甘肃省石窟寺保护管理导则

Guidelines for Conservation and Management of Grotto Sites in Gansu Province





敦煌研究院　美国盖蒂保护研究所　编制

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序言

中国石窟寺分布广泛、规模宏大、体系完整、内涵深厚，是我国辉煌灿烂古代文明的集中体现，也是中华文明同其他古代文明交流互鉴的历史见证。发展石窟寺文物保护事业，对于传承中华文明、坚定文化自信，满足新时代人民美好生活的文化需要具有重大意义。同时，石窟寺文化遗产与丝绸之路文化联系紧密，不仅展示了古代丝绸之路的繁荣兴盛，也是当下共建“一带一路”，推动不同文明交流互鉴，促进人文相亲、民心相通不可替代的文化载体。

由于历史久远，石窟寺本体构成和保存环境十分复杂，存在多种病害，面临多种风险，安全隐患突出，石窟寺保护管理工作成为中国特色文物保护利用实践的重要探索领域。近代以来，特别是中华人民共和国成立以来，在《中华人民共和国文物保护法》等中国文物法律法规体系和《中国文物古迹保护准则》等行业规则标准的共同指引下，石窟寺保护与修复的成果大量涌现，代表了中国文物保护工作的发展水平，展示了中国政府对保护传承人类共同文化遗产的历史责任与现实贡献。

甘肃地处中西方和多民族文化交流的十字路口，得天独厚的文化自然环境造就了以敦煌莫高窟、天水麦积山石窟、临夏炳灵寺石窟、瓜州榆林窟、凉州天梯山石窟、张掖马蹄寺石窟群等为杰出代表的无数艺术瑰宝，素有“石窟艺术之乡”的美誉。甘肃石窟寺规模宏大，开凿时间较早，发展序列完整，延续1200多年，保存相对完整，实证了中国石窟寺开创、发展及衰落的全过程；集各时代、多民族建筑、绘画、造像等艺术为一体，代表了中国石窟艺术文化发展的最高峰，是全省最宝贵和最具特色的文物资源。

就微观而言，甘肃石窟文化内涵丰富，艺术风格独树一帜，表现手法复杂多样，域外风

格、西域风格与中原风格交织并存、交汇融合；建筑类型丰富，壁画、彩塑、石雕、浮雕、大像、窟龛、窟檐、栈道各具特点、异彩纷呈；特别是壁画和文书内容具象地呈现古代社会生活的方方面面，构成一部中国佛教石窟艺术史和丝绸之路文化发展史，是我国中古时期社会生活的百科全书。

甘肃石窟寺分布范围极广，多种文物自身病害与保存环境密切相关，保护管理的任务更为繁重，相关探索和经验更为宝贵。

作为全国文物大省和石窟寺大省，数十年来，以敦煌研究院为代表的甘肃石窟寺保护、研究、弘扬工作，充分遵循文物工作规律，吸收借鉴国际先进理念做法，重视科技赋能保护，以价值完整性为质量目标，以真实完整保护文化遗产为基础，以深入挖掘文化遗产价值为核心，以负责任传承弘扬为目的，统筹保护、研究、弘扬，逐渐形成了三位一体平衡发展的质量管理模式，成为我国文物有效保护、合理利用和精心管理的典范，更是中国在石窟寺文物保护领域的一面旗帜。

但不可否认，甘肃石窟寺保护管理也存在发展不平衡、不充分的问题，特别是中小石窟管理粗放、研究力量薄弱、专业人才匮乏、展示利用水平不高，过度旅游或旅游不足并存等各种不平衡、不充分和不规范的现象多有存在。

面对这种形势，在甘肃省文物局支持下，敦煌研究院以高度的文化自信自觉，主动承担石窟保护的国家与社会责任。不仅长期坚持用匠心呵护遗产、以文化滋养社会，持续做好莫高窟、榆林窟、西千佛洞等敦煌石窟保护管理，近年来还接手了麦积山石窟、炳灵寺石窟和北石窟寺的保护管理，并对天梯山石窟等全省重要石窟寺保护管理工作进行全面参与，为地方政府文物保护提供了宝贵的专业咨询和技术援助。随之也将其与国际专业机构，特别是与美国盖蒂保护研究所的深度合作，从敦煌石窟推向甘肃全省石窟，开辟了甘肃文化遗产保护管理国际合作的新篇章。《甘肃省石窟寺保护管理导则》的成功编制，就是一项最新的代表性成果。

《甘肃省石窟寺保护管理导则》的编写出台，顺应了新时代文物治理体系和治理能力现代化的根本要求，将文物工作科学化、精细化、规范化的具体要求落到了实处，对全省石窟寺和其他类别重要文物保护具有示范借鉴意义。

《导则》的编制，凝聚着敦煌模式、国际经验、甘肃实践，是对我国“保护第一、加强管理、挖掘价值、有效利用、让文物活起来”文物工作方针的具体诠释。《导则》坚持高质量发展要求，进一步落实分级保护、属地管理的基本原则，既为石窟寺文物的科学保护管理提供了可推广、可复制的操作指南，也为文物行政部门科学有效监管提供了可核查、可追溯的绩效评估体系。

《导则》的内容设计和操作规范，是我国石窟寺保护管理经验的一次系统总结和提炼升华，也是对敦煌研究院“基于价值完整性的平衡发展质量管理模式”在全省的在地化推广应用。《导则》编制有中方和美方多名专家共同参与，广泛吸收和借鉴了国内外的相关科学理念、规范做法和成功经验，体现了国际性与区域性理论和实践的成功契合与高度统一。

多年来，《中国文物古迹保护准则》的施行为甘肃文物和石窟寺文物保护管理工作在基本原则、价值认知、分类保护、遗产监测、展示活化和合理利用等方面提供了全方位的理论指导与系统性的遵循规范，也启迪影响了文物保护各专门领域理论与实践的发展。可以认为，《甘肃省石窟寺保护管理导则》是对《中国文物古迹保护准则》在具体领域的发展深化，是科学构建中国石窟寺文物保护领域从文化遗产价值认知到保护原则，再到保护实践的完整体系，形成文物保护管理从实践中来再到实践中去的良性循环的标志性成果。

谨此希望《甘肃省石窟寺保护管理导则》的公布施行能够为甘肃石窟寺文物保护管理工作提供更为有效的理论指导与实践规范，切实促进保护利用高质量发展。同时希望全省广大文物保护工作者边实践边总结，举一反三、触类旁通，在此基础上形成更具普适性和指导性的其他全省性的文物分类导则规范，促进我省各类文物保护利用水平的整体提升，为中华民族伟大复兴和人类文化遗产保护事业的发展做出应有的贡献。

甘肃省文物局党组书记、局长　　程亮

2024 年 12 月

Foreword

China's cave temple sites are widely distributed in Gansu, large in scale, and comprise a comprehensive system of profound significance. They are an embodiment of China's ancient civilization and a historical witness to the exchanges and mutual learning between China's civilization and other ancient civilizations. Development of heritage conservation of grotto sites, also known as cave temples, is of great significance for the inheritance of Chinese civilization, for strengthening cultural confidence, and benefiting the lives of people in the new era. At the same time, the cultural heritage of cave temple sites is closely related to the culture of the Silk Road and not only demonstrates the prosperity of this ancient route, but also is an irreplaceable part of the joint development of the Belt and Road Initiative, promoting exchanges and mutual learning among different civilizations thus fostering civil bonds of affinity and people-to-people connectivity.

Owing to its long history, the preservation of the cave temple sites themselves and their components is complicated due to multiple hazards and threats. As a result, their conservation and management has become an important area of exploration of cultural heritage conservation and utilization with Chinese characteristics. Since modern times and especially since the founding of the People's Republic of China, under the combined guidance of China's cultural heritage laws and regulations, for example, The Law of the People's Republic of China on the Protection of Cultural Relics, and professional standards such as the Principles for the Conservation of Heritage Sites in China, many achievements in the conservation and restoration of cave temple sites have emerged. These demonstrate the evolution of China's cultural heritage efforts and show the historical responsibility

and current contributions of the Chinese government to the protection and the common cultural inheritance of humankind.

Gansu is located at the crossroads of cultural exchange among the multiple ethnic groups between the Central Plains of China and the Western Regions that gave rise to the countless art treasures of the Dunhuang Mogao Grottoes, Tianshui Maijishan Grottoes, Binglingsi at Linxia, Yulin Grottoes at Guazhou, Tiantishan Grottoes at Liangzhou, and the Matisi Group at Zhangye as well as many other sites. These art treasures have earned Gansu the reputation as the "Home of Grotto Art" principally because of their large scale, early construction dates, and the comprehensive development sequence, whose history extends over more than 1200 years, and moreover are relatively well preserved. They demonstrate the entire process of the creation, evolution, and decline of Chinese grotto sites. Taken as a whole, they represent the pinnacle of Chinese grotto art and culture and are the most precious and distinctive cultural heritage resource in Gansu Province.

From the perspective of individual grottoes, Gansu is characterized by rich cultural connotations, unique artistic styles, and complex and diverse techniques of expression. Infusion of foreign styles from the Western Regions mingled and blended with those of the Central Plains, creating various architectural styles, wall paintings, painted sculpture, stone carvings in relief, giant Buddha statues, decorated niches, and wooden temple fronts and eaves connected with wooden walkways, all of which have their own characteristic splendor; but, especially the mural paintings in the caves and the manuscripts discovered definitively represent all aspects of medieval society and together constitute an encyclopedic history of Chinese Buddhist art and the history of Silk Road culture.

The geographic distribution and spread of cave temples in Gansu is extensive and the severity of damage and deterioration is closely related to their setting and environment. The task of protection, conservation, and management is arduous and thus focused research and experience are essential in order to achieve the necessary results.

As a major province in China with both cultural heritage and cave temples, for decades the protection, conservation, research and continued use of Gansu sites, as represented by the Dunhuang Academy, have fully complied with the regulations for cultural heritage work and have drawn on international concepts and practices while focusing on the importance of scientific technology as a means of conservation empowerment while maintaining the integrity of heritage values in order to achieve a true and complete preservation system. The Dunhuang Academy considers the integrity of the values of cultural heritage as the core goal in order to preserve the completeness and authenticity of cultural heritage while promoting

responsible use. A quality management system achieves the trinity of balanced conservation, research, and promotion or public use, appreciation, and education. The Dunhuang Academy has become a paradigm of effective conservation, appropriate use, and good management. Thus it has become a model site and management organization for conservation of cave temples in China.

It is also undeniable, however, that the conservation and management of grotto sites in Gansu is unbalanced and selective. In particular, small and medium sized grotto sites often lack extensive management capabilities while research is weak and there is a shortage of professional talents, low levels of exhibition and appropriate utilization. Moreover, there may be either insufficient or excessive tourism. Faced with this situation, the Dunhuang Academy, with support of the Cultural Heritage Bureau of Gansu Province, has confidently undertaken the initiative and responsibility to actively support grotto site conservation. Not only has the Dunhuang Academy persisted for a long time in caring for heritage with ingenuity and nurturing society with culture, it has sustained its excellence in the preservation and management of the Dunhuang Mogao Grottoes, Yulin Grottoes, and the West Thousand Buddha Caves, but now the Academy has been assigned responsibility for the conservation and management of Maijishan Grottoes, Bingling Grottoes as well as the Northern Grottoes (Beishikusi) thereby providing valuable professional consultation and technical assistance to local governments for the protection of these major grotto sites of Gansu Province. As a result, the cooperation with international professional institutions, especially the Getty Conservation Institute, was extended from the Dunhuang Grottoes to the other grotto sites in Gansu, ushering in a new chapter of international collaboration in the conservation and management of cave temples in the province. The successful compilation of the Guidelines for Conservation and Management of Grotto Sites in Gansu Province is one of the latest representative achievements.

The compilation and publication of the Guidelines conforms to the fundamental requirements of a modern cultural heritage governance system and capabilities in the new era and implements specific requirements of scientific, advanced, and standardized practical conservation and management work. This paradigm also has reference for other major cultural heritage sites in Gansu Province.

The Guidelines embody the Dunhuang model, international experience, and Gansu practice. It is a concrete interpretation of China's cultural heritage policy of "conservation first, strengthening management, revealing values, effectively utilizing heritage, and making it come alive again for people". The Guidelines adhere to the requirements of high-quality development and further implements the basic principles of hierarchical protection and local administration thereby providing

not only replicable operational guidelines for scientific conservation and management of cultural heritage of cave temples, but also an efficient and verifiable system for administrative departments to conduct effective oversight and supervision.

The content design and operational standards of the Guidelines are a systematic summary and refinement of China's cave temple conservation and management experience and a localization of the Dunhuang Academy's "balanced development and quality management model based on the preservation of values." Preparation of the Guidelines was jointly undertaken by many experts from China and the United States and extensively absorbed and adapted relevant scientific concepts, standard practices, and successful experiences at home and abroad, reflecting the successful fit and high degree of unity of international and regional theories and practices.

Over the years the Principles for the Conservation of Heritage Sites in China has provided comprehensive theoretical guidance for the protection and management of cultural heritage and cave temples in Gansu in terms of basic principles, values recognition, conservation of varied levels of sites, heritage monitoring, exhibitions and rational use. Systematic compliance with these norms has also inspired and influenced the development of theory and practice in various professional fields of cultural heritage preservation. It is reasonable to consider that the Guidelines for Conservation and Management of Grotto Sites in Gansu Province are a further outcome of the Principles document in specific areas and a scientific elaboration relevant to cave temples in China in which values identification and conservation principles merge to form a complete system of preservation practice constituting a landmark event in this field.

I sincerely hope that publication and implementation of the Guidelines for the Conservation and Management of Grotto Sites in Gansu Province will provide effective theoretical guidance and practical standards pertinent to Gansu grotto sites and foster a high standard of conservation and utilization. Also, I hope the many conservators of cultural heritage in Gansu Province will summarize their practical experience, draw analogous inferences and on this basis apply them to related fields through the formation of provincial guidelines for the classification of cultural heritage that are universal and instructive and promote conservation while contributing to the great rejuvenation of the Chinese nation and the preservation of the cultural heritage of humankind.

Cheng Liang

Secretary of the Party Committee and Director of Gansu Provincial Heritage Bureau

December 2024

编制前言

过去几十年里，中国乃至全世界的文物保护工作都取得了长足的进步。中国文化遗产保护管理有效执行相关法律、法规、制度、文件，逐步促进了文物保护工作的发展，提升了文物保护工作水平。自 1989 年以来，在盖蒂保护研究所和敦煌研究院的长期合作中，我们亲眼见证了这一进程。虽然新的问题和威胁不断增加，比如，随着旅游业的兴起，给莫高窟这类脆弱的遗址带来了负面影响，但是，这些问题和威胁都得到了妥善处理，彰显了敦煌研究院保护其管辖范围内遗址的坚定承诺。近年来，在敦煌研究院的带领下，其提升保护和管理标准的潜力逐渐在甘肃省内得到广泛认可，甘肃省内三处石窟寺也划归敦煌研究院管理，其中，麦积山石窟和炳灵寺石窟两处遗址均为世界文化遗产。这些遗址不仅在中国非常著名，国际影响力也日渐提升，同样面临着和莫高窟相似的威胁。

人们很容易忽视那些小型遗址，虽然它们不仅数量众多，而且通常都与当地有密切联系。从历史角度来看，这些遗址反映了佛教沿丝绸之路兴衰的一千多年间全部的石窟寺类型。从这个角度来说，我们可以看到，自明朝丝绸之路衰落后，人们逐渐忽视这些遗址，许多石窟被弃用，不同程度遭受自然因素引起的劣化和人为开发影响，这对历史遗迹造成了极大的破坏。

2017 年，在甘肃省内全国重点文物保护单位管理者参与的《中国文物古迹保护准则》区域研讨班上，甘肃省文物局、敦煌研究院、盖蒂保护研究所（Getty Conservation Institute）首次就是否需要为甘肃省石窟寺保护管理制定导则展开了讨论。讨论促成了本导则的产生，得到了当时敦煌研究院院长王旭东的大力支持。《甘肃省石窟寺保护管理导则》参考中国古迹理事协会 2000 年发布、2015 年修订的《中国文物古迹保护准则》，以及相关政策和理论文件

编制而成，是针对省内所有类型的古代石窟及艺术载体的实践拓展。

遗产保护，无论是文化遗产还是自然遗产，要想成功实现其保护意义的目的，在充分利用其价值之前，必须判断文物面临的问题，并采取相应的预防措施。大多数石窟寺所处的地方自然环境优美，条件可能有些艰苦，却反映了丝绸之路的历史。我们相信，全面实施《导则》将有力证明这是实现石窟寺遗产地管理最佳目标的有效手段。未来，随着石窟寺遗产地管理水平的提升、遗产保护管理理念的发展、文物保护技术的进步、游客参观需求的提高，将适时开展《导则》的修订工作，以进一步发挥《导则》对甘肃省石窟寺保护管理工作的指导作用。

在起草《导则》的考察之行中，我们和同事们一起亲眼看到了许多具有历史价值和艺术价值的遗迹，我们也能够体会到他们在保护方面所面临的巨大挑战。和这些同事一起合作编写这本导则，让我们备受鼓舞，并得到了多方肯定，我们希望这本导则能够促进保护甘肃省石窟寺的艺术价值、历史价值、科学价值和社会价值。

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2024 年 12 月

Preface

Cultural heritage conservation has advanced over the last decades both in China and in the wider world. In fact, China's well- regulated policies, backed by the law of the PRC pertaining to heritage, and implemented in a systematic way has incrementally improved the protection of the heritage. We have seen this process first-hand in the Getty Conservation Institute's (GCI) long involvement with the Dunhuang Academy (DA), beginning in 1989. As new problems and threats arose, such as the rising tide of tourism and its adverse effects on sensitive sites like the Mogao Grottoes, they have been addressed in effective ways that have demonstrated a sincere commitment to preservation of the site and other sites which have traditionally been under the purview of the DA. Of late, due to the leadership of the DA and recognition of its potential to raise the standard of conservation and management in the province, other grotto sites in Gansu have been placed under the direction and guidance of the academy, two of which – Maijishan and Binglingsi – also have World Heritage status. These sites, well-known in China, and increasingly abroad, have been impacted by the same threats as the Mogao Grottoes.

Yet it has been easy to overlook the less significant sites, which are nevertheless the more numerous and often have a close relationship with their nearby communities. They represent, from an historical perspective, the full range of grotto types constructed over the thousand years that Buddhism flourished along the Silk Road. Looked at from this perspective we can see that their relative neglect following the decline of the Silk Road during the Ming period, when many fell into disuse and suffered deterioration and exploitation from various natural and human causes, represents

a significant potential loss to the historical record.

Discussions between the DA, the Gansu Cultural Heritage Bureau, and the GCI about the need for guidance for these grotto sites of Gansu took root in the 2017 regional training course on the China Principles for national level heritage site managers. These discussions initiated a process to develop a set of conservation and management guidelines, enthusiastically supported by the then Director of the Dunhuang Academy, Wang Xudong. Based on the China Principles, the policy and theoretical document launched by China ICOMOS in 2000 and revised in 2015, the Guidelines for the Conservation and Management of Gansu Province Grotto Sites are a practical extension aimed at the full spectrum of ancient grotto types and artistic expression in the province.

For heritage conservation, whether cultural or natural, to be successful in its purpose to preserve significance, it is necessary to identify the problems and their diversity before harnessing the resources available to combat them. Most grotto sites are in places of great natural beauty and in an environment that, while harsh, is also representative of the deep past of the Silk Road. We are confident that with diligent application the Guidelines will prove to be a powerful tool to achieve its objectives and aims.

In the future, with the improvement of management for cave temple heritage site, the development of concept for heritage protection and management, the progress of cultural heritage protection technics, and the increasing demands of tourists for visitation, the revision of the "Guidelines" will be carried out in a timely manner to further play the guiding role of the "Guidelines" in protection and management of cave temples in Gansu Province.

Seeing first-hand these historically and artistically diverse sites on study trips during the drafting of the Guidelines, together with our colleagues from the DA and the Gansu Cultural Heritage Bureau, we were able to appreciate the magnitude of the challenge that their preservation faces. But it has been encouraging and affirming to work together with our colleagues on this document, which we hope will contribute to preserving the artistic, historic, and scientific values of the Gansu grotto sites.

