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The IUCN/WWF Forest Conservation Newsletter

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Celebrating Mountains

Mountains cover a quarter of the world's land area and support a quarter of remaining forests, many areas of exceptional biodiversity value and a wide variety of human communities, including vulnerable groups isolated from mainstream society. Over three quarters of the world's mountain people live in poverty, a situation intensified because many recent armed conflicts have taken place in mountainous areas.

Although the 'picture postcard' appeal of mountain scenes has created a huge tourism industry, this obscures several environmental and social problems that are also typical of mountain environments. Harsh climates, fragile ecosystems and difficult communications make life hard for people who from circumstances or tradition live at high altitudes, while isolation hampers their ability to deal with rapid change or new problems like climate change. At the same time, many forest dwelling species and habitats are increasingly at risk.

The United Nations has proclaimed 2002 the International Year of Mountains, aiming at developing mountain areas to improve the well-being of local people and protect the environment; formulating and implementing national policies on sustainable mountain development; and promoting information tools to encourage public dialogue and awareness of mountains. The Bishkek Global Mountain Summit, taking place in Kazakhstan in October, will pool all recommendations generated during the year and develop practical actions for promoting sustainable mountain development.

What should emerge from Bishkek? IUCN and WWF run projects in all the world's significant mountain ecosystems, with almost half WWF's 300 plus forest projects in mountains. IUCN's Commission on Ecosystem Management is preparing a paper on mountain forest conservation and development. Between them, the organisations have a huge accumulated knowledge about practical conservation in these areas. But this information is hard to find. 'Mountains' have never generated the kind of popular and coherent conservation response that has developed with respect to other categorisations such as 'forests' or 'freshwaters', despite the existence of some excellent research institutions and organisations devoted to mountain environments and society. Experience all-too-often remains fragmented, personal and unrecorded, so that hard-won lessons are lost and mistakes repeated. Perhaps the most significant contribution of IYM would be to create a new impetus for the worldwide conservation movement to give mountains the priority attention they deserve. The International Year of the Mountains should aim at creating practical action and a groundswell of opinion in favour of a co-ordinated response to mountain issues: if enough enthusiasm can be generated now, institutional responses will surely follow.

Cut and Run

Illegal logging threatens to undermine the gains made by protected areas and good forest management. Governments and NGOs are gradually responding to the problem. Nigel Dudley, Christian Thompson and Paul Toyne report.

Targeted advocacy can make a difference, particularly if enough publicity can be generated. A combination of small-scale illegal loggers and international corporations have been logging and rapidly degrading Tesso Nilo, one of Sumatra's single largest remaining blocks of lowland forest, for timber and pulp. In order to generate media pressure on both the companies involved in destroying Tesso Nilo and the Indonesian government, WWF organised a press trip with CNN and print journalists to expose the extent of the problem in this important forest. One outcome was a television news story that was widely screened around the world. As a result, April (Asia Pacific Resource Holdings Ltd), one of the main companies involved, asked to meet with WWF staff and committed to stop logging and converting pristine forests by the March 2002.

WWF also released a research report focusing particularly on the involvement and responsibilities of the G-8 countries and China with respect to illegal trade. In the run up to the G-8 summit in June, WWF called on G-8 countries to commit to purchasing timber only from legal sources originating from sustainably managed forests, and suggested a package of solutions including chain of custody certification, the development of Producers Groups and corporate involvement in the Global Forest and Trade Network. The response from the G-8 at the summit was poor as despite the Action Programme of Work on forests by the G-8 concluding there was no specific slot on the agenda to discuss progress. The G-8 in their statement on Africa however recognised the importance of tackling governance and corruption issues in respect to natural resource management.

Individually a few states are seeking action: the UK government is developing its plans to implement its timber procurement policy and has signed a bi-lateral Memorandum of Understanding on timber trade with the government of Indonesia. The governments of France and Germany made announcements at the last meeting of the Convention on Biological Diversity on establishing timber procurement policies that ensure their timber is from legal and well-managed forests. WWF will be launching a major campaign on illegal logging and forest crime in 2003.

Sources: *Illegal logging in the southern part of the Russian Far East*, Anatoly Kotlobay and Andrey Pitchnikov, WWF Russian Programme Office; *The Timber Footprint of the G8 and China*, Paul Toyne, Cliona O'Brien and Rod Nelson, WWF UK; Global Witness; www.planetark.org; www.earthroots.org; Greenpeace Brazil



An illegal logging camp opposite Tanjung Puting National Park, Southern Kalimantan, Indonesia

The World Bank estimates that the illegal timber trade currently costs the governments of the world US\$5 billion annually through lost tax revenues, with another US\$10 billion lost to the economy of producer countries. Illegal logging also undermines local communities, damages biodiversity and is causing degradation in many of our most important protected areas. The international community is gradually facing up to the threats posed to many natural forests through the impact of illegal logging operations, while individual countries are starting to act against forest crime. Brazil recently seized a record haul of illegal mahogany, following a long period of research and lobbying by Greenpeace and others and the President of Brazil acknowledged the scale of the problem and supported a global ban. In June 2002, the government of Cambodia expelled the Malaysian company GAT International, following aerial reconnaissance by the environmental group Global Witness that showed the company was involved in illegal harvesting, in contravention of the government's January 2002 moratorium. But the problems are, if anything, getting worse. A report from WWF in the Russian Far East found that 1.5 million cubic metres of timber is being cut illegally in the Primorye region each year, mainly going to China, South Korea and Japan. Weak systems of control are blamed, exacerbated by corruption, high levels of unemployment and a collapse of the domestic wood-processing industry. In Canada, the NGO Earthroots claims that the Ontario Ministry of Natural Resources has been routinely permitting logging companies to effect clear-cuts of thousands of hectares of Ontario's crown forests contrary to provincial forestry laws that limit clear-cuts to 260 hectares: in some areas 46-98 per cent of cuts exceeded this limit.

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Alerce alert:

Road through the Coastal Range



Darron A. Collins explains why local people and the international community are asking for an alternative route for a proposed highway through Chile's temperate rainforest.

Look at any international road map and you will see lines of red and blue running from Chile's Peruvian border in the north, through the capital city of Santiago, south to the coastal towns about two-thirds of the way down the country. But there, these lines peter out. Chilean leaders now want to continue the red and blue lines south – to link up the country and open the southern frontier. One key component of this plan involves a 319km highway through the temperate rainforests of the coast - la Ruta Costera.

Chilean and international environmental organisations, however, see the route planned by the Chilean Ministry of Public Works (MOP) as ill conceived, at best. Roads certainly have direct, measurable impacts on the landscape: the Chilean coastal highway would effectively pave over the world's last Olivillo forests, an ecological formation unique to southern Chile. But, in this case, it is the access that the coastal highway affords that ultimately threatens the ecological intactness and integrity of the region's forests. Since the 1950s the forest sector in Chile has been startlingly efficient at converting the native, temperate rainforests of the south to pine (*Pinus radiata*) and eucalyptus (*Eucalyptus* spp.) plantations. Spawned by economic incentives for conversion, hundreds of thousands of hectares of native Chilean forest have been eradicated in favour of planted exotics over the past 10 years. The Coastal Highway infrastructure would make it economically attractive to convert one of Chile's last intact blocks of native forest to monocultures for the wood and paper products industry. Large-scale conversion of these forests would eradicate the habitat of many endemic animals like the Pudu deer, Magellan's woodpecker, Darwin's frog, mountain monkey, and huinya cat and would write the final chapter for many

groves of the remarkable alerce (*Fitzroya cupressoides*) a tree that can reach skyward 375 feet and surpass 3,000 years of age. Not surprisingly, a highway of this magnitude snaking through the remote coastal forest would bring immeasurable change to the region's indigenous Huilliche. And, according to the Huilliche people themselves, most of this change would be for the worse.

Groups from the local Huilliche to the international WWF and the Natural Resources Defence Council have been constructive critics of the project for the past several years. In 2000, a group of 10 scientific, social, indigenous and environmental organisations formed the Coalition for the Conservation of the Coastal Range (known by its Spanish acronym CCCC). At the heart of the controversy for the CCCC is the MOP's refusal to undertake an Environmental Impact Assessment (EIA) for the entire project, instead submitting a partial EIA for just 6.2km - 1.9 per cent of the highway's length. Other routes between North and South exist - routes that would facilitate sustainable development, allow the Huilliche to better determine their own fate, and preserve the cultural and national heritage of Chile. The most viable route of the alternatives would cost just 60 per cent of the route promoted by the MOP. But the MOP has never given these routes serious consideration and would instead prefer to make one spasmodic jump across the coast.

