Ischigualasto-Talampaya Natural Parks

2020 Conservation Outlook Assessment

SITE INFORMATION

Country: Argentina  
Inscribed in: 2000  
Criteria: (viii)

These two contiguous parks, extending over 275,300 ha in the desert region on the western border of the Sierra Pampeanas of central Argentina, contain the most complete continental fossil record known from the Triassic Period (245-208 million years ago). Six geological formations in the parks contain fossils of a wide range of ancestors of mammals, dinosaurs and plants revealing the evolution of vertebrates and the nature of palaeo-environments in the Triassic Period. © UNESCO

SUMMARY

2020 Conservation Outlook  
Finalised on 02 Dec 2020  
GOOD

The two protected areas jointly forming the Ischigualasto-Talampaya Natural Parks World Heritage site cover some 275,000 hectares. The landscape and biodiversity have been subject to multiple use pressure before the establishment of protected areas, some of which have since been continuing illegally. Like many protected areas, the site is facing challenges from poaching, firewood harvesting, invasive and feral species, as well as road construction impacts against a backdrop of insufficient funding and staffing. It would thus be misleading to interpret the conclusion of this assessment as covering the overall status of the two contiguous protected areas. Rather, this assessment has the objective to provide an outlook according to the conservation values underpinning the World Heritage status. For the extraordinary geological values of the Ischigualasto-Talampaya Natural Parks, i.e. the complete sequence of fossiliferous continental sediments representing the entire 45 million years of geological history of the Triassic Period, the conservation outlook is assessed as good. However, the ongoing limitations in terms of harmonizing the governance and management of the two protected areas, resourcing and limited visitor management and law enforcement capacity need to be addressed.
FULL ASSESSMENT

Description of values

Values

World Heritage values

▶ A complete sequence of fossiliferous continental sediments representing the entire Triassic Period

Criterion:(viii)

This site is one of the rare natural World Heritage sites inscribed exclusively according to criterion (viii). The two contiguous protected areas jointly comprising it contain a complete sequence of fossiliferous continental sediments representing the entire 45 million years of geological history of the Triassic Period. No other known place in the world has a comparable fossil record revealing the evolution of vertebrate life and the nature of palaeoenvironments in the Triassic Period (World Heritage Committee, 2014). Thereby, the site is of extraordinary scientific importance (IUCN, 2000).

Other important biodiversity values

▶ Rare and endemic species

The area was nominated according to additional natural and cultural criteria (State Party of Argentina, 1999). The applicability of natural criteria other than what is today criterion (viii) was not supported in the technical evaluation though (IUCN, 2000) and the World Heritage Committee (2000) inscribed the site under criterion (viii) only. Nevertheless, this large World Heritage site with a total surface area of some 275,000 hectares does boast important biodiversity values, which is fully acknowledged in the IUCN evaluation (IUCN, 2000). Specifically, the site is home to a relatively intact desert and scrubland environment in the Sierras Pampeanas mountains, the habitat of several endemic, near threatened or culturally valuable species of flora and fauna, including mammals, birds and reptiles (World Heritage Committee, 2014; UNEP-WCMC, 2011; IUCN, 2000). The Ischigualasto / Talampaya System have a small guanaco population that has been categorized as endangered in the last national categorization (SAREM, 2019).

▶ Scenic values

The Ischigualasto / Talampaya Natural Parks contain "scenic landscapes and features of great aesthetic and cultural value" (IUCN, 2000). Striking landscape features include the red sandstone cliffs in Talampaya National Park and, in Ischigualasto Provincial Park, white and multi-coloured sediments creating a stark landscape named "Valle de la Luna" or "Valley of the Moon" (World Heritage Committee, 2014).

Assessment information

Threats

Current Threats

Low Threat

There are no significant threats to the exceptional geological values of the site besides illegal collection of fossils, which is hard to prevent, especially in light of limited staffing and enforcement capacity. There are various other threats, which are clearly identified in the management plans for both the national and the provincial protected area. They include feral and domestic livestock, the impacts of roads, poaching and firewood collection. All require management responses. From an admittedly narrow perspective of the specific justification for the World Heritage inscription of the site, the threats to the Outstanding Universal
Value of the site are considered low.

