

Values of Protected Landscapes and Seascapes

A series published by

the Protected Landscapes Task Force of IUCN's World Commission on Protected Areas

Series Editorial Team: Thora Amend, Jessica Brown, Ashish Kothari, Adrian Phillips and Sue Stolton



2

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Edited by
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Volume produced in partnership between the WCPA Protected Landscapes Task Force and the Task Force on Cultural and Spiritual Values of Protected Areas.

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Around the sacred mountain: the St Katherine Protectorate in South Sinai, Egypt

John Grainger and Francis Gilbert

Summary

The St Katherine Protectorate in southern Sinai is one of Egypt's largest protected areas and includes the country's highest mountains supporting a surprising biodiversity and a high proportion of endemic species. It is a land with a unique history of enormous national and international significance because it contains religious and culturally significant sites, including Mt Sinai and the fortress Monastery of St Catherine where Orthodox monks have lived for 17 centuries. Since the fourth century the remote reaches and religious sites of the Sinai have attracted pilgrims and fascinated travellers. The core of the Protectorate is a World Heritage Cultural Site.

The Protectorate has been effectively managed as a Protected Landscape since the development of management plan in 2002 but increasing development pressure catalysed by mass tourism in this previously remote region is today leading to the overexploitation of its resources. Attention is needed to conserve the unique natural, cultural and religious heritage of one of the world's most spectacular, fragile and important places.

Overview

The St Katherine Protectorate is situated in the south of the peninsula of Sinai, in the middle of the fabled desert wilderness of the Exodus. The Protectorate is one of Egypt's

largest and most important protected areas, and its 4350 km² span virtually the entire high mountain massif of southern Sinai (Maps 1 and 2). It encompasses one of the most spectacular and resource-rich areas in the Middle East and includes Egypt's highest peaks, supporting a unique assemblage of high altitude ecosystems with surprisingly diverse fauna and flora and many endemic species.

Sinai is a unique place for human history both in terms of the events that have taken place there and the manifestations of its history. As the only land route out of Africa throughout the Pliocene and Pleistocene, it is probable that early man first left Africa through the Sinai between 1.7 and 1.6 million years ago (Bar-Yosef and Belfer-Cohen 2001, Derricourt, 2005). There is also ample evidence that humans occupied the Peninsula about 300,000 years ago. The successive millennia of human passage and occupation have left their mark in the form of ancient trade routes, historic settlements, intricate land and water-use systems, and traces of sophisticated social organisation and cultural artefacts. In Sinai the first consonants (Proto-Sinaitic) were created, to become eventually the basis of the Greek and Hebrew alphabets. Inscriptions found at Serabit El Khadim in southern Sinai record the first-ever human use of copper instead of stone. The Peninsula also bridges the eastern Mesopotamian and western Mediterranean parts of the Fertile Crescent, the native region of the wild progenitors of the eight Neolithic 'founder' crops important in early agriculture, and four of the world's five most important domesticated animals, including sheep and goats. The Sinai



Map 1. Regional map of St Katherine Protectorate



Map 2. Local area of St Katherine Protectorate

was the route through which many of these domesticated species were exchanged between adjacent cultures until ultimately they were spread throughout the world.

The lands of the southern Sinai are best known to Jewish, Christian and Muslim faiths for their association with biblical tradition: the Exodus or the 'wanderings', the New Testament descriptions of the Flight into Egypt and the return of the Holy Family to Palestine. Consequently, numerous historical sites and monuments contained within the St Katherine Protectorate have great significance to these three monotheistic religions.

The most renowned sites are Mt Sinai, the Mountain of God and reputedly the place where Moses received the Tablets of the Law, and the Monastery of St Catherine¹, one of the best-preserved sites dating from the early Christian period and the oldest to have been occupied continuously. The Monastery represents over 1500 years of monastic tradition and contains an unparalleled collection of Byzantine icons and manuscripts. The Monastery and the associated local

¹ In English transliteration the name of the Monastery uses Catherine with a 'C'; the World Heritage Site is referred to as the St. Catherine Area; the Protectorate's name and that of the town use 'Katherine' with a 'K'.

biblical sites have been visited and venerated by pilgrims for more than 1700 years, imbuing the landscape with a palpable and profound sense of piety and sanctity. Set within the matrix of the Protectorate's physical landscape, they interconnect via tangible and intangible threads of ancestral trails, cultural traditions and religious connotations.

The St Katherine Protectorate forms one element of a regional system of five protected areas, collectively representing the diversity and biodiversity of marine, coastal and terrestrial ecosystems of southern Sinai. The Protectorate's setting and distinct character, together with its unique fusion of historical, cultural and natural values combine to constitute a quintessential Category V protected area.

In recognition of its universal and outstanding values, in 2002 the 641-km² core area of the Protectorate was inscribed by the UNESCO World Heritage Committee as the St Catherine World Heritage Area on 'Cultural Criteria' I, II, III and IV. The listed 'core' area is physically demarcated by the Precambrian circular volcanic dyke that encircles the highest mountains in Egypt and includes Mt Sinai, the Monastery of St Catherine and associated religious sites.



The five Protected Areas of South Sinai and the World Heritage Site surrounding Mt Sinai (map produced by Tim Newbold, Nottingham University).

Natural, cultural and spiritual features

Physical/natural landscapes

The South Sinai massif is an isolated mountainous block of some of the world's oldest rocks, dating back over 700 million years to the late Precambrian. It is a wild and largely barren land of stark natural beauty. Saw-edged mountain peaks of ancient crystalline rocks rise to more than 2000 m in its central core, dominating the landscape of the Protectorate. The mountains induce a higher rainfall than on the surrounding coastal plains, making it the coolest place in Egypt and the only one to have snow. This moderating influence provides varied habitat conditions that support a surprising diversity of wildlife. The high mountains form an island-like refuge of central Asian steppe vegetation: more than 450 higher plants have been recorded within the Protectorate, including almost half of Egypt's endemic flora. The high mountains have been recognised as one of the important centres of plant diversity for this region of the Middle East (IUCN 1994).

Sinai's endemic fauna is largely restricted to this island refuge and is found together with relict species from elsewhere: Sinai rosefinch (*Carpodacus synoicus*) from Asia, ibex (*Capra nubiana*) and perhaps wolf (*Canis lupus arabs*) from Europe, and striped hyena (*Hyaena hyaena*) and Tristram's grackle (*Onychognathus tristramii*) from Africa. The Protectorate is an Important Bird Area (Baha El Din 1999) and is one of the most important places in Egypt for insects: two-thirds of Egypt's butterflies occur here (Larsen 1990), including two endemics, of which one, the tiny Sinai baton blue (*Pseudophilotes sinaicus*), is probably the smallest butterfly in the world, with its entire world range restricted to a few square kilometres centred on Mt Sinai itself.