A recent pause in highway construction is reason enough for a degree of optimism. Groups feverishly lobbying for a less destructive, more easterly route hope that if or when the lines on the map begin running once again, they will avoid the last remnants of South America's only temperate rainforest.

Contact: Darron A. Collins, WWF Regional Forest Co-ordinator, Latin American Secretariat, Darron.Collins@WWFUS.ORG

News in brief

EU against deforestation: The European Parliament has asked the Commission and Council not to finance projects that lead directly or indirectly to the destruction of tropical forests and to encourage certification for sustainable forest management. Parliament has also urged the Commission to develop a Biodiversity Action Plan for Forests. In a related move, the Commission has told EU states not to allow shipments of Amazonian mahogany into Europe without assurances that the timber was felled legally. The Commission highlighted Brazilian mahogany being shipped into the EU with export permits whose legality was 'a matter of dispute', and may have been issued in contravention of the Convention on the International Trade of Endangered Species (CITES).

Source: WWF Forestry and Wood Certification Newsletter No. 6, January-May 2002

Carbon sink rejected: The Thai government has rejected a 'forest conservation' proposal by the US that would establish tree plantations to meet the US targets for reducing CO₂ emissions in return for reducing debt owed by Thailand to the US. Local community groups, NGOs and academics pressured the Thai government to reject the proposal stating that the risks involved for local communities and forests were not worth the money Thailand would gain in debt reduction.

Source: WRM Bulletin # 57, April 2002



Amur and Primorsky Gifts to the Earth

Forest protection is to be increased by 3.2 million ha in the Russian Far East. Two commitments made as part of the WWF Gifts to the Earth initiative, and celebrated in the Netherlands and in the UK in June, will see the protected area network in the Primorsky region enlarged up to 17.8 per cent of the total area by 2005 and to 10 per cent in the Amur region. These commitments, made by the regions Governors, will also help support the traditional lifestyles of the local indigenous populations, the Evenki in Amur and the Udege in Primorsky.

Contact: Alexander Belokurov, abelokurov@wwfint.org, www.panda.org/gtte/forests

News in brief

Alberta under fire: The June 2002 issue of the prestigious US magazine *National Geographic* cites Alberta's forest management record as 'a prime example of (the) deleterious effects' of oil, gas and forestry developments'. In the 1960s, 96 per cent of the province's boreal forest was essentially wilderness, today, according to the article, less than 10 per cent of these forests exists in areas larger than a few square miles. The article draws upon a nine-year study by the University of Alberta on the effects of an estimated half-million miles of roads, pipelines and 15-foot corridors – used for seismic testing for oil and gas deposits – which found a 20 to 50 per cent decline in some migratory bird populations, drastic declines in the grizzly bear population and some woodland caribou herds on the verge of extinction.

Source: Jill Sturdy, Canadian Parks And Wilderness Society - Edmonton Chapter, jill-sturdy@cpaws-edmonton.org

Biopiracy pledge: China, Brazil, India, and nine other of the world's most biodiverse countries, which between them contain 70 per cent of the world's biodiversity, signed an alliance in February 2002 to fight biopiracy and press for rules protecting their people's rights to genetic resources found on their land.

Source: Associated Press, February 19, 2002

Cleaner pulp: Paper mills have long been notorious for their release of numerous toxins into the environment. However, research in the US and Finland is being carried out on producing paper without chlorine. The technology incorporates the use of transition metal substituted polyoxometalates cluster ions for bleaching pulp. The goal of the polyoxometalates research is to develop a highly selective, effluent-free, closed mill bleaching process that also produces high quality paper.

Source: USDA Forest Service International Programs

Cree agreement: The long running disputes over hydropower and forestry development between the government of Québec and the James Bay Crees have been resolved with the approval of an Agreement in Principle establishing a new relationship between the two parties. The Agreement ensures a joint Cree-Québec Forestry Board will review forestry regulations and forestry plans for Cree territory and provide recommendations to reconcile forestry activities with the Cree traditional uses of the territory and the protection of the natural environment.

Source: Environment News Service (ENS), February 5, 2002

PNG lifts ban: The moratorium on logging Papua New Guinea's (PNG) forest has been lifted. Prime Minister Sir Mekere Morauta imposed the moratorium in 1999, after admitting the failure of the forest industry in PNG, and stating measures should be taken to rectify the problems and promote more sustainable practises. Prior to the moratorium being lifted an independent review of 32 proposed logging concessions was conducted, recommendations from which were built into a timebound action plan that gained approval from National Executive Council. Implementation of many of the components of this plan have been delayed, and in the meantime there have been several instances of contravention's of the Forestry Act and Regulations, which the review sort to put to an end. While work is underway to incorporate a number of the reforms into the legislation that governs industrial scale forestry activities in PNG, these reforms are yet to have an effect in practice.

Source: Papua New Guinea Eco-Forestry Forum and Tim Dawson, Tim@wfvn.org.vn

Estonia forest crimes: Estonian NGOs have estimated that roughly 50 per cent of the timber exported from Estonia is illegal. The leading Estonian newspaper *Äripäev* has revealed that the Finnish forest company Stora Enso acquired a growing forest from illegal owners related to organised crime of southern Estonia for 70,000 Euros.

Source: Rein Ahas, Estonian Green Movement, reina@ut.ee

Mining rule relaxed: In January, Indonesia issued new rules to reduce restrictions on mining in forests in a move aimed at boosting investment.

Source: Reuters News Service, January 28, 2002

Monarch threat: Escalating deforestation and forest fragmentation in Mexico is threatening monarch butterflies despite three presidential decrees to protect critical over-wintering sites. Ariel images taken over a 28-year period show that continuous forest cover in areas surrounding three important over-wintering reserves has declined from 80 per cent in 1971 to under 30 per cent in 1999. Furthermore, the average size of forest fragments has dropped from about 2,000 hectares to just 25.

Source: Environment News Service, April 3, 2002



Protecting US National Forest Wilderness – the wait goes on

The US national forests of Alaska have been the focus of many attempts to secure protection; this spring matters have come to a head.

In the last days of the Clinton administration in the US, a move was made to shift the Forest Service policy from resource extraction from national forests to managing lands for broader environmental and recreational benefits. Formalised as the Roadless Area Conservation Rule, (roadless rule), the policy barred new road building in the 23.7 million hectares of pristine national forest land, one-quarter of which is in Alaska. Under the rule, pristine forest lands could only be disturbed if natural disasters such as fires threaten area residents and wildlife. As well as the obvious conservation benefits of the rule, the policy was also a practical response to a management problem: The Forest Service has a US\$8 billion maintenance backlog on existing roads.

However for the past year the Bush administration has repeatedly delayed the date that the rule comes into effect. The administration has pledged to uphold the roadless rule, but plans to modify it to allow local input so decisions are made on a forest-by-forest basis. According to campaigners, interim directives have already undermined the rule and proposed timber contracts and oil and gas leases that could threaten roadless areas are under consideration in national forests over the whole of the USA.

The US Undersecretary of Agriculture, a former timber industry lobbyist, has stated that no timber sales have been completed that would not have been allowed under the Clinton rule, and that fears about future incursions into roadless areas are premature. However, in southeast Alaska's Tongass National Forest, the largest US national forest, the Forest Service is moving forward with 33 timber sales (out of a US total of 50 proposed sales) in roadless areas that would be protected by the policy. The Tongass holds about a quarter of the world's remaining coastal temperate rainforest. Earlier this year, a District Court Judge barred

further timber sales in roadless areas until the Forest Service conducted a study of Tongass wilderness and the impacts of logging there. Disappointingly for those calling for protection of the Tongass, the study, released in May, did not call for new habitat protection in the roadless areas.

