

Economic valuation of Centre Hills (MNT402)

The ongoing volcanic eruption from July 1995 to present has led to the destruction of over 60% of the forest cover on Montserrat. The Centre Hills remains the largest intact forested area. They are of global biodiversity importance, supporting the critically endangered Montserrat oriole and galliwasp lizard, which are found nowhere else on Earth. The Centre Hills also provide essential environmental goods and services. They are the main water catchment area on the island, a major tourist attraction, and give protection from soil erosion, landslides and flooding. Since 2005, the Department of Environment, in partnership with the Montserrat Tourist Board, Montserrat National Trust, Royal Botanic Gardens Kew, Durrell Wildlife and RSPB, has implemented a Darwin project to conserve the Centre Hills. This has involved biological and socio-economic assessments to develop a participatory management plan, extensive outreach, increased local capacity for environmental management and the preparation of new (OTEP-funded) environmental legislation to enable the Centre Hills to be designated a National Park.

A socio-economic assessment began in late 2005 to define the extent of land-use, as well as knowledge and attitudes of residents toward the environment and its management. However, it became clear that a major gap existed in terms of understanding and appreciating the economic values associated with the Centre Hills. Thus, the economic valuation project was conceived.

Ecosystem services are often under-invested in and over-exploited, because there are no markets that reflect their value. Given that many stakeholders are defined by their economic interests, it is also logical that this type of data is as critical a component in environmental management as are the biological and ecological data which define the resource itself.

Stakeholder consultations in Montserrat held in July 2007 identified many and diverse values derived from the Centre Hills, including landscape beauty, recreation and tourism, soil conservation, agriculture, habitat for unique and endemic biodiversity, and a potable water source. Critical threats identified were pressures for land for physical development (e.g. for agriculture and housing) and threats to native biodiversity by invasive species, including feral animals and loose livestock. Administrative arrangements for management of private lands within the Centre Hills need to be defined and include a definition of rights, responsibilities, land use restrictions and potential compensation and incentive schemes.

Given the range of economic information needed to guide decision-making on these issues, it was decided that the most useful approach would be to estimate the total economic value of goods and services from the area in its current state. This gives a quantitative measure of how important the Centre Hills are to Montserrat in monetary terms.



Survey work carried out in the Centre Hills

It also provides a reference point with which to compare possible alternative ecological states and land uses.

From mid-November to mid-December 2007 a 'choice experiment' survey was conducted to estimate the values of services provided by the Centre Hills. In the choice experiment questionnaire, respondents were asked to choose between three alternative policy scenarios costing different



Workshop in which Montserrat's pioneering experiences in economic valuation was discussed with other UK Overseas Territories

amounts. The responses reveal the strength of people's preferences for different characteristics of the Centre Hills. A total of 342 respondents completed the questionnaire, which constitutes 10% of the adult population. The results show that Montserratians are willing to pay significant amounts to address the following ranked scenarios: 1. Control invasive species; 2. Protect native species; 3. Maintain trails in the Centre Hills; 4. Conserve forest cover.

These findings, together with other economic data on the values of the Centre Hills, will be used to inform development decision-making in Montserrat. This is taking place in a context driven by the urgent need to stimulate economic growth in Montserrat and move closer towards self-reliance. Tourism is seen as a significant employment generator, foreign exchange earner, and contributor to Gross Domestic Product (GDP) and agriculture is recognised as a small but economically and socially important sector. Development priorities are solidly focused on the development of infrastructure and housing in a very limited land space. Crucial decisions need to be made regarding how physical development proceeds, how the tourism and agricultural sectors develop, and how the natural resources of the island are conserved.

Consultations planned for the end of March 2008 will engage decision-makers and other key stakeholders in analysing the implications of the findings of the economic valuation study for issues such as the type of tourism desired, management of tourism in the Centre Hills, appropriate areas for physical development, addressing the problem of loose livestock, biodiversity conservation, and watershed management priorities.

Having determined the value of the Centre Hills, it will provide the basis for ensuring that the main users of the services being provided contribute to its maintenance by making payments that will enable the effective management of this natural resource. Private land owners in the Centre Hills may also be recognised for the valuable services provided by their property while also raising the possibility of offering some level of incentives to allow their property to continue in the use for which it is best suited. In general, assigning economic values to the Centre Hills will provide the basis for determining how this national asset will be viewed, valued, conserved and utilised by all stakeholders, in the interest of not only the current but future generations.

Montserrat is one of the first UK Overseas Territories to use economic valuation as a tool for environmental management. There is considerable interest in other Territories and small islands worldwide to learn from Montserrat's pioneering experiences with economic valuation in the Centre Hills. Montserrat has been able to share its experiences with colleagues and experts in the Caribbean through various regional projects coordinated by the Joint Nature Conservation Committee (JNCC) and funded by OTEP. For example, in 2007, Montserrat contributed to the development of an environmental economics toolkit on 'Valuing the Environment in Small Islands'. This toolkit is now



being used around the world as a manual for economic valuation in small islands.