The Monastery from Mt Sinai

Archaeological and historical landscapes

Sinai lies at the crossroads of much of the world's history. Early man and, more recently, many armies and cultures have passed across its landscapes in both directions, from the armies of the Pharaohs, Cambyses, Alexander the Great and the Roman legions, to Moses and Christ. In 641 AD Amr Ibn Al-Ass led a Muslim army across Sinai to conquer Egypt and spread the Islamic faith into North Africa and beyond. Later campaigns saw the Crusader armies and Ottoman Turks enter the Peninsula, while in the modern era the Sinai was the theatre for the twentieth century wars between Israel and Egypt.

Whether for the purposes of trade, pilgrimage or conquest, the people that passed through or remained in Sinai left the landscape with a miscellany of traces of their passage and influences. There are over 300 major archaeological sites of varied provenance known in the Protectorate, with many of the most significant dating from the Early Bronze Age (3100-2200 BC). Of great significance are the *nawamis*-thought to be ceremonial tombs for nomadic herders- dating from the Chalcolithic period (Bar Yosef et al, 1977). These incredibly well preserved circular stone structures are probably the world's oldest examples of stone roofed buildings and the oldest known remains of a pastoral nomadic society.

Associated with and linking many archaeological sites are the ancient caravan routes and desert trails used since pre-historic times for trade and passage between the coast and the interior deserts. The ancient Nabataean desert route passing just north of the St Katherine Protectorate became the major route for Muslim pilgrims travelling from Egypt to Mecca and Medina for the *Hajj* or *Umra*. The traditional route taken by Christian pilgrims to the Monastery of St Katherine, reputed to house the biblical burning bush in addition to relics of Saint Katherine herself, was from Wadi Feiran and through Naqb El Hawa – “the pass of the winds”. This pass cuts through the circular dyke wall and opens out onto the plain of El Raha, where according to Exodus the Israelites waited for Moses, and then onto the Monastery.

Religious and spiritual landscapes

The St Katherine Protected Landscape's major significance is as an area of immense spiritual significance to three of the world's monotheistic religions - Christianity, Islam and Judaism. The Protectorate hosts Mt Sinai, the 'Mountain of God', where Moses is said to have spoken with God and to have received the tablets of Law, events recorded in the holy books of all three faiths². Although other mountains in the region have been and continue to be postulated as the true Moun-

² See Chapter 95 (Al-Tin - The Fig) of the Holy Quran

tain of God, centuries of pilgrimage and Christian and Islamic tradition have by now almost certainly secured this legacy for the Mt Sinai (Jebel Musa) of the Ring Dyke.

Christian monasticism has its origins in the deserts of Egypt and Sinai. In the third century many Christians fled the systematic persecution of the Christians under Diocletian, even as the Roman Empire started to implode as a result of civil war and the buffeting from the barbarians from the north. Lacking Roman garrisons, Sinai was a logical and accessible place of retreat and early Christians found refuge in the remote wilderness, settling in southern Sinai around sites sacred in the Biblical tradition. Even under the Christian emperor Constantine, many thousands withdrew from secular society to lead an anchoritic life, one of the earliest forms of Christian monastic living and originating before the inception of religious life in community. The area around Mt Sinai was a major focus of this new asceticism and the large community of anchorites it attracted eventually became the nucleus of the Monastery of St Catherine. The remains of Christian chapels and hermitages dating back to the second and third centuries or the later Byzantine period are scattered throughout the immediate area around Mt Sinai and the Monastery. Others such as the small monasteries of Dir Rimhan and Dir Antush on Gebal Um Shaumar lie more distant but within a day's walk.

The Orthodox Monastery of St Catherine dates from AD 337 when the Empress Helena, mother of Constantine, ordered the building of a sanctuary around the site of the biblical Burning Bush. Her building still stands as a Chapel behind the apse of the magnificent sixth-century basilica (Church of the Transfiguration), the most venerated place within the Monastery. The fading of Roman authority and a decline in trade from caravans resulted in a shift from commerce to brigandage and a general lawlessness among some Sinai tribes, which drove the early monastic communities to seek protection. In 527 the Emperor Justinian began to build the famous monastery on the northern slopes of Mt Sinai, both to protect the monks from marauding nomads and to help secure Byzantine interests, particularly the road from Aqaba to Suez. The walls built to protect the monks and the military garrison survive to the present day and theirs is the oldest Christian monastery in the world to have maintained its monastic function without disruption from its foundation. The Byzantine walls protect a group of buildings of great importance both for the study of Byzantine architecture and in Christian spiritual terms

The Monastery's library preserves the second-largest collection of early codices and manuscripts in the world, outnumbered only by the Vatican Library. Its strength lies in the collection of Greek, Coptic, Arabic, Armenian, He-

brew, Georgian and Syriac texts and it was from here that the Russian Count von Tischendorff in 1859 'borrowed' its most precious manuscript, the Codex Sinaiticus. This work, the oldest extant version of the Gospels and the only copy of the Greek original, was written between 330–350AC and originally contained the whole of both Testaments. The major part of the Codex ended up in the British Library, although some extra pages were discovered in the 1970s in the monastery and are now on display in its own museum. Over the centuries the monks of St Catherine's Monastery have maintained close relations with their Muslim neighbours and rulers. Displayed in the Monastery is a copy of the Firman, a document reputedly sanctioned by Prophet Mohammed in 623 AD, which exempted the monks of St Catherine's from military service and tax and called upon Muslims to give them every help. During the Fatimid Caliphate (909–1171) a chapel within the Monastery's inner precinct was converted to a mosque; it still stands and was recently renovated.

The isolation of the Monastery allowed it to escape the effects of the iconoclasm of the eighth century, a period in which many religious images were destroyed throughout Byzantium. As a result, the Monastery houses the world's finest collections of early religious icons dating back to the fourth century and includes the oldest icon on an Old Testament theme. Many of the icons are painted in the encaustic tradition using pigmented hot wax. The Monastery also contains liturgical objects, chalices and reliquaries of outstanding craftsmanship. Decorating the apse of the basilica, the Katholikon, is a mosaic of the Transfiguration, a monumental composition from the late sixth century and a masterpiece of Byzantine art.