For some members of Congress, concern about the administration's direction and its failure to strongly defend the roadless rule, has led to affirmative action. On June 5, 177 Members of Congress introduced the National Roadless Area Conservation Act of 2002, which would codify the Roadless Area Conservation Rule. The US Agriculture Department has received more than two million letters and faxes supporting the road ban, the largest ever outpouring of comments on a federal environmental measure. In a separate development, the proposed Alaska Rainforest Conservation Act has the support of 117 members of Congress.

Source: Dominick DellaSala, dellasal@wwfks.org; *Washington Post*, June 5 2002; forests.org, June 9 2002; Reuters News Service, May 20 2002; Laurie Cooper, Alaska Coalition, laurie@alaskacoalition.org, www.akrain.org

WWF-US and the Conservation Biology Institute have completed a comprehensive assessment of roadless areas to date, drawing primarily on peer-reviewed science and nearly a decade of satellite imagery and computer mapping assessments. The report can be downloaded from: www.worldwildlife.org/forests

Protected areas news in brief

French forest protection analysed: The first detailed national forest protection gap analysis, carried out by WWF-France, has revealed that only 1.09 per cent of the forest area of the French mainland is well protected (IUCN Protected Area Categories I to IV).

Contact: Daniel Vallauri, dvallauri@wwf.fr or download the report from: www.wwf.fr/pdf/forets_version_complete.pdf

Virunga danger: Virunga National Park in the Democratic Republic of Congo (DRC), Africa's oldest protected area, has seen increased settlement by displaced people in recent months. Large-scale forest clearance has been reported to provide land for settlement, farming and livestock. Convoys of lorries have been seen ferrying hundreds of cattle into and around the park. Conservation organisations are asking the DRC authorities to identify alternative land for communities living in the park. They are also urging humanitarian organisations to respect national and international regulations prohibiting development of infrastructure inside World Heritage Sites.

Contact: Catherine Mgendu, cmgendu@wwfeafrica.org

Worth the wait: The New Zealand Government is no longer logging native forests. After 30 years of public debate and campaigning, it was announced in March that 130,000 ha of indigenous forest previously controlled by the government owned logging company, Timberlands West Coast, would be protected.

Source: www.doc.govt.nz, press release, March 25 2002

Kenyan resource plunder continues: The Kenyan government has rescinded protected status from 4 per cent of forests, claiming that the territory is needed to open settlements for the country's landless people. However, the indigenous Ogiek people will lose much of their traditional forest territory if this scheme goes forward. According to experts, at least 10 per cent of the land needs tree cover to ensure a reliable water supply. Only 1.7 per cent of forests is currently protected.

Source: Global Response, www.globalresponse.org

In the last issue of *arborvitae*, Carole Saint-Laurent, IUCN/WWF's International Forest Policy Advisor, provided an overview of the year's international initiatives that promised rich opportunities for forest conservation. Four months on the position looks a lot less promising

Failing Forests

2002 has so far been characterized by a proliferation of international forest meetings and the adoption of various decisions and programmes of work that look great on paper: they feature key issues and approaches, like restoration of forest ecosystems and effectiveness of protected areas – but in reality have less apparent intergovernmental political support for forest action than we have seen for 10 years.

This should have been a significant year for forests on the international stage. The 6th Conference of the Parties to the Convention on Biological Diversity (CBD COP6) was slated to adopt a strong new work programme on forest biodiversity, including specific actions on protected areas, restoration, forest fires, illegal logging and certification. The 2nd session of the UN Forum on Forests (UNFF) was set to review progress and necessary next steps on protected areas and restoration. The World Summit on Sustainable Development (WSSD) was looming with heads of state presumably needing to say something positive on forests.

What has happened instead is that negotiations in all three arenas have given only cursory attention to substantive forest issues with greater attention being given to process matters. In the case of the CBD, a good work programme was adopted, but many hours were spent negotiating a preamble that could be read as undermining the status of the work programme. The UNFF gave only passing attention to protected areas and restoration in favour of lengthy debates on the establishment of expert groups. The final preparatory meeting for the WSSD largely rubber-stamped the UNFF outcomes in the face of negligible political interest in forests. The only intergovernmental arena in which dynamic discussions on forests are happening is under the auspices of the UN Framework Convention on Climate Change, but that is because of the prospect of money for plantations that may cause more environmental and social problems than they solve unless clear and enforceable safeguards are in place.

The main concern of the international environment and development community right now is combating poverty and promoting sustainable livelihoods. The case for the relevance of forests to these objectives has not been successfully made in political terms despite much talk around this issue.

The result is that forests – except as sinks for dollars – have rapidly been dropping off the international agenda, while energy, freshwater and marine issues are rising in prominence. Why does this matter? It is not hard to imagine that allocation

of funding to forests (within governments, bilaterally and multilaterally) will fall if Heads of State ignore forests at the WSSD and if political interest continues to drop off. Some countries and regions (e.g. Africa) still assert the importance of forest issues. But this is less and less likely to be matched by support from donors and other potential partners if interest in forests fizzles out within the international community.

On the brighter side, the frequency of international forest meetings this year has provided opportunities in the margins to explore collaboration among individual governments and organisations on specific issues. These include a major initiative on forest landscape restoration (WWF/IUCN with various bilateral and international partners) to be announced in 2002.

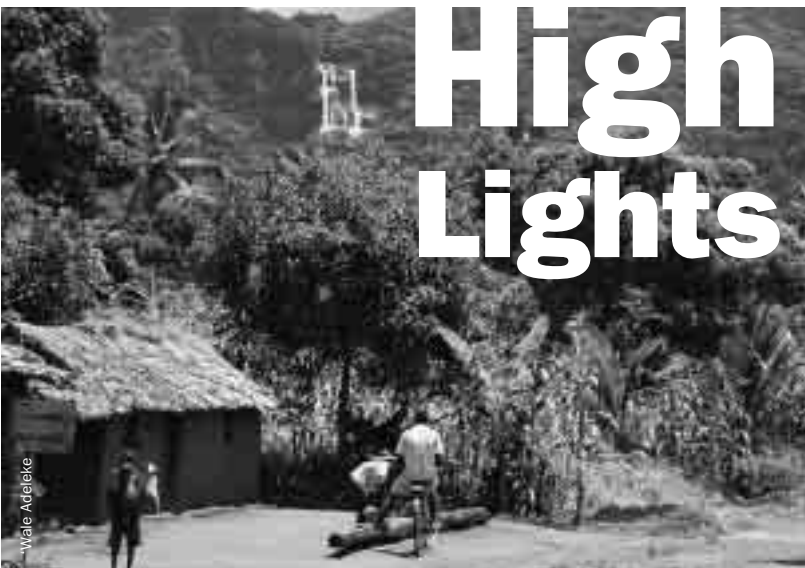
The decision on forest biodiversity at the CBD COP6 does put in place some specific events and processes that could provide opportunities for advancing work in coming years, particularly on protected areas, restoration and fires. The decision on the 2nd session of the UNFF on Forests, as endorsed by the preparatory meetings for the WSSD, provides an opening to work on illegal logging and trade, in the context of 'domestic forest law enforcement'. But all this depends on whether greater political interest in forests can be generated at the international level. To achieve this, forest landscapes and biodiversity need to be recognised as having a role to play in meeting the pre-eminent global challenges of combating poverty and promoting sustainable livelihoods.

Contact: Carole Saint-Laurent, carsaintl@bellnet.ca

Fires in brief

As *arborvitae* goes to press, the debate on fire prevention is building in response to the fires that have burnt more than 1 million ha across the **USA**, illustrating all too clearly the prediction from the US National Interagency Fire Center of a record-setting fire season this summer. Thousands of people have been evacuated and many homes and businesses have been lost. The Bush administration blamed environmental groups for contributing to the forest fires. Their challenge stopped the U.S. Forest Service's attempts to thin out forests by letting timber companies move in and cut trees, which is to date the federal government's main effort to remove 'dangerous underbrush'. Earlier this year, fires across nearly 8,000 ha in forested land in the Andean foothills south of Santiago, **Chile**, forced the evacuation of tourists and villages nearby. The affected parks - the Malleco National Park, Tolguaca National Park and Conguillio National Park - are known for their araucaria and native hardwood forests. Meanwhile as fires swept through habitat of the Amur tiger and leopard in Siberia and **Russia's** Far East in May, the Ministry of Natural Resources estimated damage caused by forest fires in 2001 was more than 2.8 billion roubles (US\$88,000,000), the main causes of fire, besides hot and dry weather, were violation of fire safety rules and insufficient financing and technical equipment of anti-fire divisions. In April, half of the 8,500 ha of Melaleuca forest in U Minh Thuong National Park, **Vietnam** was affected by fire – only 63,000 ha of this type of peat swamp forest remain in Vietnam.