Contributors: Sarah Sanders, RSPB; Emily McKenzie, JNCC; Luke Brander, IVM Amsterdam; Albert Daley, Development Unit Montserrat; Nicole Leotaud, CANARI Trinidad; Carole McCauley, Centre Hills Project; Stephen Mendes, Centre Hills Project

Stephen Mendes, Centre Hills Project, Montserrat, Tel: +1 664 491 3088, Email: centrehills@candw.ms

Strengthening capacity for Species Action Planning in Montserrat (MNT402)

Montserrat is one of the most important UK Overseas Territories for biodiversity conservation, containing numerous endemic and restricted-range species. A considerable number of these species are highly threatened at a global level. The Durrell Wildlife Conservation Trust, in partnership with Montserrat's Department of the Environment (DOE), National Trust (MNT) and the UK's RSPB and Royal Botanic Gardens Kew, are seeking to address these issues by building the capacity in Montserrat to produce Species Action Plans (SAPs) – 5-year plans produced at participatory workshops that output detailed programmes of projects and activities to tackle species-specific problems.

Our first workshop in October 2007 resulted in an SAP for the Critically Endangered mountain chicken frog. The workshop was well attended by Montserratians representing various interests on the island, as well as two experts from a mountain chicken project on Dominica, the only other country in the world where this frog is found. The participants from Dominica painted a grim picture of the situation on that island. In 2002, a disease caused by chytrid fungus, affecting only frogs but highly contagious amongst all species, was found in Dominica. Over just a few years, the entire Dominica mountain chicken population has been almost exterminated and is now at a very low level. This disease could reach Montserrat at any time, carried by tiny tree frogs stowing away in fruit and vegetables, which Montserrat imports from Dominica following the loss of farmland due to the ongoing volcanic emergency. The SAP identifies this risk as one of the primary causes of concern and details a programme of preventative measures. Another serious threat that was identified at the workshop was unsustainable hunting of mountain chickens on Montserrat. Measures to regulate and monitor the future harvest of this traditional food are also developed in the SAP.

Our next SAP, in April 2008, will see DOE taking more of a lead role in the running of the workshop and production of the subsequent



Philemon 'Mapie' Murrain searches under a 'cover board' (artificial refuge) for galliwasps. Photo: Matt Morton / Durrell

plan. This SAP will focus on the Montserrat galliwasp, a large nocturnal lizard, found nowhere but in Montserrat and, even there, apparently restricted to just a few hectares of land. To gather information in support of this SAP, DOE, MNT and Durrell biologists have been conducting extensive night-time searches over the past 6 months for this very elusive species about which almost nothing is known. Sightings have been made, confirming the continued survival of this species, but it appears that it is, in fact, restricted to this tiny area – its global range – and does not occur outside of that. The galliwasp SAP will be a very challenging plan to produce.

Over the remaining lifetime of this project, three more SAPs – for the yellow-shouldered volcano bat and for two plant species found only on Montserrat, an orchid and a privet-like shrub – will be produced, again each supported by field work collaborations between Montserratian and UK project partners to provide up-to-date status information on each species.

Matthew Morton, Durrell Wildlife Conservation Trust, Email: matthew.morton@durrell.org

South Georgia Habitat Restoration Programme (SGS301)

There can be no doubt that Norway rats *Rattus norvegicus*, probably introduced in the 19th Century by sealing gangs, have had a significant detrimental impact on the spectacular wildlife of South Georgia. The species that has suffered the most is the endemic South Georgia Pipit (the only sub-Antarctic songbird), which is completely excluded on the 65% of coastline that harbours rats. Successful rat eradication on Grass Island off South Georgia in 2001 has shown that pipits will, in time, recolonise areas once the rats are removed. The other significant group to suffer from rat predation are the burrowing seabirds, which are greatly reduced in number where rats are present, with some species completely excluded. However, many offshore islands remain rat-free and are havens to these species, as is the south coast of the island, although glacier retreat means that these natural barriers may not prevent the further spread of rats for much longer.

Due to the success of the Grass Island eradication, the South Georgia Habitat Restoration project was established to assess the feasibility of an island-wide rat eradication – at 150,000 hectares, South Georgia is by far the largest island to ever be considered for a project of this kind. In order to formulate a way forward, various questions had to be answered, including finding the home-range size and distribution of the rats and vulnerability of non-target species to poisoning. In order to answer these questions, fieldwork was carried out between February and March 2007 on the island.

The fieldwork consisted of many aspects, including radio-tracking of live rats, testing of non-toxic biomarker bait to assess the risk



Elizabeth Corry uses an endoscope to search inside burrows and rock crevices for galliwasps. Photo: Philemon 'Mapie' Murrain, MNT