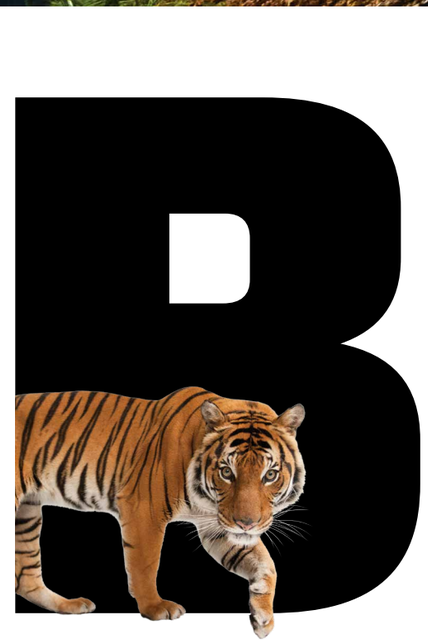
MYANMAR

DRIVING CHANGE IN ASIA: NEWLY OPEN, MYANMAR IS A TREASURE TROVE OF NATURAL ASSETS, CULTURAL DIVERSITY AND ENTHUSIASM FOR THE FUTURE.

All Roads

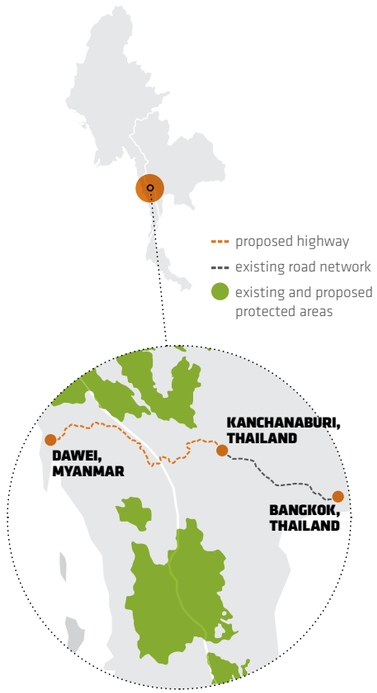
In a natural wonderland newly engaged with the outside world, Myanmar's people envision a thoroughly modern, nature-based path.

by **Scott Wallace**
photographs by **Stephen Kelly**



TIGER: © JOEL SARTORE/NATIONAL GEOGRAPHIC CREATIVE

BOUNCING IN 4X4S along a gash of red earth gouged into the mountainside, it feels as though we're entering a freshly exposed primal wilderness few outsiders have ever seen before. Rivers—a remarkable number of which remain free flowing and unobstructed—knife their way through narrow gorges. Towering canopy trees bare their trunks as they rise from steep valley walls. Ashen clouds hang low, threatening rain. We wait—five minutes, then ten—as earthmovers shove avalanches of stones and soil down the cliff, opening the way forward.



How will Dawei's planned deep sea port, industrial zone and the proposed superhighway to Bangkok affect the biologically rich Tanintharyi region, home to endangered tigers, elephants and primates?

That's one of the key questions WWF and its partners will seek to answer in the coming years as the mega-development begins to take shape. As the largest Global Tiger Priority Landscape in the Greater Mekong Region, the cross-boundary region could harbor as many as 250 tigers, hundreds of Asian elephants and countless other important species (see page 39 for a sample of some of Myanmar's more unique creatures).

To inform the development of the road, WWF is working to expand the baseline of knowledge about the area so that decisions can be made about the route and its environmental implications. Future surveys will continue to unlock the mysteries of its largely untouched forests.

I'm traveling with a team of conservationists from WWF into the sprawling rain forests of the Tanintharyi Region, along the southern tail of Myanmar. These are boom times, and this road project heralds the end of 50 years of isolation and limited outside investment. Like the road itself, opening on to new vistas with every twist and turn, Myanmar is moving forward into exciting but uncertain terrain, rife with opportunities and challenges. Foreign investment is pouring in at a staggering pace. Laws are being rewritten across the board, covering everything from land ownership and press freedom to environmental rules.