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Director of Dunhuang Academy

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Getty Conservation Institute

December 2024

第一章　引　言

本章封面图片：麦积山崖壁立面及栈道

概况

甘肃素有“石窟艺术之乡”的美誉，境内石窟寺分布广泛、规模宏大、体系完整，代表了中国石窟艺术文化发展的最高峰。其中，敦煌莫高窟是世界上现存规模最大、延续时间最长、内容最丰富、保存最完整的佛教艺术宝库，麦积山石窟享有“东方雕塑馆”之称，天梯山石窟亦被誉为中国“石窟鼻祖”。根据甘肃省石窟寺专项调查结果显示（截至 2021 年 12 月），甘肃省现有县级以上石窟寺文物保护单位（含摩崖造像）128 处（145 个文物点），包括世界文化遗产 3 处，全国重点文物保护单位 18 处（34 个文物点），省级文物保护单位 14 处（15 个文物点），市县级文物保护单位 96 处，这些石窟寺主要分布在除甘南州以外的 13 个市州、53 个县区。此外还有尚未定级的石窟寺 91 处。

甘肃石窟寺丰富多样，分布有不同时代、不同地域的各种类型，其规模大小不一，但它们有许多相同的属性并面临相似的挑战，适合采用一种统一的方法对它们进行规范的保护和管理：

——石窟寺开凿的年代范围约为公元 4 至 19 世纪初叶，甘肃黄河流域东部的部分石窟开凿于明代（1368 年—1644 年）。

——石窟寺几乎全部坐落于河流或绿洲旁的崖壁之上，且大多保存有壁画和塑像。

——石窟寺壁画和塑像反映了佛教，以及包括道教、儒教在内的中国传统文化信仰，展现了 1600 多年间不同时代、不同地域内的艺术形式。

——石窟寺都面临着与赋存的岩体、环境（甘肃西部为沙漠，东部为森林和高山）有关的生态、自然灾害等问题。

——较为重要的石窟寺管理机构有足够的专业人员进行全面的保护、研究、管理等相关工作，而多数小型或级别较低的石窟寺在人才队伍和专业知识方面面临显著困境。

——各石窟寺展示利用水平不平衡。规模较大的石窟寺游客超负荷，对文物安全造成一定隐患；而规模较小的石窟寺却鲜有游客，收入堪忧。

——少数石窟寺至今仍为宗教场所，且缺乏严格的管理，这些宗教活动会对石窟寺带来一些无法预知的负面影响。

近年来，国家和甘肃省认识到石窟寺的保护、开放面临着更严峻的挑战，越来越重视石窟寺保护、利用。从 2002 年至今，甘肃省陆续颁布了《甘肃敦煌莫高窟保护条例》《甘肃炳灵寺石窟保护条例》《甘肃省麦积山石窟保护管理办法》《榆林窟保护管理办法》等石窟寺保护法规；国家和甘肃省针对石窟寺，分别下发了《国务院办公厅关于加强石窟寺保护利用工作的指导意见》《甘肃省人民政府办公厅关于加强石窟寺保护利用工作的实施意见》，进一

步加大了石窟寺保护、利用工作的力度，提出了总体目标和具体任务。

2002 年，在中国文物保护法规体系的框架下，以《中华人民共和国文物保护法》和相关法规为基础，参照相关国际原则，国际古迹遗址理事会中国国家委员会与国际机构合作，编制了《中国文物古迹保护准则》，并于 2015 年进行了修订。这是国家第一部文物保护领域的行业规范。《准则》颁布实施以来，广为中国文物保护工作者接受，《准则》的主要原则和精神也在中国文物主管部门公布的相关法规中得到了越来越多的体现。

2003 年开始，甘肃省文物局组织敦煌研究院、麦积山石窟艺术研究所等单位，开展“甘肃中小石窟调查项目”，对省内石窟寺进行了持续十几年的调查，全面了解了甘肃石窟寺保存内容和现状，并对相关信息进行了更新。2020 年，国家文物局组织了一次全国性的石窟寺调查，旨在全面掌握石窟寺的保护管理状况，系统分析石窟寺保护形势，为科学制定保护政策和中长期规划奠定重要基础。

2016 年 8 月，甘肃省人民政府将天水麦积山石窟、永靖炳灵寺石窟、庆阳北石窟寺整建制划归敦煌研究院管理，敦煌研究院有了运用区域性石窟寺管理方法的需求，同时也能对作为石窟大省的甘肃文物主管部门的宏观管理起到有力支撑作用。2017 年 9 月，敦煌研究院和盖蒂保护研究所（GCI）联合中国古迹遗址保护协会，对来自甘肃 32 个不同类型遗产地的专业人员，以《中国文物古迹保护准则》为主要内容举办了为期 5 天的培训班。培训班成员讨论并形成共识，认为甘肃省石窟寺遗产将会受益于全方位、系统性的保护管理模式，也认识到目前各石窟寺保护、利用和管理水平参差不齐，莫高窟的保护和管理已达到世界水平，不仅成为其他石窟寺的典范，也可以为其提供相应的帮助。

鉴于上述原因，针对甘肃石窟寺存在问题、保护管理实际和进一步发展需求，制定一部符合国家及甘肃省法规、与《中国文物古迹保护准则》原则相一致、符合文化遗产地保护与管理要求和过程的“甘肃省石窟寺保护管理导则”非常有意义且十分必要。“导则”与《中国文物古迹保护准则》结合使用，可以作为我省石窟寺的保护、研究、利用、管理的一个指导性文件，特别是针对那些各类资源与专业人员都较为缺乏的石窟寺。

《甘肃省石窟寺保护管理导则》的实施，对做好甘肃省石窟寺保护工作，提升甘肃省石窟寺保护利用的综合水平和影响力，进一步巩固和扩大甘肃省在石窟寺价值研究、考古研究、科技保护、人才培养、展示利用等方面的优势具有重要作用，对于甘肃文化大省建设及高质量打造“一带一路”文化制高点也具有重大现实意义。

甘肃省石窟寺的历史与文化背景

甘肃位于中国的西北，地形呈西北至东南走向，西接新疆哈密，东南与陕西渭河平原和

四川盆地相连。境内石窟寺历史延续时间长、文化形态多样、内容丰富多彩，加之各石窟寺分布区域跨度大、极为分散，地理环境复杂多样，多处在人烟稀少或山野之地。这些现实因素都对石窟寺的保护、研究、利用、管理等工作提出了新要求、新内容、新方向。

历史概述

甘肃历史悠久。在旧、新石器时期，古人类就在此创造出了辉煌的史前文化艺术，如大地湾、马家窑文化等等。先秦时期，甘肃东部与中原等地区的先民更是共同开创了早期中原文化。及至秦汉时期，甘肃全境已与中原融为一体。

西汉前期，汉武帝“列四郡，据两关”，以此而“断匈奴右臂”。先于公元前 121 年设置了酒泉、武威二郡，后于公元前 111 年又从两郡中分出张掖、敦煌二郡，从而形成了历史上“河西四郡”的战略格局。与此同时，汉武帝曾两次派遣张骞“凿空西域”，逐渐形成了以汉首都长安经河西走廊而通向中亚、西亚的古代交通要道——“丝绸之路”。随着汉朝政治与经济的发展，中国与西域诸国的经济文化交流极为密切，中国文化经由丝绸之路向西传播，西方文明也经此进入中国。而敦煌作为甘肃最西端连接河西与西域的第一座城市，一度“总凑敦煌，是其咽喉之地”（《隋书·裴矩传》），并因此成为了名副其实的“华、戎所交，一都会也”（《水经注疏·卷二》）。发现的简牍、文书和艺术品，都反映出汉唐之际敦煌文化的繁盛。

两汉之际（公元前后）佛教经西域传入中国。汉末魏晋时期（3—4 世纪），战火纷飞，政权更迭频繁，佛教乘机得以蓬勃发展。河西与西域接近，是我国最早接触佛教的地区之一。在佛教传入初期，沿着丝绸之路来往于西域和中原的高僧们常常在敦煌、凉州等地驻足，他们直接或间接地影响和推动了本土佛教的发展。佛教的繁荣，使敦煌、凉州等地成为当时颇具影响的重镇。

尤其是十六国至魏晋南北朝时期，北方政权的统治者大多笃信佛教，在他们的大力倡导下，各地不惜耗费巨资兴建寺院、修建石窟。敦煌也在前秦建元二年（366 年）开始了营建石窟（见“甘肃省历史年表”），东阳王元荣、建平公于义都在莫高窟开凿了大窟。在凉州，北凉统治者沮渠蒙逊在城东南开凿了“凉州石窟”（可能为天梯山石窟），造丈六佛像。同一时期，凉州附近的张掖马蹄寺石窟、酒泉文殊山石窟也相继开凿。北魏灭北凉后，凉州石窟的开凿者及当地高僧被北魏统治者接至首都平城（今山西大同）继续营建石窟，其中北凉著名高僧昙曜曾主持修建云冈石窟，深受凉州佛教影响。甘肃中部的永靖炳灵寺石窟中，存有西秦建弘元年（420 年）题记，据研究，现存其中的壁画塑像极有可能还早于 420 年。在甘肃东部的天水，著名高僧玄高曾在西秦统治下的麦积山隐居，并于此前后在麦积山开始营

建石窟。北魏以后，崇佛之风风靡全国，永平二年（509 年），泾州刺史奚康生又开凿了南、北石窟寺。在此前后，陇东平凉泾川县的王母宫石窟和华亭市的石拱寺石窟，以及天水武山县的拉梢寺石窟等，也开始相继营建。而在十六国时期已经形成规模的石窟寺也在此前基础上不断地扩建发展。这些都说明，甘肃各地石窟寺的营建不仅时间早、分布区域广，而且与各时期的政治人物等都有着密切关系。因此，可以说甘肃石窟寺是研究中国古代政治、经济、文化、艺术、社会生活等方方面面的重要历史资料，具有极高的历史、文化、艺术、科技和社会等方面的研究价值。

石窟源流

佛教于公元前 6 世纪诞生于古印度，创立之后，在印度不断发展演变，至公元前 3 世纪的孔雀王朝时代，达到极盛，开始从印度向周边其他国家传播。公元前 1 世纪时，佛教已经中亚传入我国于阗一带。约公元 1 世纪前后，佛教传入中国。佛教初传中国之时，受到了本土儒、道思想的强烈抵抗，但经过短暂争持后，佛、道、儒三教逐渐“汇通”融合，最终形成完全中国化的佛教体系。

石窟艺术随佛教传入中国，但向中国传播路径变多，加之传入地本土文化的注入，中国各地的石窟艺术呈现出风格多样的特点。甘肃佛教主要经陆路丝绸之路传入，故早期石窟中主要呈现出印度式和西域式的特征。如模仿印度毗诃罗窟的禅窟（莫高窟 268 窟、285 窟及文殊山后山禅窟等）、西域龟兹式的大像窟（仅出现于马蹄寺千佛洞），而这两种石窟形式只出现在河西石窟中，中原石窟并未出现。在敦煌北凉壁画与炳灵寺石窟早期壁画中，既可以看到西域式的表现手法，又可以看到魏晋以来中国式的绘画特征。

而当石窟艺术在全国各地发展成熟之后，随着中原文化的巨大影响，中原式的石窟艺术又反传到了甘肃等西部地区。特别是隋唐之际，国家的统一和强盛，大大促进了石窟艺术在全国的发展，以首都长安为中心的佛教雕塑和壁画艺术很快就传播到各地，甘肃的石窟艺术中也出现了与中原一致的新风格。所以，在当今中国唐代佛教寺院雕塑与壁画保存极少的情况下，甘肃石窟壁画和彩塑就具有十分重要的意义。

从唐末五代开始，由于地方政权割据称雄，甘肃大部地区特别是河西地区与中原王朝的联系时断时续，使得石窟文化的交流也随之减少，石窟的发展趋向缓慢与保守。及至西夏和元代，甘肃开凿的石窟或重绘的壁画，反映出既不同于以前各代，又与当时内地或南方迥异的新风格，这种现象既与甘肃佛教吸收新的民族艺术有关，更和吸纳藏传佛教新风格的关系密不可分。但总体来看，甘肃石窟的繁盛景象一去不返，逐渐走向了没落之路。

明清时期，在中央大一统的政治背景下，各地石窟艺术开始向趋同化的方向发展。有明

一代，甘肃各地开凿的石窟较少，且内容不多。清朝统治者出于政治需要，一度大力发展藏传佛教，故这一时期甘肃石窟寺与藏传佛教有关，同时也出现了一些表现道教及民间信仰的石窟寺，这些新内容成为当时甘肃石窟寺的基本特点。

石窟概貌

石窟寺在甘肃各地分布较广，并以此形成了甘肃传统文化的一大特色。虽然甘肃石窟寺丰富多样，分布时代、地域不同，规模大小不一，但它们在很多方面有着高度的一致性和相似性。根据甘肃石窟寺分布的地理位置，大体可分为河西敦煌、河西凉州、陇中、陇南和陇东五大区域（见附录 1 和附录 4.2）。在古代河陇文化的发展史上，每个区域之间既相互关联，又有着自身的特点，这些特点共同构成了丰富多彩的甘肃石窟文化内涵。

1. 河西区域石窟

自汉代设立河西四郡以来，河西地区就成为中国西北的要冲，到魏晋时期，已形成了深厚的汉文化基础。因地接西域（在当时包含新疆及其以西的地方），河西地区是佛教在中国最早建立的区域。在魏晋时期中原纷争之时，河西一带保持了较长时间的稳定，成为甘肃石窟开凿最早的地区。隋唐以后，随着佛教的持续发展，河西地区以敦煌为中心，佛教石窟的营建更加繁荣。晚唐五代到北宋，张氏、曹氏归义军政权控制了以瓜、沙二州为中心的地区，使之保持政治稳定、经济发展之势。同时，归义军政权十分崇佛，在莫高窟、榆林窟修建了众多的石窟。此后，西夏、元、明、清时代，河西各地或兴建寺院和石窟，或重修重绘前代洞窟。

河西区域石窟[①]可分为两个部分：一是敦煌区域石窟，二是凉州区域石窟。

敦煌区域石窟主要包括今敦煌市的莫高窟、西千佛洞，肃北县的五个庙石窟，瓜州县的榆林窟、东千佛洞、下洞子石窟，玉门市的昌马石窟等。这些石窟都属于古敦煌文化圈，皆以莫高窟为中心，延续时代最长，现存数量最多，又位于东西方文化交流的要道，反映了不同时代中外文化交流形成的丰富的文化内涵。其中，莫高窟创建于前秦建元二年（366 年），历经北凉、北魏、西魏、北周、隋、唐、五代、宋、西夏、元等十个朝代 1000 多年连续不断地营建，至今保存有 735 个洞窟，壁画 45000 平方米，彩塑 2000 余身，是中国乃至世界上保存洞窟最多、延续时间最长、内容最丰富、艺术最精湛的佛教石窟群。敦煌石窟的特点在于不论洞窟形制还是彩塑、壁画内容都保存较为完好，反映出一千年间完整的石窟艺术

① 河西地区西部的敦煌、瓜州，851—906 年由归义军政权统治，906—914 年为西汉金山国统治，914—1028 年恢复归义军政权统治，1028—1037 年由沙州回鹘统治。

发展史。敦煌彩塑制作精美，个性突出，壁画更是内容丰富，魅力无穷。敦煌早期壁画以厚重的色彩渲染出浓烈的宗教气氛，叙事性的故事画引人入胜，菩萨及飞天的形象反映着来自西域和中原的不同风格。唐代以后流行的大型经变画则体现了中国式佛教艺术的成熟，以宏大的场面、众多的人物，富有深度的空间来表现华丽美妙的西方极乐世界，这是佛教的产生地印度不曾有过的表现形式，反映了中国人的审美情趣。各时代供养人的画像，表现出不同时代的真实人物形象，这对于我们了解和研究古代肖像画艺术、古代服饰艺术等都具有十分重要的意义。

凉州区域石窟主要包括武威天梯山石窟，张掖金塔寺石窟、马蹄寺石窟、文殊山石窟、童子寺石窟等，是甘肃省现存时代较早的几组石窟群。其中，天梯山石窟可能为史上所载“凉州石窟”，与历史上沮渠蒙逊家族所开的石窟相吻合。现存最早的石窟大约为北凉时代所建，大部分也在北魏时期建成，其造像特点基本都体现出在西域佛教艺术影响下最初的佛教造像样式。由于“凉州石窟”对于云冈石窟的营建产生过重大影响，所以对于早期中国北方石窟的研究来说，河西石窟具有重大意义。同时，河西石窟区域中，还包括如肃南景耀寺石窟等一些清代石窟，这些具有浓重藏传佛教特点的清代石窟，代表了中国晚期民族地区佛教文化的最后辉煌。

2. 陇中区域石窟

陇中区域石窟主要包括永靖炳灵寺石窟，景泰五佛沿寺石窟，靖远县寺儿湾石窟、法泉寺石窟，以及白银红山寺石窟等。其中，炳灵寺石窟的第 169 窟开凿于西秦建弘元年（420 年），此窟利用天然洞穴开凿而成，是中国最早有明确纪年的石窟，而且窟中还有一些比建弘元年更早的壁画或彩塑，这些内容在一定程度上反映出中国佛教艺术最初状况，对于研究石窟艺术的源流诸问题具有重要意义。此外，炳灵寺石窟历经北朝（北魏、西魏、北周）、隋唐一直到明清，均有绘塑。部分洞窟还有石雕佛像，这是在河西石窟中较少见的。除了炳灵寺石窟之外，陇中石窟区域中的其他几处石窟古代的原作保存极少，现存大部分为近代（晚清）重修或重绘。这些石窟寺在很大程度上反映出石窟文化在这一地区持续发展、兴盛、衰落的历史面貌。

3. 陇南区域石窟

陇南区域石窟主要包括天水麦积山石窟，甘谷大像山石窟、华盖寺石窟，武山木梯寺石窟、水帘洞石窟群，西和县的八峰崖石窟等。其中以素有“东方雕塑馆”之称的麦积山石窟最具代表性，麦积山石窟最早营建于十六国时期，后经北魏、西魏、北周、隋、唐至宋、元、明、清各代不停营造，现存窟龛 211 个，各类造像达 7200 余尊，雕塑作品对于了解和研究北朝佛教艺术具有十分重要的意义。

武山水帘洞石窟群，包括拉梢寺、千佛洞、显圣池等处，多是利用天然洞穴制作的摩崖浮雕或壁画彩塑。特别是拉梢寺石窟，其中存有北周秦州大都督尉迟迥题记的巨型摩崖大佛浮雕，具有重要的历史价值和艺术价值。

4. 陇东区域石窟

陇东区域石窟主要包括庆阳北石窟寺、玉山寺石窟，泾川南石窟寺、王母宫石窟，合水保全寺石窟、张家沟门石窟、莲花寺石窟，镇原石空寺石窟，华亭石拱寺石窟，庄浪云崖寺石窟和陈家洞石窟等。陇东石窟区域中规模最大的当属庆阳北石窟寺石窟，北石窟寺现存窟龛共有 295 个，所属时代为北魏、西魏、北周、隋、唐到宋代，其中唐代开窟较多。其中，开凿于北魏永平二年（509 年）的第 165 窟规模最大，保存有体量宏大的七佛造像，窟中碑文显示，此窟为北魏泾州刺史奚康生所建。此外，陇东地区的石窟多为石雕造像，此与河西石窟主要为泥塑彩绘的情况有所区别。而且由于地理位置接近陕西，故大多与中原一带佛教石窟的形制有着密切的关系，对于研究中原石窟文化及其艺术风格演变等方面都有着重要的参考价值。

甘肃省历史年表

甘肃西部地区		时 间	甘肃东部地区		时 间
汉	西汉	前 206- 公元 8	汉	西汉	前 206- 公元 8
	新莽政权	8-25		新莽政权	8-25
	东汉	25-220		东汉	25-220
三国	魏	220-265	三国	魏	220-265
晋	西晋	265-316	晋	西晋	265-316
	东晋	317-320		东晋	317-320
十六国	前凉、前秦	320-385	十六国	前赵	319-329
				后赵	329-351
	后凉、北凉	385-400		前秦	351-385
	西凉、南凉、北凉	400-421		后秦、南凉、西秦	385-415
	北凉	421-439		西秦、仇池、大夏	415-426
南北朝	北魏	439-534		大夏	426-431
			南北朝	北魏	431-534
	西魏	535-557		西魏	535-557
	北周	557-581		北周	557-581
隋		581-618	隋		581-618
唐	唐	618-764	唐	唐	618-763
	吐蕃	764 -851		吐蕃	763-851
	唐	851-907		唐	851-907
五代	后梁、甘州回鹘	907-923	五代	后梁	907-923
	后唐、甘州回鹘	923-936		后唐、后蜀	923-936
	后晋、甘州回鹘	936-946		后晋、后蜀	936-946
	后汉、甘州回鹘	946-948		后汉、后蜀	946-948
	后周、甘州回鹘	948-960		后周、后蜀	948-960
宋	北宋、甘州回鹘	960-1036	宋	北宋、西夏	960-1127
	西夏	1036-1227		南宋、西夏、金	1127-1214
元		1227-1368		西夏、金	1214-1235
		元		1235-1368	
明	明、蒙古部落	1368-1644	明		1368-1644
清		1644-1912	清		1644-1912
中华民国		1912-1949	中华民国		1912-1949
中华人民共和国		1949-	中华人民共和国		1949-