Source: Environmental News Service, June 10, 2002; Reuters News Service, February 8, June 13 and June 26, 2002; *Russian Forest Update # 2 (76)*, February 2002; Environmental News Service, April 9, 2002.



Lawrence S. Hamilton, Vice-Chair (Mountains) of IUCN's World Commission on Protected Areas introduces this issues arborvitae special focus.

Why is 2002 the International Year for Mountains? Aren't these the immutable everlasting three-dimensional earth features of our planet? Yes, but technologically 'gifted' humans, with lowlanders' attitudes have wreaked grievous harm on them in the name of development. They do merit our concern for a number of reasons related to value, vulnerability and threats.

Lasting Values

Mountains speak to the inner core of our spirits. They have been or are significant to most of the world's religions. Reverence, pilgrimage and ceremonial values must not be impaired due to heedless development, including 'spectacle tourism'. Artists, writers and musical composers have been continually inspired by untrammelled mountains. They have challenged and deeply stirred alpinists and trekkers.

Due to difficult terrain and harsh climate mountains are often the last islands of untransformed nature midst a sea of altered lands. Consequently they are repositories of much of the world's biological diversity. Moreover, due to the altitudinal vegetation climatic/soils zones, and the varying compass aspects of these massifs, there is great heterogeneity in habitats. Endemism is particularly high due to their 'island' nature. What is more, as the last bastions of wild nature, they harbour many of the planet's rare species and communities. They also harbour the wild ancestors of many of our most important crops: barley, potato, maize, rice, wheat and coffee, for example.

Mountains, which receive the bulk of the global precipitation, are literally the water towers of the world. Watercourses emanating from them nourish people, agriculture, industry and commerce in the lowlands. Mountain forests are the guardians of water quality, and forest soils are the safest hydrologic condition for water storage. The accelerating scarcity of quality water shouts out for the care of our mountain watersheds.

Mountain Vulnerability

Mountains are dynamic places of powerful geologic and climatic processes: avalanches, volcanic eruptions, earthquakes, landslides, torrents, glacial lake outbursts, rockfall and potentially great surface erosion. Mountain climates are as variable and extreme as is their topography and their thin soils are highly erosive due to precipitation and slope. Flora and fauna is under greater stress, more vulnerable to disturbance and slower to recover. Because of mountains' shape, the flora and fauna of the various altitudinal zones, have decreasing space as they are forced to shift upwards in response to global warming. Some relief is possible for poleward migration if habitats are connected in the great North-South ranges.

Unique Threats

As the highest points in the landscape, mountains are the greatest recipients of long distance air pollution. Decline of forests, aquatic organisms, soil fauna and birds have been experienced particularly in the industrialised countries. Height also means they receive the bulk of telecommunication hardware and the increase in cellular phone antennae is leading to skyline graffiti.

Mountains are 'outflow' areas where much of the physical mountain products leave the area in unprocessed state for value-added use in the lowlands. Timber, fuelwood, non-wood forest products, minerals, and increasingly, agricultural products. Mountains often are economically marginalized areas. Even precious topsoil under de-stabilised crop and grazing systems moves to the lowlands. They are also 'outflow' areas for young people and the skilled, leaving behind older people, and often the women (who have always done much of the land management, but have increasing burdens). This demography is a special challenge in development scenarios. This marginality of mountains extends also to health care, education and political power.

Finally, mountains are often areas of tension, conflict, banditry, illegal drug growing, poaching, forest trespass and open warfare. These are characteristic because of remoteness, difficult access, distance to capital cities, the independence of mountain people and the fact that mountains are often national borders. Sustainable use of mountains tends not to occur in areas under these conditions of risk and uncertainty.

Mountain Celebration

These values and threats, and actions for conservation and sustainable use of mountain environments, are being highlighted this year by governments, NGOs and international organisations, in an attempt to increase among decision-makers and the general public an awareness of the need for changing our thinking about highland areas. This issue of *arborvitae* is a contribution to this process. Elsewhere there are conferences, festivals, food fairs, pilgrimages, clean-up campaigns, school contests and other innovative events. *arborvitae* readers are invited to join in these activities, plan their own, or simply to go out and enjoy and respect your favourite local mountain, massif or even hill!

Contact: Lawrence S. Hamilton, hamiltonx2@mindspring.com

Unifying themes

Mountain environments face special environmental and social challenges. While their inaccessibility has kept some mountains more pristine than the lowlands, others – such as the lower Himalayas and Alps – have been dramatically altered. Understanding the similarities between mountain environments may also help in developing coherent national and international responses to the problems that they face.



A combination of topography, climate and particular social impacts together create a range of problems and opportunities that are either unique to or especially acute in mountains. Several are of relevance to mountain forests:

Unstable environments: climatic extremes, steep slopes and poor soils mean that forest loss or degradation in mountains is likely to have more immediate and acute impacts than in lowlands, and may also be more difficult to reverse. Forest loss can be followed by rapid erosion including avalanches and mudslides, which often carry immediate human costs. Rapid soil erosion has been linked to forest loss in mountains throughout the world, including recently in Thailand, China, the Andes and the Atlas Mountains of North Africa.

Pangani – water or drought?

In 2001, a severe drought in Kenya left four million people dependent on food aid as reservoirs emptied, making strict water and electricity rationing necessary. In the Pangani river, shared between Kenya and Tanzania, river flows have dropped from several hundreds to 37 cubic metres per second. Although the lack of rainfall is the ultimate cause, the problem is seriously aggravated by forest degradation and water over-abstraction. It is clear that by working together local communities can help keep vital mountain watershed protection intact to ensure river flows and equitably share the water available.

As part of the IUCN Water & Nature Initiative, a five-year partnership for action for healthy ecosystems and improved livelihoods, the IUCN Eastern Africa Regional Office (EARO) is helping develop equitable water allocations in the Pangani Basin. The basin drains Mt. Kilimanjaro, Mt. Meru and much of the Pare and Usambara Mountain ranges. At a stakeholder meeting in Moshi, Tanzania in May 2002, all stakeholders agreed that the increased water abstractions from the basin are seriously threatening the intricate links between livelihoods and environment. Under the current flow regime, the Pangani does not provide enough water to meet competing demands for hydro-electricity generation, irrigation and ecosystem maintenance. The meeting concluded with participants highlighting the need for an equitable water allocation system that considers both human and environmental needs in the context of integrated river basin management. IUCN EARO will act upon this mandate, in partnership with the Pangani Basin Water Office and other relevant organisations, to develop a project to address the institutional, information, management and awareness needs identified in the workshop.

Assessing Mountain Protection

Earlier this year, Bhutan's Nature Conservation Division (NCD) undertook an assessment of the management effectiveness of its protected area system. This Himalayan kingdom has demonstrated an unparalleled commitment to environmental protection; over a quarter of the country is in well-designed, representative protected areas, and another 10 per cent in 'tiger corridors' connecting large blocks of habitat. The assessment was funded by the World Bank/WWF Alliance, and conducted in collaboration with staff from the World Bank and WWF-Bhutan.

According to Dr. Sangay Wangchuk, Joint Director of NCD, assessing the management effectiveness of the newly operational parks was the next logical step in park stewardship. 'Many park systems are like a restaurant – the food looks great, but you don't want to see the kitchen. With this assessment, we are opening the doors to the kitchen. We wanted to be fully transparent with our park management.' The assessment, which included a series of workshops, interviews and site visits between late 2001 and early 2002, identified a range of threats and management weaknesses. Threats included grazing, road widening and construction, poaching and the collection of non-timber forest products. Management weaknesses included staff shortages, inadequate ecological data and ineffective law enforcement. Recommendations of the assessment include increasing field-level staffing, developing systems to monitor and prevent threats, revising grazing policies, improving natural resource inventories and improving communication among all levels of the park system.

