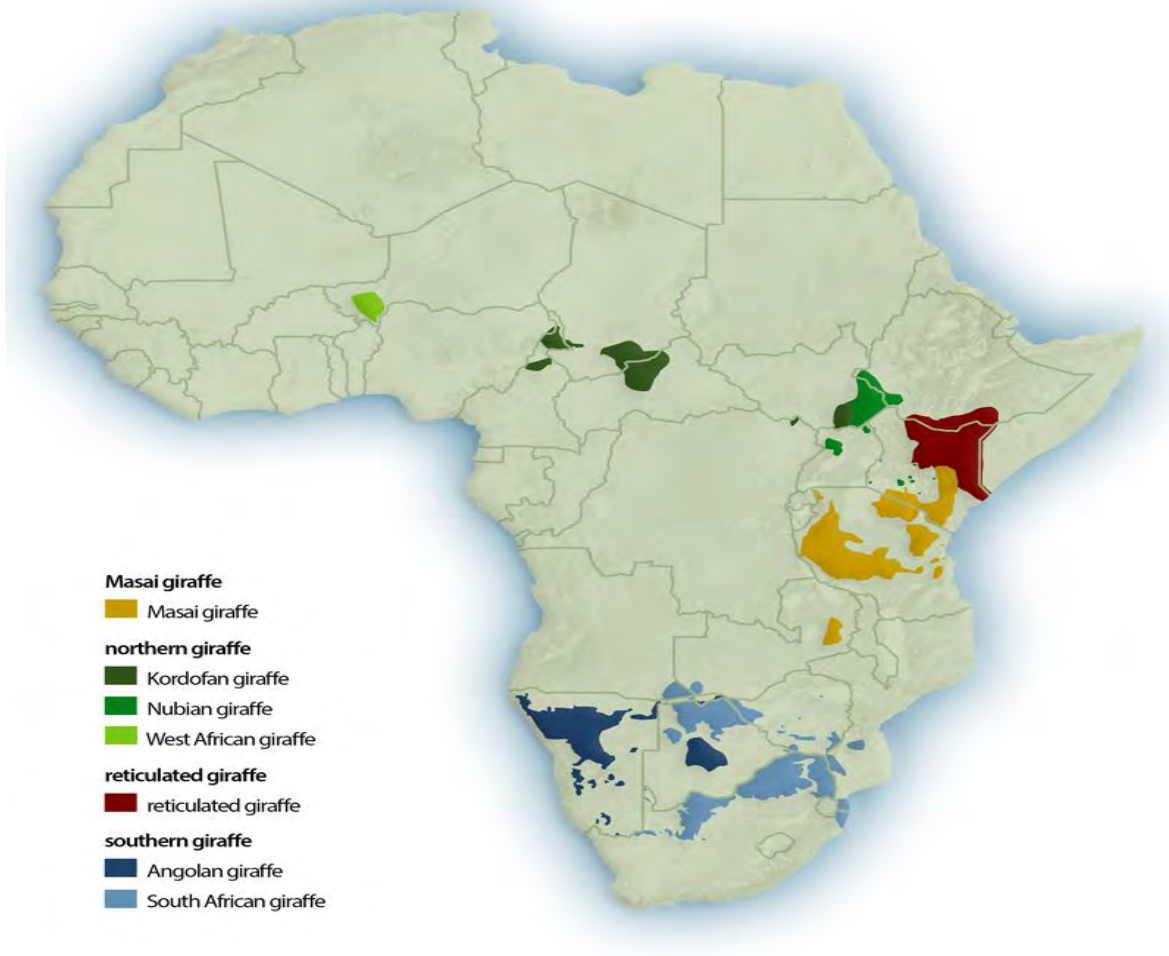


Giraffes, like many mammals are endangered creatures. *The Woman Who Loves Giraffes*, by Alison Reid tells the story of the struggles and achievements of pioneering Canadian biologist, Dr. Anne Innis Dagg, the first person to study animals in the wild, hence inventing wildlife studies.

It's an award-winning film about second chances for people and animals. There are some really inspiring moments regarding Anne's continued determination. But the most telling part of the movie might be when the South African biologist says he doesn't think Giraffes will survive. Without intervention this is going to be true for many creatures in the near future. But it isn't climate change that is eradicating species, it's roads.

Roads might not seem like the problem. It would seem that the emissions from cars are the worlds' problem. But roads do a lot more than cover ground, they stop migrating herds. This fragmentation of mating populations is known as *bio-fragmentation*. If the roads are fenced in, they can stop almost any animal. The irony is that the fences are there to protect animals from cars, but they actually cut them off from each other, among the many other extinction level effects of roads and the types of economic activities they foster.