1. 河西——敦煌区域石窟和凉州区域石窟

河西敦煌区域石窟位于河西走廊西端的干旱荒漠地区，这里的石窟寺多建于党河、疏勒河流经的绿洲河谷沿岸两侧之上。主要有敦煌莫高窟、西千佛洞，瓜州榆林窟，肃北五个庙，玉门昌马石窟等遗址。以世界文化遗产——莫高窟为代表的敦煌石窟开凿时代较早、时间跨度最长、数量最多、价值最高、内容最丰富，其内容反映出中国封建社会的政治、经济和文化状况，是中国古代美术史的光辉篇章，为中国古代史研究提供了珍贵的形象史料。这个区域共分布有 10 处石窟寺文物保护单位。

莫高窟

西千佛洞

五个庙石窟

昌马石窟

榆林窟

河西敦煌区域石窟——壁画与雕塑




莫高窟



榆林窟


五个庙石窟

昌马石窟

河西凉州区域石窟位于河西走廊的中段。这一区域内的石窟寺多建于祁连山腰间的河谷两岸之上，地理位置、环境都极为独特。这一区域内的石窟寺开凿时代较早，遗址数量可观，可惜现存壁画、塑像数量不多，但内容却较为丰富、风格多样。尤其是天梯山石窟第1、4窟中心塔柱露出的北凉至明代各时期的壁画，几乎完整地反映了河西佛教石窟文化发展的时代历程。此区域内共分布有20处石窟寺文物保护单位。

天梯山石窟与窟前水库

天梯山石窟

马蹄寺石窟地区景观

马蹄寺石窟（三十三天洞窟）

天梯山石窟（金塔寺）

天梯山石窟（千佛洞）

河西区域凉州石窟——壁画与雕塑

天梯山石窟

天梯山石窟

马蹄寺石窟群之金塔寺石窟西窟

文殊山石窟

马蹄寺石窟群之北寺藏佛洞

马蹄寺石窟群之千佛洞第 4 窟

马蹄寺石窟群之金塔寺石窟东窟

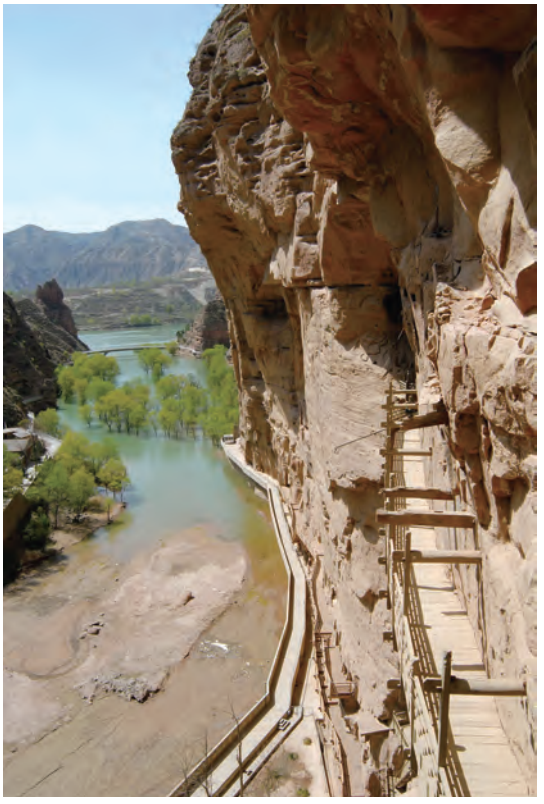
2. 陇中区域石窟

陇中区域石窟主要指散布在兰州周边的，位于黄河及其支流河岸两侧的石窟寺，主要以永靖炳灵寺石窟为代表，其余石窟寺原作保存极少。此区域内共分布有 19 处石窟寺文物保护单位。

炳灵寺石窟

寺儿湾石窟

五佛沿寺石窟

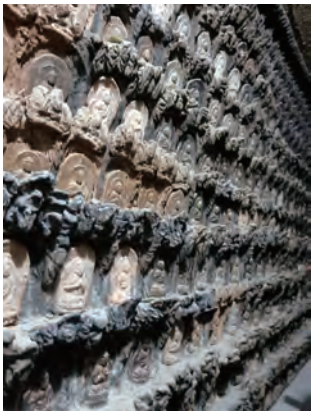


炳灵寺石窟

法泉寺石窟

陇中区域石窟——壁画与雕塑

炳灵寺石窟



五佛沿寺石窟

寺儿湾石窟

3. 陇南区域石窟

陇南区域石窟主要分布于甘肃东南部秦岭西端的山脉森林间，主要为甘肃天水和陇南两区域内石窟寺。此区域内石窟寺时代跨度大、内容丰富、形式各异，尤以素有“东方彩塑馆”之称的世界文化遗产地麦积山石窟而闻名。此区域内分布有 34 处石窟寺文物保护单位。

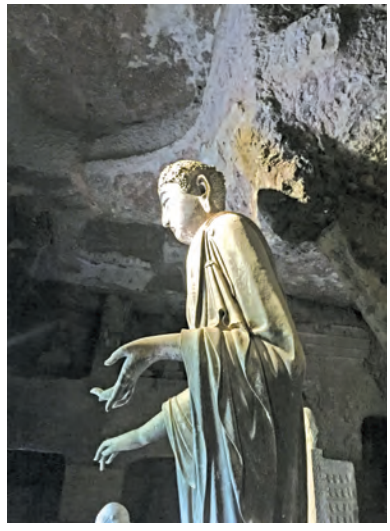
麦积山石窟

水帘洞－大像山石窟群之拉梢寺石窟

大像山石窟

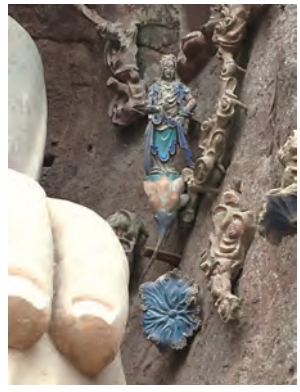
木梯寺石窟

陇南区域石窟——壁画与雕塑



麦积山石窟

水帘洞－大像山石窟群之拉梢寺石窟



大像山石窟

4. 陇东区域石窟

陇东区域石窟主要指位于甘肃最东端，包括庆阳、平凉两地区内的所有石窟寺。此区域内石窟寺多开凿于被黄土高原所覆盖的砂岩层上，且全部建于黄土高原河流和沟渠两岸之上。此区域内石窟寺丰富，但保存状况较差。此区域内共分布有 45 处石窟寺文物保护单位。

北石窟寺

王母宫石窟

石空寺石窟

南石窟寺

云崖寺石窟

陇东区域石窟——壁画与雕塑




北石窟寺



云崖寺石窟

石空寺石窟

南石窟寺

第二章　石窟寺保护管理基本要求

本章封面图片：莫高窟世界文化遗产标志碑

《中华人民共和国文物保护法》第 26 条：

各级文物保护单位，分别由省、自治区、直辖市人民政府和设区的市级、县级人民政府划定公布必要的保护范围，作出标志说明，建立记录档案，并区别情况分别设置专门机构或者专人负责管理。全国重点文物保护单位的保护范围和记录档案，由省、自治区、直辖市人民政府文物行政部门报国务院文物行政部门备案。

《中国文物古迹保护准则》第 19 条：

确定文物古迹的保护等级：文物古迹根据其价值实行分级管理。价值评估是确定文物古迹保护等级的依据。各级政府应根据文物古迹的价值及时公布文物保护单位名单。公布为保护单位的文物古迹应落实保护范围，建立说明标志，完善记录档案，设置专门机构或专人负责管理。保护范围以外应划定建设控制地带，以缓解周边建设或生产活动对文物古迹造成的威胁。

简介

依据《中华人民共和国文物保护法》和《中国文物古迹保护准则》，以及相关法律法规（见附录 3）要求，对甘肃省内的世界文化遗产，国家、省、市县级的石窟寺，提出保护与管理的基本标准或要求。后续的章节分别详述与石窟文物有关的保护、研究、管理、利用应关注的要点、过程与程序。

石窟寺保护管理基本要求如下：

- 各级石窟寺类文物保护单位应遵照《中华人民共和国文物保护法》第 26 条和《中国文物古迹保护准则》第 19 条的要求实现“四有”。
- 制定保护总体规划并按照规划或评估结论，分轻重缓急，按步骤实施保护、研究、弘扬、管理工作。
- 进行定期监测和日常维护。
- 石窟寺应有必要的安全设施、管理制度、工作人员。
- 具备开放条件的应有游客安全和防范措施。
- 文物保护项目的勘察、设计、实施、评估，必须遵循国家和甘肃省文物保护工程管理办法相关要求和程序。
- 县级及以上人民政府应当将文物保护纳入本地区国民经济和社会发展规划。将文物保护所需经费列入同级财政预算，确保石窟寺开展考古调查、安防、保护、修缮与日常维护，以及收藏、展示的基本需求。
- 管理机构应充分认识到石窟寺有可能被当地社区与游客作为宗教活动场所使用，或过

度商业化。不能因石窟寺内的宗教活动、旅游开发、商业行为、游客行为对石窟寺价值造成负面影响。在遵照国家、甘肃省有关文物保护管理与使用的法律法规的前提下，采取对各方有益的适当方式实现合理利用。

•如有需要，石窟寺管理机构应寻求专业机构或更高级别文物保护单位管理机构的帮助。

不同级别石窟寺保护管理基本要求

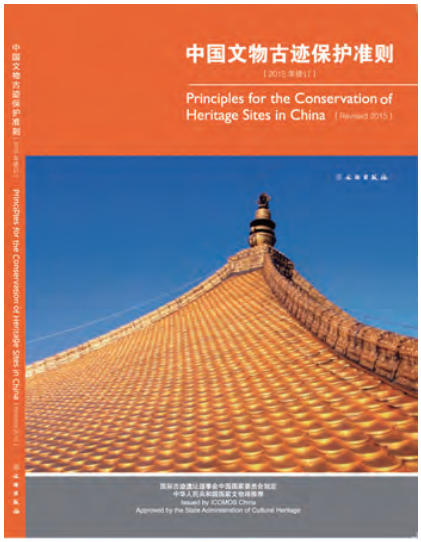
除了上述要求之外，下表针对各级别石窟寺在管理、保护、利用等方面提出了细化要求。石窟寺保护等级越高，相关要求也越严格。世界文化遗产的石窟寺是最重要的遗址，因此必须受到密切的关注，以确保它们的所有价值得到保护。较高一级别石窟寺的基本要求可以作为下一级别石窟寺提升的标准，全国重点文物保护单位的石窟寺应努力达到世界文化遗产的标准，省级和县级文物保护单位石窟寺应对照这些标准以争取更高的地位。同时，各等级石窟寺要注重管理、保护、研究、利用等各方面工作平衡发展。

世界文化遗产	全国重点文物保护单位	省级文物保护单位	市 / 县级文物保护单位（含未定级）
管理机构要求			
•石窟寺管理机构设置管理、保护、研究、利用等多个部门，能够完全满足石窟寺相关业务工作需求并熟悉世界遗产相关的法规章程。	•石窟寺管理机构设置管理、保护、研究、利用等多个部门，能够满足石窟寺大部分业务工作需求。	•石窟寺管理机构设置管理部门，能够满足石窟寺基本工作需求。	•设立专管机构或确定安全管理直接责任单位。
•具有开展系统的研究、保护修复、利用与管理的多学科专业人员。	•具有开展基本的研究、保护修复、利用与管理的专业人员。	•具有处理保护修复、利用与管理等日常工作的专业人员。	•具有处理日常事务的工作人员。
•制定总体规划并定期评估。	•制定总体规划并定期评估。	•制定总体规划并定期评估。	•对保护和安全风险进行评估。
•有针对盗抢、火灾、洪水、地震、极端天气、突发事件等的完整综合预案体系和应急处置能力。	•有针对盗抢、火灾、洪水、地震、极端天气、突发事件等的完整综合预案体系和应急处置能力。	•有针对盗抢、火灾、洪水、地震、极端天气、突发事件等的专项应急预案。	•有针对盗抢、火灾、洪水、地震、极端天气、突发事件等的现场处置预案。

世界文化遗产	全国重点文物保护单位	省级文物保护单位	市 / 县级文物保护单位（含未定级）
保护要求			
•具备开展保护研究和文物本体修复能力，各项工作符合世界文化遗产保护管理相关要求。	•具备开展保护和文物本体修复的基本能力，各项工作符合全国重点文物保护单位保护管理相关要求。	•具备开展日常维护保养能力，各项工作符合省级文物保护单位保护管理相关要求。	•具备开展基本日常维护保养能力，各项工作符合市县级文物保护单位保护管理相关要求。
•充分认识石窟寺各类劣化现象和面临的威胁，并能有效处置，及时消除各类隐患。	•依托专业机构，研究各类劣化现象、评估面临的威胁，并能有效处置，及时消除各类隐患。	•依托专业机构，能消除影响石窟寺的紧急问题。	•依托专业机构，能消除影响石窟寺的紧急问题。
•拥有能够监测、记录石窟寺各类风险因素的预防性保护系统。.	•建立能够监测、记录石窟寺主要风险因素的相关制度和日常工作规范。	•建立能够监测、记录石窟寺主要风险因素的相关制度和日常工作规范。	•建立定期巡查制度和日常工作规范。
•具有开展文物数字化采集的能力。	•依托专业机构，有序开展文物数字化工作。	•依托专业机构，有序开展文物数字化工作。	•定期开展重要文物现状数字照片记录。
•开展考古调查、价值阐释、艺术研究和成果普及等工作。	•开展考古调查、价值阐释、艺术研究和成果普及等工作。	•制定在重点保护区内调查重要考古区域的工作计划。	•依托专业学术机构，有序开展考古调查，推进相关研究工作。
•开展国际合作研究，定期举办学术交流活动。	•根据条件开展国内外合作研究，举办学术交流活动。	•与国内机构合作开展研究，参与学术交流活动。	
游客管理要求			
•具有科学的游客管理系统，保证石窟寺安全及提供良好的旅游体验度。	•足以保证石窟寺安全及提供良好的旅游体验度。	•管理游客并足以保证石窟寺安全。	•管理游客并足以保证石窟寺安全。
•根据科学数据和游客调查结果建立游客承载量。	•根据科学数据和游客调查结果建立游客承载量。		
•根据合理的研究成果，使用多种方法阐释石窟寺的价值并且用以支撑合乎国际标准的展陈。	•根据合理的研究成果来阐释石窟寺的价值并且用以支撑高品质的展陈。	•提供基本而全面的信息并展陈石窟寺及其价值。	•利用简单的方法提供有关石窟寺及其价值的基本信息。
•有训练有素的讲解员可以流利使用数种主要语言。	•训练良好的讲解员可以使用英语。	•有讲解员为游客提供讲解服务。	•管理人员或看管人员有能力提供石窟寺的基本知识。
•合乎国际（世界遗产）标准、满足游客参观的多功能游客中心及其他游客服务基础设施。	•根据游客人数与国家的要求，设立接待与服务区，及其他游客服务基础设施，满足参观要求。	•根据游客人数设立接待区及基本的游客服务基础设施。	

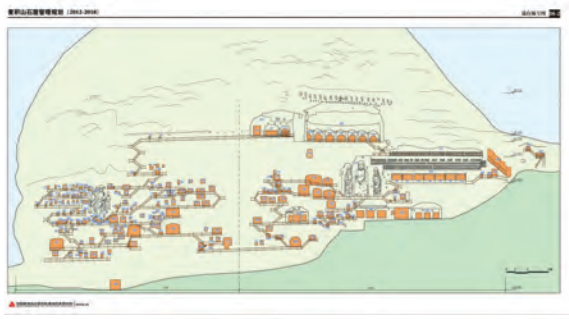
世界文化遗产	全国重点文物保护单位	省级文物保护单位	市 / 县级文物保护单位（含未定级）
•高品质、设计良好的指示牌、通道、栏杆、长椅、垃圾容器和其他与游客服务有关的一切设施。	•高品质、设计良好的指示牌、通道、栏杆、长椅、垃圾容器和其他与游客服务有关的设施。	•充足的解说牌和必要的游客服务相关设施。	
档案管理要求			
•设置专门的档案管理部门。	•具备档案管理职能。	•具备档案管理职能。	
•建立完整的石窟寺档案系统，包括遗产清单、各时期影像文字资料和图纸、保护工程、干预记录、研究文献等。	•建立石窟寺档案系统，包括遗产清单、各时期影像文字资料和图纸、保护工程、干预记录、研究文献等。	•收集基本的石窟寺相关信息资料，包括遗产清单、各时期影像文字资料和图纸、保护工程、干预记录、研究文献等。	•有机构或管理办公室，负责收集包括遗产清单在内的石窟基本信息和相关干预、研究记录。
•建立数字档案管理系统，分类收集存储数字化资源。	•符合国家保存和利用标准，有单位及专人管理与石窟寺有关的档案资料。	•有与石窟寺有关的档案资料，有档案管理系统。	
•档案管理符合国家相关规范和标准。	•档案管理符合国家相关规范和标准。	•档案管理符合国家相关规范和标准。	
基础设施要求			
•应当具有开展各项业务工作的办公用房和基础设施。	•应当具有开展基本业务工作的办公用房和基础设施。	•应当具有满足基本工作需要的办公用房和基础条件。	•具有满足基本工作必要的办公用房和基础条件。
•基础设施质量符合国家相关建设标准或规范。	•基础设施质量符合国家相关建设标准或规范。	•基础设施质量符合国家相关建设标准或规范。	•基础设施质量符合国家相关建设标准或规范。
•新建基础设施符合总体规划要求，对石窟寺景观有最小的视觉影响、外观与景观环境协调。	•新建基础设施符合总体规划要求，对石窟寺景观有最小的视觉影响、外观与景观环境协调。	•新建基础设施符合总体规划要求，对石窟寺景观有最小的视觉影响、外观与景观环境协调。	•新建基础设施符合总体规划要求，对石窟寺景观有最小的视觉影响、外观与景观环境协调。
•新建基础设施应开展考古调查。	•新建基础设施应开展考古调查。	•新建基础设施应开展考古调查。	•新建基础设施应开展考古调查。

石窟寺保护管理的基本要求

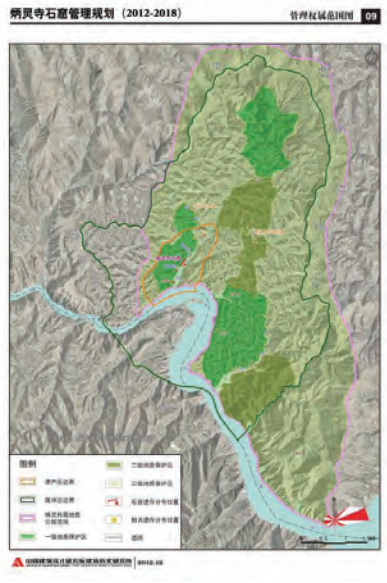


《中国文物古迹保护准则》为本导则提供了依据。

《中华人民共和国文物保护法》第 26 条“四有”规定之一是在遗产地竖立标志碑，宣告该遗址为官方保护。



全国重点和省级石窟寺文物保护单位的一个基本要求是总体规划，规划包括对遗址的价值、目标、威胁和状况的描述，以及基础档案记录和遗产地的本体保护规划，如本页所示的莫高窟、麦积山和炳灵寺等石窟寺总体规划。



第三章　规划程序

本章封面图片：敦煌市附近党河边上的西千佛洞石窟

《中国文物古迹保护准则》第 16 条：

阐释：文物古迹的保护和管理涉及到多个可能的学科领域，是一项复杂的系统性工作，必须符合相关法律与技术规范，不得对文物古迹造成损害。文物古迹保护和管理工作程序是保证文物古迹保护依法合规，技术上具有可行性和合理性，能够有效保护文物古迹的基本保障。

简介

规划程序是对石窟寺的保护、管理和利用做出决策的一种手段。妥善保管遗产地是管理人员和保护专家面临的重大挑战。由于被忽视和暴露在自然环境中，长期存在的威胁对石窟寺产生的影响已持续了几十年，更有甚者已持续了数个世纪之久。当劣化机理尚未明确，且未能采取恰当的预防、修复和管理方法时，这些威胁将持续影响遗产地。长期使用不恰当或具有破坏性的方法和材料可能会导致进一步的损害。