With this assessment, Bhutan joins a growing list of countries that have begun to take serious measures in assessing the management effectiveness of their protected area systems.

A key role in watershed management: the fact that mountains form the starting point of most of the world's major watersheds also means that environmental degradation in mountains can have direct impacts on downstream water quality. Protecting mountain forests can help maintain the purity of water downstream and, in the case of tropical montane cloud forests, can maintain the supply of water. This is becoming an important argument for maintaining mountain forests in many parts of the world, and some Central and South American countries have linked the two through payment for environmental services.

Acute impacts of climate change: mountains are likely to be exceptionally affected by changes in climate, as a result of rapid shifts in the altitudinal range of species, isolation and eventual disappearance of fragile mountaintop habitats (including particularly tropical montane cloud forests but also for example the forest communities of the White Mountains in California) and rapid changes in ice and glacier coverage, as currently being experienced in the European Alps.

Isolated biodiversity and endemism: mountains that have remained remote for long periods often develop high levels of species endemism, providing rich biodiversity but also particular conservation challenges, in that changes in one small area can threaten an entire species. Mountain biodiversity 'hotspots' include the

Albertine Rift mountains of Central Africa, Mount Nimba on the border of Liberia and Côte d'Ivoire, the Andes and many island mountains, such as the Canary Islands.

High levels of poverty: the low standards of living in many mountain areas means that environmental problems exacerbate difficult living conditions. Most of the world's illegal drug cultivation takes place in mountains for example and this has serious environmental impacts including through the use of herbicides to destroy crops. Mountains are also often seen as areas where there will be relatively few political constraints on resource development and experience a disproportionate amount of mineral extraction and hydroelectric development.

Affluence creating specialised impacts: in the rich countries, higher standards of living have created other pressures. Skiing is damaging mountain forests in many countries, while mountain climbers and trekkers from the developed world are changing the environment and society of areas that have until recently remained relatively untouched by outside pressures, such as parts of Nepal.

Opportunities in empty landscapes: despite the generic problems outlined above, many mountains still remain comparatively empty, particularly in the higher regions, providing opportunities for large-scale conservation that have long disappeared in more accessible environments.

There is already a lot of practical experience and examples are given from the portfolios of IUCN WWF and the World Bank. Developing a coherent international response to sustainable development in mountain environments should be a major focus of the International Year of the Mountains.

Kamchatka – Dream or Reality?

The Kamchatka peninsula in the Russian Far East is one of the most active volcanic zones on the planet. In 1999, in a bid to save Kamchatka's unique ecology, its Governor pledged to increase protected areas to just under a third of the total territory. The aim was to create several nature parks, which would safeguard habitat for rare animals such as the brown bear and bighorn sheep. WWF recognised this commitment as a Gift to the Earth.

Since then developments have been moving fast. Several new protected areas have been created and basic ecotourism infrastructure has been set up in the Blue Lakes Park, thanks in part to 25 local school children who took part in an environmental camp and helped design and lay out nature trails. Kamchatka is sparsely populated, but WWF and Kamchatka's Parks Department are working to ensure that those people who do live there continue to benefit from the peninsula's natural resources. Alongside ecotourism, traditional activities such as controlled hunting of bears and bighorn sheep, strictly limited trapping of fur animals, and gathering mushrooms and berries can all provide income. Local people continue to raise reindeer in Bystrinsky, where a new WWF network of radio stations enables villagers to report incursions by poachers and to communicate in emergencies. Initiatives like this, which serve conservation purposes as well as providing a social service, help to encourage local support. WWF was quite overwhelmed, nonetheless, when the administration of Nalychevo named two peaks in honour of the organisation and named a river after Viktor Nikiforov, Regional programme director at the WWF Russian programme office.


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Whose Forests and Whose Mist?

Edmund Barrow of IUCN's Eastern Africa Regional Office, explores the importance of mist forests of Eritrea, Djibouti and Somaliland along the Red Sea and Gulf of Aden.



The mist forests on top of the mountain spurs, which run from east to west along the Gulf of Aden and Red Sea in Eritrea, Djibouti and Somaliland are vital and unique areas of vegetation, and are the most important forests in these countries. These mist forest areas are crucial components of natural resource management, and especially so in dry and drought periods where they serve as forage reserves for pastoralists and other land users, and make important contributions to livelihood security in terms of mitigating risk and enhancing resilience. They are also important water catchment areas and sources of water – without the vegetation the mist would not condensate and water yields would decrease. If over-exploited and denuded (as has happened in a number of places), then such forests will be degraded and gradually be lost. So, there is an urgent need to halt and reverse their degradation, and, at the same time ensure that they contribute to the livelihood security of the people of the countries.

The issues concerning the mist forests in Djibouti are similar to the problems being faced in Somaliland, and, to a lesser extent in Eritrea and relate to an overuse of the:

- vegetation for livestock, especially in dry and drought times resulting in a reduced vegetation cover to trap the mist; and
- trees for local construction purposes, but also to supply timber for urban centres further away.

Djibouti has few natural resources, and with less than 150 mm of rain per year has limited possibilities for crop production. The mist Forêt du Day is the most important and only forest of consequence in Djibouti. The goods and services that the forest provides are of immense importance to the country. The area has seen significant degradation, as traditional natural resource management controls are no longer effective. As a result *Juniperus procera* and *Olea*

africana are being replaced by more drought tolerant species historically found lower in the catena, such as *Buxus hildebrandtii* and *Acacia etbaica*.

The mist forests of Somaliland occur in the north Goolis mountains and their surroundings, and cover an area of about 1,160 km². These forests are important conservation areas, and are the only 'true forest' areas in the country.

Juniperus procera and *Olea africana*, both of which are economically and ecologically viable, dominate the mist forests of the central and Northern Highlands (the green belt of Eritrea). The high altitude dry *Juniperus*-*Olea* mist forest makes up the majority of the closed forest (about 4,600 km² or 3.7 per cent of the land area). At present there are about 23 villages in this area. Much of the mist forest area has been degraded or destroyed. The main causes of destruction include unwise land use systems and the expansion of agriculture, fuelwood consumption, the 30-year liberation war, and the construction of traditional houses that are very wood demanding.

From both a conservation perspective and as part of pastoralist natural resource management, the conservation and sustainable use of the mist forest areas is important. Over use and degradation will result in the loss of these mist forests and the important biodiversity contained therein. Total exclusion, for example through forest reservation, is not an equitable solution as it would alienate these forests from pastoralists who rely on such refuges as dry and drought time forage reserves. A balance is needed so as to conserve the forest areas, yet ensure that local resource users can continue to have rights and responsibilities for such forests. Starting some form of village land and natural resource planning that integrates the neighbouring villages with the mist forest will be a way to initiate such work, and will be a basis for extending the programme to other areas.

Contact: Ed Barrow, egb@iucnearo.org

Sources of Mountain information

The Forestry Division of FAO is the focal point for a mountain agenda that has been building since the Rio de Janeiro Earth Summit in 1992. A listing of 2002 IYM activities is available from the FAO at: www.mountains2002.org, www.montagnes2002.org or www.montanas2002.org

Discussion on mountain issues can be found at the Mountain Forum, located at IUCN headquarters, which is a global electronic network of more than 2,500 individuals in 100 countries: www.mtnforum.org

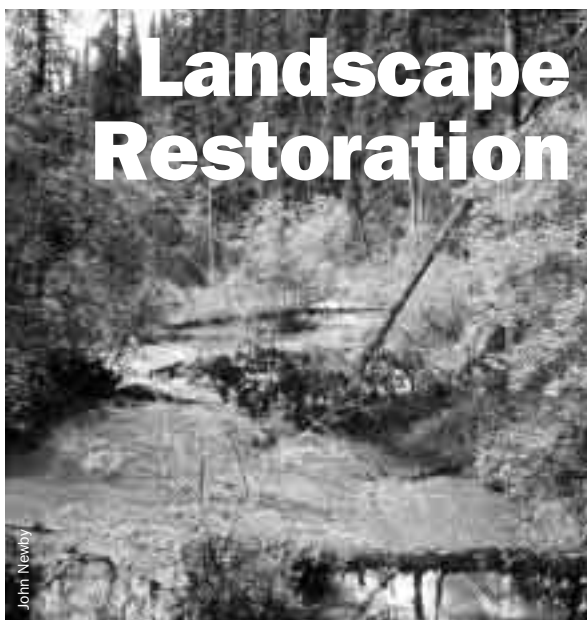
Information and site descriptions on all UNESCO Mountain Biosphere Reserves, World Heritage Sites and on-going mountain projects under the International Hydrological Programme and the International Geological Correlation Programme has been compiled by UNEP-WCMC under the supervision of Dr Martin Price.

valhalla.unep-wcmc.org/unesco/index.htm

For more information on the Bishkek Global Mountain Summit, being held in Kyrgyzstan from 29 October – 2 November, www.globalmountainsummit.org

Up to half of the world's forest has already been lost. Most remaining forests, even in protected areas, are under some sort of threat and a significant proportion is already severely degraded. This is not only bad news for forests and biodiversity but also increases the environmental risks that face many of the world's poorest people. People depend on forests for a range of goods and services, such as fibre, food, medicinal plants and maintain soil. The loss of forest cover or the severe degradation of remaining forests impacts negatively on the supply of these benefits.