As Myanmar looks to the future, WWF has seized this moment to step in to help make the country a model of sustainable development. This huge, expensive and long-planned road project notwithstanding, national officials appear keen on preserving the country's vast trove of natural riches, even while positioning the country to leapfrog into the 21st century.

"This is a huge window of opportunity to get environmental considerations integrated into all these new policies—social, energy, agriculture, land use, direct foreign investment," says Kate Newman, senior director of WWF's public sector initiatives. "We want to support the integration of green economic principles into their national economic plan."

A lifelong conservationist with decades of field experience around the world, Newman is scrunched into the SUV's backseat with Michelle Owen, Myanmar's conservation program manager for WWF. Besides providing advice at the policy level, Newman says, WWF will help the government strengthen protections for existing national parks and determine where best to locate new ones.

At least initially, those efforts will be focused here in the Tanintharyi, for its staggering biodiversity—including endangered Indochinese tigers, Asian elephants, gibbons and langurs—and for the urgency to protect it, as one of the country's largest new infrastructure projects gets under way. A deep-water port and sprawling industrial park are under construction on the Andaman coast, just outside the city of Dawei. Farther inland, road crews are pushing east through this rugged landscape of rushing rivers and upland forest toward the border of Thailand.

If the new superhighway to Thailand is completed as planned, it will link Dawei directly to Bangkok and hasten the integration of Myanmar with the nine other members of

A NEW PATH
In the countryside, many adolescents forgo education to work long hours at back-breaking tasks. That's beginning to change, with more families choosing to keep their children in school.

CHANGING TIMES
A young logger and his elephant emerge from the Tanintharyi forests. Thousands of captive elephants like this one are used to harvest teak in Myanmar. With new restrictions on timber exports due to take effect in April, the use of elephants to extract logs from the jungle may soon be a thing of the past.

the Association of Southeast Asian Nations, or ASEAN. More tangibly, it will provide a rapid new route for people and commerce straight across Indochina to the Indian Ocean, drawing the region closer to markets in South Asia and the Middle East.

"This is one of the most biodiverse areas in the world," says Owen, as the earthmovers pull to the side and allow us to pass. "But we don't yet have any empirical data. It's all anecdotal." Biodiversity and social surveys are planned for these forests in the coming year. The results will help WWF understand the importance of nature to local society and the scientific community, as well as how and where to put new national parks and biodiversity corridors to protect the rich diversity of species.

Another kind of highway—a wholly unfortunate one—exists here as well. Wildlife trafficking is a major concern in this corner of the world. Myanmar serves as a major corridor for smugglers of exotic species and animal parts throughout Southeast Asia and China. Clearly here in the Tanintharyi, efforts to curb wildlife poaching will depend on gaining the trust and collaboration of the local population. Just 15 minutes up the road, we pull off at a ramshackle roadhouse where the proprietor is proudly serving a putrid-smelling langur stew. The owner, a barrel-chested man in his forties, tells us he pays hunters the equivalent of $1.50 per pound for the primates they bring in from the forest. With the increased road traffic, the owner notes, wild game is getting scarcer, and the price he pays is going up.

And although it might be tempting to scold the restaurant owner or try to shut him down, Owen knows a crackdown on such small-time purveyors would likely be counterproductive. "Often you end up driving the trade underground, where it's much harder to monitor," she says. "Bushmeat is often used as a local protein source, and you don't want to criminalize communities that hunt for personal consumption. What you want is to have communities supporting efforts to stop commercial exploitation."

Indeed, the experiences of WWF in other developing countries, such as Namibia and Nepal, point to the critical role local populations play in conserving natural resources when they actively participate in decisions affecting the use of those resources. "Enabling communities to improve their lives through better management of their resources will be a fundamental part of our program," says Newman.

That view jibes with the vision articulated by WWF President and CEO Carter Roberts. Roberts met personally with President Thein Sein when he came to Washington last year, and he has also conferred with Aung San Suu Kyi, the hugely popular opposition leader who is expected to run for president in 2015. For Roberts, the opening of Myanmar and its leaders' avowed commitment to green principles, even in the midst of rapid change and economic growth, presents an unprecedented challenge. "We're moving faster than we ever have to bring the lessons we've learned around the world to bear in support of a government that wants to do the right thing at this pivotal moment in its history."