Following a life of prayer and devotional work the resident monks have been able to preserve this unparalleled heritage of Byzantine art and culture. Small numbers of hardy Christian pilgrims made their way to Sinai; the first recorded pilgrimage was by the nun Egeria in the fourth century. Although having long welcomed occasional guests and visitors, the increasing pressures of tourism threaten to change this tradition. The Saint Catherine Foundation, a UK-registered charity, was established in 1996 under the royal patronage of HRH the Prince of Wales to support conservation work at St Catherine's Monastery, particularly related to the library and its vulnerable manuscripts.

Although not intended by its builders, the Monastery's spectacular setting at the base of Mt Sinai, with its commanding view over the Plain of Er Raha where the Israelites waited for Moses, has resulted in an enduring association between the natural beauty and remoteness of the site on the one hand, and human spiritual commitment on the other.

Cultural landscapes

St Katherine is the only protectorate in Egypt to contain a sizeable indigenous population and a significant urban development within its boundaries, a situation that presents both management challenges and opportunities to promote sustainable development practices. More than 7,000 Bedouin live within or close to the Protectorate's borders, a number swelled by about 1,300 settlers from the Nile Delta who mainly live in the small town of St Katherine. 'Bedouin' simply means 'people of the desert', and most are descendants of tribes who arrived from the Arabian Peninsula between the fourteenth and sixteenth centuries AD. The main tribes in southern Sinai today are the Muzeina, Tarabin, Tiyaha, Garasha, Sawalha, Huweitat and the Gebaliya. Each tribe controls a different part of southern Sinai.

The area around St Katherine, however, belongs mainly to the Gebaliya, literally the 'people of the mountains', whose origins are very different. Approximately 2,000 strong, this tribe has played an integral part in the life of the Monastery since its beginning. In 527 A.D the Emperor Justinian sent a contingent of 100 families from Wallachia near the

Black Sea to help build the monastery and to be its servants, "obedient to the monks they and their descendants until God regain possession of the world and all that is upon it": they were soon supplemented with another 100 families from Alexandria, and finally much later from El-Matariya in the north-eastern Delta (Murray 1935, Bailey 1984, Hobbs 1995). After the mid-seventh century most of the Gebaliya converted to Islam, thereby enriching their unique culture. The four clans of the Gebaliya tribe each trace their lineage to one of these groups (for example, the El Gindy clan trace their ancestry back through the Alexandrian cohort) and thus began the special relationship between the Gebaliya and the Christian monks that persists to this day. The Gebaliya prepared meals, tended the monastery's mountain gardens and provided manual labour in return for food and a share of the harvests. The Gebaliya continue to regard the Monastery as their benefactor – calling themselves *Awlaad ad-Dayr*, the 'children of the Monastery'.

Traditionally, the Gebaliya Bedouin of St Katherine have lived a pastoral nomadic way of life: pastoral, in that they kept livestock, and nomadic, in that they moved with their animals between seasonal pastures. Summer was spent



View into Wadi Arbaian across the old Bedouin section of St Katherine town. Photo: Mike James.

in the high mountain pastures tending their gardens, whilst winter was spent in the lower areas. During the Israeli occupation of Sinai beginning in 1967, the traditional nomadic lifestyle of the Bedouin changed. Today, life is now more settled and many Bedouin men work in non-traditional activities, mainly for tourist companies as guides or cameleers, although some continue to cultivate mountain gardens. The women now tend the smaller number of livestock and produce traditional craft items for their own use or increasingly for sale to tourists.

Wild plants and animals have traditionally supplemented the Bedouin's diets, health, incomes and material culture. Local Bedouin use more than 170 species of plants to treat various medical disorders, from colds, digestive problems and skin disorders, to bites and stings (Bailey and Danin 1981). In 2001 a project for the conservation of globally significant medicinal plants was initiated in the St Katherine Protectorate with the support of the Global Environmental Facility. The project's aims are to promote the sustainable use of medicinal plant species while exploring and protecting the Bedouin's traditional knowledge and intellectual property rights. One of the results of the project is the creation of an NGO in St Katherine, the Medicinal Plants Association.

Legal status

The high mountain area within the present Protectorate was managed as a nature reserve by the Society for the Protection of Nature in Israel during the Israeli occupation of Sinai following the war of 1967. With the return of Sinai to Egypt a proposal was made to 'dedicate' the whole mountainous area of South Sinai as a National Park (Dames and Moore 1981). In 1988 Prime Ministerial Decree No. 613 identified St Katherine as a '*Natural Protectorate*' under Law 102 (1983) in recognition of the "area's conservation importance in terms of the mountain structural formations, unique biological features and its internationally renowned religious, historical and cultural heritage". It was named the 'St. Katherine Protectorate', although no actual boundaries or management objectives were defined, and no staff or resources were allocated for management. The practical realisation of the Protectorate can be considered to date from April 1996, when Prime Ministerial Decree 904 defined the protectorate's boundaries and Egypt initiated a five-year development programme aided by a €6m grant from the European Union.

The wide-ranging management programme included the creation of a local management unit, infrastructure and support facilities, resource conservation management and monitoring programmes, as well as programmes for Bedouin support, participatory management, public awareness and visitor management. To date there are no formal

distinctions amongst protected areas in the current Egyptian legislation, although the St Katherine Protectorate has been effectively managed as a Category V area since 2002, with the development and implementation of a management plan (NCS 2002). The plan explicitly nominates and justifies the categorisation of the St Katherine Protectorate as a Protected Landscape, the first in Egypt. It is used as an in-house document given that it has not been formally approved and promulgated by the Ministry of Environment or the Egyptian Environmental Affairs Agency.

The IUCN Category V is particularly suited to the St Katherine Protectorate with its mosaic of land-use and ownership patterns, diverse management regimes including customary tribal law, and land management and conservation traditions such as *dakhl* and *hilf* (see Box below). It encourages the sort of flexible arrangements instituted for the management of resources, including co-management and other stewardship arrangements that can bring benefits to local communities and sustain local livelihoods.

When co-management paradigms were being explored with local communities during the establishment of the Protectorate, the Bedouin constantly stressed the importance of using customary law (*'urf*) to assign responsibility for nature protection in specific areas to individual men who were *'ahl al-makan*, i.e. resident or frequent users of those places. The *haris al-biyah* (community guards) system was eventually instituted, whereby local Bedouin were selected by their own communities to be employed full-time by the Protectorate to patrol and work in designated areas, because, it was argued, only this level of responsibility would make any violation of conservation regulations by tribal people a violation of *'urf* custom and personal honour.

The Protected Landscape category, therefore, provides an appropriate management approach for the St Katherine Protectorate as a way of integrating biodiversity conservation, religious and cultural heritage protection and the sustainable use of resources. In addition to the international guidelines for Protected Landscapes, specific management objectives are identified in its management plan, including an ecosystem approach, conservation of traditional cultural and religious values, integration into the South Sinai network of protected areas, integration into local development and land-use in order to assist sustainable local rural development and benefit local communities, and facilitation of compatible recreational, educational and scientific uses.