## Current Giraffe Range 2020



Source: Giraffe Conservation Foundation

### Roads & Habitat Loss

All listings of threats to Giraffe populations put habitat loss as the main reason for declining populations. Roads might not seem like they cover much ground, but beyond bio-fragmentation, all factors in habitat loss: urban-sprawl, agriculture, mining, & drilling are all facilitated by, and impossible without roads. Armed conflicts are another reason for habitat loss, and that might not seem like it has much to do with roads, but soldiers don't get far on foot without roads. Railways cover less ground and allow for population density rather than the urban-sprawl that roads cause.

### African Population Boom

The real problem for Giraffes is that Africa is ground zero for both population and road growth. All of the top ten countries for fertility rates are in Africa. And according to a 2015 United Nations report, population growth between 2015-2050 is estimated to be 2.4 billion, 1.3 billion

of it in Africa; over 50%. In that same time period, roads are expected to increase by 60% (Ibisch et. al. 2016). And considering that Africa is not already covered in roads, and that most population growth will be there, it doesn't bode well for roaming animals. Giraffes have already gone extinct in 7 African countries: Nigeria, Senegal, Burkina Faso, Eritrea, Guinea, Malawi, & Mauritania. But there has been some success in Niger, which is good because The West African Giraffe is the most isolated Giraffe fragment.

### **Success in Niger**

In 1996 the Giraffe population in Niger was thought to be 49. The West African Giraffe lives only in Niger, bio-fragmented by hundreds of miles from the closest population in Chad. But the Nigerans noticed that roads weren't just fragmenting herds, but killing Giraffes by collisions. According to The Natural Resource Defence Coalition: 'In Niger where many giraffes have been struck by cars, the population is so small and isolated that conservation officials have taken the drastic step of transporting some of the animals to a safer space.' Thankfully this, and other conservation methods like planting Acacia trees, their favourite food, worked. By 2008, numbers were estimated at 175, a 250% increase since 96. And according to The Giraffe Conservation Foundation, that number is up to 600 by 2019! That's a 1200% increase since 1996, which was the year I met Anne.

### **20 Foot Giraffes: The World's Largest Petroglyphs**

Niger's number of Giraffe's have increased partly because they noticed that road fatalities are something they could do something about. But Niger also has some of the most amazing Giraffe art in the world, and it has only been known outside of Niger since 1987. There are hundreds of animal petroglyphs in the Dabous region, but the two largest, at 6.35m, & 5.4m, are of Giraffes. These are the largest petroglyphs in the world, and estimated to be 10, 000 years old. But they too are endangered, and so there were casts made of them. One representation is at the airport in the nearby town of Agadez. The other is at National Geographic Headquarters in Washington D.C. Perhaps these iconic images helped inspire the Nigerans to do something about roads and Giraffes.





Nabous Giraffe Petroglyphs - The largest petroglyphs in the world. Nabous Niger.



Nabous Giraffe cast in the Hall of Explorers, National Geographic Headquarters, Washington, D.C.

However, not everything is going as well as it is for Giraffes in Niger. The separating of herds into fragments whether they are Giraffes or tigers, or bears, causes a loss of genetic diversity that leaves populations more vulnerable to all natural stresses, like disease, drought and predators, not just drivers. In places where roads aren't yet everywhere, like the Amazon and the African home

lands of so many roaming herds of our cousins, they are spreading, and fast. The fragmentation of the Earth by roads has reached 600, 000 fragments, of which over 50% are less than 1km squared.

### **More Than Just Giraffes are Endangered**

Giraffes and countless other species of the web of life that support us are in danger of dying off in a way that will change the animal kingdoms beyond anything else in 60 million years. The rate of species extinction today is unparalleled since the death of the dinosaurs.

That species extinction was called the 5th mass extinction. It caused the end of the age of reptiles, and led to the age of mammals. We are currently in the age of *The 6th Extinction*. According to the World Wildlife Fund, estimates of the yearly extinctions range from 2000 to 100,000 species a year, and we have lost 50% of Earth's animals in the last 50 years. Words escape me. This will lead to more than the extinction of Giraffes. It will usher in a post-mammalian future. So what can be done about this?

### **So, What Can Be Done?**

Well, you could see *The Woman Who Loves Giraffes*, and support not just conservation movements like the one Anne Innis Dagg is fostering, but realize that our love affair with the automobile does more than change the climate. But what can be done on a scale that will be more than drops in the ocean?



A Wildlife Bridge in Banff National Park. Part of the Yellowstone to Yukon Wildlife Corridor, (Y2Y).