Tackling Forest



Sixty forest experts and decision-makers from around the world were brought together in a joint workshop organised by IUCN, WWF, ITTO, CIFOR, NEAFF, CIDA and the governments of Costa Rica and the UK to share their experiences on restoration. Participants from governments, universities and research institutions, and international, non-governmental and community-based organizations were present – from Malaysia to the UK, Tanzania to Chile.

The main objectives of the workshop, which included obtaining a greater shared understanding of Forest Landscape Restoration (FLR) among forest experts and decision makers, initiating a process for working with partners to implement FLR and generating political commitment for the implementation of FLR, were achieved. The meeting sponsors took the conclusions and recommendations of the workshop forward to the 2nd Session of the UN Forum on Forests in New York. There is also commitment from the sponsors and other partners to take FLR forward to WSSD and beyond.

Contact: restoration@iucn.org, Stephanie Mansourian, smansourian@wwfint.org. Presentations for the meeting can be found at www.iucn.org/themes/fcp/activities/flr2.html

Forest Leadership Forum

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The world's largest forest product companies such as International Paper and Weyerhaeuser, retailers like the Home Depot and IKEA and environmental groups came together for the first time to promote responsible trade in forest products at the Forest Leadership Forum in Atlanta, USA. The Forum, which took place in April, was co-hosted by WWF and the Certified Forest Products Council – the North American network of companies who support responsible forest management and trade in certified products.

The Forest Leadership Forum was organised in recognition of the fact that the forest products industry can be part of the solution and can play an important role in combating threats to the world's forests. Discussions at the Forum focussed on issues such as illegal logging, responsible management of production forests, and corporate purchasing policies. WWF is encouraging responsible management and efficiency by forming partnerships with industry through its Global Forest and Trade Network (GFTN). This professional group of over 800 members consisting of timber producers, processors, and retailers, and environmental groups is committed to promoting sustainable forest management and trading and/or sourcing independently certified forest products.

Over 1,100 people attended the conference from North America, Africa, Latin America, Asia and Europe and over 180 stands showcased certified products and NGO information on sustainable forest management.

The Forum provided the opportunity for several new initiatives to be announced by the forest industry. A 3-year partnership between WWF and IKEA will contribute to the development of global toolkits on forestry issues such as Producer Groups' development, high conservation value forest identification and responsible forest management in key countries such as Latvia, Lithuania, Estonia, Bulgaria, Romania, China and Russia. New product launched included, a new line of paper certified to Forest Stewardship Council (FSC) standards, by the Canadian company Domtar.

Sources: www.panda.org/forests4life; www.forestleadershipforum.org/; www.wwf.ca

Forthcoming meetings in brief

Taiga Rescue Network and The Boreal Forest Network

Forests of the Northern Lights: Boreal Forests of the World VI
Winnipeg, Canada, September 20-26, 2002

Contact: TRN, www.taigarecue.org or Michelle Forrest, michelle.forrest@shawbiz.ca

The Asia Pacific Association of Forestry Research Institutions, together with FAO, FORSPA, FRIM and IUFRO

International Conference on Forest Rehabilitation

Kuala Lumpur, Malaysia, October 7-10, 2002.

Contact: FAO Regional Office for Asia and the Pacific, Bangkok, Thailand, Matthew.Markopoulos@fao.org



WWF World Wide Fund For Nature
Avenue du Mont Blanc, CH-1196 Switzerland. www.panda.org

focus

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Expanding options for Mountain Women

Pictures clockwise from far right:

Training programme for local women on orchid cultivation

On site training on orchid cultivation by an experienced farmer

View of Apatani plateau, Arunachal Pradesh India

All photographs courtesy of WWF India

The Indian State of Arunachal Pradesh is situated in the Eastern Himalayas – one of the hotspot regions of world biodiversity. The state is called the ‘Citadel of Orchids’ as it harbours over 600 different species of orchid, many of which are endemic and rare or threatened. Orchids are of great ornamental, medicinal and commercial value and could be exploited for the socio-economic development of the local communities whilst contributing to conservation.

Most of the local tribal communities in Arunachal Pradesh practice slash and burn agriculture, known locally as Jhum, and depend on the surrounding forests for their livelihood. The increasing population, consequent shortening of Jhum cycles (fallow period between two phases of successive cropping), and other developmental activities are however leading to an alarming rate of forest degradation.

WWF-India, in collaboration with the State Forest Research Institute (SFRI) and with financial support from the Government Department of Science and Technology, are trying to expand orchid cultivation in these degraded community forests. A three-year project in the Apatani valley is aiming to achieve the twin objectives of socio-economic development of the local communities and rehabilitation of degraded land for environmental conservation. During the project two groups of local women will be trained in various techniques of orchid cultivation such as polytunnel and orchid bed construction, seedling transplantation and multiplication and post harvest technology.

Contact: Rajeev L.Semwal, rajeevsem@hotmail.com; Sudipto Chatterjee, sudipto66@hotmail.com and Pijush Datta, pijusjkd21@yahoo.co.i



WWF-India is working with communities’ in the Eastern Himalayas where traditional values are diminishing in an attempt to revive organic ties with natural resources.



WWF news in brief

Co-operation in Russia: WWF, the Wildlife Conservation Society, and the Phoenix Fund have signed an agreement seeking closer co-operation in conservation issues in the Russian Far East to help conservation of the region’s biodiversity and, in particular, conservation of the endangered Amur tiger and Far Eastern leopard.

Contact: Yuri Darman, ydarman@wwfrfe.ru

The UK’s fragmented forest: A new report from WWF-UK, *Reversing the habitat fragmentation of British woodlands*, describes forest fragmentation in Britain. It assesses the impacts of fragmentation on woodland species; considers how building a forest habitat network might reverse fragmentation; and asks: how well have we been doing? The report also considers the minimum required area in terms of viability of individual woodlands and what percentage cover would ensure sustainability of woodlands in general.

Contact: Beatrix Richards, BRichards@wwfnet.org

New Forest for Life Manager: Dr. Jill Bowling has joined the Forests for Life Team in Gland, replacing Stewart Maginnis who left last year for the Forest Conservation Programme at IUCN. Jill comes from the International Federation of Building and Wood Workers, based in Geneva, and for the last five years was Director of their Global Wood and Forestry Programme. She is Australian, lived in the Pacific Northwest of the USA for 10 years before coming to Switzerland, and has a background in biology and forestry.

Contact: J.Bowling@wwfint.org

New Producer Group in Japan: The inaugural meeting of Sanshoukai (which literally means ‘a group of mountain smiling’), an independent producer group with close relations with WWF Japan, was held in March 2002. The 15 members, from various forest sectors will promote well-managed forestry and credible forest certification within Japan.

Source: Eishi Maezawa, emaezawa@wwf.or.jp



Restoration in Tanzania

The efforts of the local Sukuma people in semi-arid Tanzania are gaining international recognition as an outstanding example of forest landscape restoration.

The Shinyanga region, south of Lake Victoria, has suffered from serious forest and woodland degradation due to the over-grazing, uncontrolled bush fires, unsustainable wood demand (in particular for fuel), and clearing of forest land to eradicate tsetse flies (1940-1965) and for agricultural expansion. However, a still strong memory of the traditional ngitili system has provided a good entry point for the forest restoration efforts of the local community.

