



WAYPOINT

SUCCESS STORIES FROM ABOVE

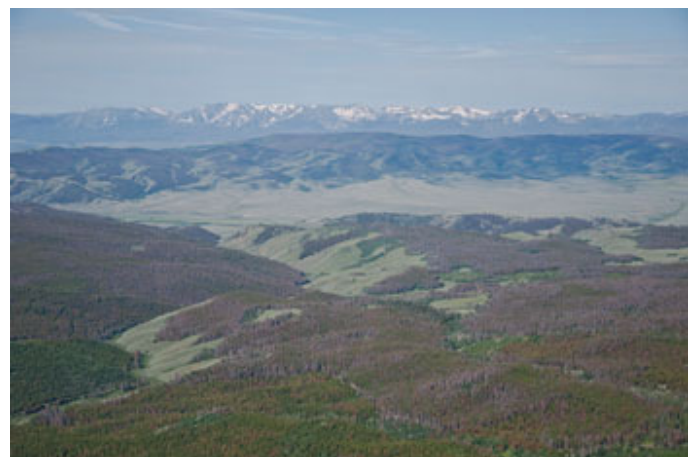
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LightHawk's monthly update, WayPoint, was created to highlight the impact of our work. Each edition covers one specific flight, or series of flights, and illustrates how LightHawk advances conservation efforts throughout North and Central America through the unique perspective of flight. We hope you enjoy WayPoint and will share with others our success stories from above.

Climate Change Impacts Studied Through Flight



Evidence of illegal deforestation in the buffer zone inside Darien National Park, Panama. The Nature Conservancy-Panama/LightHawk



The gray, brown, and red trees in Wyoming's Snowy Range were killed by mountain pine beetle. More than 1.5 million acres of forest in northern Colorado and southern Wyoming are affected by the mountain pine beetle epidemic. Josh King/LightHawk

"Carbon pollution is putting our world—and our way of life—in peril. By restoring ecosystems and protecting certain areas from development, the U.S. can store more carbon in ways that enhance our stewardship of land and natural resources while reducing our contribution to global warming." -- Ken Salazar, US Secretary of the Interior

As Danish Prime Minister Lars Løkke Rasmussen welcomed heads of state from 110 countries to the United Nations Climate Change Conference in Copenhagen in December, he highlighted the fact that climate change knows no borders. "It does not discriminate, it affects us all," he said. While the most widely addressed issues at the conference were the reduction of greenhouse gas emissions, which nations should be held most responsible, and who was going to pay for the plan, many of LightHawk's partners, including The Nature Conservancy, The Wilderness Society, the International League of Conservation Photographers and World Wildlife Fund, participated in the conference to increase awareness about another critical aspect of the climate change puzzle: ecosystem protection, with a particular emphasis on the preservation of temperate and tropical forests and wildlife corridors.

Like so many large-scale environmental issues, efforts to understand the complex nature of climate change benefit greatly from the aerial perspective. Flying with LightHawk helps our partners prevent deforestation, publicize the extent of beetle-killed forests, understand the impacts of fire suppression, identify viable habitat linkages, and monitor changes to wildlife and plant populations.

Deforestation

When forests are clearcut, burned, or lost to beetle kill, the climate change impacts are compounded – not only do dead trees release their carbon into the air but the carbon sequestering power of the forests is also lost. Working with international conservation groups such as The Nature Conservancy (TNC) and World Wildlife Fund, as well as a wide variety of local government agencies and citizen groups, one of the key priorities of LightHawk's Mesoamerican program is protection of tropical forests within the Mesoamerican Biological Corridor. On a recent flight in Panama, LightHawk flew TNC biologists to evaluate the condition of the forest within Darien National Park. The flight revealed illegal deforestation and helped park managers better understand the forest resources they're



Aerial photos of the aftermath of wildfires in roadless areas help wilderness advocates make recommendations for future fire suppression techniques. Rich Fairbanks/The Wilderness Society/LightHawk



The Split Rock Wildway, a state owned "Wild Forest" that conservationists hope to link via easements to existing wilderness in the Adirondacks. J Henry Fair/LightHawk



Narragansett Bay is the site of valuable historical eelgrass beds that allow scientists to more effectively measure the success of restoration efforts that improve water quality, sediment stability, and fisheries throughout the bay. Eelgrass is a key indicator of the impacts of climate change. K.Raposa/Narragansett Bay Research Reserve/LightHawk

charged with protecting.