History is present everywhere in Myanmar—so much so that many still know the country by its former name, Burma. In Yangon, the country's largest city and former capital, gleaming office towers and construction cranes rise above crumbling colonial-era buildings and warrens of ancient streets. Everywhere, it seems, people and wares are on the move, piled into pickup trucks, clinging to the rooftops of exhaust-belching buses. A massive new overpass is being built to smooth traffic, but instead snarls traditional roadways.

So, immersed in Yangon's tension between old and new, we head out on another road—this one a route linking Yangon to the ancient city of Bagan. There is no better way to feel a country's pulse than to venture deep into its heartland, so we aim for the back roads north on a route that parallels the fabled Irrawaddy River. We pass the spectacular Shwedagon Pagoda and its immense golden spire and lavish shrines on our way out of town.

Soon we break free of Yangon's congested arteries and find ourselves winding our way through bucolic villages bordered by electric-green rice paddies, where farmers topped with conical hats stoop to tend the precious crop. Kids with long poles on their shoulders balance buckets of water or baskets of grass. Motor scooters haul trailers loaded with stacks of green bamboo.

We stop in the village of Hmaw to watch fishermen casting nets into a stream. Ko Mya Thein, 45, says he will sell his catfish to a local middleman, who in turn sells them to an exporter with connections in Japan and China. His teeth are stained red from chewing betel

Technology for nature

In 2013, WWF collaborated with the Ministry of Environmental Conservation and Forestry, the Smithsonian Conservation Biology Institute and the Green Economy Green Growth Association in Myanmar to organize a Geospatial Analysis Training and Strategic Planning Workshop. Participants learned how to use Geographic Information Systems (GIS) and other geospatial technologies to measure human impact on the local environment. During the training and planning process, nine government ministries and over 50 people, including the rector of the University of Forestry, Dr. Myint Oo, determined how best to use these free, open-source tools to advance the sustainability and resilience of Myanmar's economic and social landscapes.

Join Myanmar locals on the move. Download the free World Wildlife *magazine app on your tablet.*

WORD ON THE STREET
Locals eat, drink, talk—and take in the news—at a streetside teashop on Pansodan Jetty in downtown Yangon.

nut, a mild stimulant, and he's wearing a baggy fatigue shirt two sizes too big for his wiry frame.

"Life is hard," he acknowledges, "but it's getting better." He's not sure about the meaning of green development, but he knows his livelihood depends on abundant, clean water. His grandchildren are just starting school, and he hopes some day they will become well-paid professionals. He shoulders a beam loaded with scores of small fishing traps and wishes us well.

In the town of Kyu Chaung, we remove our shoes at a gate guarded by a pair of ornate dragons and enter the grounds of a small monastery. An attendant ushers us into a spacious, sparsely appointed room, where we kneel on mats opposite two middle-aged monks draped in saffron robes. Dishes of shrimp, fried rice cakes and a plate of ground nuts mixed with pickled leaves, called laphet, are brought forth. The monks beckon us to eat.

"I am pleased with our president and what he is doing for the development of the country," one of them says. He's also pleased with a nationwide government campaign to raise environmental awareness. "The climate depends on keeping our forests healthy. It's our responsibility as monks to help raise the consciousness of our followers." To that end, the monastery recently organized villagers to plant 300 trees. In fact, between 1990 and 2010, the estimated area of dense forest cover in the country dropped from more than 45% to less than 20%. WWF estimates that up to a third of the remaining woodlands could be lost in the next 20 years without the imposition of new controls, which are due to take effect in the coming months.

Still, in town after town, we come across newly erected billboards exhorting citizens to care for the environment. "Save a tree, save a life," reads one sign. "Help your environment—take care of the forest," reads another. "To have a green society, everyone should plant trees," proclaims a third. The message seems to be taking hold, especially among Myanmar's younger generation, where it will count most in the years ahead.

In the town of Baung De, throngs of children stream out of the yard of the local middle school. Amid the shrill, excited cries of the students, elderly rickshaw driver U San Shwe sits stoically on his rig, waiting to take his two granddaughters home.

