

## Biodiversity: a love story.

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I am a scientist, but I'm going to share with you a love story. A love story to save humanity.

Early in the morning, about once a week I quietly slip out of the house, and head to a local park in my neighborhood of Birmingham.

As the dawn breaks, I wait and watch for the chaos that will soon erupt.

At first I hear a few chips and warbles, and soon I see birds flitting about everywhere, hungry after a long night.

I and any other birdwatchers who have shown up have fun finding, identifying and observing as many species as we can.

I always see the neighborhood birds that are here all year long. Seeing them is like seeing old friends.

But I especially enjoy the challenge of finding species that are rare, or just passing through.

There's much more to birdwatching for me than the thrill of the hunt.

Birding re-excites my feelings of joy and wonder about the complexity and beauty of life on our little planet.

For example, every spring and fall there is an epic migration of birds travelling between their summer ranges in the US and Canada and their winter ranges in the tropics.

At night millions of these migrant birds pass overhead while we slumber.

Among them are orioles and tanagers, grosbeaks and buntings, thrushes and warblers.

These small creatures travel thousands of miles in just days.

Most, including the tiny hummingbirds, fly non-stop over the Gulf of Mexico.

When I see these birds in my local park, I am witnessing a small piece of one of the greatest migratory spectacles on our planet.

What I am sharing with you is a glimpse into my life-long love affair with nature.

It began as a child, born into a family of expert naturalists and birders.

At 9, I was deliberately seeking and listing birds.

In college and graduate school I studied ecosystems in Florida, Central America, and Africa

Now, as a college professor I teach students about ecology and conservation science, and involve them in my research into endangered species.

Despite all I have learned about nature these past decades, my heart flutters and my knees go weak when I see something like this rare Cerulean warbler.

Now, it turns out, I am not the only one having this love affair with biodiversity.

Just in my home city there are hundreds of others with similar passions.

Armed with binoculars, cameras, nets and magnifying glasses, they seek out butterflies, beetles, wildflowers, ferns, and ~~even~~ salamanders and moths.

Others are enjoying nature in different ways.

They include hikers, paddlers, and ~~even~~ hunters and fishers.

All of us share a bond through our love of nature.

From these groups of people, communities and friendships emerge that transcend religious and ideological boundaries.

It is a beautiful thing.

But it is also profoundly important.

This subculture is a social movement that can save humanity.

To understand why, I have to talk about the tragic side to our love affair with nature.

I'm certain you are aware we are in the midst of a great "environmental crisis".

Over the past 150 years, we have waged a war on nature, and there is no end in sight.

Already, there are 7.2 billion people on the planet,

And just during this talk our population will grow by another 2500 (155x16 min).

Each of these lives requires an ecological support system to provide drinking water, food, materials, and clean air.

But our numbers and our patterns of living are straining the ecosystems that support us.

Already it takes the planet 18 months to produce the resources we consume in one year.

What's more, if everybody lived at the level of the average American, we would need 5 planet earths

Clearly, this is unsustainable.

We undercutting the environmental foundation on which our civilization is built.

This crisis is also wiping out the biodiversity that so many of us love.

The rate of extinction today puts the modern era on par with the five mass extinctions earth has endured in the 3.5 billion years since life arose.

Hundreds of species have gone extinct in recent history –

This is happening not just in places that may seem faraway, such as tropical rain forests.

It is happening in our own back yards.

Where I live in Alabama, we've lost 90 species – that's nine zero - in modern times.

Among them are the Carolina Parakeet, the Passenger Pigeon, and the Bachman's Warbler

These are species that neither I nor any other birdwatcher will ever get to see.

The loss of species is both a symptom and cause of our stormy relationship with nature.

Nature sustains humanity through what are called ecosystem services.

These services provide us with the resources we use daily and provide more complex functions such as protecting us from environmental extremes.

Ecosystem services are so important that where they have become significantly impaired, human societies fall apart.

Yet, Scientists estimate that 60% of the world's ecosystem services are being used unsustainably.

Now, here's the important connection between these ecosystem services, biodiversity, and extinction.

