



Macedonia (FYROM)

THE FORMER YUGOSLAV Republic of Macedonia (FYROM) has a land area of 9,779 sq. mi. (25,333 sq. km.), a population of 2,038,000 (2006 est.), and a population density of 205 people per sq. mi. (79 people per sq. km.). With a strong agricultural base, 24 percent of the country is classified as arable, with a further 25 percent used as meadows and pasture, and 39 percent is forested. Much of the pasture is for raising sheep, with large flocks reared on the Bistra Mountains.

In terms of carbon dioxide emissions, the per capita rate for Macedonia has been relatively stable, at 5.5 metric tons per person in 1992, falling slowly to 5.2 metric tons by 2003. As for the country's electricity production, 82.3 percent comes from fossil fuels, with 17.7 percent from hydropower. The result has been that 76 percent of emissions by source come from solid fuels, 22 percent from liquid fuels, and the remaining 2 percent from the manufacture of cement. By sector, electricity generation and heat production account for 71 percent of all carbon dioxide emissions, with 11 percent from transportation. The country has a relatively poor system of public transport, with a small railway network, only a third of which is electrified. Climate change and global warming are likely to have a severe effects on Lake

Doiran, where fishermen from Macedonia source much of their fish stock.

The Macedonian government took part in the United Nations Framework Convention on Climate Change in May 1992, which they ratified in 1998. Macedonia also ratified in the Vienna Convention in 1994.

SEE ALSO: Agriculture; European Union; Transportation.

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JUSTIN CORFIELD
GEELONG GRAMMAR SCHOOL, AUSTRALIA

Madagascar

THE MOST RECENT effect of climate change and global warming in Madagascar has been an increase in El Niño effects, which are associated with drought conditions and increased wildfires. In addition, there has been an increase in the intensity and number of cyclones, which displaces human communities and

leads to local famine and cholera outbreaks. Madagascar's western coast, mangrove forests are particularly susceptible to any increase in sea levels. Although warmer ocean temperatures caused by global climate change have been recorded in northern Madagascar, the effects of this change on the coral reefs in the region have been mitigated, at least temporarily, by cooler water from deep ocean currents. Madagascar's unique flora and fauna are also susceptible to climate change. For example, reduced rainfall has negatively affected endangered sifaka lemur populations. The impact of climate change and global warming in Madagascar is exacerbated by deforestation resulting from increased population and unsustainable swidden farming and logging that has reduced forest cover and increased desertification, causing higher temperatures, lower humidity, and diminishing annual rainfall.

Efforts to reduce the effect of climate change and global warming on Madagascar's flora and fauna include the U.S. Agency for International Development's attempt to reduce brush fires, which, in addition to destroying vegetation, release carbon into the atmosphere. The Wildlife Conservation Society, Conservation International, and the government of Madagascar's Makira Forest Project seek to protect over 300,000 hectares of rainforest in northeastern Madagascar. It is hoped that the Makira Forest will offset 9.5 million tons of carbon dioxide (CO₂) over 30 years through carbon sequestration, preserve habitat for threatened species, and provide economic opportunities for local indigenous communities.

SEE ALSO: Carbon Sequestration; Cyclones; Deforestation; Desertification; El Niño and La Niña; Indian Ocean; Sea Level, Rising.

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DOUGLAS WILLIAM HUME
UNIVERSITY OF CONNECTICUT

Maine

LOCATED AT THE northeastern tip of the United States, Maine is known chiefly for its wood and seafood products. Nearly 90 percent of its land area is forested, and 21,000 acres (85 sq. km.) are designated as state forests. Maine has 3,478 mi. (597 km.) of tidally influenced shoreline. These forests and coastlines are particularly vulnerable to climate changes caused by global warming. The U.S. Environmental Protection Agency reports that rainfall in parts of Maine has decreased by 20 percent over the last century. In the future, the sea level in Rockland is predicted to rise as high as 14 in. (36 cm.), leading to coastal flooding, beach erosion, and the loss of valuable wetlands. As a result of this vulnerability, Maine has taken decisive action in establishing policies, priorities, and actions designed to modify human behaviors associated with global warming and climate change.

PROGRESS

Between 1990 and 2001, the population of Maine increased by 5 percent. During that same period, carbon dioxide (CO₂) emissions rose by 20 percent to a total of 22.7 million metric tons. In 2005, Maine established new standards for motor vehicle emissions based on those already in place in California. As a result of these efforts, Maine now has the eighth lowest level of CO₂ emissions in the United States. The Public Utilities Commission acted in 1999 to move Maine toward renewable energy, requiring that 30 percent of all power come from renewable sources, such as fuel cells, tidal power, solar, wind, geothermal, hydroelectric, biomass, and solid-waste fueled generators.

In 2001, the New England governors and Eastern Canadian premiers began developing plans to reduce the levels of greenhouse gas emissions throughout the area. In addition to establishing a Greenhouse Gas (GHG) Emissions Inventory, the plan called on members to develop specific plans for reducing GHG emissions and for energy conservation, educating the public, leading by example, reducing GHG emissions from electric power plants, conserving energy, and reducing the overall impacts of climate change. In 2006, Maine received an overall grade of "B" for actions taken on accomplishing these goals. The report card cited progress in purchasing hybrid vehicles for the state, establishing LEED standards in