"It's very important not to destroy the forest," says the older of the two girls, sixth-grader Nan Wai Wai Hlaing, with a shy smile. Her grandfather beams proudly. "I want them to get a good education," he says, "so they can become teachers themselves and help the village to develop."

"I am so proud to be from Myanmar, and to help make sure environmental conservation happens in parallel with economic development. Youth are poised to play a role in a green future for Myanmar because we are excited about new ways of thinking and doing things. We are blessed to live in a beautiful country with such natural riches that we need to make sure they continue to thrive."

MYA NWE, Program Associate, Greater Mekong Program

Orderly confusion may be the best way to describe early morning in the bustling market of Pyay on the banks of the Irrawaddy River. On display is an astonishing array of fruits and vegetables, eels and fish, herbs and medicines, rice and beans. The streets are clogged with bicycles and rickshaws—merchants unloading sacks of grain and clutches of unfortunate hens, bound together upside down at the feet.

As the sun rises high enough to banish the cool shadows, Ma Zar and her neighboring fishmongers erect a canvas shelter on the street corner to protect their wares from spoilage. Talkative and funny, Ma Zar, 33, is happy with the morning's business. "I've made a lot of money today," she laughs. Forced to drop out of school after first grade, she expects a brighter future for her children—a dream which she believes has been made possible by Myanmar's democratic opening.

As the long road nears Bagan, we see a dozen women working at widening the thoroughfare, shoveling freshly split rocks into baskets and hauling them to the lane under construction. It's yet another example of progress reshaping a pastoral landscape where narrow roads wind through emerald green, grass-covered hills and wooden oxcarts still outnumber cars two-to-one.

"This road will bring more foreigners here—like you," says Ma Wai, 20, a young woman whose cheeks are smudged with beige *thanaka* paste, commonly used for cosmetic beauty and to protect skin against the blistering sun.

The Mother River of Myanmar

The Irrawaddy River, which spans the length of the country and empties into the Andaman Sea, is growing increasingly silted and congested due to deforestation, agricultural erosion and other threats. At its southern reaches, the river's delta is home to a coastal mangrove system that is being slowly converted for aquaculture, agriculture and development. But WWF is developing an assessment of the river's sediment flows and hydrology—all toward more effectively protecting it in the future.

On a recent visit, members of the Helmsley Charitable Trust—a major supporter of WWF's growing engagement in the region—met with local fishermen who demonstrated the custom of collaborative fishing with the river's iconic Irrawaddy dolphins. Using a centuries-old system of hand signals and slaps to the side of their boat, the fishermen guided the dolphins to herd fish into mutually rewarding masses. "It was yet another example of the country's fundamental links between thriving wildlife and human good," says Rosalind Becker, the trust's program associate for conservation and medical research.

"They will all be welcome here." It's not the kind of talk you'd expect from a young woman consigned to such strenuous labor. She makes around 2,000 kyat a day, she tells us—about two dollars. But clearly, she doesn't think of herself as poor. "I'm proud of doing honest work," she proclaims, pushing her conical hat off her forehead to wipe her brow. "I'm proud of helping to build the new Myanmar!"

As we pass through the ancient walls of Bagan, its dazzling pagodas and stupas loom in the dawn light like dozens of giant chess pieces. From the terrace of the 11th-century Shwesandaw Pagoda, we gaze out over the Bagan plain spreading before us, a dozen pagodas aglow in the golden light of sunrise.

It's a quiet scene with few visitors, but that peacefulness already faces new ebbs and flows. An advertising executive from New York appreciates the stillness, saying, "This is still a place for more hardy, backpacker sorts of travelers. I think they have a greater appreciation for what they're seeing than a casual tourist who gets out to snap a picture and then moves on." He's heard that Myanmar still has undiscovered species of wildlife, and hopes that tomorrow's tourists will be as respectful of that mystery as today's.

As the day circles toward nightfall, Bagan's energy changes, and a growing cacophony of hawkers and vendors set up their wares for the packed bustle of tourists arriving for spectacular sunset views. More and more tour operators are lining up to handle an anticipated groundswell in foreign guests, and the scene at sunset makes it clear, as pink and orange light drenches the ancient temples, that Bagan has entered the modern era. Tourist after tourist shoots photos and videos, then instantly sends the images out to the larger world.