近几十年来，新出现的压力和挑战威胁着石窟寺。这些新的挑战来自于对石窟寺的多样化利用，特别是旅游业的发展和宗教活动的开展，以及经济的快速发展。

解决这些问题需要一个方法论的过程。该过程用于制定总体规划，这是所有国家和省级石窟寺文物保护单位的要求。如今，一个有效的遗址保护和管理规划应遵循国家和甘肃省的法律、法规和政策文件（参见附录 3），如国务院办公厅《关于加强石窟寺保护利用工作的指导意见》、甘肃省政府《关于加强石窟寺保护利用工作的实施意见》等，以及《中国文物古迹保护准则》和国际实践。

制定规划的过程对石窟寺管理者来说非常重要。制定规划时，管理者必须与遗址工作人员一起完成这个程序，查找档案记录中的不足，收集所需要的信息，明确阐释石窟寺的重要性，对问题进行评估，并就未来如何以最好的方式保存石窟寺做出决策、制定规划。

制定良好决策的前提是充分并正确掌握石窟寺的信息，以及对石窟寺重要性的全面了解。掌握的信息有限或有误、或对意义缺乏全面了解，将导致决策失误。保护程序是一系列的步骤，每个步骤都是下一个步骤的基础，以确保作出正确的决策。

规划程序流程表

规划程序步骤如下。每一个步骤都列出了关键问题，这些问题有助于石窟寺工作人员和其他人员就石窟寺的需求展开讨论。

步骤 1：调查及收集信息

- 石窟寺的信息资源有哪些？来源于何处？
- 是否完成石窟寺的遗产清单？
- 是否绘制了石窟寺地图？
- 是否收集了有关石窟寺（文字和影像）的档案记录？
- 是否完成了近代（清代之后）对石窟寺的干预及事件（挖掘、保护、利用）的记录？

步骤 2：评估与分析

2.1 价值与重要性	2.2 现状与威胁	2.3 管理条件
• 石窟寺为何重要？ • 石窟寺有哪些价值？ • 谁珍惜这些价值？ • 石窟寺带来了什么利益？ • 在对石窟寺的了解研究方面有哪些缺失？	• 遗产地及其洞窟状况如何？ • 石窟寺面临什么威胁？ • 劣化机理是什么？速度如何？	• 是否实现“四有”？ • 法定条件和财务状况如何？ • 影响石窟寺的社会、政治与经济的因素有哪些？ • 石窟寺可持续利用的机遇和限制条件有哪些？ • 有哪些主要的利益相关者？

步骤 3 作出决策

3.1 确定目标及适当的保护与管理方式

- 考虑石窟寺的现状及管理条件，保存石窟寺价值的最好方式是什么？

3.2 制定策略

- 将采取哪些措施来实现目标并保存石窟寺及其价值？
- 如果实施这些策略需要进行重大项目立项，要成立专家组进行审核并提出建议。
- 在很多情况下，需要对材料和方法进行检验和评估。

步骤 4 实施策略

4.1 编制计划并实施

- 为每个策略制定详细的计划，使工作人员、各级管理者和专家都能够清楚地看到流程和预期结果。

4.2 监测和评估结果

- 制定一项评估和监测结果的计划。
- 定期修订计划。

规划程序主要步骤

步骤 1　调查及收集信息

对石窟寺的保护和管理做出决策和制订计划，首先要调查和收集有关石窟寺及其附属文物的相关信息。这一步骤对所有级别石窟寺的工作决策都很重要。它是步骤 2 中进行评估以及对石窟寺进行更深入研究的基础，这将在第六章中进行讨论。

- 对于那些开始进行总体规划编制或修订总体规划的石窟寺，调查和收集信息尤为重要。
- 作出决策前，有必要收集信息以评估规划中的重大干预措施。

•对于在规划和管理方面进展顺利的石窟寺，步骤 1 为工作人员提供了一个更新、汇总石窟寺有关艺术、历史、保护、地质、周边地区和环境等方面信息的机会。

•对于在管理方面相对比较滞后的石窟寺，步骤 1 是着手进行或者更新单个洞窟和石窟寺附属文物清单的机会，并考虑对石窟寺进行测绘、建立摄影档案和记录其现代历史的必要性。

步骤 2　评估与分析

评估与分析是对石窟寺做出各项工作决策中最重要的步骤。评估程序主要包含三个方面：重要性、现状、管理（包括“四有”）。它们都很重要而且相互关联。

步骤 2.1　评估价值和重要性

重要性评估是对石窟寺作出决策的主要依据。它要求：

•深入了解石窟寺的历史及其与该地区其它石窟寺和历史发展的关系；

•了解石窟寺及其周边景观和环境的艺术价值和美学价值；

•认识石窟寺在当今世界的社会价值，例如文化教育价值；

•清楚表达石窟寺的重要属性或特征，如壁画和塑像、洞窟建筑类型、景观中的文化特征（如舍利塔），与自然因素（如河流、树木、植物）。

步骤 1 所收集的信息以及历史研究是理解重要性的基础（历史研究将在第四章详细讨论）。

石窟寺的重要性源于其本身的价值。当今保护和管理石窟寺的最佳做法是保存遗产地的所有价值，而不是为了某一方面的价值而牺牲或贬低另一方面的价值。评估结果是对石窟寺的重要性做出阐述，需明确说明石窟寺为何重要以及石窟寺为何值得重视。

历史、艺术和科学价值

石窟寺的历史、艺术和科学价值往往相互关联，长期以来一直是古遗址的核心价值。因为古遗址是了解历史必不可少的信息和艺术创作宝库，它们的历史、艺术和科学价值对指导今天的决策至关重要。

作为丝绸之路沿线历史的见证，石窟寺讲述了佛教的传入、发展、实践及在当地不同朝代政治局势下衰落的历史，讲述了几个世纪以来的艺术实践和艺术风格，讲述了贸易商品和商贸网络、民族多样性以及记录在碑文和文献中的确切文字和思想等，例如莫高窟藏经洞（第 17 窟）出土的文献。

石窟寺的实物遗存与保存至今的古代文献一样，都是历史的见证，例如，莫高窟内的壁画除了是佛教图像之外，更是农耕、服饰、乐器、娱乐、战争、建筑等方面丰富的资料来源。

石窟寺也是中国与中亚等地思想、艺术传统和宗教实践等方面交流的信息来源。对石窟寺实物（如颜料、工艺品、贸易商品等）的科学调查，可以提供有关材料来源、加工、制作

和产地等信息。研究结果为我们了解当时的技术及中原与西域贸易往来的地理范围提供了新的视角。

石窟寺记录了古代塑像和壁画所具有的非凡创造力和艺术性。这些艺术品还展示了在材料使用方面的成就、独创性和技术进步，例如矿物颜料和有机颜料的使用，以及 1900 年在莫高窟第 17 窟（藏经洞）内发现的粉本和白画技艺。所有石窟寺都展示了洞窟的建造方式以及塑像和壁画的制作技术和工艺。

甘肃石窟寺对促成世界遗产名录“丝绸之路：长安—天山廊道的路网”的成功申报贡献卓著，这是中国最重要的文化遗产路线之一。

社会价值和文化价值

社会价值和文化价值的共同属性源自与当代社会的联系。当今社会，这些价值与人们如何利用这个遗产地有关，无论是用于研究、娱乐、教育、宗教活动，还是作为更大的社会凝聚力的表达，例如体现地区或民族自豪感。

石窟寺的教育价值在于向公众（通常是游客和当地民众）传递知识并让公众了解遗址的历史。

自 20 世纪人们重新认识到石窟寺的价值以来，石窟寺在为现代和当代艺术家提供创作灵感方面发挥了社会和教育作用。从 20 世纪 40 年代开始，临摹壁画并举办展览是向广大公众宣传石窟寺的主要方式，同时也是记录和研究古代工匠技艺的主要方法。

与石窟寺相关的非物质文化遗产价值通常与佛教和道教有关。在古代，石窟寺的社会价值主要体现在宗教和政治方面，但如今石窟寺的社会价值则主要体现在观光旅游和文化教育方面，也体现在当地的节日与传统方面，例如每年的佛诞日。如果管理得当，这些活动会有利于该石窟寺的保存；但如果管理不当，这种利用会破坏石窟寺的历史和美学价值。

特定族群的宗教和文化认同可能会在石窟寺中得到体现，这与古代的各民族有关，他们的影响可以在石窟艺术中看到。而在当今社会，这种关联可能会通过宗教表现出来。这样的族群可能会对石窟寺产生特殊的亲切感。

文化景观与自然价值

石窟寺坐落在沙漠和山地环境的山谷和河流旁的崖壁上，其独特而令人震撼的石窟环境是重要的文化景观，具有很高的美学与自然价值。石窟寺的位置深受自然景观和环境的影响。

自然价值体现在动植物的生存栖息地以及石窟寺所在的河流、树木、山脉和沙漠景观。如果一个石窟寺没有明确的边界和足够的缓冲区，则景观的完整性很难得到保护。当新建工程和其他建设活动影响到石窟寺的周围环境时，其完整性和真实性就会降低。其他干预措施（如在炳灵寺和天梯山进行的水库建设）虽然改变了原始环境，但新环境仍保留了美学和自然

价值。

当今世界不断发展，当石窟寺的自然环境没有受到现代开发的影响时，它具有当代社会价值，可以作为开放的娱乐休闲与静心沉思场所。佛教和道教都高度重视自然的价值。因此，保留这些价值与石窟寺的原始用途是一致的。

通过科学的管理来维护自然价值，符合旨在保护和改善环境的“生态文明”建设原则，符合“绿水青山就是金山银山”的理念。坚持这些原则和理念可以保护石窟寺的基本价值，同时有助于实现国家更大的目标。

步骤 2.2　风险评估和现状评估

评估石窟寺面临的威胁和现状必须了解：

威胁

石窟寺面临的典型自然危险有岩体失稳、地震、洪水、暴雨和火灾。这些威胁可能很少发生，但是一旦发生就会给石窟寺造成极大的破坏。例如几个世纪以来在莫高窟、榆林窟、炳灵寺以及其他许多石窟寺发生的洪水。地震对甘肃石窟寺来说特别危险，这些石窟寺都经历过几次大地震。气候变化后果会影响石窟寺保存，尽管这些后果目前还不能完全预测，但它们可能会加剧未来的环境条件变化。

确定威胁、风险后，需要专家就其可能的严重性和发生频率提供防范评估意见。例如，地震对石窟寺构成了巨大威胁，其风险是强烈地震在某一时间范围、某一特定区域内发生的概率。

真实性和完整性

真实性和完整性是考虑有关遗产地重要性方面的关键概念。任何一个古老地方，如果被使用了几个世纪，然后被废弃，就会有损失和变化。当代保护与管理的目标是预防或减缓文物进一步劣化和改变，以保存遗产地的历史原状。劣化的程度和变化的类型将影响遗产地的真实性和完整性，从而影响其重要性。

因为年代久远、且经常使用考古方法来进行研究，所以石窟寺通常被归类为考古遗址。与考古遗产地相同，石窟寺是脆弱而珍贵的历史遗存，要谨慎作出干预决策。现代对壁画重绘和对塑像的不当修复将掩盖或破坏原来的材料、工艺和设计，或者忽视石窟寺的周围环境，都将损害石窟寺的真实性和完整性。

有些石窟寺经历了佛教和道教等宗教活动的复兴。这样的宗教活动也许保留了多方面的文化传统，例如当地的节日，也反映了多方面的传统宗教习俗。鉴于石窟寺的历史，传统宗教活动更多的是处于中断而不是延续的状态，并且现在许多宗教活动很可能反映的是近代习俗而不是古代传统活动的延续。然而，这种主要用于当地社区使用的方式，成为社会价值的一类重要组成。在这些案例中，我们面临的挑战是找到正确的平衡点，使这些当代的利用不

会破坏石窟寺及其周围环境的真实性和历史价值。

当一个石窟寺的真实性和完整性严重降低时，它的法定保护等级可能也会随之降低，甚至有可能失去成为文物保护单位的资格。

价值与利益

价值产生利益。无论是对政府还是对当地社区和企业来说，其中一个好处是经济利益。经济利益来自于遗产地的主要历史和文化价值，并且，经济利益与旅游业带来的社会价值联系最为紧密。如果管理不善，旅游基础设施（如标识不佳、商店和游客设施选址不当）会破坏和掩盖历史和景观价值。如果为了短期的经济利益而进行的开发破坏了这些主要的价值，那么未来就会鲜有收益。这是每个石窟寺必须防范的风险。

现状

劣化是一系列过程的累积效应：化学变化、侵蚀、颜料褪色、因盐害造成颜料脱落、生物生长、人为造成的改变，等等。

评估时需要确定石窟寺的本体状况：石窟寺是否稳定或正处于劣化中？如果通过监测、检测，或者通过对过去的记录进行比对确定其正在劣化，其速度有多快？原因是什么？

有些劣化可能在很久以前就已经发生并且已经停止。所有现实和潜在问题都需要在干预之前进行仔细监测、测试、研究。

损坏是由于自然和人为因素造成的直接伤害，例如火灾、地震、洪水、岩体裂隙、人为撞击或盗窃等。

一旦威胁和现状得到评估，就要确定优先顺序。必须仔细考虑以确定石窟寺的某些特定方面或者构成要素方面的最迫切需求。如果问题得不到解决，需要考虑其劣化的严重性以及造成进一步损坏的风险。在实施计划前，必须权衡和决定是否需要外部专家协助以及进行干预前的测试。

许多问题难以明确，需要某些专业知识，而管理机构的工作人员可能并不具备这些能力。但是工作人员可以对石窟寺进行持续的维护和保养，并仔细观察和记录潜在的问题，从而减少未来对石窟寺进行重大干预的需求。

相关问题将在“第五章 保护原则和措施”中进行详细讨论。

步骤 2.3 评估管理条件

管理评估考虑了可能影响石窟寺日常运行和未来保护的所有因素及其价值。结合现状评估，管理评估对于了解石窟寺的价值面临何种风险以及如何保护这些价值至关重要。石窟寺管理的作用将在第六章中进一步讨论。

评估包含分析管理者日常所处理的事务以及各种与日常管理相关的信息，例如：

- 员工的能力、专业技术、培训需求、激励、收入与福利、工作满意度；
- 资金来源；
- 游客资料统计分析；
- 研究状况及石窟寺记录；
- 石窟寺及其覆盖范围内的安防；
- 水、电、废物处理、通信系统等基本需求；
- 日常维护制度和日程安排；
- 石窟寺的展示（标识、保洁等）；
- 与员工及游客有关的设施；
- 石窟寺藏品与储存条件。

管理条件的评估也需要了解：

- 石窟寺运行必须考虑的经济、社会和政治环境，例如，区域发展规划以及该地区的旅游业前景，这些会对石窟寺产生重大影响，石窟寺管理者需要了解该地区的发展动态，并与当地政府建立联系。
- 当地社区，包括政府、企业和商业活动，这些可能对石窟寺产生正面或负面的影响。
- “四有”是管理不可或缺的四项重要措施：有保护范围（保护区、建设控制地带 / 缓冲区）；有保护标志；有记录档案；有保管机构和人员。所有石窟寺在某种程度上已经满足了上述条件，但需要进行定期评估，以确定它们是否达到要求并发挥作用，满足石窟寺保护管理的要求。

优势和劣势

评估管理条件时，管理层与工作人员讨论其机构及日常运行的优势与劣势非常有益。这意味着要提出一些尖锐的问题，例如该石窟寺在哪些方面做得出色，是否存在已有或潜在的问题。这会涉及有关石窟寺是否严格遵循国家或者世界遗产标准的广泛讨论。所有石窟寺，无论其什么级别，无论其价值保存得多好，均应以遵守上述标准为目标。

即使资源很少，也总是有可能改进石窟寺的管理方式，而员工的参与往往是此类改进的关键。

步骤 3 和 4　制定决策与实施策略

评估为做出正确决策提供了所需要的信息。这些决策可能适用于整个石窟寺，或仅适用于存在问题的局部区域。程序保持不变——收集信息、了解条件及限制因素，然后考虑可以选择的方案。

选择方案时，经常面临的问题是：保存遗产地价值最好的方法是什么？如果一种方案只能保存一个价值或强化一个利益，但破坏或削弱了另一个价值或利益，那么它就不是一个好的解决方案。

例如，决定将石窟寺主要用于宗教用途、重绘塑像或者建造新建筑可能会提升一个价值——当地社区或宗教团体的社会与经济价值，但这些行为会严重损害石窟寺的历史价值。

有时必须做出妥协，但理想的策略是保存并展现石窟寺的所有价值。对一个石窟寺来说，最重要的是其原有的壁画和塑像、石碑、周围的自然环境。

做出决策及实施决策需要考虑：

- 可用资源：必须评估对于外部专家协助、预算和人力资源的需求。
- 干预计划：大规模的加固或基础设施建设的干预活动，必须制订详细的建设或工程计划方案。对于保护工作，应明确说明所要采取的方法和使用的材料，并由专家组进行评估。
- 测试、试验、方案：通常在做出最终决策前需要进行一次试验。例如设置围栏或标识这样的干预，先做一个试验会节省时间和费用。对壁画、塑像或石窟岩体进行修复或加固，测试和试验可能会使石窟寺免受不当的干预，这可能就是成功与失败的差别，或是持久、不可逆转的破坏。测试应在足够长的时间内进行，以获得有效的结果。
- 专业技术和专家委员会：做出保护、展陈或展示以及利用等方面的重要决策时需要听取外部专家的意见。这通常以召开专家委员会的形式进行，但重要的是，该委员会应由相关领域资深专业人士组成。石窟寺管理者和其工作人员必须参与该委员会，确保做出的决策符合石窟寺的价值。石窟寺具有相似的特点，因此它们通常都存在类似的问题，例如岩体的稳定性和排水问题。可以从已经面临过相同问题的同行那里得到许多借鉴，并评估其措施的有效性。
- 工作现场：工作现场的状况能反映工作的质量。杂乱的现场可能表明工作没有达到标准。石窟寺管理者有责任监督所有的干预措施，要求提供干预措施的报告，确保干预不损害石窟寺；要求施工现场整洁有序，并注意施工安全。根据干预工作的性质有可能需要进行考古调查。

历史、艺术和科学价值

历史、艺术和科学价值在石窟寺中相互关联，长期以来一直是古代遗址的核心价值。由于古代遗址是信息和艺术创作的宝库，这对于了解历史信息、欣赏古代艺术必不可少，因此保存这些价值至关重要。

壁画中的历史、自然和人文景观（莫高窟）


壁画艺术（榆林窟）


雕像艺术（云崖寺石窟）


石刻具有稀有性和艺术性（麦积山石窟）


日常生活（莫高窟）


生活习俗和服饰（莫高窟）


历史文献（莫高窟）

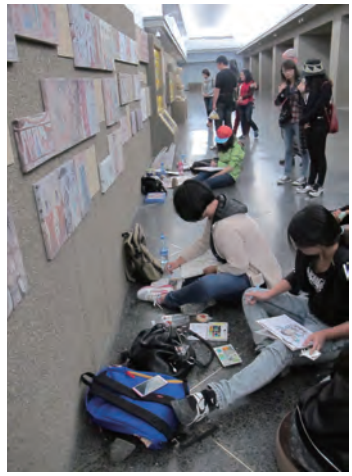

绘画材料（莫高窟）


复制技术（寺儿湾石窟）

社会和文化价值

石窟寺的社会和文化价值反映在当代对石窟的利用上，包括研究、教育、娱乐、灵感、宗教活动以及体现地域或民族自豪感。社会价值中，教育具有多种表现形式而且是最重要的。

通过展示教育观众（莫高窟）



艺术教育（莫高窟）

从讲解、游览中学习（麦积山石窟）

节假日的娱乐活动（莫高窟）

传统的宗教活动
（寺儿湾石窟）

学生在学习（麦积山石窟）

现代艺术的灵感（常书鸿画，浙江省博物馆）

文化和自然景观价值

古代遗址的自然景观及其周围环境会被人为改变。 石窟寺创建并保存于自然中，极具文化与自然价值。石窟寺位于山脉、河谷和沙漠中，往往具有突出的自然特征和景观，这些景观也需要加以保护。