'Ngitili' is an indigenous natural resource management system that involves conservation of fallow and range lands by encouraging vegetation (in particular for browse and fodder) regeneration. This revitalised system of ngitilis is being re-adopted on a wider and more individual scale, contributing to improved livelihood security and helping to restore wider woodlands goods and services to the people and the land. Due to local efforts, there are now over 15,000 individual ngitili covering approximately 25,000 ha, and 284 communal ngitilis covering about 46,000 ha.

In July, the Equator Initiative announced that the project had been chosen as one of twenty-five outstanding projects to be put forward at the WSSD. Edmund Barrow, from IUCN EARO, made the nomination on behalf of the local group, HASHI (Hifadhi Ardhi Shinyanga - Shinyanga Soil Conservation programme). He worked with HASHI in the late 1980s and early 1990s on project definition, capacity building and project evaluation, and more recently to develop up this interesting case on community-based (and government-facilitated) Forest Landscape Restoration (FLR). The project, which was presented at the FLR workshop in Costa Rica (see page 11), demonstrates that rural people and communities recognise the importance of natural trees and vegetation in their lives and have strong institutional mechanisms for their management.

The Equator Initiative has been set up by the UNDP, working with a range of groups including IUCN, to highlight successful initiatives undertaken by communities in the Equatorial belt, which promote poverty alleviation through the conservation and sustainable use of biodiversity.

Contact: For IUCN's work on Forest Landscape Restoration, www.iucn.org/themes/fcp/activities/flr1.html; the Equator Initiative, www.equatorinitiative.org

IUCN news in brief

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Regulating trade in the Mekong: IUCN Asia Regional Forest and Environmental Law Programmes completed an overview and broad comparative analysis of timber trade regulation in the Lower Mekong Basin, Cambodia, Lao PDR, Thailand, and Vietnam, in December 2001. The report, *Regulation of the Trade in Timber and Non-timber Forest Products in the Lower Mekong Basin Countries*, concludes that the task of developing and applying regulatory systems that maximise the contribution of timber and NTFP trades to national development whilst ensuring the long-term supply of these resources has not been met successfully. Adopting a unified approach to reform in the sub-region is recommended considering the linkages that exist between policy decisions of one country and exploitation of timber and NTFPs in the other states. The many regulatory constraints shared amongst the four countries of the sub-region also make such an approach imperative. It is argued that further support for a sub-regional approach lies in the economies of scale that would arise from adopting region-wide strategies and standards in response to common issues.

Contact: IUCN Regional Forest Programme, Asia, iucn@ait.ac.th

Strategy for CIS Mountain Forests: At the World Bank consultations in Finland in April 5, 2000, representatives of several CIS countries, among them: Armenia, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia and Ukraine supported the initiative of the IUCN Office for the CIS Countries to develop a Strategy for Conservation and Sustainable Use of Mountain Forests in CIS countries. Since then IUCN-CIS has developed the first draft of the Strategy's structure and created a working group of about 30 experts from different mountain regions in the CIS. IUCN-CIS hopes that this preparatory work can be the basis for the First International Conference on the Problems of Mountain Forests in CIS Countries, which would be an important input into the International Year of Mountains. Currently IUCN-CIS is implementing a CIDA-funded project on sustainable livelihoods for indigenous people in forested mountainous regions of the Kamchatka Peninsula. The lessons learned in this project are being used in the Strategy development. The initiative has been described as 'highly important and timely' by various NGOs, federal agencies and educational institutions in CIS countries. However, at present funds to fully develop the Strategy are not available.

Contact: Nikolay Shmatkov, IUCN-CIS Forest Conservation Programme, shmatkov@iucn-cis.org

The Wellbeing of Forests: an innovative e-tool for assessing environmental and social sustainability

In August 2002, IUCN's Forest Conservation Programme will be launching its Wellbeing of Forests Sustainability Assessment tool comprised of free downloadable software entitled "Wellbeing Scores" and a manual to apply the methodology. The Wellbeing of Forests brings together 27 indicators of human and ecosystem wellbeing using IUCN's pioneering Sustainability Assessment method. The Wellbeing of Forests tool will help facilitate dialogue about forests among the development and conservation communities. We encourage you to use this tool in your own work, and provide us with feedback that can help us to develop and improve it further.

Contact: The Software and Manual is available from IUCN's Forest Programme's website <http://www.iucn.org/themes/fcp/>



Mountain Focus ■ Drinking the Forest

Steve Gretzinger reports on a new initiative in the Sierra de las Minas Biosphere Reserve in Guatemala aimed at stabilising funding for reserve management and ensuring a locally sustainable water supply by involving industrial water users in a Payment for Environmental Services programme.

Cola, Licorera Zacapaneca, Embotelladora de Agua Gallo) and the major surface water users are hydroelectric (Empresa Hidroeléctrica Pasabien) and irrigation (Unidad de Riego La Palma, Jumuzna and San Agustín de Acasaguastlán) industries.

Despite this dependence of users upon SdM's water, there are currently no financial mechanisms to channel user fees upstream to the managers of the reserve. Industrial water users make no payment for water pumped from aquifers. Surface water users, agroindustry, farmers and residential dwellers pay some fixed fees, but these are not based on consumption and no fees are fed back to the protection and management of the SdM. Water users and governmental officials have noticed a gradual decrease in water quality and quantity, and many recognise that the current system is not sustainable.

Engaging the Private Sector

Given these circumstances, the SdM is a particularly good area to develop a Payment for Environmental Services (PES) model. The programme aims to systematically link social, economic, environmental and institutional aspects of conservation, with particular focus on partnerships with the large industrial water users.

The programme will initially focus on developing a local (municipal-level) institutional framework for a PES Programme in the SdM ('The Water Fund'). Active engagement with downstream industries will be encouraged and revenue-generating activities to financially sustain the SdM via a PES programme with industrial water users will be designed and implemented.

The overall objectives of the project are to develop a mature functioning PES programme that could also serve as a model for other municipalities in Guatemala, Central America and the world. Locally the project aims to provide sustainable water use practices and/or forest landscape restoration in the micro-watersheds of rivers located in the municipalities of Teculután and Río Hondo and provide economically viable and 'water friendly' alternatives for agricultural producers in the micro-watersheds of the same municipalities.

Contact: Steve Gretzinger, Conservation Director of WWF-CA, sgretzin@wwfca.org or Oscar Brenes at obrenes@wwfca.org. The project is the result of joint work carried out by WWF-Central America, the Fundación Defensores de la Naturaleza, the Conservation Finance Program of WWF-U.S, WWF-International and the Centro Internacional de Política Económica para el Desarrollo Sostenible (CINPE) of the Universidad Nacional (Costa Rica).

The 240,000 ha Sierra de las Minas Biosphere Reserve (SdM) rises from slightly above sea level to over 10,000 feet and is one of the most spectacular and species rich mountain ranges in Central America. As the oldest mountain range in the region, the SdM harbours:

- 70 per cent of all birds, mammals and reptiles registered in Guatemala and Belize;
- a large variety of ecosystems including dry, conifer, and tropical cloud forests;
- habitat for threatened species such as the Quetzal, Tapir, Howler Monkey, Jaguar, Puma and Harpy Eagle; and
- 63 permanent rivers, which originate in the Reserve and provide water for communities and industrial water users in the populated Polochic and Motagua valleys.

WWF-Central America and Defensores de la Naturaleza, an IUCN member, have collaborated on the management of SdM since 1990. Initially, WWF helped establish the protected area and initiate traditional reserve management. In the late 1990's, the focus evolved to the resolution of land tenure conflicts, promoting gender issues, and developing economic alternatives based on sustainable natural resource use (with funding from WWF-Austria and WWF-Switzerland). From this work it became clear that to ensure stable financing for the long-term future of the reserve, it would be necessary to involve downstream users of water originating in the SdM in upstream conservation efforts.

Water from the reserve is used downstream for household consumption, hydroelectric energy, bottling of beverages, agriculture, cattle, tourism, recreation and commerce. Although all residents depend on water, the major sub-surface water user is the bottling industry (Pepsi, Coca-



Tracking Trees

Effective verification of the chain of custody of wood products has important applications in combating forest threats such as illegal logging and unsustainable management. If consumers, specifiers, retailers, processors and producers are to be convinced to source or produce their wood products from responsibly managed forests, they must also have the tools at their disposal that enable them to participate in a verifiable chain of custody.