## **Bridges & Tunnels & Trains**

One large scale project that might benefit Giraffes is what The Banff National Park has done with their roads. The Trans-Canada highway bisects the park and separates migrating herds of elk, deer, wolves, cougars, bears, foxes and many less photogenic creatures. The park studied migration patterns and which animals would use tunnels, and which would need bridges. (I'm guessing Giraffes would need bridges). It's hard to imagine a Giraffe on a bridge, but all animals in the region use the bridges, which wasn't certain before they were built. But bridges and tunnels, and trains could really help roamers like Giraffes, & lions and tigers and bears.

## **Success in Banff**

Biologists from all over the world come to Banff to learn how to implement these de-fragmenting migrational supports at home. These bridges are proliferating but not fast enough. And yet, after stopping less than 3 collisions a year, they lower road costs rather than increase them, according to a study by the Virginia Department of Transportation.

Banff is the first place to implement such migrational support on a large scale. And they are both well used and very successful. Animal collisions and fatalities are 80% lower, according to Canadian Geographic. It's safer for drivers and it insures that less bio-fragmentation of breeding populations occurs. Things like this can become normal.

The problem is the lack of long term vision to invest in our common future. National Parks are places where natural systems take precedence over human activities. But do we want parks to be the only places where these animals survive? Because if that happens, then the populations will shrink to numbers that will not allow for continued healthy breeding. This leads to inbred, demented animals. It may be hard to get such bridges and tunnels built elsewhere, but it can be done. We only have to want to help, like they did in Niger. But if we build bridges and tunnels and trains, we might not have to move Giraffes to save them, like they did in Niger. Instead, we could let animals move themselves around.

## **Migrational Support & Migrational Corridors: De-fragmentation**

And perhaps the Giraffes of Africa could be connected like the wildlife corridor initiative Y2Y: The Yellowstone to Yukon migrational corridor that the Banff bridges are a part of. Y2Y is an international non-profit started in 1993, that has increased protected areas in this range by 30% according to their website. And this has helped take grizzly bears and wolves off the endangered list in some US states. This success has inspired the similar conservation group A2A: Algonquin to Adirondack, a similar international, non-profit conservation group fostering a wildlife corridor between Algonquin Park in Ontario Canada & Adirondack Park in New York State.

It might be too late to connect the Nigeran Giraffes to their cousins, but the Giraffe population fragments of Eastern Africa could be connected by the initiatives of similar international conservation groups. Especially since Tanzania's national mammal is the Giraffe, and they have several fragments of Giraffe populations within Tanzania, that are already connected to fragments in Kenya. A Great Rift Valley Wildlife Corridor would be a great idea.

### **Endangered Status**

Being listed as endangered in the US would be a great help too. This would stop the currently legal trade in Giraffes. Between 2006-2015, The US imported 39,516 Giraffe specimens. They are a favoured prize of game hunters. America imported 3,744 Giraffe trophies, 21,402 bone carvings, & 3,008 skin pieces during that time, according to The Guardian newspaper.

There was a petition to add Giraffes to the endangered list by a coalition of conservation groups in 2017, to the US Fish & Wildlife Service, who are required by law to respond within 90 days. In April 2019 they said endangered status 'may be warranted,' which gave them another 9 months to act, which has also passed.

However, the members of the Convention on International Trade in Endangered Species (CITES), decided to add Giraffes to their Appendix II list for the first time in Aug 2019. This does not ban the trade of Giraffe parts, but does mean they will be tracked and regulated for the first time.

So there are things that can be done. We can go with bridges, and tunnels, and biodiesel powered fast trains, but poisonous gas is cheaper. And Climate Change causing extinctions is normal, but not at the rate we've caused with our industrial revolutions. But we can help with migrational support over and under the roadblocks we've set up to animal migration and mating. And we need to get Giraffes on fully endangered lists.

One of the problems with cars, is that there is often one person, and many empty seats on roads that cut off every other creature that can't fly. Trains take up less space, move more people, and foster density. But part of the reason building bridges is so rare is that these kinds of support and behavioural changes are hard to do on a small scale too, Banff being a rare exception.

**Inventing Wildlife Studies - Slightly easier than prolonging the age of mammals.**



Anne Innis Dagg in 1956.

*The Woman Who Loves Giraffes*, tells of the troubles Anne encountered trying to study Giraffes in the wild in the 50's. She went to South Africa by herself in 1956. She had to invent the field of wildlife studies, since no one had ever done it before. But she also had trouble securing the bare necessities of life. She had to use her initials to disguise her gender to secure lodging, among other difficulties a single woman encountered in a country that had just enacted apartheid, something she'd never heard of, but even if she had, that wouldn't have stopped her.

An August 2019 Canadian Geographic article credited her as inventing *behavioural biology*. But she didn't just study animals rounded up and brought to a zoo, she blazed a trail into the wild and studied animals on their own terms. *Behavioural biology* doesn't go far enough, she invented *wildlife studies*. Everyone else before her studied animals, Anne studied wildlife. This is a *crucial* distinction if we are to understand how the life around us really behaves, and what is really needed to support our cousins and ourselves.