莫高窟的沙漠、山地景观

麦积山石窟的森林山地景观

从文殊山远眺祁连山

马蹄寺石窟的山地景观

位于黄河水库边的炳灵寺石窟及岩层

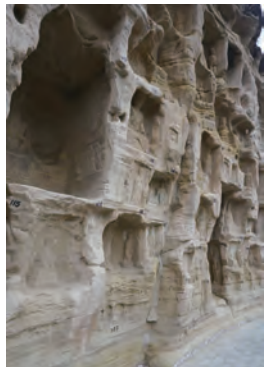
森林密布的云崖寺石窟河谷

威胁与现状

几个世纪以来，石窟寺一直受到自然威胁和人为破坏。保护的目的是了解这些威胁和状况并消除或减轻威胁和破坏，为子孙后代保存好这些遗址。

强降雨形成洪水，冲毁通往莫高窟的路面和桥梁。（莫高窟，2012 年 6 月 5 日）

上世纪中叶之前，洪水、积沙、烧火、地震曾造成莫高窟的一些损害与脱落。（莫高窟）



崖面侵蚀与岩体失稳。（北石窟寺与五个庙石窟）

自然侵蚀、废弃造成的石窟劣化与崖体剥落。（童子寺石窟）

可溶盐造成壁画劣化（莫高窟，现已修复）

上世纪初无人管理之前，涂鸦与烧火造成的壁画损害（五个庙石窟）

不当使用（景耀寺石窟，现已整治）

崖面风化（仙人崖石窟）

潮湿导致洞窟壁上微生物生长（云崖寺石窟）

第四章　历史研究与考古调查

本章封面图片：20 世纪 60 年代莫高窟工作人员在进行档案研究

《中国文物古迹保护准则》第 5 条：

研究应贯穿保护工作全过程，所有保护程序都要以研究成果为依据。研究成果应当通过有效的途径公布或出版，促进文物古迹保护研究，促进公众对文物古迹价值的认识。

简介

历史和考古研究包括对档案、记录、考古、艺术史和文献开展研究，以了解石窟寺的价值及其重要性。为确定石窟寺原制作材料与技术、石窟劣化及其原因而进行的科学研究与调查，见第五章保护原则与措施。通过研究明确遗产地的历史意义及其在古代和现代历史进程中的经历至关重要，这些信息对制定遗产地保护、管理、展陈的决策十分必要。甘肃省石窟寺自公元四世纪起就已经开凿并使用，其中许多石窟寺有着复杂的重修和再利用历史。

研究可以从多个层面进行以达到不同的目的。研究的最重要目的是为了解历史沿革、意义、保护历史，并向公众讲解、展陈。有些石窟寺已经做了很好的研究、档案记录和成果出版工作，有些石窟寺缺乏记录和档案。

不论研究状况如何，石窟寺所有工作人员都应尽其所能收集、评估相关信息和历史记录。研究是一项重要工具：研究结果将为评估提供信息资料，并有助于为进一步研究、考古调查、展陈、保护、遗产地利用等制订策略和确定优先次序。

大型石窟寺群如莫高窟、麦积山、炳灵寺含有非常丰富的信息，但不是所有的石窟寺都保存了相关资料。较小型的、偏远的或被废弃的石窟寺（群）很多，就单独个体而言，这些小型石窟寺本身可能不具备重要的意义，但是从总体上来说，它们对于了解该地区历史发展总体情况以及不同时期的石窟功能等方面有很大帮助。因此，我们需要用更宏观的视角来看待这些互相关联的石窟寺，并进行调查和评估。

甘肃石窟寺是古代丝绸之路遗址网路的一部分，从甘肃和中国延伸到中亚和地中海。跨国世界遗产“丝绸之路：长安 – 天山廊道的路网”在命名时，强调了研究甘肃石窟寺时需要考虑的长远联系。

评估研究需求时涉及到的关键问题：

•石窟寺研究的优先次序是否确定？

•最重要的研究问题是否明确？

•石窟寺档案建立与维护机制是否建立或健全？

•石窟寺档案研究是否完成？

•进一步考古调查或发掘是否必要？

•历史照片、地图、资料的收集是否完成？

甘肃石窟寺关键的信息来源：

•甘肃中小石窟考古调查报告

•甘肃石窟志（2011 出版）

•国家、省、市 / 县级文物保护单位和博物馆的文献

•石窟寺或博物馆内的石碑与题记

•敦煌研究院保存的档案资料

•甘肃省文物局网站、文物资料信息中心

重点研究工作

•确定石窟寺的文化边界

•历史与考古研究

•编纂近代管理及干预历史

•出版研究成果

确定石窟寺的文化边界

确定石窟寺的历史文化边界是一项很重要的研究工作。法定的行政管理界线对于遗产地的保护必不可少，也是“四有”的一个要素。这在第二、三章都提到过。文化边界不像法定界线那样精确，它划定了一个包含石窟寺相关特定文化或年代信息的地理区域。

文化边界有助于理解石窟寺的范围及其与周围环境的关联性。石窟寺通常以地理特征来界定，如河流、山岭、山谷，它们常与当地寺院、其他石窟群、附近的乡镇、墓地或者超越石窟寺特定边界的其他区域有关联。这些关联可以通过历史研究、必要的考古调查或试发掘来建立或证实。石碑、历史记录、题记等能帮助确定文化边界以及单一石窟寺与石窟群的关系。

在地理环境中探寻进出石窟寺的原始路线，有助于明确古代朝圣者进出石窟寺的方式。

当确定了文化边界，就应该按照第六章遗产地管理所要求的那样，作为档案记录的一部分在地图上标示出来。对许多石窟寺来说，随着考古发掘或新信息的发现，识别文化边界是一个持续的过程。

历史与考古研究

石窟寺的历史与考古记录应包含下列信息：

- 石窟寺基本信息：
  - 位置、营建时代和修复信息；
  - 现状描述，使用、修复及改建信息，历史记录及照片。早期文档记录记载了重要的历史信息，有助于解释石窟寺的现状。
- 石窟寺价值研究包括：
  - 历史价值反映营建年代的背景、当地所载历史进程、重大事件和重要历史人物及对当地的影响；
  - 艺术与文化价值反映文化、传统、宗教流派、艺术风格、文化传播与影响，以及与国内外相似石窟相比的特殊属性；
  - 石窟在历史上对文化变迁、民族融合、社会发展的特殊贡献，石窟的艺术特色和艺术创作的独特价值，以及石窟寺对丝绸之路文化和经济发展的贡献；
  - 对相似文化遗产的比较研究，包括在甘肃省及其他省份，以及沿丝绸之路其他国家的石窟寺及石窟群。
- 考古调查与勘测：
  - 对地上和地下遗迹进行调查、勘查，并在适当的时候进行考古发掘，以及对文物库房和博物馆保存的出土文物进行研究，以确定遗址的文化边界并了解其重要性。虽然许多石窟寺已被遗弃甚久，原有的内容消失殆尽，但是它们所处的地理位置对于了解石窟寺所在区域的发展非常重要，例如佛教的传播和发展、石窟群之间的关系以及石窟寺与其附近城镇、寺院之间的关系。

编纂近代管理及干预历史

石窟寺近代（从晚清开始）的干预历史和相关事件是信息收集的一个重要方面。干预历史和相关事件是指从已知最早的近代档案到正式宣布成为一处文物保护单位，及其后直至现在所发生的诸多事件和重要的干预措施。从 20 世纪早期至 20 世纪 50 年代这段时间见证了

石窟寺被视为历史与文化场所的缓慢复兴，虽然其中许多石窟寺已经被废弃达几个世纪之久。随着保护和管理变得越来越复杂，并且自 20 世纪 40 年代开始迄今已有了长达 70 多年的石窟寺科学管理历程，编纂石窟寺的近代史非常有用且必要。

大型石窟寺如莫高窟和麦积山石窟，有丰富的近代历史档案记录，其历史可追溯至 19 世纪末和 20 世纪初，这归因于它们经历过频繁的现场勘查，保存许多照片记录和清代历史文献。研究晚清时期对石窟寺的使用很重要，因为那个时期常有塑像和寺院外观的重修工作，以及道教活动的重新介入。20 世纪 40 年代末、50 年代开始，政府重新重视石窟寺的保护和档案记录。较小的、偏远的石窟寺是在最近一段时间才开始进行调查，可能只有少量的近代档案记录，需要对地方和省级档案馆的资料做深入调查。

另一个了解石窟寺近代史的途径是开展当地口述历史的调查。从年长的村民那里获取有助于了解石窟寺在近代用途改变的情况，了解传说、故事以及当代宗教用途。这种研究通常由人类学家来完成，可能会引起一些高校院系的兴趣，让他们向那些与石窟寺有渊源的群体征集口述史。

出版研究成果

应向工作人员、学者和公众广泛提供有关石窟寺的最新研究成果和出版物。电子出版物越来越多，也易于共享。

与石窟寺有关的研究、文章、照片、档案、文献资料应该定期编纂成书、成册。

历史研究

研究是了解遗产地历史及其发展历程的一个重要工具。研究结果为评估提供信息，并有助于为进一步的研究、考古调查、展陈、保护和利用工作制定政策、确定优先次序。

历史照片展示了上个世纪石窟寺的现场情况，对于了解遗址的现代历史至关重要。此类照片还可用于向参观的游客展示保护工作的历史。

莫高窟　1907 年
（斯坦因摄，英国国家图书馆藏）

莫高窟　1954 年

麦积山石窟　1941 年

天梯山　1959 年

莫高窟　1963 年

炳灵寺石窟　1963 年

考古调查

考古调查和勘测是石窟寺区域研究的一个关键组成部分，许多石窟寺都位于偏远地区。

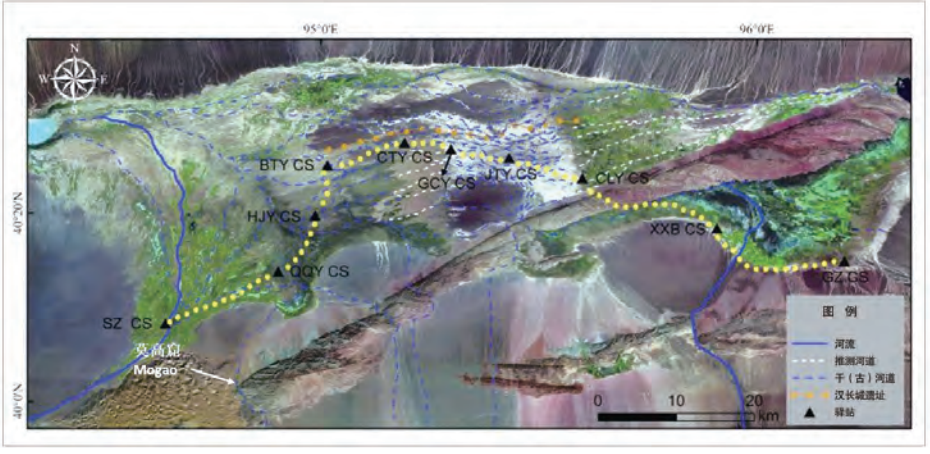
丈八寺石窟

景耀寺石窟

罗汉洞石窟

许多石窟寺早已被废弃，但仍享有被保护的地位。它们在地理环境中的分布对于了解该区域的发展历史极为重要，例如佛教的传播和活动、石窟群之间关联以及石窟寺与附近城镇、寺院之间的关系。

区域调查，如受甘肃省文物局委托进行的“甘肃省中小石窟调查项目”，是了解和记录分散在全省各地许多中小型石窟寺位置、分布和保存状况的重要工作。这种野外工作具有挑战性，但会带来巨大的收获。这是在区域层面上进行研究和调查从而获取最丰富信息的方法。



利用遥感和地理信息系统技术的无损数据采集分析方法正成为考古调查的重要工具。这可以发现有趣的结果，例如上图，驿站和沿着河西走廊到敦煌的官道系统可以被识别出来。(LUO L，WANG X Y.，et al. Journal of Archaeological Science. 2014，50，178–190)

第五章　保护原则与措施

本章封面图片：云崖寺石窟显示潮湿与壁画劣化密切相关

《中国文物古迹保护准则》第 9 条：

不改变原状：是文物古迹保护的要义。它意味着真实、完整地保护文物古迹在历史过程中形成的价值及其体现这种价值的状态，有效地保护文物古迹的历史、文化环境，并通过保护延续相关的文化传统。

简介

石窟寺在历史的进程中一直经历着外观的改变、原始制作材料的劣化与损失。石窟寺主要包括周边环境、岩体，以及石窟寺的组成元素如壁画、彩塑、石刻等。本章介绍并说明石窟寺及其组成元素的保护原则和措施。周边环境的保护将在第六章讨论。

保护的主要目的是尽可能采取防止或减缓损坏和劣化的措施以保存遗产地的价值。其中一个要求就是保持遗产地的历史现状。历史现状体现的是遗产地因历史变迁所衍生出来的价值。材料本身的改变被认为是遗产地历史和使用的一部分，应予以尊重并保留。一般来说，对遗产地修复如新的做法不能被广泛认同，因为它会引入新的材料而损害文物的真实性。

尽管每个石窟寺都是独一无二的且有着不同的历史背景，但由于暴露在环境中而导致产生相同的劣化状况，也都表现出一系列的共同现象。这些现象包括与水分和与盐相关的病害、侵蚀，以及由此引发的脱落，同样也包括人类活动诱发的变化。这些病害和脱落的区域被认为是石窟寺历史的一部分，不应该被恢复或重建。相反，遗址应当保存在现有的历史原状之下，保持石窟寺构成元素稳定，以防止进一步的损失或将损失减至最小。自然威胁的更多信息请参阅第 3 章步骤 2.2。

主要的保护原则与措施

- 保护流程
- 科学研究与调查
- 最小干预
- 遗产地保护
- 预防性措施
- 保护措施
- 监测和日常维护

保护流程

要保护遗产地及其要素的历史原状，需遵循一套既全面，又相互统一，同时符合科学方法的方案，该方案还需与第 3 章中提出的总体规划流程内容相匹配。

只有对现有的风险、原因和病害机理进行研究、分析和记录后才能实施保护。如果不这样做，也不采取行动来应对这些风险，那么保护干预可能会失败，甚至会加剧问题，导致进一步的劣化和损失。

保护流程包括下列步骤：

- 石窟寺的调查、历史研究和资料收集（在第四章讨论过）；
- 威胁和风险的评估、分析：
  - 持续发生的威胁识别和风险评估；
  - 了解劣化的原因和机理。
- 通过管理进行遗产地保护，防止不当使用（见第六章和第七章）；
- 现状记录；
- 干预的必要性和可行性评估；
- 制订保护干预计划：
  - 根据需求采取预防措施；
  - 根据需求采取抢救性加固干预措施。
- 通过研究和测试以了解所有不良后果和干预措施的适宜性；
- 确定开展工作所需的可用资源，包括保护规划、设计和实施的专业人员、材料和设备，以及预算；
- 根据保护规划实施保护措施；
- 成立专家组，在施工中及施工结束之后评估保护工程的效果；
- 工作记录；
- 进行日常维护和监测，以评估保护措施的效果并确定遗产地持续稳定；
- 建立监测与干预记录的档案。

进行任何干预之前，必须向有关上级单位提交干预计划的立项申请报告。立项获得批准后，应进行详细和广泛的调查、研究，以制订保护方案。该方案在实施之前也需要送交审查和批准。在保护方案实施之前，必须建立严格的质量管控体系和一套确保干预措施有效的程序。实施过程中发现新的重大问题，应停止工作，修改方案，重新报批。

在项目招标过程中，应优先采用适当的、安全的技术，不应该仅仅根据成本来选择方案。

在整个保护干预过程中必须进行文件记录工作，包括使用过的材料和采用过的技术，这些文件必须存档并且能够提供给未来石窟寺保护和管理的工作人员，使他们能够详细了解过去发生的干预事件。

科学研究与调查

基于对石窟寺历史和价值深刻理解的科学研究和调查，对做到良好的保护至关重要。

应该对可能影响石窟寺及其要素的环境面貌、周围景观进行深入研究。研究还可以识别诸如颜料和地仗层成分、木质构件等材料，以了解文物劣化的原因，如通过分析盐分可了解其可能对壁画造成的伤害，从而制定适当的保护措施。研究包含收集与评价现有的文献、开展实验室或现场测试、评估历史干预工作。虽然石窟寺有许多共同特性，可以从其他石窟寺的问题及其解决方案中学到很多经验，但是从来没有一套固定的方案措施可以适用于所有石窟寺。每一处石窟寺都是独特的，要基于其特定的环境、岩石类型、气候和微环境、干预历史等背景来理解。

监测是一种数据收集的形式，用以改善管理和保护并为研究劣化原因提供信息。监测有几种不同的类型，如：

- 为了解本体劣化原因与程度而进行的定期检查与记录，对所有的测试和历史干预进行的科学评估；
- 如果可行，监测洞窟内的微环境（温度、湿度、二氧化碳）与洞窟外的气象环境（降雨、风、温度、湿度），监测石窟岩体稳定性和水、盐状况等；
- 有助于管理的其他类型监测，如观察游客行为、进行游客调查。

所有的测试和调查都必须经过合理的科学评估，将结果写成书面报告归入档案。

在决定是否采取干预之前，有些石窟寺可能缺乏进行调查记录、科学研究和技术分析、监测等能力的专业人员和资源，无法提供关于持续造成风险、损坏和劣化的原因及其变化速率的信息。在这种情况之下，寻求专业帮助非常重要。在没有这些研究资料和信息的情况下，实施保护工作可能会导致负面效果。如果不先解决劣化的原因，加固措施可能会失败并加剧损坏。

最小干预

要意识到保护措施会影响石窟寺的自然寿命，并会改变石窟寺各组成部分的状况，这一点很重要。因此，只有在确定即将发生损害和劣化时才应采取干预措施，且只在最需要的地方采用。

过度干预通常会降低石窟寺的价值，因此，干预应该是最小化的——必须的工作要做但尽可能少做——且不能影响将来可能需要实施的干预。

所有石窟寺的干预应该做到尽可能可逆，不得损害历史结构或石窟寺的要素，被处理的区域应在未来可以再处理，且不会产生不良影响。

虽然所有石窟寺的保护都应该遵循相同的方法过程，但干预的程度应当根据劣化的严重程度、石窟寺的预期用途以及现有的可利用资源和专业水平而有所不同。例如，如果一个石窟寺处于偏远地区而且不用于开放参观，那么只应进行基本的加固和维修措施，以防止进一步损坏和劣化。如果石窟寺要开放参观，其壁画、雕塑脱落的地方，可以用地仗加固或兼容材料进行填补，以改善外观和防止进一步的损坏。

遗产地保护

石窟寺的保护需要防止因为人类和动物（通常是啮齿类动物与鸟类）活动造成的威胁与损害，并减少因暴露在这些环境之下所造成的劣化。通常，石窟寺整个范围的保护要尽早进行。在制订、实施预防性措施和保护措施之前，要进行持续的研究、科学调查和必要的监测，以便更好地了解问题所在。保护类型可以有差异：偏远地区的石窟寺只需提供基本保护就足够了，如设置栅栏或标牌，而在其他地区可能还需要建造围墙和门来封闭洞窟（如莫高窟的崖面挡墙），为壁画和塑像的保存创造更稳定的环境。

窟前建筑或寺院是石窟寺保护的另一个例子，也可以发挥展示功能。最初，窟前木构建筑（如莫高窟第 96 和 16 窟）是进入洞窟的正式入口，由于石窟寺长时期废弃或极少被使用，窟前木结构几乎都已损坏。如今，在某些情况下，为了展示或复原，以及保护和缓冲洞窟内部免受外部环境影响，一些石窟寺重建了某些窟前木构建筑。建设新的窟前建筑会改变石窟寺的外观和完整性，因此，修建此类建筑时，要根据历史和考古文献的记载，采取最小干预并尽量使用传统工艺方法，其设计和规模要与石窟风格保持一致，但不必完全复制原始建筑。这些木构建筑不具有稳定崖体的作用，稳定崖体属于工程干预，将在下文“保护措施：大规模的遗址加固工程”中讨论。

预防性措施

实施保护时应遵循一般的优先顺序，在进行抢救性保护措施之前应更多关注预防性措施。预防性措施是减缓劣化的行为，例如改善环境条件或建立保护结构。石窟寺的环境状况大多不受人为控制，因此，壁画和雕塑会受到温度和湿度的波动变化以及雨水、地下水和洪水的影响。在这种情况下，在抢救性保护之前应优先实施预防性保护措施，将环境影响造成

的破坏降至最低。

预防性措施可以是防护结构、防护罩，或者是防止雨水直接滴落在裸露塑像上的窟檐。预防性保护设施应尽量不引人注目，只覆盖文物最濒危的部分，以确保石窟寺原有的本体特征，不对其美学价值产生负面影响。