The science is increasingly clear that ecosystems provide more services and better quality services when their native species are present and their populations are healthy.

In other words, the warblers, worms, and wildflowers of the planet are part of a vast network of species that sustains humanity.

Powerful arguments have been made to save biodiversity.

Scientists have produced mountains of data that show we need to save nature to save ourselves.

Social advocates have pointed out that as the environment degrades, it is the world's most vulnerable, the poor, who suffer first and suffer most.

~~Even~~ Religious leaders have proclaimed we should save nature to be good stewards of Creation.

These arguments have helped, but they haven't been enough.

Nothing has convinced a majority of the world that saving nature should be a top priority.

Not climate change, pollution, famine, nor extinction,

Instead, the pace of ecological destruction quickens daily.

It is from this dark place that I circle back to love.

We need to live sustainably, so that all people and all species enjoy a secure and prosperous future.

This will require innovation, cooperation, sacrifice and change.  
 These are daunting challenges and it's not going to be easy.  
 That's why I believe we must invoke one of the most quintessential of human capacities - love.  
 Love motivates us to do great things.  
 Think of how love moves you to care for your families, friends, and your community.  
 Love can also motivate us to save the ecosystems that keep us alive, and other species, who  
 are, after all, our only living companions in the known universe.  
 That's why I say, it is time for humanity to fall in love with nature.

Some great thinkers have shown us this is a real possibility.  
 E.O. Wilson and others have spoken of our scientifically documented longing to connect with  
 other species and ecosystems, an instinct dubbed Biophilia.  
 Jeremy Rifkin speaks of how our species has - over the ages - extended its sense of empathy  
 from our family to ever-larger groups of people.  
 These thinkers suggest that in this new era of global-awareness we can extend our empathy to  
 embrace other species.  
 Certainly the time is right, and the need is great. I believe we are ready.

So how can you get people to fall in love with nature?  
 First, you must get them acquainted.  
 But too many of us spend our lives inside the boxes we call apartments, houses, cars, offices  
 and classrooms.  
 These containers isolate us from nature.  
 So we need to get out of the box and head on down to the equivalent of the local bar to meet  
 some interesting and attractive species.  
 Visit a park and hike a nature trail.  
 Join others on a birdwatching walk  
 Bring a child along – they are natural explorers and they will lead the way.

Once you are out there, notice the differences among species.  
 Which ones do you find impressive, bizzare, or beautiful?  
 Choose a few species, snap some photos or take some notes, and then learn their names. It is  
 easier now than ever before using websites, apps, local experts, or books.

Knowing their names, you can look them up on-line and have fun finding out where they live,  
 what they eat, and how do they fit into the ecosystem.  
 But learn in ways that will build your environmental wisdom.  
 Find out what ecosystem services the species provides  
 And how we humans have affected the species

If you stick to it for just a short time, you'll probably begin to see the world differently. Nature will be less abstract, distant and intimidating.

Wherever you go you will see connections between yourself and other species.

And you may realize there are some species you now care about. Species you don't want to see go extinct.

If that happens, then like millions of others of us around the world, you will have fallen in love with nature.

I would hope that with time, you'd want to take this relationship to the next level.

For any sustainable relationship, you must give something back.

Maybe you hang out a bird feeder at your office,

Or, put native plants in your yard to provide habitat.

Or, you find ways to support local environmental groups.

These are all helpful, meaningful acts.

But for real change to occur, what needs to happen most is that you'll examine your lifestyle and find ways to reduce your impact on the nature that you've grown to love.

These changes will be the manifestations of a true love of nature.

As your awareness and lifestyle evolve, others will take notice of your new-found wisdom.

Some will make similar changes in their lives, and a few will start their own love affair with nature.

And like this, the movement grows. What was once a subculture of the few who love nature, becomes the social norm.

With time, humanity will find unity of purpose in building a future where all people and species live in harmony.

This is why I've dedicated my life to helping humanity find its love for nature.

It's an optimistic vision, and requires a lot of courage and hard work.

But it's the love story that can save humanity.