The Protectorate lies adjacent to the coastal areas of South Sinai whose resorts have become a mainstay of the Egyptian economy and one of the world's fastest growing development areas for mass tourism. In contrast, the St Katherine Protectorate, along with South Sinai's other

protected areas of Ras Mohamed, Nabq, Abu Galum and Taba, remain relatively undeveloped and, being largely inaccessible to vehicles, they form natural bulwarks to the physical expansion of mass tourism activities. However, the process of acculturation brought about by the influences of foreign tourists and workers from the Nile Valley culture has permeated deep into the life of local Bedouin communities.

Administrative status

Prime Ministerial Decree No. 613 established an Executive Council, headed by the Governor of South Sinai, to manage the Protectorate; other Council members were from the Ministries of Tourism, Petroleum, Agriculture, Defence and Interior as well as from the Egyptian Environmental Affairs Agency and the Academy of Scientific Research. This administrative structure was altered in 1989 with Decree 30/1989, by which the Egyptian Environmental Affairs Agency alone was mandated with the Protectorate's management. However 'ownership' of the Protectorate area is effectively vested in the Governorship of South Sinai. Since 1996 the Protectorate has been managed locally by a unit based in the town of St Katherine. The Protectorate is divided into two management areas, the North and South

Ranges, and staff are deployed accordingly. The unit falls under the authority of a Sector Manager for Sinai, and now reportedly has 69 staff consisting of Rangers, local Community Guards and ancillary or temporary positions (Fouda et al. 2006). The present staffing levels represent a ratio of 16 staff per 1000 km², well below the global mean of 27 staff per 1000 km² for protected areas, and far below the average for Africa of 70 per 1000 km² (James 1999). A minimum target staffing level of 85 i.e. 20 staff per 1000 km² was projected in the management plan.

The main roles and functions of field staff are based on the legislation concerning natural protectorates (Law 102 of 1983 and Prime Ministerial decree 264 of 1994) and on the legislation on the environment (Law 4 of 1994). However, the Protectorate as a whole falls under the administrative authority of the Governor of South Sinai, who is the highest authority in South Sinai. The Governorate has overall responsibility for regional planning and development strategies for industry, housing, road and tourism projects, and can effectively redirect or override protected area management decisions or prescriptions. Field staff have no powers of detention or arrest, and can only report violations of protected area regulations, relying on the police and judiciary to pursue and prosecute cases.



Gebaliya Bedouin with apricots from his garden. Photo: Tim Hurst.



Gebaliya Bedouin grafting a fruit tree. Photo: Mike James.

The Monastery is the property of the Greek Orthodox Church and belongs to the Archdiocese of Sinai under the hierarchical system of the Eastern Orthodox Church³. It is a self-governing and independent monastery, under the administration of the Abbot, who has the rank of Archbishop of St Catherine, Feiran and El Tur, the smallest diocese in the world. Antiquities within the area are managed by the Egyptian Supreme Council of Antiquities, working through the South Sinai Regional Office of the Egyptian Antiquities Organization at El-Tur.

Land and water use practices

Traditional land and water uses

As almost everywhere in the world, the relationship between the Protectorate and its indigenous people has proved difficult and sensitive. From the outset in management planning, an overriding assumption was that local people, tourists and native biodiversity could coexist. Although increasingly commonly held, this belief has remained largely untested in the Middle East, particularly in an area of the size and complexity of St Katherine. A second guiding principle has been that the people most dependent and associated with the Protectorate's resource base, the Bedouin, are the best stewards for these resources, and therefore they should be enabled to manage their own resources locally.

The Gebaliya are a conservative people with a long-standing but increasingly vulnerable tribal culture, as well as a profound knowledge of their land. In the high mountains the traditional form of land-use was a system of transhumance: in early summer the Bedouin would move their households into the higher mountain reaches to take advantage of the late-spring plant growth and to tend and harvest their mountain gardens. Their type of land-use was established almost 2000 years ago and is very much part of their heritage. Orchard agriculture was typical of the Byzantine world and the cultivation of small mountain gardens was probably first introduced into Sinai by hermits coming to settle in the area during the first few centuries AD and then later invigorated by Greek monks with their fruit and olive trees and grafting techniques. Gardens were walled to protect them from animals and to improve fertility in this rocky landscape and soil was often transported to the gardens from outside. The Gebaliya are the only Bedouin to have adopted this form of agriculture.

These large and well-organised gardens probably date from the time that the Monastery was being established at the end of the fourth century and were designed to cater for the increasing number of monks and the attendant Gebaliya. The largest garden is in Wadi El Arbaein and belongs to the Monastery. It covers about 20 ha and contains over 700 very old olive trees. When he visited in 1816, Burkhardt described this garden with its olive trees as a "pleasant place to rest" (Zalat and Gilbert 2008). The Gebaliya still aim to use gardens as a significant source of food, irrigating them from hand-dug wells where water levels permit. The walled gardens are very characteristic of the wadis in the high mountains: there are more than 400 orchard gardens within the Gebaliya territory, each on average about 0.2 ha. Some are owned by the Monastery but are tended by the Bedouin in return for half of the produce (Perevolotsky 1981). Vegetables and cereals are grown, but vines and tree crops such as almonds, apricots, figs, pears, olives and apples form the bulk of the produce (Zalat and Gilbert 2008).

The gardens are vital in another sense too: they represent patches of rich vegetation amidst an arid rocky landscape, containing relatively ungrazed wild plants along with cultivated crops and fruit trees. These constitute islands of rich resources for wildlife and are undoubtedly very important in augmenting and sustaining biodiversity. The cultivation and irrigation of these gardens is currently being abandoned by the Gebaliya under the dual pressures of a long-lasting drought and the necessity for paid work to feed their families: this is a serious conservation issue for the Protectorate.

The St Katherine Protectorate lies in the arid North African belt characterised by a Saharan-Mediterranean climate and, although altitude moderates the temperature regime, summers are relatively hot, with a mean maximum temperature of 36°C (August), while winters are relatively cool, with a mean minimum of -7.8°C (February). There are



Nawamis - possibly ceremonial tombs, dating back to between 4000-3150 BC. Photo: Tareq Amin.