实施预防性措施应考虑到今后更改的可能性。因此，不应该仓促实施，也不应该妨碍今后采用更有效的措施。

在建设保护设施之前必须进行考古调查，以避免在挖掘地基的时候破坏地下可能存在的历史遗迹、遗物。

安装预防性保护设施不得改变或损坏其保护对象。增加结构会改变环境并可能导致意想不到的后果，安装后对其状况进行定期监测是必不可少的，并对设施进行日常保养维护。

最重要的是，预防性措施应成为保护整个石窟寺总体计划的一部分，同时考虑崖体稳定、裸露石窟的保护、窟门的需求，以及洞窟外立面的其他改变。

保护措施

就石窟寺而言，保护措施的重点一般是采用直接干预的方式，例如加固以减缓或制止劣化，加固危险的构件使之恢复到安全状态。

在实施期间或之后，干预不应该影响或改变原材料，如壁画中的颜料，也不应该降低石窟寺各要素原有的艺术价值，不能引起石窟寺其他部分的损坏。

项目设计和实施通常需要专业知识和经验，如岩土技术和壁画保护专业知识，因此必须由有资质的专业组织在监督下进行，以确保质量和设计、施工保持一致。

•适合的材料与技术

过去，许多石窟寺因使用不适合或不兼容的材料和方法而使文物受到损害，包括成膜的涂层和化学固结剂，如果使用不当，它们会减缓或抑制水分蒸发和盐的移动，从而起到屏障的作用，导致表面剥落，应该避免使用这些材料，尤其是在壁画表面。使用水泥修复、加固历史构件通常具有破坏性，应避免使用。

其他处理方法，例如用来固定空鼓壁画的十字锚固法，已经被一些不那么明显的方法所取代，比如灌浆。莫高窟 85 窟采用轻质材料灌浆技术已超过 15 年，效果良好。然而，十字锚固法和灌浆最终都可能失效，它们需要熟练和有经验的人员来实施，并进行随后的定期监测。

用于文物加固和消毒的化学固结剂材料，包括杀虫剂和熏蒸剂，会侵入文物结构而且不

可能完全可逆。保护措施和处理材料的选择，应根据专家的建议，先经过调查、研究、科学试验和评价，只有被证明长期有效和安全的技术和材料才可使用。

干预材料也可能干扰未来科学分析从而影响文物的研究潜力。在评估或制订保护计划时，应始终考虑科学价值的重要性。

•大规模的遗址加固工程

为解决主要威胁，可能需要采用大规模的工程加固干预措施。这些措施可以是防洪通道、防沙防风栅栏（合成纤维和植被防风带）和崖体加固。崖体加固包括加固薄顶洞窟，阻止因渗水和流沙进入裂隙而导致窟顶坍塌，以及建造支撑结构以防止崖体坍塌。同时，为了增强地质稳定性，修建预防地震破坏的构筑物与栈道时（莫高窟、榆林窟、麦积山石窟等）需要采用锚杆加固方法。因为钻孔具有破坏性，操作时使用空气冷却干式钻孔法尤为关键。在某些案例中，装有窟门的砖石外墙（榆林窟、莫高窟）也属于加固的一部分。所有这一类型的干预都必须考虑到对石窟寺和景观的视觉影响。

•遗产地要素的保护

壁画、雕塑、石刻题记代表了石窟寺最重要的历史与美学价值。

壁画

壁画应当原址保存而不应该从原有环境中迁移。在一些石窟寺可以看到历史上揭取或试图揭取壁画失败的尝试。在原址设置安防设施非常必要，特别是位置偏远的石窟，以防止壁画被盗窃和恶意破坏。

有些石窟在其历史中经历过多次重绘，甚至整窟的重绘。应该对各个时期的重绘进行研究、分析、评估和档案记录。为发现早期壁画而移除后期重绘壁画，或者复原壁画脱落的区域，都可能对石窟寺的真实性造成负面影响，应当避免这些做法。

需要通过研究来判别壁画损坏或劣化的原因，以便制定合适的保护方案。方案的重点应侧重于预防性措施和加固措施，以减缓劣化速度。

壁画的保护措施要侧重于加固。例如：对壁画地仗脱落的位置进行边缘加固、对地仗空鼓进行灌浆、对颜料层局部起甲进行回贴等。

目前，壁画保护研究方面仍有较为突出的问题亟待解决。例如，与盐有关的壁画病害和由于烟熏使得壁画表面变黑。烟熏壁画会影响其观赏价值，但并不是一种劣化的形式。清洗烟熏的方式可能会对原有材料造成较大破坏，在较为安全的新技术研发出来之前，没有必要迫切地去清洗。可以通过其他手段，例如成像技术以及对原始材料科学分析基础上进行的数字重建等方法，去展现和欣赏这些壁画的原始风貌。

雕塑

甘肃石窟的雕塑有泥质彩塑和石雕两种。前者通常以木头骨架或石胎为基础塑造而成，这是莫高窟和河西走廊石窟的典型做法。这些石窟中，岩石粗糙不适合精细雕刻，因此需要进行抹泥、上彩。北石窟寺与麦积山石窟的雕像通常直接雕刻在岩体上，也可以抹泥上彩，但通常不这样做，以便在细颗粒砂岩上呈现雕刻细节。

雕塑保护的重点是保持当前状态稳定以确保结构安全并防止受到损害，特别是地震时防止倾倒。采取何种适当的材料与方法来加固遭受侵蚀的砂岩仍是一个尚未得到有效解决的研究课题。对于这些问题需要采用预防性保护措施来防止进一步的劣化，直至找到可用、安全、可靠的加固材料为止。

如果雕塑保存早期颜料，应对其开展相关研究，以辨别和了解早期年代的颜料层。因为无论是石胎或木骨泥塑，历史上可能经过多次重绘。需要对历史上所有重绘情况进行研究、分析、评估和档案记录。为了发现早期颜料层而清除后期的绘画层或者将其恢复至特定历史时期风格的做法都是不合适的，这样会对文物价值产生负面影响。

彩塑表面的颜料层在材料和技术上与壁画相似，因此需要采用与壁画相似的干预原则和标准。

脱落的壁画和彩塑残块要进行记录并妥善保管（见第六章）。

碑刻与石碑

碑刻与石碑的价值在于其具有的历史、艺术和文化意义的图案符号和文字记录，并可能提供有关石窟寺的历史信息（如年代、供养人、历史背景等）。

石刻暴露于自然环境和气候下会导致其劣化，可以建造防护结构以控制或减缓风化过程。

只有在不具备原址保护条件且无法确保有效管理的情况下，经主管部门批准后，才能考虑搬迁石刻文物。搬迁前必须进行详细的记录、评估、论证。搬迁后需要在原址放置复制品或标识物，并安放说明牌。

监测和日常维护

因为石窟寺的地质结构存在不稳定性而且雕塑和壁画极其脆弱，所以石窟的监测与日常维护需要引起特别关注。

正如上文科学研究与调查部分所述，监测是一种数据收集方法，用于了解石窟寺保护状况。在保护工作过程中实施监测，及时发现可能出现的新问题。保护工作完成后对总体状况进行监测，确保石窟寺能够保持稳定的状态。

日常维护指的是为消除引起进一步劣化的问题而及时采取的定期、持续的措施和行为。石窟寺的日常维护包括清除积沙、杂乱生长的植物，确保遗产地排水通畅，维修人行道等基础设施，升级安防及监测设备等。某些类型的维护，例如积沙清理，也许需要监测和记录，以便建立基础记录数据。

应制定相关规章制度，明确监测的各项内容、基本的日常维护要求和操作规范等，以防止因疏忽或不当操作而对石窟寺造成损坏。

监测和日常维护应列入保护计划，并由石窟寺管理部门提供相关经费。

石窟寺保护要求总结

- 建立并实施一套整体、综合、科学的规划以保存价值；
- 建立一支保护科研的核心团队，或寻求专业团队的帮助，对所提出的干预措施进行评估和审核，提供必要的专业知识，监督相关工作，监测实施状态，该团队另一个重要作用是保持与石窟寺工作人员的联系，关注石窟档案记录、监测和日常维护等方面的工作；
- 设立固定的工作岗位，并通过培训提升员工在石窟寺保护和利用方面的能力；
- 充分认识石窟寺管理在可持续保护方面发挥的重要作用。

科学研究与调查

基于对石窟寺历史深入了解而进行的科学研究和调查，对于良好的保护至关重要。其中包括识别威胁和风险、劣化原因、方案设计。

对原始材料和工艺的研究包括使用非侵入性检测方法，例如使用傅立叶变换红外光谱（FTIR）来分析颜料。（莫高窟）

劣化原因调查发现，盐和高相对湿度会导致以前修复过的壁画再次发生酥碱现象，说明稳定的环境对石窟保存至关重要（莫高窟，现已再次修复）

如果能开展实验室科学分析，则有助于进一步了解材料和劣化机理。上图通过扫描电子显微镜（SEM）对壁画微区进行观察分析。（莫高窟）

调查记录对于今后文物的了解、评估、研究至关重要。

野外试验是科学研究的重要组成部分。图片中，模拟壁画试块被放置在现场进行光照测试。（麦积山石窟）

研究有助于识别和测试减缓劣化的处理方法和材料。砂岩加固是目前研究的一个重要领域。（南石窟寺）

遗产地保护

遗产地保护可防止由人类和动物造成的损害，并减少暴露于环境之下所造成的劣化。干预的程度可能因劣化的严重程度和遗产地的预期用途而异。

处于偏远地点、很少或没有人参观的石窟寺，设置围栏或标示牌、进行例行检查，可能就足以保护石窟寺免受人类和动物的伤害。其他石窟寺，如果有壁画和雕塑，就需要额外的保护。（五个庙石窟、景耀寺石窟）

为保护残存的雕塑及其他构件，可以考虑加固或重建窟顶结构（上图，左）。此窟在上图（右）画圆圈的位置。（丈八寺石窟）

出于安全和环境协调的目的，洞窟入口可以考虑修建墙壁等设施以保护石窟。（童子寺石窟）

修复过或重建的窟檐建筑可以用来保护洞窟，但是应该根据研究结果并且使用传统的材料和设计。（莫高窟）

预防性措施

预防性措施是减缓劣化的做法。例如，改善窟内的环境条件或建立保护性结构。这些干预措施所使用的材料和设计应与遗址相容，而不应减损其历史和艺术价值。

保护性结构是遗产地的一种保护措施。在上图中，该结构的设计和材料对石窟寺及其要保护的雕塑的美学价值产生了负面影响。（陈家洞石窟）

窟檐可以保护大型雕像和浮雕免遭降雨和流水冲刷。（天梯山石窟，北石窟寺）

安装金属栏杆能保护雕像避免盗窃和触摸，但影响参观。（云崖寺石窟）

用标志提醒游客把摄影自拍杆和雨伞收好，以防止损坏文物。（麦积山石窟）

在狭窄的栈道上，雨伞可能会刮伤历史悠久的文物构件和游客。（麦积山石窟，已采取管理措施）

现场看护管理十分重要。清末、民国时期没有保护和管理措施，会造成壁画上游客涂鸦、动物划痕。（昌马石窟）

保护措施

石窟寺的保护措施强调稳定，以减缓劣化并加固不安全的构件。它们需要调查病害的原因，并选择适当的材料和方法，这可能需要进行测试并且由有经验的专业人员来完成。


上世纪中叶用十字锚固支撑法固定空鼓壁画的方法（左图），已经被在视觉上不那么显眼的灌浆法（右图）代替。锚固会造成更大的损坏，并给脆弱的壁画区域施加压力。如今，灌浆法使用的浆液，其成分与原有的地仗层相似，被认为是一种更安全的方法。（莫高窟）


在雕像的下部（左图）可以看见由于潮湿而产生的酥碱现象，这是由于环境因素造成盐的运移所产生的劣化。 处理方法是在石窟后面开凿隧道将水分隔离（右图）。这种情况必须获得专家的建议并进行科学评估，以避免对崖体和壁画、塑像造成伤害。（寺儿湾石窟）


此处需要进行加固以防止进一步的脱落。（罗汉洞，已制定修复方案）

壁画脱落和起甲需要进行加固处理，以防止发生进一步的脱落。（童子寺石窟，现已修复）

遗址大规模加固

遗址范围的加固，包括应对重大威胁的大规模加固工程。这类重大遗产地干预措施必须考虑到对景观的视觉影响。

崖体稳定包括岩石加固和锚杆（索）加固。（莫高窟）

防沙措施。（莫高窟）

此种崖体状况可能需要进行加固，以防止岩石脱落或崩塌。（昌马石窟）

崖体加固、修建栈道和窟门有助于稳定崖面。（榆林窟）

现代崖体外立面、人行栈道和用于保护洞窟的窟门，可能会损害石窟寺的审美价值。（莫高窟）

崖体进行了加固，设置了栈道和窟门。（麦积山石窟）

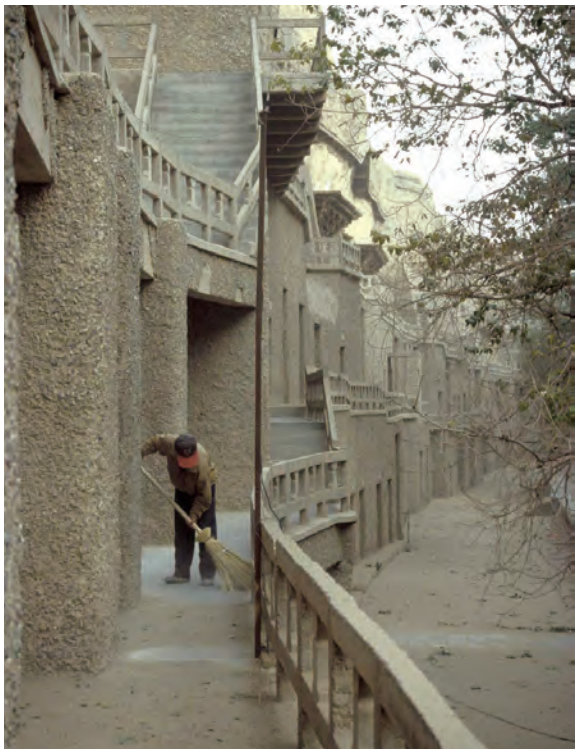
监测与日常维护

进行监测是为了确保石窟寺保持稳定，并确定是否出现了新问题。日常维护包括定期和持续不断的监测和保养，以消除可能导致进一步劣化的问题。两者都需要做好记录。

对环境状况进行监测有助于了解和分析劣化原因。这些结论还被用来制定保护措施。（莫高窟）

评估现状是否发生变化，定期监测非常必要。（莫高窟）

石窟处于人迹罕至的偏远野外，也应该加强保护、定期维护，防止盗窃，减少石窟文物劣化风险。（景耀寺石窟）



扫除灰尘以防止进入洞窟是一种日常维护的方式。（莫高窟）

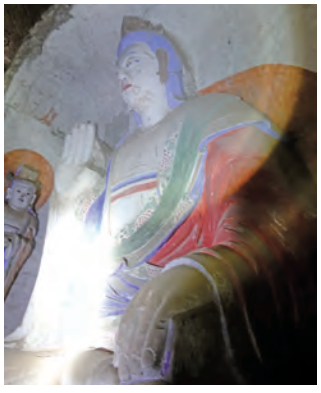
组成要素的保护

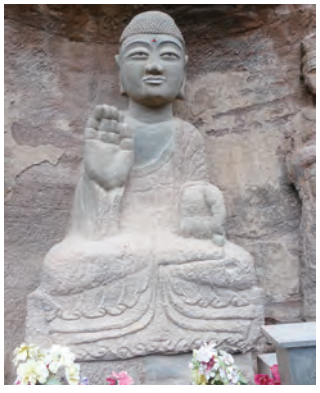
对石窟寺构成要素的保护，主要是保护壁画、石雕、彩塑和石刻，它们代表了石窟寺最重要的历史和艺术价值。它们应该原地保存其历史状况，而不是从原环境中移走。

壁画上可能同时看到多个时期的画面。多层壁画都具有历史意义。历史上曾出现过为露出底层壁画而破坏上层壁画的行为。这种行为不应重演。（童子寺石窟、千佛洞石窟）

没有充分的理由，就不允许将壁画从原来的地仗层中移除，这既有破坏性又改变了历史原状。（马蹄寺石窟）

塑像的表面画层在材料和技术上都与壁画相似，因此两者可以采用类似的干预标准。（南石窟寺）





画层（左）或损坏的雕塑（右，头部和手部重建）的修复或重建一般不被允许，因为这样会引入非原始材料而影响真实性。只有在极少数情况下，有确凿历史证据，谨慎论证并经文物部门批准的情况下才能进行。（王母宫石窟、云崖寺石窟）

石碑应尽可能在原址保护。如原址不具备保护条件，可以搬迁至室内保存。这种情况下，在原址应该放置石碑复制品或标记。（王母宫石窟［左］、云崖寺石窟）

第六章　石窟寺管理


莫高窟南区
莫高窟北区
卞寺
天王堂塔
慈氏塔
小牌坊
九层楼（96窟）
成城湾大花塔
上、中寺
成城湾小花塔
138窟前牌坊
莫高窟
成城湾花塔
文
化
路
大
泉
河
洞
窟
崖
壁
窟
前
区
舍利塔
大牌坊
舍利塔
舍利塔
舍利塔

本章封面图片：卫星图像用于莫高窟总体规划中的遗址管理

《中国文物古迹保护准则》第 23 条：

管理：是文物古迹保护的基本工作。管理包括通过制定具有前瞻性的规划，认识、宣传和保护文物古迹的价值；建立相应的规章制度；建立各部门间的合作机制；及时消除文物古迹存在的隐患；控制文物古迹建设控制地带内的建设活动；联络相关各方和当地社区；培养高素质管理人员；对文物古迹定期维护；提供高水平的展陈和价值阐释；收集、整理档案资料；管理旅游活动；保障文物古迹安全；保证必要的保护经费来源。

简介

《导则》第二章概述了石窟寺保护管理的基本要求，本章将详细说明石窟寺管理的主要类别。石窟寺管理，是指工作人员积极参与保护石窟寺及其价值的所有活动，确保石窟寺日常工作，如保护、利用、监测、维护等工作正常运行，并对工作人员进行培训和激励。石窟寺管理规定了所有工作都应遵循的框架、体系、标准。

虽然石窟寺管理的职责和作用适用于所有类型的遗址，但每个石窟寺都有其特殊属性和面临不同的挑战（参见第一章），需要加以考虑。石窟寺管理的主要类型如下所述（保护原则和措施内容见第五章）。

管理的主要类型

- 政策与程序
- 资金来源
- 人员和培训
- 监测和日常维护
- 环境整治
- 文件管理、档案管理与藏品管理
- 基础设施管理、水电管理与垃圾处理
- 人员安全与石窟安防
- 研究（参见第四章）
- 合理利用（参见第七章）

政策与程序

石窟寺管理者负责为管辖范围内的石窟寺制定一般性的保护管理策略和程序。石窟寺保护管理总体规划对石窟寺各方面工作制定了指导纲要。但是，让工作人员了解国家、甘肃

省、国际上涉及遗产地管理、保护和使用的有关条例、准则和政策的文件也是很重要的（相关文件见附录 3）。

资金来源

要做好石窟寺保护管理工作，必须有充足的资金来源。根据国务院指示，各级人民政府要遵照国家要求，将“文物保护纳入财政预算”，这是石窟寺保护管理的基本保障。石窟寺管理机构，尤其是中小石窟寺管理机构，要主动了解和掌握国家、地方对文物保护事业的支持政策，积极寻求各方指导和资源，找出影响石窟寺保护管理的关键问题，通过多种渠道争取文物保护经费。

人员和培训

石窟寺保护需要各种专业技术，尤其是档案记录、研究、监测、保护、管理、工程、建筑、展陈和游客管理等方面的技术。通常，并非所有石窟寺的日常管理都需要上述专业技术，只有少数石窟寺的工作人员掌握这些专业技术。因此，一些石窟寺可以向其他石窟寺或科研机构寻求适当的帮助。

石窟寺的管理者和专业人员应该：

- 了解保护和管理的基本原则；
- 密切关注石窟寺当前的各项工作；
- 在工作中做好记录、拍照；
- 跟进后续的监测工作。

石窟寺管理机构应该安排工作人员去管理水平较高的石窟寺学习、培训，学习先进经验。

工作人员接受有限的培训后难以成为保护技术人员和工程师，也无法成为某个领域的专家，但是通过培训，工作人员可以学习日常维护的操作规范，监测潜在问题，记录和保存基础档案。同时也要认识到，工作人员知识有限，不能从事超出能力范围的工作。

