

Executive Summary

- This is the fifth Management Plan for the Rio Bravo Conservation and Management Area (RBCMA), covering the period 2006-2010 and developed in consultation with senior staff members of Programme for Belize (PfB). The general strategy has been presented to and approved by the PfB Board of Directors.
- The plan analyses the current situation and past experience to set out the main thrusts for action over coming five years, using the methodology developed for use throughout the national protected areas system. It is a medium-term guiding document, setting priorities and giving direction without limiting operational flexibility. It is therefore part of a suite of planning documents, supplemented by more detailed sectoral plans and implemented through annual work-plans developed by the programme managers.
- The plan is based on the underlying principles governing RBCMA management:
 - to conserve biodiversity and archaeological heritage;
 - to demonstrate sustainable use of forest resources compatible with conservation aims, so contributing to the local economy and supporting conservation management.

The management regime corresponds to IUCN protected area category VI. The provisional zoning system introduced in 1993 has been revised to reflect advances in forest management over the past 15 years but retains its structure based on the UNESCO 'Man and Biosphere' model – i.e. a protected core managed on national park precepts buffered by a 'sustainable use' zone managed as a functional forest reserve plus an outer area of engagement with peripheral communities. This structure complements that of the adjoining Maya Biosphere Reserve (with its World Heritage core zones) across the international frontier.

- Three conservation targets are identified corresponding to the three main ecosystems – broadleaf forest, pine savannah and aquatic/wetland systems. The site is of very high conservation importance and past management has succeeded in keeping its ecosystems in good to very good condition. The objective over the planning period is to maintain them in that state.
- Of the three conservation targets, pine savannah is in the worst condition and broadleaf forest, though subject to the broadest range of threats, is in the best. On present evidence the aquatic systems are in good condition but are vulnerable. Unmanaged fire is the greatest single threat, deeply affecting the pine savannahs and significant areas of broadleaf forest. Loss of biological connectivity through land use change and deforestation in the wider landscape is also important, acting insidiously and more or less irreversibly. It is also the most difficult to address. The impacts of illicit activities (hunting, timber theft etc) are localised but still of concern, with a direct link between hunting and fire.

- Four action areas are identified to relieve identified threats to conservation targets – protection, sustainable use programmes, outreach and education, and research. The management regime is now mature with most necessary actions in place and the emphasis is therefore on consolidation rather than on new initiatives. The ability to mount and maintain effective management action is, however, eroded by chronic financial insecurity with budgetary shortfalls and uncertainties in cash flow affecting maintenance of infrastructure (roads, buildings) and timely replacement of capital equipment (notably vehicles). The priority is therefore placed on a ‘sustainability’ strategy – developing the two proven revenue-generating programmes (ecotourism and sustainable timber production) not only as practical demonstrations of good forest use but as the means to self-sufficiency for basic management operations. This sets a revenue-generation target of BZ\$ 1.4. million p.a..
- Eco-tourism development already has a sectoral plan that is adopted as the priority programme for 2006-2010. The approach is based on increasing the quality and the range of offerings (with emphasis on water-based activities at Hill Bank). At La Milpa Field Station the aim is to maintain occupancy levels at c. 40%, ensuring regular maintenance to ensure the site remains competitive. At Hill Bank the target is to increase occupancy from c. 7% to c. 35% by investing in cabanas and other modifications to existing facilities, again assuring a regular maintenance budget. Investments in equipment are needed at both sites and the whole initiative is backed by a marketing plan. The full plan requires a capital injection of BZ\$ 770,000 over three years but is projected to increase net income to c. BZ\$ 1 million by the fifth year. The eco-tourism plan is therefore the principal component of the sustainability strategy. Options for concessions or partnerships with tourism operators remain open.
- Full sectoral plans have also been developed for the sustainable hardwood timber programme. Present operations can be expanded from 450 ha p.a. to 800 ha p.a. without prejudice to management standards and objectives backed by Forest Stewardship Council certification and greatly increasing the contribution made to the local economy. At this level, the operation also becomes a net revenue generator but requires extra investment in staff and transport. Some important tasks (e.g. re-measurements for growth rates, inventory) are also needed to complete the management system. A joint partnership is therefore proposed to attract the additional investment without losing overall management control. This perfects the system, relieves PFB of c. 30% of its staff time for redeployment elsewhere, and supplements eco-tourism income to meet the ‘sustainability’ target.
- The protection programme will be maintained, with additional measures to address security ‘hot-spots’ in the frontier area, along the northern ‘roof’, the two pine savannah areas (notably the ‘San Felipe’ savannah) and the eastern boundary. Ideally the effort should be boosted with three to four extra staff, dedicated transport and equipment upgrade/replacement, at an extra cost of