³ The exact status of the church within Eastern Orthodoxy is ambiguous; for some, it is considered autocephalous (i.e. not reporting to any higher-ranking bishop), while others see it as an autonomous church under the jurisdiction of the Greek Orthodox Church of Jerusalem.

no natural permanent streams and so the only sources of fresh water are shallow aquifers replenished by winter precipitation that mostly falls as snow on the mountain peaks. On average there are only 13 days per year in St Katherine when 0.1 mm or more of rain falls in a single day and only three days with more than 5 mm; furthermore, evaporation rates are very high. Water supplies are very limited for both wildlife and people and are often freely available only seasonally, depending on rainfall. Natural springs occur where rocks are highly fractured or jointed and are often tapped by Bedouins to irrigate gardens; temporary rock pools and occasional springs are the only water sources available for wildlife.

Thus, water is the principal limiting factor, even though the Bedouin possess great skill in using the erratic rainfall and limited groundwater supplies. Often located by traditional divining, these supplies are exploited by digging wells, although they require precipitation for replenishment. However, the whole area has been suffering for the last 15 years from a long-term drought. Recent tourist development has greatly exacerbated the situation, resulting in serious

depletion of this limited groundwater. Shallow groundwater aquifers are also highly susceptible to contamination and surveys by the Protectorate show that municipal water supplies are frequently contaminated by faecal coliform bacteria. Groundwater quality is poor, with high concentrations of dissolved salts that cause urinary tract problems among local people. The average daily water demand of all the people, tourists and residents in Saint Katherine is three-times greater than the supply from ground water and water already needs to be brought in by tanker.

Nomadic ethnoconservation systems, such as the *al-hilf* (see Box) practised by the Gebaliya Bedouin, are analogous to one of the most widespread and long-standing traditional institutions in the Middle East for the conservation of rangeland resources - the *hima*. This is a conservation arrangement that goes back over 1400 years and is rooted in Islamic law and tribal custom (Grainger and Llewellyn 1994). Such systems have great pragmatic value and should be a lesson for modern approaches to the conservation and equitable sustainable use of natural resources in arid and semi-arid regions. As everywhere in the world,

Box: Customary law and resource use

One important aim of the management of protected areas consists of trying to maintain traditional customs for conserving and using resources, thereby preventing the invasion of destructive and exploitative modern techniques.

In the past the Bedouin in south Sinai practised the tribal system of *al-hilf* ('the agreement') to control the seasonal use of pasture, or the personal action of *dakhl* ('essence'), normally to protect trees. In the *al-hilf* system, Gebaliya Bedouin agreed on an annual basis to prevent herds from entering certain high mountain pastures above 1800 m, between February and May. This was a deliberate way of protecting fodder plants by allowing them to regenerate and flower before being besieged by livestock. With *dakhl*, a system chiefly used by the Muzeina and nominally still in effect, a man assumes responsibility for the protection of a group of trees in a particular area. Anyone who cuts green limbs or destroys a tree within this zone would be fined according to tribal law (*urfi*) and the cash or livestock fine turned over to the man who detected and reported the violation.

Although these traditional conservation systems are now largely vestigial, the *hilf* system was recently revived by the Gebaliya and a *hilf* was declared on Gabal Safsafa in order to conserve the Sinai Baton Blue butterfly and its food plant.

They did this as the result of a research project in the high mountains of the St Katherine Protectorate (James 2006). The project discovered that the tiny endemic Sinai baton blue butterfly (*Pseudophilotes sinaicus*), quite possibly the smallest butterfly in the world, is critically endangered because its entire world distribution is restricted to a minute area of about 5 km². The caterpillars and adults of this species feed exclusively on Sinai thyme (*Thymus decussatus*), another threatened and near-endemic species. In an attempt to conserve this butterfly, in 2002 the Gebaliya with the support of the Protectorate declared Farsh Shaiyeib near the summit of Gabal Safsafa, a traditional *hilf*. The area is only a few hundred square metres, but contains the densest stands of thyme plants and by far the largest population of the butterfly. Domestic animals were kept out until the thyme had flowered and the caterpillars pupated, thereby protecting the butterfly population. This was the first new *hilf* established by the Gebaliya in living memory.

pastoral nomadic cultures such as that of the Bedouin of St Katherine Protectorate have changed rapidly in recent decades and have given way to the powerful forces of sedentarisation, globalization and, in the case of St Katherine Protectorate, mass tourism. As a result many of these indigenous resource conservation techniques are endangered or even extinct, with the consequent loss of both the values of local people and their traditional knowledge.

Management policies and practices

The Protectorate is richly endowed with natural, cultural, historical and religious heritage, and the protection of these unique natural and cultural values was the primary purpose stated for the declaration of the St Katherine Protectorate. However, a wider national objective was for the Protectorate to help underpin and expand the tourist industry in Sinai, chiefly by developing alternative and sustainable forms of tourism activities. The twin aspirations of conservation and development are encapsulated in the Protectorate's vision statement: "The St Katherine Protectorate will be one of the world's great mountain parks with its natural and cultural resources used sustainably and appropriately for the long-term benefits of the people of Egypt and the world".

South Sinai's natural and cultural heritage has been the main catalyst for an ambitious development programme for tourism. However, this heritage had been put at serious risk from unsustainable development pressures linked to the rapid expansion of mass tourism, to the extent that they now threaten to undermine the Protectorate's intrinsic values. Major conservation issues arising from the increasing demands of tourism were exacerbated by politically and militarily motivated development and settlement strategies aimed at securing the Sinai Peninsula. The visible symptoms are an expanding population and lifestyle changes, inappropriate urban and mass tourism developments, the despoiling of the natural landscape, over-extraction and localised contamination of the limited groundwater supplies, and socio-economic marginalisation of the local Bedouin communities

Management planning

In response to the prevailing conditions and with regard to available resources, an integrated management plan was developed in 2002 by the St Katherine management unit and local stakeholders with the support of EU funds (NCS 2002). The plan sets out the basic purpose and management philosophy for the Protectorate, lays out its goals and objectives, and outlines general policies and strategies to achieve them. It aims to protect critical habitats and historical sites, including the area subsequently designated as

the World Heritage Site, to assist community programmes and to establish appropriate management infrastructure. The primary management goals expressed in the plan are for the conservation of the mountain ecosystem of Southern Sinai including all its elements and processes, and the conservation of traditional cultural and religious values.

Although the whole of the St Katherine Protectorate is legally protected, certain areas or zones require different levels of management or protection, and with limited resources a pragmatic approach needs to be adopted for such a large and inaccessible area. To accomplish this, a resource-base zoning plan was developed as part of the management plan, by which an area is zoned according to its need for protection, level or intensity of management and capacity to sustain traditional, public or commercial uses. The zone plan follows a gradient that ranges from almost no human impact allowed to an intensive-use zone which may be considerably modified and also includes an external buffer zone. The system provides guidelines for management actions and for the resolution of conflicts, which frequently arise when attempts are made to conserve and utilise the same resource base. The World Heritage Site in the core area of the Protectorate has a special integrated management status based on the various management zones included within its boundaries.