一些石窟寺雇用当地人看管石窟，这是能得到当地百姓支持的好方法，但是，必须对雇用的工作人员进行培训，让他们认识到石窟寺各方面的价值，强化石窟寺的保护意识。

优秀的石窟寺管理者会通过培训和鼓励工作人员，来提升石窟寺管理水平。

监测和日常维护

对石窟寺的全方位监测包括定期巡视和档案记录，以及对影响石窟寺的所有因素采取响应措施。档案还应包括气象记录，这些记录应作为石窟寺档案的一部分加以保存。

日常维护是石窟寺最重要的工作之一，这是一种可以广泛应用的预防性保护措施，可以预防、减缓石窟文物进一步劣化，确保各项服务和设施正常运行，及时解决问题、消除隐患，避免引起更严重的破坏和更大范围的损失。

石窟寺是否得到良好的日常维护、管理是否有序，反映了工作人员对该石窟寺的重视程度。管理疏忽将导致维护不善。合理、及时地保养维护石窟寺是管理人员的责任。

石窟寺的日常维护包括以下方面：

- 清理所有的垃圾并进行妥善处理，包括可回收材料，尤其注意有毒废弃物需要安全处理（如电池、杀虫剂或其他有毒溶剂等）；
- 对石窟保护区进行定期巡查，注意潜在风险和不当利用的迹象，保证所有系统正常运行（包括监测和安防设备、垃圾处理设备等）；
- 根据石窟监测结果，定期保养维护石窟（见第五章）；
- 及时保养、修理和维护各类基础设施，保证基础设施正常运行；
- 注意保持祭台和香炉干净整洁，香炉必须放置在窟外。

环境整治

环境整治能展示和维护遗址的文化价值和自然价值。石窟寺通常位于风景优美的山川河谷中，具有独特的景观属性。景观环境是石窟寺及其价值的重要组成部分。正如第三章所述，保护石窟寺自然环境价值符合“生态文明”建设原则，并体现了“绿水青山就是金山银山”的理念。

要保护石窟寺环境的历史、自然和社会价值，需采取以下措施：

- 确定石窟寺环境的法定界限。石窟寺环境的范围通常超出遗址保护区，甚至可能超出建设控制地带（缓冲区）。为了保护石窟寺整体，未来有可能对石窟寺的法定界限进行延伸以更好地保护石窟寺环境。因此，确定石窟寺环境的法定界限非常重要（参照第四章对文化界限的界定）。
- 标明并绘制石窟寺环境的大致界限。石窟寺环境可能包含较大范围的景观，主要以自然环境为主（如山脉、河流、山谷和植被）。石窟寺有法定界限，但石窟寺环境没有固定界限，随着时间推移和人为活动的影响，环境范围可能会缩小。
- 确定石窟寺的可视范围。可视范围，是从石窟寺所处位置能看到的环境范围，包含所有可视的自然景观和历史景观。在可视范围内，干预措施应该是适当的，并持续对其监测，确保不改变石窟环境的质量、特征和状态。应减少像树立通信塔、城市发展活动等影响可视范围的现象发生，将这些活动尽量安排在保护范围之外。

•确定石窟寺环境对提升遗址价值的作用。环境一般包括石窟寺的自然景观，也可能具有历史关联或属性，以及生态价值和自然价值。在某些情况下，石窟寺环境可能包括村庄、农田、墓地和其他具有社会价值的现代建筑。

•保持石窟寺环境的历史与自然景观的主要工作有：

•布设网线、管道、安防摄像头、安防设备、通信塔时，尽量安置在隐蔽处，减少对石窟寺环境景观的影响；

•养护园林树木时，确保保护区内的植物不影响可能存在的考古遗迹；

•种植当地本土植物，去除现代园林景观；

•拆除遗址保护区内干扰可视范围、没有历史价值或没有重要功能的建筑；

•设置道路和停车场时，选择对石窟寺和环境影响最小的地点；

•减少污染、交通堵塞、噪音，节约用水；

•监测环境变化，如植被、河流、山坡、人类活动和建设施工等。

文件管理、档案管理与藏品管理

做好文件管理、档案管理和藏品管理是管理部门的基本职责。石窟寺管理者应确保上述工作由受过培训的人员来进行。

文件管理。为了当前和未来的研究、保护和利用用途，必须建立遗址的文件资料记录档案。文件资料要求：

•描述石窟寺遗址：要记录石窟寺，首先要用文字描述、线图描绘石窟寺及其组成部分，收集、整合相关信息。包括：

•对重要的文件、记录、档案、照片、地图和藏品进行确认并列出清单；

•对石窟寺的组成部分进行界定，统一命名，以便参考；

•对石窟寺的法定管理范围进行界定和记录，这也是“四有”的要求之一（如第四章提到过：界定文化边界是研究活动的一部分）；

•创建石窟寺档案，增强对档案的管理，使档案符合保存、使用和数据检索的标准。

•拍摄石窟寺遗址：用摄影摄像手段记录石窟寺周边和内部环境，是进行研究、监测、保护、利用和宣传的基本工作。影像资料通常包括：

•用于监测目的，定期对石窟寺的重要组成部分进行拍摄记录；

•拍摄所有发生了变化的壁画、塑像和石窟，并加以文字描述（参照第五章）；

•拍摄、记录石窟寺环境的所有重大变化。

•用新技术记录档案：使用三维数字摄影、摄影制图、无人机等新技术全面记录石窟内

外信息。使用新技术记录文件应注意以下方面：

- 必须使用正确的电子数据储存方式，确保数据后续使用。很多石窟寺管理机构可能不具备用高科技手段记录档案并长期维护数据的条件。甘肃省文物局、一些高校和拥有数字化部门的大型石窟寺管理机构，如敦煌研究院，可以帮助技术水平较低的石窟寺管理机构，但石窟寺管理人员必须了解存储数据的位置和使用数据的相关规定。
- 过去用传统调查方法或者手工绘制的石窟寺地图，应作为历史记录加以保存，这些地图一般都很详细，可以从中看出当时石窟寺的状况。但现在，像激光扫描、摄影测量这样的新技术已经非常普及，可以快速完成海拔高度图、平面图、石窟环境地形图等的绘制工作。无人机空中摄影也很普遍，费用也较低，能及时呈现石窟寺环境的现状。
- 使用卫星遥感技术可以识别地面或航空摄影无法看到的景观特征。像中国科学院这样的科研机构，大量采用这种方法，尤其是在丝绸之路沿线河西走廊的干旱沙漠地区，用于定位、识别地面特征、地下特征和古代道路体系。这些科研机构可以帮助小型石窟寺管理机构。这项技术还可以用于监测大范围内开发活动和盗窃活动以及随时间产生的变化。
- GIS（Geographic Information Systems，地理信息系统）在考古学和其他学科中广泛地用于创建、管理、分析、可视化和绘制地理信息参考数据地图，它是一种在区域范围内（如甘肃省域）管理遗产数据非常有用的工具。

档案管理：记录与存档是文物保护单位“四有”工作要求，应指定专人负责档案管理工作。创建、维护档案的要求如下：

- 建立全面的信息采集系统，记录、扫描、整理相关信息，包括文本、图片、视频及其他类型的数据；
- 注意收集与石窟寺的价值、人为干预、环境和重大活动有关的信息和记录；
- 收集信息时注意信息的完整性和时效性；
- 确保数字化数据和信息的稳定性和将来的可用性。

藏品管理：石窟寺藏品的种类和尺寸各异。莫高窟等少数遗址拥有大量重要藏品，包括考古资料。其他大部分石窟寺只有小型藏品，可能是过去多年从洞窟中收集的掉落的壁画或塑像残片（块）。这些残片（块）可能会被回贴到原来的位置，也可能作为样品用于分析研究，也可能保留了洞窟中褪色壁画的原始颜色。当地博物馆或区域性博物馆可能是保存这些小型藏品的最佳地点，能为这些残片（块）藏品提供安全的存储空间和档案管理。

自 19 世纪或 20 世纪以来的那些日用仪器、工具和设备，以及地质样品和当地村民捐赠的传统物品等，虽然缺乏特别突出的意义，但依然是石窟寺现代历史中的重要组成。

基础设施管理、水电管理与垃圾处理

石窟寺应通过使用可再生资源、绿色能源、节水以及关注遗址及其生态环境等方式，创建良好环境，并促进可持续发展。这要求：

- 从形式、规模、材料、风格和游客安全的角度，定期监测石窟寺的基础设施和新建项目对石窟寺的影响；
- 评估石窟寺现有的建筑物和临时建筑物，决定是否拆除，对具有价值或重要功能的建筑物进行修复和维护；
- 设计新建筑时，确保其和石窟寺环境保持协调统一；
- 优先考虑节约用水，园林维护和灌溉应遵循节约用水原则，尽量使用河水和再生水；
- 优先考虑节约能源，取暖、空调和照明应尽量使用绿色能源；
- 废物和垃圾应先分类，再根据当地政府的相关规定集中运输和处理，废水经处理后可二次使用或排放，建筑垃圾可在政府有关部门的指导下掩埋处理。

人员安全与石窟安防

确保人员安全和文物安全。特别是开放的石窟寺，要制定应急管理预案，应对突发自然灾害或气象灾害（如火灾、洪水、地震、强风和强降雨等），保障游客健康和游览安全，保护文物安全。石窟寺应遵循博物馆和文物保护单位的安全要求，建立医疗急救站，配备专业医务人员。需注意以下事项：

- 游客疏散和紧急响应预案、医疗救援；
- 公共卫生和安全设备的升级和测试；
- 可能影响游客人身安全的道路或设施；
- 洪水威胁；
- 崖面和边坡失稳；
- 防火设备（尤其是保留了宗教功能、有宗教活动发生的石窟寺）；
- 安装避雷针，预防火灾和断电；
- 排查火灾隐患并及时消除（如电、焚香烧纸、烟火和危险物品等）；
- 对开放区域进行定期巡逻和检查；
- 必要时，做好反恐准备；
- 醉酒、不遵守规矩和秩序的蛮横人士。

遗址管理

遗址管理涵盖石窟寺保护管理的各个方面。石窟寺的工作人员是遗址管理成功与否的关键因素。如果没有训练有素、积极进取的工作人员，石窟寺将难以完整地保存下去。

培训工作人员，让工作人员参加专家委员会的讨论，参加区域性或与遗址相关的研讨会、调研考察等，都有助于增加工作人员的专业知识，提高工作人员的积极性。

当地人民是重要的石窟守护人，他们和偏远的石窟通常有特殊的感情。应培训当地人用合理的方式守护石窟。

让全体工作人员了解石窟的总体规划和相关政策，有助于实现石窟发展目标。

无论是手工绘制还是用新技术完成的档案资料，都用于记录和研究石窟及其组成要素，用于制作复制品、记录石窟现状、监测石窟变化、辅助展陈。如第四章《历史研究和考古调查》所述，档案是今后最宝贵的资源，必须妥善保存，供研究人员和保护专业人员使用。

环境整治

石窟寺环境是石窟寺的主要价值之一。对石窟寺环境中自然景观和文化景观的合理治理，可以展示和维护其历史价值和自然价值。

石窟寺与其所处的自然景观，共同构成遗产地的完整价值。（左图：麦积山石窟，右图：云崖寺石窟）

城市地区新开展的建设活动、建筑设施与石窟寺共存，改变了石窟寺的文化景观和自然景观。（大像山石窟）

需要考虑陈设物和标牌颜色与周围自然环境的协调性。（拉梢寺石窟）

石窟寺所在的美丽河流环境会受到现代建筑颜色、形式、体量的影响，要考虑这些建筑物与历史环境的协调性。（五佛沿寺石窟）

监测与日常维护

监测和日常维护对保证遗址的长期安全和长久保存至关重要。监测和日常维护需要使用仪器，配备专业指导，但细心观察遗址、记录遗址变化、做好遗址日常清洁也可以达到同样的效果。

环境监测通常需要复杂精密的仪器和专业人员。

对整个石窟寺范围进行定期监测和检查，确保像水渠这样的基础设施运行正常、维护妥当。

用简单的工具就可以进行日常维护，防止垃圾堆积。

应尽量减少监测设备的接线或将它们隐藏起来，不宜暴露在外。

保持工作现场干净有序，有助于提高安全性和工作效率。

处于潮湿地区的石窟寺，更应该加强日常维护，防止因土壤积水、植被生长而加剧石窟劣化。

第七章　利用与展陈

本章封面图片：游客在麦积山石窟欣赏、拍摄雕像

《中国文物古迹保护准则》第 40 条：

合理利用是文物古迹保护的重要内容。应根据文物古迹的价值、特征、保存状况、环境条件，综合考虑研究、展示、延续原有功能和赋予文物古迹适宜的当代功能的各种利用方式。利用应强调公益性和可持续性，避免过度利用。

简介

遗产地的利用在现今社会变得越来越重要，并且成为遗产地管理众多方面的组成部分。遗产地的利用可以为遗产地本身、当地社区以及社会公众带来利益，但也会对遗产地的价值和原真性构成威胁。在第六章我们已经介绍了遗产地利用是遗产地保护的重要组成部分，由于石窟寺遗产地的利用越来越广泛，甚至对石窟寺的保护造成巨大的冲击，在这一章，我们将对石窟寺遗产地的合理利用进行单独讨论。

典型的石窟寺遗产地利用包括：

•科学研究和考古调查；

•石窟寺及其价值的展示和弘扬教育活动；

•传统文化和宗教习俗的活动场所；

•公众休闲、旅游、娱乐并获得经济效益。

石窟寺的合理利用能为其提高社会价值，为社会带来经济效益。然而，一些不当的使用则与石窟寺遗产地的价值（历史价值，艺术价值和自然价值）相冲突。为了更好地保护石窟寺，石窟寺的保护和管理人员能意识到这些潜在的威胁就显得尤为重要。

规范石窟寺遗产地的利用是为了保护石窟寺的所有价值及历史文化的可持续性。如果不能实现这样的目的，就需要决定石窟寺的哪些价值会受到影响，这个决定需要石窟寺的主管领导和该领域的专业人士共同商议。当然，这样的案例很少，因为通过创造性的思维和规划，保存石窟寺的历史价值、艺术价值和社会价值是可以同时实现的。如果一座石窟寺的历史价值由于过度的使用已经被大大削弱，那么这个石窟寺可能会被取消文物保护单位的资格。

石窟寺的主要用途

•科学研究

•教育

•传统和宗教用途

•公众休闲和旅游观光

本章介绍石窟寺的主要用途，以及石窟寺管理者可能需要考虑的潜在价值冲突，以避免过度开发使用而造成石窟寺的伤害。

科学研究

研究包括各个方面，考古、历史、科学等，正如第四章提到，丝绸之路沿线石窟寺的社会科学研究在当代具有非常重要的价值。对于挖掘石窟寺的教育价值，研究是非常有意义的并且几乎没有任何负面影响。但考古调查必须在对石窟寺影响最小，并且提供详细的计划和评估的情况下才能进行。第四章提到，收集当地老一辈居民关于传统习俗和一些地方口述历史，也是研究工作的重点，这在乡村地区尤为重要，因为乡村地区的传统习俗更容易留存，但也会随着经济发展和社会变化而逐渐消失。

教育

石窟寺内容的展示和教育是以学者们的研究成果为基础，是让文物本身和石窟寺的近代史保持活力、讲好石窟寺故事的方式。教育是石窟寺管理者承担的首要义务，新一代人能通过石窟寺，学会珍惜文物的艺术、历史、科学、自然和文化价值，了解其产生的社会意义。除了去洞窟实地参观之外，石窟寺教育还能通过讲解和文物展示等更多方式进行。包括：

- 为学校和社区，以及国内外观众举办各种有趣的展览
- 讲解导览
- 提供有关信息的网站
- 手机应用程序
- 数字石窟
- 复制洞窟
- 高质量的旅游纪念品
- 出版物
- 节假日和演出活动

地处偏僻的石窟寺要借助当地乡镇和城市的力量进行石窟寺文化的弘扬和展示工作。大型的石窟寺可以通过组织研讨会、举办专业会议和成立工作坊的形式来突出石窟寺的教育意义。

传统和宗教用途

当代宗教活动（佛教、道教）和传统的民间习俗最初形成的目的应当是不同的，然而他们在某些方面却是延续的。比如“佛诞日”等代表性节日的焚香、供奉祭品以及当地自发承

担保护职责等，这些行为将参与活动的群体紧密地联系在一起，尤其在农村地区的石窟寺。在农村地区，人们所熟悉的文物遗迹有利于历史和传统习俗的传承。正如《准则》（第十条）关于文物真实性中提到："与文物古迹相关的文化传统的延续同样也是对真实性的保护。"

潜在的价值冲突：政府对传统文化遗俗的认可是很重要的，但有些不当利用对石窟寺的历史价值保护构成威胁。比如最常见的焚香和燃灯供奉，如果在石窟内部进行，就会逐渐对壁画和塑像造成烟熏破坏，影响石窟寺的艺术和历史价值。

大多数的冲突是可以解决的，前提是清楚地了解石窟寺最重要和最有价值的部分，并找到一些可行的、能化解冲突的实践方法。比如，将焚香活动放在洞窟外部进行就可以有效调解石窟寺历史和文化价值保护与宗教活动之间的矛盾；再比如，塑料花饰供养、食品供养或者其他形式的佛教供养物不要出现在洞窟内，能让石窟寺的历史价值和真实性更好地得到保存。除此之外，在核心保护区域播放音乐或诵唱也不合时宜，这会破坏石窟寺的庄严氛围。

石窟寺的重绘和重建，与其潜在价值间存在着难以解决的矛盾。如果石窟寺由于内容缺失而进行了重绘和重修，最后仅仅保留很小比例的原始部分，那它的完整性、真实性和历史价值将受到很大的影响。

随着时间的推移，个体和社会对于历史的记忆慢慢消逝，相关的宗教活动和信念也逐渐转移。几个世纪以来，由于上述原因，许多石窟寺失去了最原始的历史印记和特征，尤其是最近几十年，很多石窟寺经历了大规模的重修重建，寺院前的附属建筑重新建设、翻修，并为了适应当代的佛教和道教活动增添了一些新的设施。这样的发展趋势不符合作为文物保护单位的古代石窟寺的要求。在第五章和第六章已经讨论过，对石窟寺遗产地的干预必须是最低限度，同时还要考虑石窟寺的历史特征和所处的自然环境，这样才能保留石窟寺的真实性，保证其文物保护单位的地位。

一些不恰当的干预措施，比如通过重新彩绘或者制作新的塑像来满足现代宗教活动的需求，会更进一步破坏石窟寺的历史价值。如果这些不恰当的干预在过去已经发生，应当在石窟寺管理机构档案中保留记录，并在石窟寺现场配有醒目的标志说明，以便参观者能清晰地辨认哪一部分是原始的，哪一部分是现代的。由于重绘和重建可能改变或者掩盖文物的原始痕迹，这就影响了文物的潜在研究价值。

当然也应该认识到，宗教和民俗活动在某些方面也会给石窟寺保护带来一定程度的积极作用，这需要在管理方面做好引导、协同配合工作，在符合管理规定的前提下，开展宗教和民俗活动并做好监督管理。

公众休闲和旅游观光

各种形式的旅游主体（包括团体旅游和个人旅游）多见于著名的大型石窟寺，比如莫高

窟、麦积山石窟和炳灵寺石窟，知名度低一些的石窟寺主要接待人群是当地以及周边地区的游客。

近年来，以宗教和朝圣为目的的旅游活动越发流行，尤其在中国西部少数民族区域以及其他宗教在社会生活中占主导地位的国家和地区。石窟寺遗产地的休闲观光性质主要体现在节假日期间的旅游活动中，比如散步、徒步、野炊以及亲近自然等活动。

参观石窟寺是公众认识和尊重古老的历史文化遗址的途径，也是向公众展示石窟寺教育价值的一种方式。

潜在的价值冲突：旅游为石窟寺不仅带来了机遇，也带来挑战，必须仔细评估其存在的不利后果并加以规划，才能保证石窟寺旅游的可持续发展。游客参观石窟寺可以为当地经济发展和遗产地收入做出贡献，但由此产生的经济利益可能会让地方政府和社区一味地增加游客量，甚至超过石窟寺的最大游客承载量。过多的游客会造成交通堵塞和环境拥挤，这将影响游客的参观体验，甚至发生踩踏事件，还可能导致传染性疾病的传播。