When Anne returned to Canada to continue studying Giraffes, she had to endure resistance to her groundbreaking studies. As a result of the backwards attitudes of the academic community, she ended up teaching something she was very good at, Independent Studies, at UWaterloo, where she was my writing advisor.

But switching fields meant that she was assumed dead by the Giraffe community, who re-discovered her in her 80's. That part of the film is quite inspiring. At the first *International*



*Association of Giraffe Care Professionals Conference*, in Arizona, in 2010, they gave her the inaugural Pioneer Award, which has hence been called, *The Dr. Anne Innis Dagg Excellence in Giraffe Science Award*.

The movie states that even during the time when she had been seemingly forgotten by the Giraffe community, that you couldn't get an article on Giraffes published unless you cited Anne Dagg. Then National Geographic did a special on Giraffes published just a month after the Canadian Geographic article, that leaves her out, again; it was a good article other than that though.



Anne in South Africa in 1956.

Then National Geographic follows up that article on giraffes that *doesn't* cite Anne Dagg, with an issue on *Women Pioneers*. That cover includes Jane Goodall, who went to Africa several years after Anne, with her mother, and with the backing of Richard Leakey. And Dr. Goodall was accepted into a Phd program at Oxford, without any academic credentials. Anne didn't have it so easy.

After getting her Masters, Anne wrote to Dr. Leakey among many organizations, schools, and individuals for backing to study in Africa, but had to go it alone. This independent, world-beating initiative was so much in the spirit of Independent Studies. This program had the

most rigorous admission standards at Waterloo, which never left the top of Maclean's Magazine's Reputational Standings during my time studying under Dr. Anne Innis Dagg. She was finally getting her due and then National Geographic went back to the days when she was not given her place, seemingly because she was so pioneering that she wasn't on anyone's radar.

And the problem persists today, the literature is rife with lack of credit. The Toronto Star reviewed the film and speaking of wildlife studies, it said she was 'only the second person in the world ever to have done so.' This was reprinted in Ottawa's Bytowne Movie Guide, where I heard about the movie. The film actually perpetuates this too though; it says there was a Red Deer study in Scotland just before Anne. But she tells me this was a hunting group only interested in hunting deer, not actually understanding them on their own terms.

And a Smithsonian Magazine article from March 2017 said that she was 'one of the first to study giraffes in the wild.' Perhaps they can be forgiven since that article came out over a year before the movie in Sept 2018. However, it just seems like another Washington magazine not giving Anne the credit she so richly deserves.

I myself re-discovered her after 20 years when Anne came to Ottawa for a Q&A with the film. We discussed the prof at The University of Guelph who denied her tenure, who is unapologetically interviewed in the film. I told her that I didn't think she would get her apology but that she should try anyway, as a way of continuing to be a trailblazer for the women who come after her. I was proven wrong about a month later. The University of Guelph formally apologised and donated to three of her favourite Giraffe charities.

This was because of the interest caused by this award winning movie. Some things can change. And since they finally opened the commuter train where I live in Ottawa, I feel emboldened to say that we *can* go with good ideas instead. And maybe National Geographic will shed even more of their former old boys club image, and give Anne the attention in the magazine that she deserves, or The Smithsonian Magazine.

### **Looking in The Mirror**

*The Woman Who Loves Giraffes* suggests that the Giraffe conservation movement hasn't attracted the same amount of attention as primate conservation, because Giraffes don't give us the impression of looking in a mirror like looking at our primate cousins does. But if we want to

save Giraffes and our fellow great apes, maybe we should look in the mirror, and not just the rear view mirrors with, '*OBJECTS ARE CLOSER THAN THEY APPEAR,*' written on them. Though that is a good metaphor, because species extinction is not coming up, it's much, much closer than it appears. But we have options like bridges & tunnels & trains, and trailblazers like Anne.

### **Bridges & Tunnels & Trains**

The idea of treating the world like a refuge, the way national parks are seen, is what is needed. What Giraffes and humans really need is less roads, or at least to remove some of the fences around them. The only way to still travel as much, is biodiesel powered fast-trains, - if we are smart enough to bridge the gaps that roads cause.

But what humans and Giraffes need most, is to end our reliance on toxic petroleum. Then we won't need the roads as much, and we might get to keep some of the things that we do need, like a world that supports mammals such as Giraffes, and me and you. Because right now we are changing not just the climate but the makeup of the web of life. This is ending the era of mammalian roaming. And roaming is how we got to where we are; it's how we covered the whole globe. But right now we are covering the whole world in roads. But we have options, supporting the work of people like Anne Innis Dagg is one of them.



Things could be looking up.

C. Donaghue