Cultural Conservation

Concurrent with biodiversity loss, the world's human cultural diversity is rapidly disappearing as indigenous people are displaced or acculturated, languages forgotten and traditional and other forms of knowledge relating to biodiversity are lost forever. Human cultural diversity and biological diversity are intimately connected. It is apparent that biological diversity in agricultural systems was higher in earlier times and has been reduced considerably as traditional agriculture and types of agricultural technologies have declined. From the outset of the Protectorate the management unit established a sustainable multi-faceted programme aimed at helping support local Bedouin communities and promoting their culture and indigenous knowledge. The major interventions centred on primary health care, veterinary support, selective local employment and income generation activities such as Bedouin-managed tourism and handicrafts. The Bedouin have been central to the Protectorate's conservation programmes in roles that vary from community-appointed guards to managing an acacia rehabilitation programme (Hobbs et al. 1998).

Besides direct employment, two projects set up through the Protectorate's development project are still generating income more than six years after their inception: FanSina, a women's handicraft business and Al Karm, a model Bedouin eco-lodge.

Fansina is a Bedouin Craft programme started at St Katherine in 1997 at the request of local Bedouin women that assists them in preserving and marketing their traditional skills, thereby increasing household incomes. The initial intervention has grown into a registered business completely owned and managed by Bedouin: more than 300 women are involved, working from home in the production and marketing of items of their decorative embroidery and beadwork with stylized and authentic motifs inspired by their local culture and environment. Fansina recently received a grant through an EU-funded project to expand the scheme to other Bedouin communities.

Al-Karm was established in 2002 with EU funding. The Protectorate management unit worked with local Gebaliya to construct a minimalist ecolodge with 6 rooms and space for up to 20 people, owned and managed by 24 Bedouin families. It lies in Wadi Gharba on the old pilgrim route to the monastery, three hours' hike from St Katherine. It was created by refurbishing and adding rooms to an abandoned Gebaliya hamlet and gardens. There is no electricity, but it has rustic showers heated by solar energy and compost toilets. The ecolodge presently suffers from a low occupancy rate as it is relatively remote from popular tourism venues and current security regulations restrict its promotion as a destination for foreign visitors. An EU-

funded project is currently addressing these issues and building two new ecolodges.

Key challenges and threats

In common with most of Egypt's protected areas, the natural and cultural landscapes of the St Katherine Protectorate face serious threats to their conservation status and integrity (Fouda et al. 2006). The threats are both current and looming, and arise from events and phenomena with different scales and consequential impacts. Some threats such as climate change and international tourism have a global dimension, whilst others arise from national institutional weaknesses in protected-area governance and institutional capacity or are rooted in local socio-economic issues and imperatives (for example, the over-harvesting of natural resources, acculturation and low levels of environmental awareness).

Many of the environmental problems of the Protectorate are essentially solvable and include the overgrazing of endemic and rare plants, the unsustainable intensive collection of medicinal plants used in folk medicine, the hunting of wild animals (e.g. ibex) and a lack of environmental education programmes in schools and the community concerning the use of natural resources in a sustainable manner.



View across the historical Monastery garden of Bustan towards the high mountains of Wadi Gebal. Photo: Mike James.

Global warming challenges

The unique flora and fauna of the high mountains of southern Sinai, along with the Bedouin communities and their cultural heritage, are under threat from climate change. Much of the unique fauna and flora of the high mountains are relicts, marooned by increasing aridification over the last 10,000 years. As contemporary climate change under global warming gathers pace, there are serious doubts about the survival of these organisms because the normal route to safety -moving higher up the mountains and hence contracting their range- is no longer an option. The Sinai baton blue butterfly is a good example (Hoyle and James 2005): both it and its food plant probably evolved as distinct species under more benign conditions when their distributions were more extensive and more continuous. Now they occupy small patches of habitat scattered among suitable sites around Gabal Safsafa and Gabal Ahmar. The butterfly population on each patch is small, often only between 10-50 individuals. The flowering of the wild thyme, its only food plant, depends on rainfall and a dry year can reduce the available flowers by 40%: since the caterpillars feed on the flowers, this represents a serious reduction in resources. The tiny sub-populations of the butterfly are therefore at risk from four separate threats: normal year-to-year climatic variation; the increased variability and hotter temperatures predicted for the next 100 years under global warming; over-collection of thyme for medical purposes; and over-grazing by domestic animals. Under most scenarios that include global warming, the long-term survival of this unique butterfly is doubtful unless rigorous control of collection and grazing is enforced, above all of certain patches of the host-plant that are especially important. This is both a challenge and an opportunity for the Protectorate management - a challenge to implement a successful sustainable strategy and an opportunity to use this charismatic species as a means for getting its conservation message and an understanding of the local impacts of global warming across to local stakeholders and visitors. All the fauna and flora, together with the existence of the Bedouin communities, are threatened by increasing drought due to global warming. Many areas in Egypt's Eastern Desert have been abandoned for lack of water, and there is a very real possibility that large areas of the St Katherine Protectorate may suffer the same fate. An EU-funded project to bring Nile water to the town of St Katherine (see below) may save some areas from the human aspects of this fate, but there are real concerns for biodiversity.

Local governance challenges

Many of the challenges faced by the St Katherine Protectorate are in large part a consequence of the institutional deficiencies associated with development planning for

South Sinai. There is poor coordination between agencies, which have overlapping and often competing development and legal mandates, and the implementation of sustainable planning directives is thus often constrained. Two of the most important formal plans for the sustainable development of the St Katherine Protectorate, an integrated master plan and a sustainable urban development plan, have never been meaningfully implemented. The risk is that the Protectorate's future integrity will be jeopardised unless the local Government agencies, particularly the Governorate and City Council, identify with the long-term vision for the Protectorate.

The lack of 'joined-up' local management and institutional cooperation has wider international implications. There is presently an absence of official recognition or local acknowledgment of the status of the core area of St. Katherine as a World Heritage Site and the development restrictions that this entails. Furthermore, there are no indications of the global significance of the Site for visitors, except within the Visitor Centre, which is rarely open. Consequently, there is very little awareness among visitors to the core area, centred on the Monastery and Mt. Sinai, that they are within a World Heritage Site.