**Livestock Farming / Grazing**
*(Occasional livestock grazing)*

Cattle, horses, and donkeys from neighboring lands freely enter the site for grazing, thereby altering the composition of the native vegetation, soil integrity and competing with native herbivores (UNEP-WCMC, 2011; State Party of Argentina, 1999; Administración de Parques Nacionales, 2019). Neighbors’ non-authorized domestic cattle graze in around 40% of the National Park. Negative effects of trampling by livestock include surface materials fragmentation, landslides and/or marks on sites of archeological importance (Administración de Parques Nacionales, 2019). Reus et al. (2017) did not find important overlaps in food resource use between native herbivores (Octomys mimax, Dolichotis patagonum and Lama guanicoe) and exotic herbivores (Bos taurus, Equus asinus and Lepus europaeus) at the Ischigualasto Provincial Park, because of the low densities of exotic species currently present in that area. It was found that the presence of cattle causes changes in the activity patterns of guanacos. The native ungulates generally present a unimodal pattern with a midday peak, but in the areas where cattle are present, the guanaco switch to a bimodal activity pattern (Cappa et al., 2020).

**Tourism/ visitors/ recreation**
*(Illegal collection of fossils by visitors)*

Due to the high tourism affluence, park rangers or professional tour guides cannot keep all the tourists accompanied, and some can wander about unsupervised. Consequently, rocks with fossils are collected illegally by visitors in some occasions (Cortez, 2005; IUCN, 2000; Administración de Parques Nacionales, 2019). Increased recreational and touristic demand is not being sufficiently addressed (Administración de Parques Nacionales, 2019).

**Tourism/ visitors/ recreation**
*(Waste from visitors and erosion from vehicle and motorcycle traffic)*

Most visitation occurs in a few selected parts of the World Heritage site, in particular Valle de la Luna and Cañón de Talampaya (the Valley of the Moon and the Talampaya Gorge) (World Heritage Committee, 2014). Occasionally, access by off-road motorcycles has been reported (UNEP-WCMC, 2011). The impacts include littering and localized erosion from vehicle traffic in addition to some vandalism of rock art predating the establishment of the protected areas (UNEP-WCMC, 2011). The State Party of Argentina (1999) referred to waste as a “significant environmental pressure” at a time when visitor numbers were well below current numbers.

**Roads/ Railroads**
*(Direct and indirect impacts of roads)*

Two main roads (National Roads Nº150 and 76) run through the site, the latter being where most road kills of wildlife have been registered. Other risks associated with roads presence include disturbance, alien species invasions and increased access of illegal hunters (Administración de Parques Nacionales, 2019). A small population of guanacos (Lama guanicoe) within the Provincial Park (Cappa et al., 2017; Cappa et al., 2019) and a species of lizard (Liolaemus riojanus) (Kass, 2019) are potentially affected by the roads. Additionally, the presence of roads and vehicle circulation have facilitated introduction of Salsola kali, an invasive species of plant (unpublished data). As the Outstanding Universal Value of this site focuses on its geological values, the threat is ranked as low.

**Invasive Non-Native/ Alien Species**
*(Introduced wild and feral domestic mammal species)*

European hare (Lepus europaeus) is widespread and so are feral donkeys (Equus asinus) and cattle (Bos taurus), the latter being two remnants of the former use of the site for livestock grazing (Administración de Parques Nacionales, 2019). Feral pigs (Sus scrofa) have been recorded in the Provincial Park and near the National Park, although their complete distribution remains unclear (Administración de Parques
Hunting and trapping, Logging/ Wood Harvesting  
(Poaching and illegal collection of firewood)  