The Alliance, along with DFID and the Dutch Government, funded a recent workshop in Phnom Penh, Cambodia, that assessed state-of-the-art methods of tracking wood along the chain of custody en route from the forest to the consumer. Particular emphasis was placed on tracking logs from their points of origin in the forest to the places where they are processed into primary wood products..

The workshop concluded that in addition to their role in countering threats to forests, chain of custody systems can also be of direct financial benefit to the forest industry because of the information they provide to forest managers and wood processors in areas such as quality management, safety and financial control. These benefits have become evident in chain of custody systems applied in other industries. The workshop also concluded that identification, segregation and documentation are the principles upon which effective chain of custody systems must be based. Labelling technology must be utilised to identify logs and other products. Where wood products from a known source might be mixed with unidentified products along the chain of custody, it must be segregated and processed separately. Labels affixed to logs must be linked with documentation on species, quality, and other data about the product. An analysis of the legal and regulatory environment affecting chain of custody systems concluded that they are only as effective as the governance systems in which they operate. The final workshop report will be published in Autumn, 2002. It will also include a survey of the potential users of chain of custody information –foresters, government agencies, timber companies, timber importers and consumers - as well as a survey of labelling technology.

Contact: Per Bjorkman, PBjorkman@worldbank.org

The Yaoundé Process Continues

The second Ministers' Conference on the Conservation and Sustainable Management of Central African Forests (COMIFAC) was held in Yaoundé, Cameroon, on June 27 and 28. This meeting was the most recent step in the process of developing and implementing a regional, transboundary forest conservation plan for the Congo Basin that started with the Yaoundé Summit of March, 1999.

The Yaoundé process has proven to be an effective example of multi-stakeholder, international collaboration. In addition to the original signatories of the Yaoundé Declaration - Cameroon, Central African Republic, Chad, the Republic of Congo, Equatorial Guinea and Gabon - the Democratic Republic of Congo also participated and has now endorsed the Declaration. A large group of leading NGOs and international organisations participated in COMIFAC, including WWF, World Bank, IUCN, FAO, UNESCO, ITTO, UNIDO, European Union, DFID, GTZ, WCS, UNDP, CIDA, ADIE, IFIA, OCFSA, SCAC, CARPE, CARPO and CIFOR. The Alliance, which played a critical role in launching the Yaoundé process, has continued to provide technical assistance and funding.

The meeting produced the following results:

- the approval of a regional action plan for protected areas and sustainable forest management, with a particular focus on transboundary issues;
- resolutions on medium- and long-term funding mechanisms for the COMIFAC and its affiliated programmes;
- a resolution requesting that development partners contribute in funding existing protected areas and in promoting alternative livelihood and cultural activities involving local populations in the process of conserving the areas concerned;
- approval of a trust fund for the Sangha Trinational protected area;
- approval for collaboration on an anti-poaching protocol;
- adoption of the text of a ministerial declaration to be issued at the World Summit on Sustainable Development in Johannesburg; and
- adoption of formal statutes for COMIFAC, a part of the regulatory framework that makes COMIFAC the guiding body for all forest related initiatives in Central Africa.

The next COMIFAC meeting will be held in June, 2004 in Libreville, Gabon. In the intervening period, the Alliance will continue to provide financial and technical input to the process as well as support for the implementation of specific recommendations pertaining to conservation planning and management, forest sector governance and the development of sustainable conservation financing mechanisms.

Contact: Jack Hurd, Jhurd@wwfint.org

Mountains – a final word

Simon Rietbergen reviews *Forests in Sustainable Mountain Development*, which looks at the importance of mountain forests in terms of their production of wood and non-timber forest products and services: freshwater, tourism and recreation.

The book is the primary output of the Task Force on Forests in Sustainable Mountain Development established by the International Union of Forestry Research Organizations in 1996. It includes contributions from over a hundred people including forestry researchers and practitioners from international organisations and NGOs. As with any book of this scope, and with such a large number of contributors, there is some unevenness in the contributions. This

is, however, an important volume that addresses most of the problems facing mountain forests in a sound and engaging manner. Each of the ten sections has a good summary of the major issues covered in the articles up-front, which helps makes the book more accessible and valuable as reference material.

Refreshingly in a world that increasingly defines well-being solely in terms of monetary income, this book takes a very broad view of sustainable development, including not only its economic but also its environmental and socio-cultural components. However, one important research theme not addressed is how the political marginality of many upland communities reduces the scope of some sustainable development tools highlighted in the book, such as economic valuation of environmental services and transfer payments to poor upland farmers for environmentally sound watershed management.

Forests in sustainable mountain development: a state of knowledge report for 2000, edited by M.F. Price and N. Butt. IUFRO research series no. 5. CABI publishing, Oxford and New York, 2000.



arborvitae

The next issue of *arborvitae* will be produced in November 2002 (copy deadline October 2002). If you have any material to send or comments please contact:
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Back issues of *arborvitae* can be found on the WWF/IUCN Forest Innovations website, at:
<http://www.iucn.org/themes/forests>

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reviews in brief

Mining Guidelines

Available from: Maria Boulos, MBoulos@wwfint.org for free electronic copies of the paper, or www.wwf.org.uk/filelibrary/pdf/to_dig_or_not_to_dig1.pdf
To Dig or Not to Dig: Criteria for Determining the Suitability or Acceptability of Mineral Exploration, Extraction, and Transport from Ecological and Social Perspectives, provides governments and companies guidance about when to prohibit extractive activities, when to sharply restrict them, and when to apply only standard operating rules. This WWF report follows an earlier set of more general recommendations approved at the 2000 IUCN World Conservation Congress in Amman. The reports states that no mining or drilling should take place in areas that have high protection status or in sites outside protected areas that either have high conservation value and face a serious risk that such activities will cause major permanent losses to biodiversity, or where social assessments have identified that human welfare is likely to suffer. In locations that have 'significant', as opposed to 'high', protection status and conservation values, governments should only allow mineral activities if critical ecological and social issues can be adequately addressed. In other areas it should be enough to get companies to follow normal best practices.

Owning the Forests

Available from: Whitney Painter, wpainter@forest-trends.org
A new report from Forest Trends, *Who owns the world's forests?*, provides useful data from 24 countries, who together account for 93 per cent of the world's forests. Globally, governments claim to own and administer 77 per cent of these forests. Communities and indigenous people formally own seven per cent and administer an additional four per cent that governments have reserved for them. Individual landowners and private companies own the remaining

12 per cent. Forest ownership varies between countries. In Canada, Guyana, Indonesia, Malaysia, Myanmar, Russia and all of Central Africa, governments own over 90 per cent of the forests and have handed over large forest concessions to private companies. In Eastern and Southern Africa governments also own most of the forest but have given out few forest concessions. Private individuals and companies own over half of the forest in Argentina, Australia, Finland, Sweden and the United States. Communal or co-operative ownership predominates in China, Mexico and Papua New Guinea. Over the last 15 years, the forest owned and administered by communities and indigenous peoples has more than doubled. In developing countries generally, indigenous people and local communities own or officially manage 22 per cent of forests, compared to only three per cent in developed countries.

Illegal logging – nowhere is safe

Available from: Lidielte Marin, Imarin@catie.ac.cr for electronic copy of the full CATIE (Agricultural Centre of Tropical Research and Teaching) document in Spanish or executive summary in English
Illegal Logging in Costa Rica: An Analysis for Discussion, reports that between 28 and 41 per cent of all timber sold in Costa Rica, a country renowned for its environmental husbandry, is illegally harvested or transported. Around 50 per cent of the illegal timber comes from areas where loggers could have harvested legally, but did not obtain the necessary permits. Forty per cent comes from protected areas and locations that are too steep or too close to rivers and streams to harvest timber legally. Most illegal timber comes from trees in pastures or illegal conversion of secondary forest and primary forest without a management plan. The report provides a series of recommendations to counteract the illegal activity, ending with a plea to the government to make it cheaper and easier for loggers to follow legislation and manage their forests sustainably.