Planning challenges

The inscription of the area to the World Heritage Convention requires that certain conditions are fulfilled and that development carried out in accordance with laws and approved plans. However, Egypt's commitment to the Convention is clearly not being honoured within the St Katherine Area. When inscribing the St Katherine Area in 2002, the Committee invited Egypt to implement fully a 1998 sustainable development plan for the town of St Katherine (UNESCO 2002). The development of the St Katherine townscape is meant to be regulated by an official development plan drawn up by the Ministry of Housing and New Communities that implicitly curtails development and population expansion in order to retain its Bedouin character. The main concept is centred on a twin node strategy for St Katherine with (a) all new development being located away from the old town area and only consolidation through infill and general upgrading being allowed in the old town to ensure its containment and (b) the establishment of significant "cones of vision" or "protection corridors" within the World Heritage Site, in which no development at all is to be allowed.

However, this official plan, together with the restrictions on development that World Heritage status implies, have been widely ignored by the local authorities, resulting in negative physical and aesthetic impacts on the World Heritage Site. Among other things, closely spaced street lighting has been installed along twelve kilometres of the

desert entrance road into St Katherine. These lights have significantly and negatively changed the previously dramatic natural approach into the Site and were installed without any approved Environmental Impact Assessment, thereby clearly violating the development plan and World Heritage Convention's conditions and contravening instructions from the Protectorate management unit. As well, they are disliked and resented by the local Bedouin population. Another example is a residential development complete with roads and lighting constructed in Wadi Isbayia, that circumscribes Mt Sinai from the south-east, and is in an area outside the development zone prescribed in the approved 1998 urban plan. The city council also continues to 'landscape' throughout the city and its approaches with alien plants, in contravention of Protectorate Law 102 which expressly forbids the introduction of such exotics. It has also erected prominent directional signs entirely out of keeping with the local landscape.

International tourism and visitor management challenges

Pilgrims have visited the monastery throughout its existence, increasingly so from the nineteenth century onwards

when travelling became easier. Until the late twentieth century, such visits were not problematic for the monks, who invariably welcomed visitors. With the tarring of the road to St Katherine in the 1970s, increasing numbers of people have arrived, many coming merely to visit and see, rather than to gain any religious solace. Access will be even easier if plans are realised to re-commission and expand the small airport built in the 1970s, which lies 17 km north-east of the Monastery.

South Sinai has experienced a radical change from being an almost unpopulated, peripheral and remote place less than three decades ago, to an area with one of the world's fastest growing mass tourism industries. During the 1990s some 90% of Egypt's tourism investment was concentrated on the coastal resorts of southern Sinai. In 1987 there were only two hotels in Sharm El Sheikh, with a total of 300 rooms catering for about 20,000 visitors. Only 20 years later there were almost 250 hotels and 38,000 rooms, with about 2.6 million visitors. It is estimated that by 2017 the Sharm area alone will have 65,000 rooms, and the total capacity of South Sinai will be approximately 139,000 rooms, sufficient for 20 million guests on one-week stays (SEAM 2005).



Monastery of St Catherine in winter from Gebal Ad Dir. Photo: Tareq Amin.

Development is mainly focused on the 150-km coastline along the Gulf of Aqaba, stretching from Ras Mohamed/Sharm El Sheikh at the southern end to Taba near the Egypt/Israel border in the north. The spill-over effect of the mass tourism boom into the St Katherine Protectorate is and will be considerable. Concerns were expressed as early as the mid-1990s as to the impact on natural and cultural resources, particularly on the Monastery, which was then receiving about 97,000 visitors per year, mainly day-trip visitors from the coastal resorts (Shackley 1999). From 1992 to 2002, the recorded number of visitors to St Katherine increased more than tenfold, from 29,000 to over 320,000. If this trend continues, in the next five years over 600,000 visitors could be expected in the Protectorate and the most important cultural sites of the Monastery and Mt Sinai.

These two sites are already inundated by the number of visitors – Mt Sinai can have up to 1000 people a day climbing up to watch the sunrise from the small area of its summit. This large number of visitors has consequent negative physical and aesthetic impacts on Mt Sinai in general and on the small summit area in particular, significantly reducing the quality of pilgrim spiritual experience. Systems previously established for managing garbage and human waste have become overwhelmed. More importantly, the risks to life and safety have increased with the growing numbers climbing at night and there are frequent injuries and occasional deaths on the mountain. The condition of this hugely significant religious and essentially spiritual site has deteriorated considerably in terms of aesthetics, physical impacts and visitor safety since its inscription as a World Heritage Site and following the ending of EU funding for the St Katherine Protectorate.

The World Heritage Committee has recognised that excessive pressure from tourists represents the greatest threat to the Site's physical integrity and aesthetic qualities –above all, to the Monastery and Mt Sinai- and has encouraged Egypt to prepare a visitor management plan for the Monastery and surrounding area. However, in the six years since its inscription, no effective measures have been taken to implement this commitment, although recently the Monastery of St Catherine received modest support from an EU project to design and implement site restoration and a visitor management plan for the Monastery, Mt Sinai and Wadi ed Dir.

With the rapidly growing number of visitors expected in the area within the next few years, the Egyptian Government will have to take a much more proactive stand to ensure that visitor numbers stay within the World Heritage Site's aesthetic and physical carrying capacity. There has been a reluctance to adopt such measures elsewhere in Egypt: for instance, the number of divers on the coral reefs off

Sharm El Sheikh in some cases now exceed its estimated ecological carrying capacity by a factor of ten, but no diving limitations have been enacted (Jobbins 2006).

The funding challenge

A major cause of the decline in visitor services is that the Protectorate is seriously under-funded. Although an entrance fee to St Katherine Protectorate, introduced in 2004, generates over \$1 m per year, only a small fraction of this revenue is returned to the Protectorate and the World Heritage Site for operating costs. This lack of finance so constrains management that it even precludes the cost of maintaining the Protectorate's web page. This to a large extent reflects the generally poor understanding and political support for the wider social, economic and ecological values of protected areas in Egypt. Commercial expediency, including the issuing quarrying and mining permits, often overrides conservation objectives and little consideration is given to the role of the protected area system as a vital tool that will enable Egypt to respond to emerging and increasingly important global biodiversity issues such as climate change or to the growing impact of international tourism and poverty alleviation (Fouda et al. 2006). This lack of political support is reflected in the serious general under-funding of Egypt's protected area system, which covers about 14.3% of the country. A recent study of sustainable funding for Mediterranean Protected Areas ranks Egypt at the bottom of the list of countries surveyed for levels of funding per unit area. Egypt invests \$0.7 per hectare, whereas Jordan invests \$10.2, Lebanon \$19.3 and Turkey \$7.2 per hectare.