Illegal subsistence and recreational hunting is an occasional threat (UNEP-WCMC, 2011; Cortez, 2005; Administración de Parques Nacionales, 2001; IUCN, 2000). Poaching of wildlife occurs within and near the site targeting guanacos (Lama guanicoe), maras (Dolichotis patagonum) and Geoffroy's Cat (Leopardus geoffroyi) (APN, 2019). Illegal extraction of Chaco tortoise (Chelonoidis chilensis) has also been recorded. Puma (Puma concolor) is hunted by ranchers in response to livestock predation (hunters access the site through Road Nº 76). Illegal logging of native trees for various uses (firewood, handicrafts, medicinal use) is a deeply rooted cultural practice that have increased due the accessibility provided by the National Road Nº 76 (Administración de Parques Nacionales, 2019).

Invasive Non-Native/ Alien Species  
(Alien invasive plant species)  

Within the protected area, there are two highly invasive species. The tamarind (Tamarix ramosissima), associated with the channels of the temporary channels, and which is increasing its distribution in the protected area. An incipient invasion of Tamarix ramossisima has been detected next to riparian areas and roads. Dense tamarisk forests and thickets modify water courses, reduce availability of ground and superficial water, increase soil salinity and affect the frequency and intensity of fire events, all of these undesirable effects especially in desert areas (Gobierno de la Provincia de San Juan 2015; Administración de Parques Nacionales, 2019). The other invasive species present is the Russian thistle (Salsola kali), which has entered the Ischigualasto Provincial Park with the construction of a sector of National Route 150, but has not yet entered the Talampaya NP.

Potential Threats  

Mining has been reported to pose a potential threat (WWF, 2016; Administración de Parques Nacionales, 2019). Given that no impacts of mining on the specific World Heritage values of the site are expected within the foreseeable future, the threat is ranked as low.

Overall assessment of threats  

Despite reports of illegal rock and fossil collection, there are no significant threats to the Outstanding Universal Value of the site, which is based on the unique geological particularities of the area. Livestock grazing, invasive alien species, poaching, nearby mining and the impacts of roads pose threats to all other conservation values, including landscape aesthetics and rare endemic species of flora and fauna and require adequate management responses.
Protection and management

Assessing Protection and Management

► **Management system**

Management system is guided by management and public use plans. Argentine World Heritage Committee conducts Seminars for Administrators of World Heritage Sites in Argentina, aimed at assessing the properties’ management effectiveness, exchanging information and strengthening cooperation between administrators and the Committee (Administración de Parques Nacionales, 2019). An integrated management system for ensuring a closer coordination of both protected areas, comprising this World Heritage site, is lacking.

► **Effectiveness of management system**

Effectiveness of management with respect to the protection of geological features is relatively good, but human resources are insufficient to protect the site’s biodiversity from poaching, grazing by exotic and feral animals and firewood extraction. A management effectiveness assessment of Ischigualasto Provincial Park (Gobierno de la Provincia de San Juan, 2015) evaluated 5 main topics, none of which rated “very satisfactory”. Only one topic rated “satisfactory” (political and institutional framework); the remainder were rated either “medium” (financing, infrastructure and equipment) or “not very satisfactory” (staff, planning). On the other hand, Talampaya National Park current management plan reports adequate levels of funding, operative planning, infrastructure and equipment, while suggesting the need to increase staff, improve local participation, build capacities among tourism guides and promote management-focused research (Administración de Parques Nacionales, 2019).

► **Boundaries**

Talampaya National Park’s boundaries demarcation was carried out in 2016 (Administración de Parques Nacionales, 2019). The demarcation had been finalized and the domain was rightfully inscribed in the correspondent cadaster (Administración de Parques Nacionales, 2019). Although there is no legal evidence of overlap with private properties, inhabitants from Loma Negra and Aicuña ranch claim to be possessors of sectors of the national park. This in turn affects the enforcement of the protected area in regards to its management category and the human uses admitted in the conservation unit.