On our return to Yangon, Mya Nwe, the youngest member of WWF's Myanmar team in the US, provides additional cause to believe in the "new Myanmar." A native of Yangon, Nwe earned a bachelor's degree in environmental studies at St. Olaf College in Minnesota before moving to WWF-US headquarters in Washington, DC, in 2012. Nwe is back home for a visit, a professional trip that happens to coincide with her 23rd birthday. She has arranged for a special celebration at Grace Home, an orphanage in the rough-and-tumble Kyeemyintaing Township of Yangon, and she invites us to come along.

We're greeted by three dozen beaming children sitting cross-legged on the floor. To the syrupy strains of an electric keyboard, they rise to their feet and belt out a heart-wrenching song about the hardships they've managed to overcome, thanks to the love and protection they've found here. In keeping with her Buddhist philosophy of giving back, Nwe has paid for a dinner for the kids. Plates of stewed chicken, steaming rice and stir-fried vegetables are served, followed by vanilla ice cream. As Nwe says her goodbyes, the children rise from the table to sing "Happy Birthday." The shrill voices are so filled with love and tenderness that she has to fight to hold back her tears.

She has gotten what she came here for. "In Myanmar, our culture teaches empathy and compassion," she says. "The very idea of karma encourages people to be kind to one another." That philosophy extends to the natural world as well, Nwe says, filling her with hope that future generations will care for the environment, even as they seek greater prosperity. "It's not only about taking care of the poor, but also taking care of the animals. If you do harmful things to the environment, that will come back to hurt you."

Nwe's way of thinking about her country's future matches the optimism of the rest of WWF's staff. Michelle Owens expressed it well as she jolted along the road snaking above the rain-swollen Tenasserim River. From that bumpy vantage point, she was sizing up the country's vast reserves of fresh water, its unobstructed rivers, and the ecological services its forests offer, such as habitat for endangered wildlife and the sequestration of carbon.

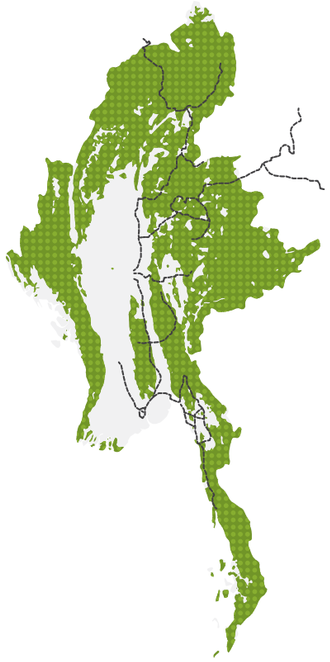
"The decisions they make about all this natural capital will form the foundation of their future," Owen said. "We'd like to provide the capacity to help Myanmar make the best decisions they can, so that everyone will benefit, not just today but in future generations as well."

That's why WWF is so invested in Myanmar, adds Carter Roberts. "Our work is really about supporting communities and national leaders to keep the country's nature, wildlife and traditional cultures intact—to protect its heart and soul." Myanmar today stands astride two worlds—the old and the new, the ancient and the thoroughly modern. That tension is what makes this country so compelling, so urgent, and so full of hope.

FAITHFUL GAZE
A young Buddhist monk in the ancient city of Bagan. Nearly 90% of Burmese identify themselves as adherents to the Buddhist faith.

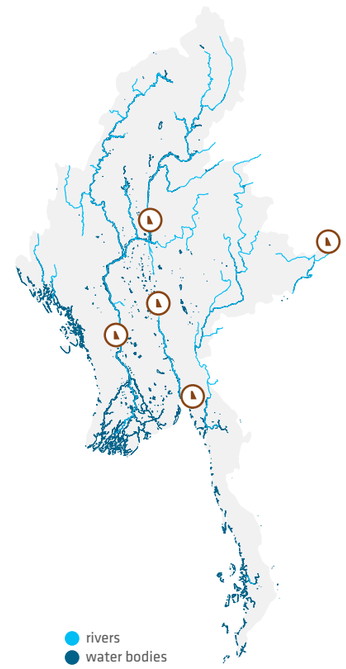
GEOGRAPHY. NATURE. ECONOMICS. CULTURE. UNDERSTAND ASIA'S NEW PIVOT POINT TODAY.