estimated at BZ\$ 60,000 primarily in capital expenditure. This is supplemented by arrangements to improve efficiency, giving benefits even if the extra funding is not secured. These include a formal reporting/monitoring system to track management efficiency and the expansion of management programmes (hardwood timber and savannah/fire) into sensitive areas using the protection and other field staff in a combined team.

- The savannah and fire management programme is the priority development area over the planning period, building on on-going work and based on an outline sectoral plan developed by PfB field staff. The objective is to maintain the present fire training programme but incorporate it within pine savannah management plans developed for 2500 ha on the Rancho Dolores and San Felipe savannahs. These plans include fire control and use as a management tool to maintain biodiversity (with special emphasis on the yellow-headed parrot) and promote pine stocking. It also includes control of invasive species. Once these plans are in full operation as demonstration areas, the programme will be extended to the remaining savannah. Equipment and skills for this work are already available. It can therefore be undertaken by redeploying staff from the hardwood timber programme, liberated for 30% of their time by the partnership arrangement. The protection staff will also be involved as, given the savannahs are sensitive areas, the work plays a protective role.
- The Freshwater Programme will be maintained, retaining the emphasis on the New River Lagoon but increasing the scope of monitoring to include physico-chemical parameters indicating human impacts (sediment load, indicators of sewage effluent, agricultural inputs). The objective is to track potential impacts and promote appropriate action, in conjunction with the statutory authorities and local communities, if water quality is found to decline. This activity is wholly dependent upon securing grant funding, logically an extension of the present programme (and with funding and scope negotiated with the funding partner). Although an expansion of coverage to the Hondo system (i.e. Booth's River and Rio Bravo) and other aspects of the system (e.g. fish populations and fisheries, hydrological regime) is highly desirable, action must be opportunistic and linked to research and broader-scale management initiatives that bring their own financial support.
- PfB conservation education and outreach programmes in neighbouring communities have been sporadic with variable results. The approach is therefore revised to concentrate on promoting use of the field stations and the demonstration value of the management programmes for training and workshops at a national and regional level. This takes better advantage of the synergies between the different activities, promises more concrete gains in conservation benefits in the wider landscape, and also serves to promote awareness of the site and its management. It is also cost-effective as the programmes are funded by the organiser (rather than PfB, which provides the venue) and a strict 'at cost' approach is recommended to promote use of the area in this way. Involvement

(and, where possible, active participation) of community members and staff of neighbouring properties is actively encouraged under this programme, facilitated if necessary by PfB subsidy.

- The importance of research and survey is fully recognised. There is, however, already sufficient information to inform management and the activity must cede priority in resource allocation to optimising the ecotourism, hardwood timber and savannah programmes. Essentially the present approach of hosting researchers (for a research fee) is maintained while initiatives involving institutional linkages (especially those with participation of local institutions) or topics linked to management programmes (including impact assessments) should be encouraged as and when possible. Monitoring programmes within the management programmes are, however, maintained and, in the case of tourism, expanded. These activities involve some staff time (subsumed in general operations) but no dedicated expenditure.
- A monitoring programme to track effectiveness of management and of conservation strategies is included in the plan.