Impending/upcoming challenges

The EU is supporting a South Sinai Development Programme with a grant of €64 m. Under this programme a project has been approved to bring piped water from the Suez-El Tur pipeline into the St Katherine World Heritage Site – a distance of more than 80 km and a rise of more than 1700 metres. In the preliminary study for this project there was no recognition of the area's World Heritage status, or indeed that it was even a Protected Area, and there was no strategic assessment of the project's potential impacts. Although a safe and adequate water supply is an indisputable basic human right (and the water supply to local communities must be improved), it seems obvious that other water conservation measures such as restrictions on development and the prohibition of hotel swimming pools should be explored before about 2000 m³ of water a day are brought to and disposed of in this unique desert environment. The traditional and unique Bedouin character of the town, the landscape and cultural values of the St Katherine area and its status as a World Heritage Site will be irrevocably damaged from the development pressures

that will inevitably accompany the lifting of this ecological and economic limiting factor.

Future plans

Management planning

It is imperative that the local authorities fully acknowledge the regulatory authority of the Egyptian Environmental Affairs Agency in the Protectorate and improve co-operation on all planning and development initiatives, including urban planning issues. A significant first step would be for the Ministry of Environment/Egyptian Environmental Affairs Agency to review the existing site management plan with the aim of formally endorsing the document and promulgating it amongst all government and local stakeholders. Effective mechanisms must then be put in place that will allow for the proper implementation of the plan, along with an adequate funding source derived from an appropriate share of the entrance fees to the World Heritage Site.

In tandem the local authorities must ensure that all future developments accord with both the official sustainable urban development plan for the town of Saint Katherine and the Government's commitment to the spirit and letter of the World Heritage Convention. In regard to the latter, the value of supervision by concerned international authorities, both conservation and religious, cannot be overstated.

Sustainable tourism

Tourism and its associated activities has become the main economic driver in the Protectorate area. Nevertheless, the present paradigm driving tourism development within the St Katherine Protectorate is environmentally and culturally inappropriate and, unless reoriented, could well destroy the area's unique natural and cultural landscape. The future integrity of the monastery, the biblical sites and the surrounding desert landscape will ultimately depend on the ability of the authorities to manage properly the rapid increase foreseen in tourism numbers, as well as the growth of the local population. The Government must ensure that future tourism development is environmentally sustainable and culturally appropriate. It must promote and facilitate the development of a different tourism paradigm to the mass tourism model seen elsewhere in Sinai and Egypt; in this new paradigm, nature-based and religious tourism activities should be central.

Formerly, Bedouin-managed mountain-trekking catering mainly for Israeli visitors thrived in the Protectorate. However, the clientele and the activity has largely disappeared since the first Palestinian intifada. Security regulations have since constrained the revitalisation of such adventure and

cultural tourist activities that are better suited to exploiting the natural values of the Protectorate, and have also prevented the promotion of the ecolodge as a destination for foreign visitors. Recently a Bedouin-run trekking company, Sheikh Sina, has been founded (financed by the EU) as a local initiative intended to equip Bedouin guides with hospitality management and language skills and improve mountain tourism operations in South Sinai by raising the quality of the already existing mountain hikes. The initiative will also assist in building two new Bedouin ecolodges in the South Sinai region, using the Al Karm experience as a learning model.

There are other private initiatives being established among the local communities, such as the Yalla Jabaleya project, aimed at promoting culturally orientated and environmentally sensitive tourism activities, which are both economically viable and sustainable. For such a tourism paradigm to thrive, the Government must lift the institutional barriers that presently constrain such local initiatives.

Local self-help initiatives

The Community Foundation for South Sinai is a new non-profit organization designed to benefit communities across South Sinai. It was registered in November 2006 as the first community foundation in Egypt, part of a fast-growing global movement that enables people to bring lasting benefits to their own communities. The vision is to connect people who care about Sinai, by enabling the creation of an endowed fund of substantial value for the varied communities of South Sinai, thereby providing a lasting resource for grassroots community activity. Eventually, a successful community foundation becomes sustainable, meeting its own running costs and having a substantial and sustained annual budget, independently managed by local people, for accessible grants that meet community needs. Endowment is a concept familiar in Islam, which has a strong tradition of philanthropic giving. Currently, an extensive programme of research into community needs



*The chapel of St Catherine on the summit of Mt St Katherine.
Photo Mike James.*

is being undertaken to identify priorities, along with local project-based initiatives designed to generate employment in keeping with local custom and practice.

Re-inscription of the St Katherine World Heritage Area

The inscription of the St Katherine Area on the World Heritage List should have ensured that a higher level of protection and attention be given to this globally significant site. There have been few obvious benefits of having the St Katherine Area declared as a World Heritage Site; development continues without due consideration of the area's status, and there has been virtually no publicity or promotion of the St Katherine Area as a World Heritage Site – it is essentially Egypt's forgotten World Heritage Site. Because the site was inscribed on cultural criteria, this gives the impression that only the Monastery and Mt Sinai are of World Heritage value, rather than the 640-km² setting which provides the landscape context. It is probably this misconception among the authorities that threatens the landscape setting with inappropriate development.

Recently an Egyptian NGO, Nature Conservation Egypt, concerned by the negative developments on the Site, has suggested to the World Heritage Committee that it should revive its earlier recommendation (UNESCO 2003) inviting Egypt to re-nominate the St Katherine Area as an 'Associative Cultural Landscape'. This would restore a sense of the site's holistic value and give St Katherine a higher national and international profile as one of the few sites in this category. Furthermore, in its evaluation of the site in 2002, IUCN supported the idea of nominating St Katherine as a World Heritage Cultural Landscape and also recommended it to UNESCO as a putative biosphere reserve.



Tourists climbing Mt Sinai. Photo: Mike James

It is to be hoped that re-nomination may raise national awareness of the site and its significance and should consequently accord it increased protection and international supervision. However, this re-nomination should be accompanied by more intensive management efforts and much greater co-operation from the relevant local and national authorities, since only then will this World Heritage Site and its enveloping protective landscape be properly secured for the world's future generations.

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Links

- Egyptian Environmental Affairs Agency – www.eeaa.gov.eg
- Holy Monastery of St Catherine at Mt Sinai - www.sinaimonastery.com
- Nature Conservation Egypt – www.ncegypt.org
- St. Katherine Protectorate. www.stkparks.gov.eg
- Sheikh Sina (Bedouin trekking company in St Katherine) - www.sheikhsina.com
- The Community Foundation for South Sinai -www.southsinafoundation.org
- The Saint Catherine Foundation - www.saintcatherinefoundation.org
- Yalla jabaleya community project - www.yallajabaleya.com

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