For years, Myanmar was largely isolated from much of the world. Today, a vibrant, ambitious and forward-looking national culture is gaining ground. In 2013, WWF issued a report on the ecosystems of Myanmar and the Greater Mekong region: we share some key indicators of the nation's natural wealth here.



FORESTS
ROADS

Myanmar lost approximately 24 percent of its natural forest cover between 1973 and 2009. Large contiguous blocks of forest remain across the country, but unless green economic planning takes hold, deforestation for timber, along with the country's growing network of roads (including the proposed Dawei-Bangkok highway) could accelerate the deforestation trend.



FRESHWATER
DAMS

In addition to supporting biodiversity, intact river systems provide myriad benefits for people: fisheries, irrigation, rich sediments for agriculture and refreshing freshwater flows to coastal marine fisheries and aquaculture. While dams threaten this natural cycle, if properly planned, hydropower could deliver renewable energy for human needs while minimizing impacts on the rivers' natural flow.

SPECIES

Historically, elephant and tiger habitat spanned nearly the entire country. Today, the elephants' range is heavily fragmented, while tigers are known to remain in only two strongholds—one far north, the other in Myanmar's Tanintharyi region along the eastern border with Thailand. Here, cross-border cooperation is vital to the long-term persistence of both elephants and tigers.

PEOPLE AND NATURE

The proposed port and road at Dawei, along with the related railroad and power lines, will open up new economic opportunities while creating access for remote communities. But the road could be devastating, depending on where it goes. We are proud to work with WWF to assess the potential impact of the road on forests, tigers and rural communities—and with WWF, The Wildlife Conservation Society and Flora and Fauna International to assess the potential of other development opportunities nationwide. Together, we hope to provide the government with the information it needs to make sustainable decisions about how it protects, uses and extracts value from its land.

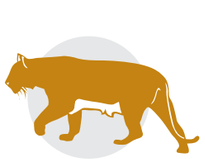
JOHN CODEY AND DR. ROBERT A. COOK, The Leona M. and Harry B. Helmsley Charitable Trust

INCREDIBLE WILDLIFE

ASIAN ELEPHANT
Weighing around 11,000 pounds, this forest giant *(Elephas maximus indicus)* spends more than two-thirds of its day grazing on available plants.

FEA'S MUNTJAC
Muntiacus feae inhabits the evergreen forests that hug the Thailand-Myanmar border. Extremely elusive, it rarely leaves the woods and its numbers are unknown.

MYANMAR SNUB-NOSED MONKEY
When it rains, *Rhinopithecus strykeri*—discovered only in 2010—tucks its head between its knees to keep water from entering its upturned nose.



INDOCHINESE TIGER
Panthera tigris corbetti can weigh up to 550 pounds. As of 2010, only 350 were estimated to be roaming the forests of the entire Greater Mekong region.

GURNEY'S PITTA
Pitta gurneyi is endemic to Myanmar and Thailand. Thought extinct after the 1950s, the vibrantly colored little bird was rediscovered in 1986, but remains endangered.

FOUR-TOED TERRAPIN
Over-collection of eggs has sped the decline in populations of the river-dwelling *Batagur baska*, one of the world's most threatened turtles.

PINK-HEADED DUCK
Rhodonessa caryophyllacea once frequented Myanmar's riverine swamps, but this critically endangered bird is now believed extinct.

IRRAWADDY DOLPHIN
Orcaella brevirostris, a blunt-snouted dolphin related to the killer whale, inhabits both the Irrawaddy and Mekong rivers. Less than 100 are thought left in the Mekong.

SLENDER-BILLED VULTURE
In Myanmar, *Gyps tenuirostris* numbers are falling due to both eating drug-treated livestock carcasses and shrinking availability of prey.