► **Integration into regional and national planning systems**

Besides integration into regional and national tourism planning (UNEP-WCMC, 2011), attempts are being made to integrate the World Heritage site with other protected areas within La Rioja Province and into local tourism strategies (IUCN Consultation, 2020). Since the former Talampaya Provincial Park became a national park in 1997, it has been an integral element of Argentina’s federal protected area system.

► **Relationships with local people**

There are tensions with Loma Negra and Aicuña Ranch inhabitants that claim domain of some sectors of the Talampaya National Park, although there is no legal evidence of overlap with private lands. The constitution of an advisory committee to engage local people in National Park’s decision making is pending. On the other hand, the World Heritage site generates direct employment and income by attracting conventional and scientific tourism to the region (Administración de Parques Nacionales, 2019). The dialogue between the local population and the Talampaya National Park has improved notably in seeking solutions to conflicts (IUCN Consultation, 2020a). Los Baldecitos and Baldes del Rosario are the nearest settlements of World Heritage site in the San Juan Province and they have no apparent conflicts with the protected areas. The presence of livestock in both protected areas might constitute a potential conflict, but this problem is being addressed (IUCN Consultation, 2020b).
IUCN World Heritage Outlook: https://worldheritageoutlook.iucn.org/
Ischigualasto-Talampaya Natural Parks - 2020 Conservation Outlook Assessment

Legal framework

Both protected areas comprising the World Heritage site are on public lands and have strong legal protection. While both areas were first established at the provincial level, Talampaya became a national park under federal responsibility in 1997. Medina et al. (2016) point out that legal conservation frameworks in Argentina tend to ignore or neglect geological aspects even though quite a few protected areas have primarily been established because of their geological values, as is the case in this site.

Law enforcement

Law enforcement is consistently described as very limited (Gobierno de la Provincia de San Juan, 2015; UNEP-WCMC, 2011; Administración de Parques Nacionales, 2001; IUCN, 1999). This can be linked to limited staffing levels and eventually funding constraints relative to the large size of the site. There are some concerns about the legal, governance and management coherence of the two protected areas jointly comprising the World Heritage site. Given the modest human and financial resources in relation to the size of the site, overall effective compliance and enforcement remains challenging.

Implementation of Committee decisions and recommendations

The technical evaluation of the World Heritage nomination reported that the national and provincial authorities were establishing "a single cooperative management regime for the site" (IUCN, 2000). The evaluation further notes that "joint management will be provided by a standing Coordinating Committee, assisted by a single Technical Advisory Group representative of key local scientific institutions, provincial agencies and non-governmental conservation organisations" to "ensure the application of uniform management policies, programmes and standards across the entire site." The World Heritage Committee (2000) made reference to this, noting that "positive response was received from the State Party concerning a cooperative management plan". While not constituting a request or recommendation this can be interpreted as an expectation of follow-up in this regard. However, a lack of harmonizing management across the two distinct legal, governance and management set-ups continues to be a reason for concern.

Sustainable use

Tourism and scientific research are the only legally permitted direct uses and both are carried out adequately overall despite localized concerns about tourism impacts (UNEP-WCMC, 2011). In San Juan Province, the Ischigualasto Provincial Park area has been designated as Category I under the Native Forest Law (Provincial Laws No 8174; 1439-L, National Law No 26331), which means that only tourism, research, management and protection activities are permitted there.

Sustainable finance

Several references highlight the insufficient financial resources available for managing such a large World Heritage site (Gobierno de la Provincia de San Juan, 2015; Administración de Parques Nacionales, 2001; IUCN, 1999). However, the Talampaya National Park management plan reported that budget is sufficient to address the operative plans (Administración de Parques Nacionales, 2019).

Staff capacity, training, and development

The few park rangers at Talampaya National park are well trained, Argentina being the one country in the region with systematic, professional ranger training. The challenge is primarily the very limited staff numbers. Ischigualasto Provincial Park does not have park rangers, only tour guides, who do not fulfill the same function (IUCN Consultation, 2020b).