"This flight provided us with a current perspective of the conservation status of this site, its connectivity, and helped us identify activities like logging, cattle ranching and agriculture that could affect the ecosystems... enabling us to analyze threats and define strategies for conservation and sustainable use of the natural resources in the park." -- Julio A.

Rodriguez, Manager of Darien National Park, The Nature Conservancy

Throughout the Rocky Mountains from Canada to Mexico, huge swaths of forest are being killed by mountain pine beetles. While pine beetle outbreaks have occurred in the past, the extent of the current epidemic is thought to be exacerbated by warmer winter temperatures. In 2009, LightHawk flew photography missions in Wyoming and Colorado to provide important perspective on the vast scale of these dying forests and to investigate the radical changes to forest communities resulting from the beetle epidemic.

"With the rise in temperatures the mountain pine beetle has been able to reproduce without limit, as well as expand its range both to the north and to the east. There is no way to realize the extent of the damage except from the air where you can see the devastation in all directions." -- Jeff Foott,

Photographer, International League of Conservation Photographers

Another force of nature thought to be exacerbated by climate change is wildfire. LightHawk missions in northern California this year helped partners such as The Wilderness Society and Klamath Forest Alliance understand the aftermath of forest fires and evaluate the fire suppression techniques used in wilderness areas, which in some areas entailed felling large swaths of trees as fire breaks. The partners will use aerial photographs as the basis for recommendations for future fire management in protected areas.

The Importance of Protecting Wildlife Linkages

In the Northeast, one of LightHawk's priorities is working with partners to understand and protect the Northern Temperate Forest. Partners such as the Adirondack Trust and Northeast Wilderness Trust are seeking to protect linkages between the Adirondack Park, the largest protected area in the lower 48 states, and the Green Mountain forest systems in Vermont. These linkages are part of a larger puzzle, as conservation groups try to maintain ecological links between the forests of western Massachusetts, through Vermont and across the border into southern Quebec.

As plant and animal species adapt to warmer temperatures, habitat linkages are going to be increasingly important since contiguous habitat must be available as species shift their

ranges to suitable habitats either at higher elevations or farther north. For conservation biologists to be able to plan these linkages, they must first understand current migration patterns. LightHawk research flights assist with tracking of a wide variety of species including pronghorn, jaguar, grizzlies, and wolves. Aerial vegetation studies also present a wealth of information for climate change researchers. In Narragansett Bay, Rhode Island researchers from LightHawk partners Save the Bay and Narragansett Bay Research Reserve have established salt marsh restoration projects specifically designed to monitor the effects of climate change. Aerial photographs enable researchers to track vegetation changes over time and gain a better understanding of the impacts of climate change on riparian, estuarine, and marine ecosystems.

Saving Pieces of Biodiversity

Though LightHawk's four geographic regions appear on the surface to be vastly different, the work of our programs is increasingly interconnected. LightHawk's volunteer pilots fly with our conservation partners from Alaska to Panama to save the pieces of biodiversity, harnessing the power of flight to transcend borders and better understand the impacts of climate change. The irrefutable view from above helps our partners connect the pieces of the climate change puzzle and illuminates possible strategies for dealing with changing biological conditions.

About LightHawk

What started in 1979 with one man and a vision has grown to over 170 volunteer pilots flying missions across the U.S., into Canada, through Mexico and down to Panama. Today, LightHawk is the oldest and largest nonprofit, volunteer pilot-based organization flying environmental missions in collaboration with hundreds of partner organizations.

At LightHawk we believe the view from the window of a small airplane provides a powerful and effective platform for research, ground-truthing, environmental awareness, and education.

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