THE STATE OF MYANMAR

TOTAL POPULATION
1980: 34,474,755
2012: 52,797,319

▲ **53.14%** SINCE 1980

SOURCE: World Bank

POPULATION BY AGE
0-14 (children) 26.7%
15-24 (early working) 18.6%
25-54 (prime working) 42.8%
55-64 (mature working) 6.7%
65+ (elderly) 5.2%

SOURCE: CIA World Factbook (2013)

A TRANSITIONAL COUNTRY
"Myanmar is categorized as a **'transitional'** country in terms of its age makeup. Countries in the transitional category stand to experience significant benefits from demographic change, if their governments take advantage of the opportunity it presents. Between 1970 and 1999, these countries experienced an average annual economic growth rate of 3.6 percent."

SOURCE: Population Action International

RELIGIONS
Buddhist 89%
Muslim 4%
Baptist 3%
Other 2%
Animist 1%
Roman Catholic 1%

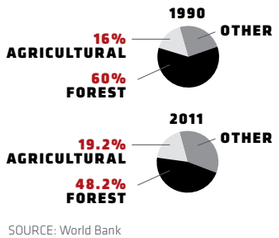
SOURCE: CIA World Factbook

NATURAL RESOURCES
PETROLEUM
TIMBER
TIN
ANTIMONY
COPPER
TUNGSTEN
LEAD
COAL
MARBLE
LIMESTONE
PRECIOUS STONES
NATURAL GAS
HYDROPOWER

SOURCE: CIA World Factbook

TOTAL LAND AREA
261,233 SQUARE MILES

SOURCE: FAOSTAT 2011



SOURCE: World Bank

The World Is Watching

US Ambassador Derek Mitchell explains why Burma is so important right now*

AMBASSADOR DEREK J. MITCHELL was confirmed as the US Ambassador to the Republic of the Union of Burma on June 29, 2012, by the United States Senate. He has worked on security and foreign policy issues in the region for more than 20 years.

During my first year as US Ambassador, I have been privileged to be part of a new chapter in the relationship between the United States and Burma.

As President Obama said to a local audience in his speech at Rangoon University here one year ago, Burma lies "at the crossroads of East and South Asia. You border the most populated nations on the planet. You have a history that reaches back thousands of years, and the ability to help determine the destiny of the fastest-growing region of the world."

Our relationship is not new. The United States was among the first countries to recognize Burma following the country's independence from Great Britain in 1948. But due to serious political differences over the past 25 years, our relationship moved steadily into a deep freeze. Those days are over. In response to the positive changes we have witnessed in recent years, the United States has normalized diplomatic relations, exchanged ambassadors, and substantially eased economic sanctions on the country, opening the door for U.S. trade and investment.

Today, we are once again reengaging at all levels and sectors to reestablish a historic partnership that promises to bring benefits to both countries and serve broad common interests. The possibilities of partnership are great, and the United States looks forward to seizing multiple opportunities to forge deep and lasting ties in coming years.

The Burmese people likewise appear eager to make up for lost time: to take advantage of nascent openings and opportunities and learn about best practices in a range of fields; to develop their knowledge and capacity; and to create an open, free, democratic and prosperous society for themselves and their families.

A core source of strength—and challenge—for Burma lies in its national diversity, the wide variety of cultures and traditions that make up this remarkable country. That diversity in people and landscape is part of what makes the country special and what has complicated its recent history.

Nonetheless, the Burmese people are united in their deep pride of their country's spectacular environmental landscape. Burma is a country rich in national resources and natural heritage. As the country looks forward to an era of development and change, one gets a real sense that many citizens fear losing some of that which has been passed down by successive generations, in essence the heart and soul of the country, on the altar of development.

I am very pleased that World Wildlife Fund has dedicated itself to working with Burma's government and civil society to chart a way forward for sustainable growth and natural preservation in this country, and to sharing the words and pictures of today's Burma with its readers.

As Burma assumes the ASEAN chair this year, and in 2015 holds its next general election, the world will be watching. The United States is confident in the tenacity and determination of the people of Burma to build a peaceful, just, and prosperous society. While the challenge ahead is great, the United States, along with many others in the international community, inside and outside of government, stand ready to assist.

** The United States' official policy continues to be that "Burma" is the official name of the country, but in diplomatic exchanges with the government, the United States uses the name "Myanmar." For example, in using "Myanmar" during President Thein Sein's visit, we want to demonstrate support for and show respect to his government, which is pursuing an ambitious reform agenda.*