Education and interpretation programs

Both areas have the explicit objective to promote environmental education among its visitors. The Provincial Park management plan indicates the existence of an Environmental Education Plan, which is not being implemented (Gobierno de la Provincia de San Juan, 2015). Based on the 2001 Management
Plan and the 2003 Public Use Plan of the National Park, environmental education activities were planned as cross-cutting actions of conservation projects. Since 2013 the National Park has an environmental education and interpretation program (Administración de Parques Nacionales, 2019).

**Tourism and visitation management**

At the time of inscription, visitor infrastructure was evaluated as modest (IUCN, 2000), as acknowledged by the State Party at the time (State Party of Argentina 1999). For the Talampaya National Park, infrastructure for tourism is reported to be adequate, with some areas requiring maintenance. The Public Use Plan for the Talampaya National Park has not yet been updated, so there is no systematic and permanent record of the quality of the visit or visitors satisfaction. The new National Park Management Plan proposes its update (Administración de Parques Nacionales, 2019).

**Monitoring**

The management effectiveness assessment documented in the management plan for the provincial protected area suggests that some monitoring instruments are being applied (Gobierno de la Provincia de San Juan, 2015). This wording implies that there would be room for developing a systematic and comprehensive monitoring system. Monitoring of natural resources in Talampaya National Park is mostly restricted to recording special value vertebrate species during control patrols. Illegal hunting events are systematically recorded since 2010. Although cultural resources findings are recorded, a systematic monitoring of the conservation status and threats to these resources is lacking (Administración de Parques Nacionales, 2019).

**Research**

Research is one explicit objective and among the very limited legal use options of the World Heritage site (Gobierno de la Provincia de San Juan, 2015; Administración de Parques Nacionales, 2019). There is a long tradition of geological and paleontological research in the area, which has generated considerable information. To a lesser extent, there is research on the ecology and biology of the scrubland desert. More recently, there have been strong efforts to understand the impacts of existing and planned road infrastructure, which can and should be linked to political decision-making. Within the Talampaya National Park, important support is given to the development of research, facilitating the logistics of researchers in the field. In the National Park, 85 research projects were authorized, including 26 linked to vegetation and fungi, 29 to fauna (vertebrates and invertebrates), 16 to paleontology, 11 to geology and 3 to cultural resources (Administración de Parques Nacionales, 2019). 12 research papers have been published in international journals on Ischigualasto since the last assessment in 2017: 3 linked to vegetation, 8 to fauna and 1 to animal-plant relationship (IUCN Consultation, 2020b).

**Overall assessment of protection and management**

The underlying gaps of management and protected can be traced to funding and staffing deficits. This results in limited effectiveness across most parameters typically considered in protected area management effectiveness assessments. The World Heritage site is a large representative sample of an ecologically fascinating scrubland desert with a complex mountainous topography. The ecosystem provides habitat for a dryland vegetation and its many associated species which are under severe pressure. The protection and management of the important biodiversity values of the site is compromised by insufficient management response capacity to a range of threats. Nevertheless, and given that the World Heritage status is primarily associated with the less vulnerable geological values, the concerns are limited from that narrow perspective.

**Assessment of the effectiveness of protection and management in addressing threats outside the site**

There are no direct indications of major pressures stemming from outside the site. Although previous management plans payed very limited attention to external challenges (Gobierno de la Provincia de San Juan, 2015; Administración de Parques Nacionales, 2001), the recently updated
management plan of the Talampaya National Park highlights several strategies that would address threats from outside the site (Administración de Parques Nacionales, 2019). There is insufficient information to permit a conclusive assessment of the effectiveness of those measures within the scope of this effort.

▶ Best practice examples

Regardless of the effectiveness of harmonizing the governance and management of the overall area, it is an encouraging example that the national and a sub-national level of a State Party government have joined forces to successfully nominate two contiguous protected areas under their corresponding jurisdictions.

State and trend of values

Assessing the current state and trend of values

World Heritage values

▶ A complete sequence of fossiliferous continental sediments representing the entire Triassic Period

Good Trend: Stable

The geological features of the site are effectively protected despite some illegal rock and fossil collection and not particularly vulnerable (UNEP-WCMC, 2011; Administración de Parques Nacionales, 2001, IUCN, 2000; Administración de Parques Nacionales, 2019).

Summary of the Values

▶ Assessment of the current state and trend of World Heritage values

Good Trend: Stable

Overall, the geological features of the site are effectively protected despite some illegal rock and fossil collection and not particularly vulnerable.

▶ Assessment of the current state and trend of other important biodiversity values

High Concern Trend: Deteriorating

As acknowledged in the management plans for both protected areas (Gobierno de la Provincia de San Juan, 2015; Administración de Parques Nacionales, 2001; Administración de Parques Nacionales, 2019), there is some degradation of the natural vegetation stemming from livestock grazing and fuelwood collection. It can be argued that degradation of the natural vegetation from this activities, as well as the road infrastructure, negatively affect the landscape beauty. A detailed assessment is beyond the scope of this exercise due to the World Heritage focus on fossils. There are credible evidence at a deteriorating trend of some rare and endemic species (UNEP-WCMC, 2011; IUCN, 2000). The guanaco population present in both protected areas was categorized as endangered by the 2019 National mammals categorization (http://cma.sarem.org.ar/es/especie-nativa/lama-guanicoe) due to low density and possible isolation of this population.

Additional information

Benefits

Understanding Benefits
Importance for research, Contribution to education

The site is a major, globally significant scientific treasure, invaluable for research in palaeontology and evolutionary biology (IUCN, 2000). The spectacular fossils create major opportunities for visitor education.

Outdoor recreation and tourism, Natural beauty and scenery

Domestic and international visitation attracted by the scenic beauty and the spectacular fossils is relatively modest but growing. The tourists also value the occasional viewing of wild animals. Factors negatively affecting provision of this benefit:
- Invasive species: Impact level - Moderate

The occasional viewing of wild animals is negatively affected by the presence of excessive number of tourist (Malo et al., 2011) and the presence of domestic animals (i.e. cattle; Cappa et al., 2020).

Direct employment, Tourism-related income, Provision of jobs

Scientific and conventional tourism, as well as to a lesser degree park management, provide local employment and income opportunities.

Summary of benefits

The most striking benefit is the extraordinary scientific significance of the site, which comes with major opportunities in terms of scientific research and visitor education. Economically, both park management requirements and tourism offer local income and employment opportunities.

Projects

Compilation of active conservation projects

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<th>Brief description of Active Projects</th>
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<td>1</td>
<td>Tourism Corridors Development Programme (Programa de Desarrollo de Corredores Turísticos), IADB/BID</td>
<td>Facilitated by an IADB/BID loan (Préstamo BID 2606/OC-AR), the program’s goal is to promote the sustainable growth of income and tourism jobs, by improving touristic development of protected areas and other strategic touristic corridors. The property is located within one of several tourism corridors in Argentina (Valle Fértil-Villa Unión - Corredor Ischigualasto - Agua Negra). Activities include developing touristic products, strengthening institutions and improving environmental management.</td>
<td><a href="https://www.iadb.org/es/project/AR-L1071">https://www.iadb.org/es/project/AR-L1071</a> <a href="http://www.turismo.gov.ar/epi/2606">http://www.turismo.gov.ar/epi/2606</a></td>
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<td>2</td>
<td>Administración de Parques Nacionales - Universidad Federal de Piauí</td>
<td>The goal of the project DRC 319/16 is to contribute to the conservation of Talampaya National Park’s rock art by applying a series of experimental treatments. Results will be compared to those of Parque Nacional Serra da Capivara (Brazil) (IUCN Consultation, 2020b).</td>
<td><a href="https://www.argentina.gob.ar/parquesnacionales">https://www.argentina.gob.ar/parquesnacionales</a></td>
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<td>IUCN Consultation (2020). IUCN World Heritage Confidential Consultation form: Respondent 1. Ischigualasto -Talampaya Natural Parks, Argentina.</td>
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