要设定石窟寺旅游开放的限度，需要分析以下几个方面：

•游客数量和参观时长；

•做游客调查，了解游客的来源地、来访目的以及参观满意程度；

•记录拥堵的区域、评估存在的风险；

•通过观察游客，分析石窟寺与游客之间的关系，了解游客在哪里聚集、被什么吸引。

根据调查结果制定相应的策略来解决存在的问题，让游客获得更好的参观体验，通过解决隐患更好地保护石窟寺以及游客安全。

在客流量较大的石窟寺，设计不合理的基础设施会对游览视线造成障碍。应该寻求对于人行道、路线布局、分界区域、安全出口，以及壁画和雕塑保护所需的干预措施的设计指导。

石窟寺的原始格局、附属设施及周边生态环境是其重要的价值，不能被现代用途改变，因此，石窟寺游客管理服务设施应精心布局和设计，以免影响环境和自然价值。

总的来说，石窟寺管理和保护的总体目标是在不破坏石窟寺历史和艺术价值的基础上，将石窟寺在休闲娱乐、教育、利益等利用方面的社会效益最大化。在《准则》第 10 条中指出，与文物古迹相关的文化传统的延续也是对真实性的保护。如果一处石窟寺在现代重修过程中缺失了大部分历史痕迹，失去了其历史延续性，就不能再作为文化遗产地来反映珍贵的历史价值。重修过的石窟寺可能会表现出巨大的社会价值，能丰富人们的精神需求，有强大的社会凝聚力，但已经失去了使其被认可和保护的文化遗产的属性。石窟寺的历史和艺术价值是独一无二且不可复制的。

研究与教育

利用石窟寺进行研究和教育，是保护遗产的重要原因之一。石窟寺研究为社会教育服务，对社会有益，能展示历史成就，增强社会凝聚力。

人们参观石窟寺的原因有很多，但最重要的原因还是渴望了解历史。无论在石窟寺还是在博物馆，展览都是游客学习的主要途径。资源受限的石窟可以依靠当地县博物馆做宣传，哪怕是几块展板，都能帮助游客了解更多信息。

石窟寺内真实的壁画和雕塑不能被移动展出，但可以用和洞窟中相同材质的颜料手绘复制的壁画和雕塑，甚至整个洞窟。可以制作出精确而美丽的复制品，可供更多的游客欣赏和研究。虽然数字化复制和虚拟体验还不能完全捕捉到原作或艺术家们手绘复制品的艺术神韵，但这进一步拓展了观赏和研究的可能性。

参观石窟寺可以激发艺术灵感和创造力。演出、教育活动和节日庆典都可以依托石窟寺开展。这也是石窟寺较好的利用方式。

传统和宗教用途

传统和宗教用途体现着石窟寺重要的社会价值，也建立了石窟寺与当地的密切联系。当地人和游客摆放的供品就是这种价值的体现。这样的利用有可能对石窟寺的真实性和历史价值产生负面影响，因此，在进行相关活动时要仔细考虑，做到有效的监督管理。





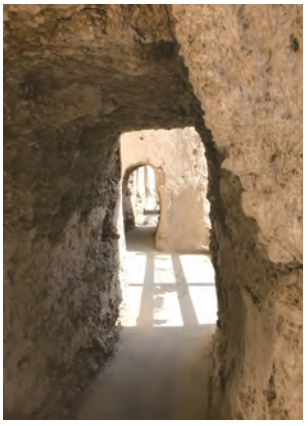
摆设供品、功德箱和经幡在石窟寺非常普遍。这类行为是可逆的，可逆在石窟寺保护非常重要。但是出于对文物的保护，不宜在洞窟内部进行传统宗教活动和供奉物品，以避免损伤和遮盖文物本体。必要时可以考虑在洞窟外部进行焚香、摆放供品等行为。



通常情况下，对遗迹保存状况不佳或丢失的塑像不允许进行重塑或重绘。如获得批准可以有限度地进行恢复，应当在专业人士的指导和建议下谨慎进行。恢复的塑像也是可逆的，可以随时移除。

公众旅游和休闲用途

石窟寺承担的教育和宗教用途与旅游和休闲活动密切联系，因为这些活动能让游客进入石窟寺。总体来说，文化遗产地的旅游日益兴盛，游客从石窟寺提供的教育和娱乐的资源中获益。如果管理得当，石窟寺的旅游和娱乐利用可以为石窟寺和当地带来可观的经济效益；但如果管理不当，石窟寺获得的收益是短期的，造成的伤害却是不可逆转的。


石窟寺当初不是为了现代旅游而建设，游客们要通过陡峭的楼梯、狭窄的栈道通行，这不仅威胁着文物的安全，也容易造成游客的拥堵，影响游客的参观体验。


要保证文物安全、确保良好的游客参观体验，游客量较大的石窟寺必须设定游客承载量。其他的安全措施包括：设计防触摸但不影响游客观看文物的屏风、设立有提示标语的标识牌、安排工作人员引导游客规范参观等。

解释性标示牌对游客有很大帮助，但它必须是清晰可辨的（如左图所示，反光会影响视线）。标示牌不应受视线干扰，并应由坚固耐用的材料制成。

石窟寺环境为游客提供了享受自然世界的场所。

附　录

附录 1　甘肃省五个区域的世界文化遗产、全国重点、省级、市 / 县级石窟寺文物保护单位清单

简要清单

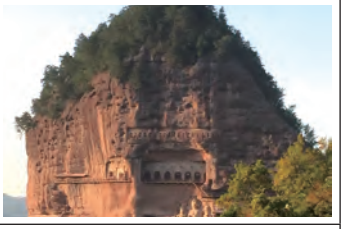
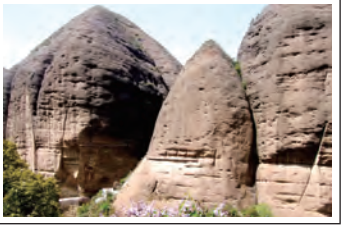
区域 / 保护等级	河西（敦煌） 10 处	河西（凉州） 20 处	陇中 19 处	陇南 34 处	陇东 45 处
世界文化遗产 3 处	莫高窟	——	炳灵寺石窟	麦积山石窟	——
全国重点文物保护单位 18 处	莫高窟 榆林窟 五个庙石窟 昌马石窟	马蹄寺石窟 天梯山石窟 文殊山石窟 童子寺石窟	炳灵寺石窟	麦积山石窟 水帘洞 – 大像山石窟 木梯寺石窟	北石窟寺 南石窟寺 云崖寺和陈家洞石窟 王母宫石窟 石拱寺石窟 石空寺石窟
省级文物保护单位 14 处	——	景耀寺石窟 亥母寺遗址 头峡口石刻 花大门石刻	红山寺石窟 寺儿湾石窟 法泉寺石窟 五佛沿寺石窟	华盖寺石窟 八峰崖石窟 佛爷崖摩崖造像碑	莲花寺石窟 保全寺 – 张家沟门石窟 玉山寺石窟
市 / 县级文物保护单位 96 处	6 处 （见附录 2）	12 处 （见附录 2）	14 处 （见附录 2）	28 处 （见附录 2）	36 处 （见附录 2）

根据地理位置与保护等级列表（省级以上文物保护单位）

主要石窟	相关石窟	朝代	位置	保护等级	图片
河西（敦煌、凉州）					
莫高窟	西千佛洞	南北朝至元	酒泉市 敦煌市	世界文化遗产	
				全国重点文物保护单位	

主要石窟	相关石窟	朝代	位置	保护等级	图片
榆林窟	小千佛洞 东千佛洞 （南北朝至清）	唐至清	酒泉市 瓜州县	全国重点文物保护单位	 
马蹄寺石窟	千佛洞，北寺，上观音洞，中观音洞，下观音洞，金塔寺，药草窟，等	北凉到明清	张掖市 肃南县	全国重点文物保护单位	
天梯山石窟		南北朝至唐	武威市 凉州区	全国重点文物保护单位	
文殊山石窟	前山千佛洞，万佛洞，后山千佛洞，古佛洞	南北朝至西夏	张掖市 肃南县	全国重点文物保护单位	
五个庙石窟		南北朝，五代，宋	酒泉市 肃北县	全国重点文物保护单位	
昌马石窟		北魏至清	甘肃省 玉门市	全国重点文物保护单位	

主要石窟	相关石窟	朝代	位置	保护等级	图片
童子寺石窟		南北朝至清	张掖市 民乐县	全国重点文物保护单位	
景耀寺石窟		清代	张掖市 肃南县	省级文物保护单位	
亥母寺遗址		西夏，元，明，清	武威市 凉州区	省级文物保护单位	
头峡口石刻		清代	金昌市 永昌县	省级文物保护单位	
花大门石刻		西夏，元	金昌市 永昌县	省级文物保护单位	
陇中					
炳灵寺石窟		南北朝至明	临夏回自治州永靖县	世界文化遗产	
红山寺石窟		元至清	白银市 平川区	省级文物保护单位	

主要石窟	相关石窟	朝代	位置	保护等级	图片
寺儿湾石窟		唐至清	白银市 靖远县	省级文物 保护单位	
法泉寺石窟		北魏	白银市 靖远县	省级文物 保护单位	
五佛沿寺 石窟		北魏	白银市 景泰县	省级文物 保护单位	
陇南					
麦积山石窟	鲁恭姬造像碑－ 仙人崖石窟 （南北朝）	十六国	天水市 麦积区	世界文化 遗产	
				全国重点文 物保护单位	
水帘洞－ 大像山石窟	千佛洞石窟 显圣池石窟 拉梢寺石窟	南北朝至 民国	天水市 武山县 — 天水市 甘谷县	全国重点文 物保护单位	 

主要石窟	相关石窟	朝代	位置	保护等级	图片
木梯寺石窟		南北朝至元	天水市 武山县	全国重点文物保护单位	
华盖寺石窟		明，清	天水市 甘谷县	省级文物保护单位	
八峰崖石窟		宋至清代	陇南市 西和县	省级文物保护单位	
佛爷崖摩崖造像碑		北周	陇南市 徽县	省级文物保护单位	
陇东					
北石窟寺		南北朝至宋	庆阳市 西峰区	全国重点文物保护单位	
南石窟寺		南北朝至唐代	平凉市 泾川县	全国重点文物保护单位	

主要石窟	相关石窟	朝代	位置	保护等级	图片
云崖寺和陈家洞石窟		南北朝至清代	平凉市庄浪县	全国重点文物保护单位	 
王母宫石窟		南北朝	平凉市泾川县	全国重点文物保护单位	
石拱寺石窟		南北朝至隋	平凉市华亭市	全国重点文物保护单位	
石空寺石窟		宋代至明	庆阳市镇原县	全国重点文物保护单位	
莲花寺石窟		唐，宋	庆阳市合水县	省级文物保护单位	

主要石窟	相关石窟	朝代	位置	保护等级	图片
保全寺—张家沟门石窟		北魏	庆阳市合水县	省级文物保护单位	 
玉山寺石窟		宋，金	庆阳市镇原县	省级文物保护单位	

附录 2　甘肃省市 / 县级石窟寺文物保护单位名录

河西敦煌石窟 6 处
东水沟石窟
南湖店西石窟（已迁至莫高窟）
南湖店东石窟（已迁至莫高窟）
碱泉子石窟
旱峡石窟
石庙子石窟遗址
河西凉州石窟 12 处
龙泉寺石窟
高峰寺石窟
娘娘庙石窟
新开阴骘寺石窟
上天乐石窟
大湖滩石佛崖石窟
上石坝河石窟
云庄寺石窟
灵官殿石窟
石佛崖石窟
观音山石窟
圣容寺石佛像
陇中石窟 14 处
邢家湾石洞寺石窟
石洞寺石窟
尖山大佛寺石窟
桃花山石窟
刘家寺石窟
三清洞石窟
接引寺石窟
朝阳寺石窟
劈佛寺石窟
红塔寺石窟
高石崖石窟
马鹿山石窟
五竹寺石窟

云盘寺石窟
陇南石窟 28 处
碧莲洞石窟
罗汉崖摩崖造像
神仙洞石窟
朝阳洞石窟（甘谷县）
马务寺石窟
显龙洞石窟
禅殿寺石窟
鲁班山石窟
铁笼山石窟
佛孔寺石窟
罗汉洞山摩崖石刻
清凉洞石窟
竹林寺石窟
黄花寺石窟
佛爷崖石窟
花果山石窟
朝阳洞石窟（武都区）
达摩石窟
菩萨石窟
法境寺石窟
万金寺石窟
真空寺石窟
三眼洞石窟
张果老登真洞
土蜂沟石窟
西姑庵石窟
千佛洞石窟
佛爷崖石窟
陇东石窟 36 处
罗汉洞石窟（泾川县）
千佛崖石窟
丈八寺石窟

韩家沟石窟
蒋家坪石窟群
太山寺石窟
红山石窟
佛爷崖石窟
朝阳洞石窟
北极洞石窟
贺家峡石窟
石桥石窟
店峡石窟
乔阳寺石窟
三教洞石窟
竹林寺石窟
佛沟崖石窟
红崖寺石窟
西寺石窟
罗汉洞石窟（庄浪县）
大寺石窟
千佛崖摩崖石刻
葛家洞石窟
佛崖湾石窟
石窑河滩石窟
曹家川石窟
小河湾石窟
万山寺石窟
尚湾石窟
千佛砭石窟
安定寺石窟
李家庄石窟
上壕石窟
碧落霞天石刻
洛阳寺石窟
高坡石窟

附录 3　选录国家、甘肃省、国际有关遗产地保护与管理的法律、法规、文件和宪章、公约

一、国家法律、法规与文件

1.《中华人民共和国文物保护法》(2024 年修订)

2.《中华人民共和国文物保护法实施条例》(2017 年修订)

3.《中华人民共和国旅游法》(2018 年修订)

4.《中华人民共和国城乡规划法》(2008)

5.《风景名胜区条例》(2016 年修订)

6. 中共中央办公厅、国务院办公厅《关于加强文物保护利用改革的若干意见》(中办发〔2018〕54 号)(2018 年 10 月 1 日)

7. 国务院关于进一步加强文物工作的指导意见(国发〔2016〕17 号),国务院 2016 年 3 月 4 日发布。

8. 国务院办公厅关于进一步加强文物安全工作的实施意见(国发办〔2017〕81 号,国务院办公厅 2017 年 9 月 9 日发布。

9. 国务院办公厅关于加强石窟寺保护利用工作的指导意见(国办发〔2020〕41 号)

10.《中国文物古迹保护准则》(2015)

11.《全国重点文物保护单位保护规划编制审批办法》(2004)

12.《全国重点文物保护单位保护规划编制要求》(2004)

13.《全国重点文物保护单位保护范围、标志说明、记录档案和保管机构工作规范(试行)》(1991)

14.《全国重点文物保护单位记录档案工作规范(试行)》(2003)

15.《文物保护工程管理办法》(文化部,2003)

16.《世界文化遗产保护管理办法》(2006 年 11 月 14 日文化部部务会议审议通过,自 2006 年 11 月 14 日起施行)

17.《中国世界文化遗产监测巡视管理办法》(国家文物局,2006)

18. 国家文物局关于加强文物保护单位游客承载量研究的通知(文物保函〔2013〕943 号)

19. 国家文物局 文化和旅游部《关于加强石窟寺等文物开放管理和实行游客承载量公告制度有关工作的通知》(文物保发〔2020〕32 号)

20.《国家文物保护专项资金管理办法》(财文〔2018〕178 号),财政部 国家文物局 2018 年 12 月 29 日发布。

21.《关于进一步加强文物消防安全工作的指导意见》（文物督发〔2019〕19号），国家文物局 应急管理部 2019年11月6日发布。

22. 国家文物局《文物博物馆单位文物安全直接责任人公告公示办法（试行）》（文物督发〔2020〕39号）

23. 国家文物局关于加强基本建设工程中考古工作的指导意见（文物保发〔2006〕42号）

24. 石窟寺开放管理导则（试行）（文物保发〔2024〕58号），国家文物局 2024年11月14日印发

二、地方性法规和文件

1.《甘肃省文物保护条例》（2010修订）

2.《甘肃省环境保护条例》（2019）

3.《甘肃省旅游条例》（2021修订）

4. 甘肃省非物质文化遗产条例（2022修订）

5. 甘肃省人民政府办公厅关于加强石窟寺保护利用工作的实施意见（甘政办发〔2021〕27号）

6.《甘肃省文物安全管理办法》（2018）

7.《甘肃省文物保护单位保护范围和建设控制地带划定办法》（2007）

8.《甘肃省文物保护工程管理办法（试行）》（甘文局发〔2018〕208号）

9.《甘肃省石窟寺保护利用规划（2023-2035年）》（甘文局发〔2023〕16号

三、国际宪章、公约与文件

1.《国际古迹保护与修复宪章》（1964）

2.《保护世界文化和自然遗产公约》（1972）

3.《实施保护世界文化与自然遗产公约的操作指南》（2017）

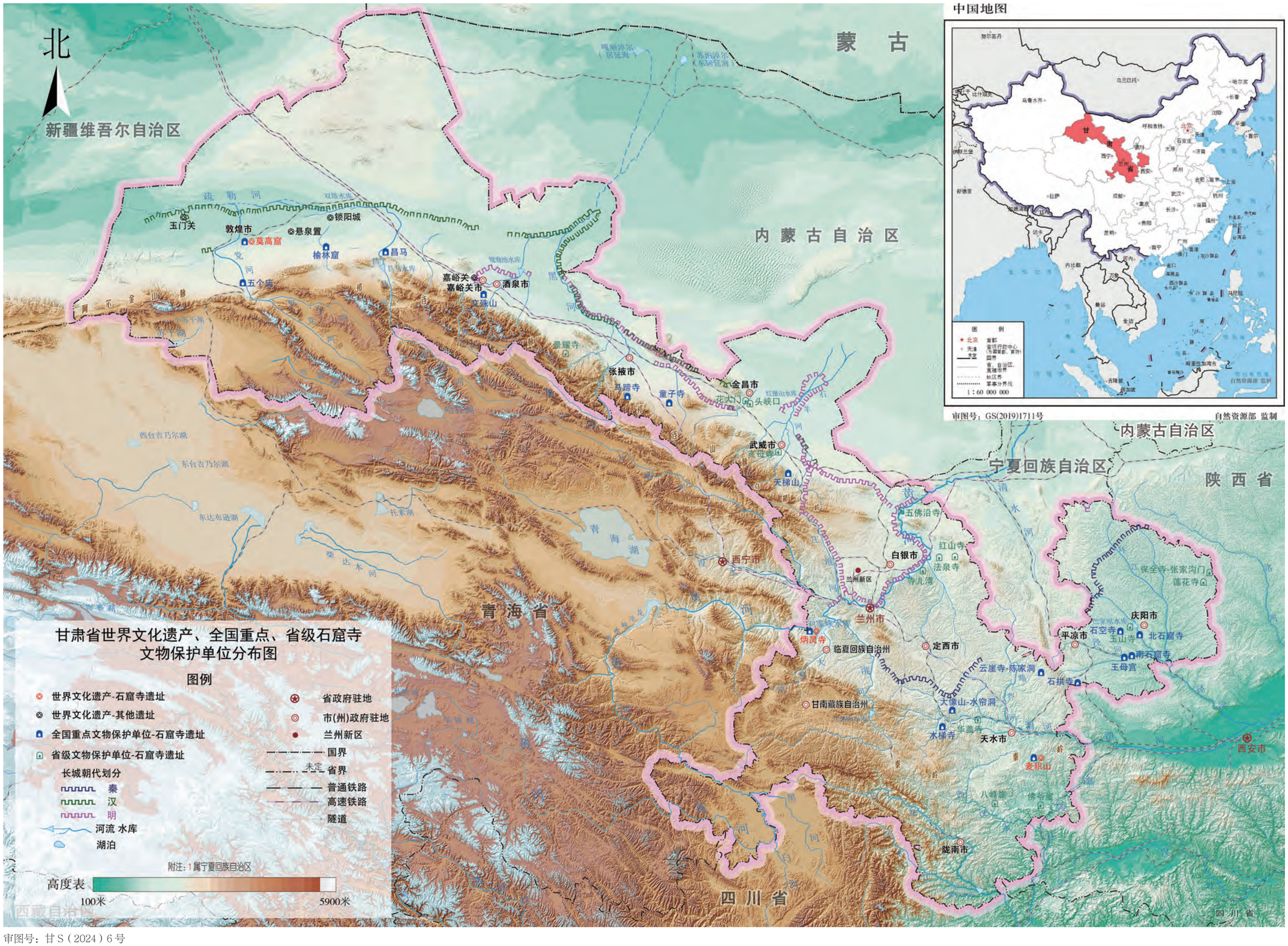
4.《考古遗产保护与管理宪章》（1990）

5.《奈良真实性问题文件》（1994）

6.《国际文化旅游宪章》（2002）

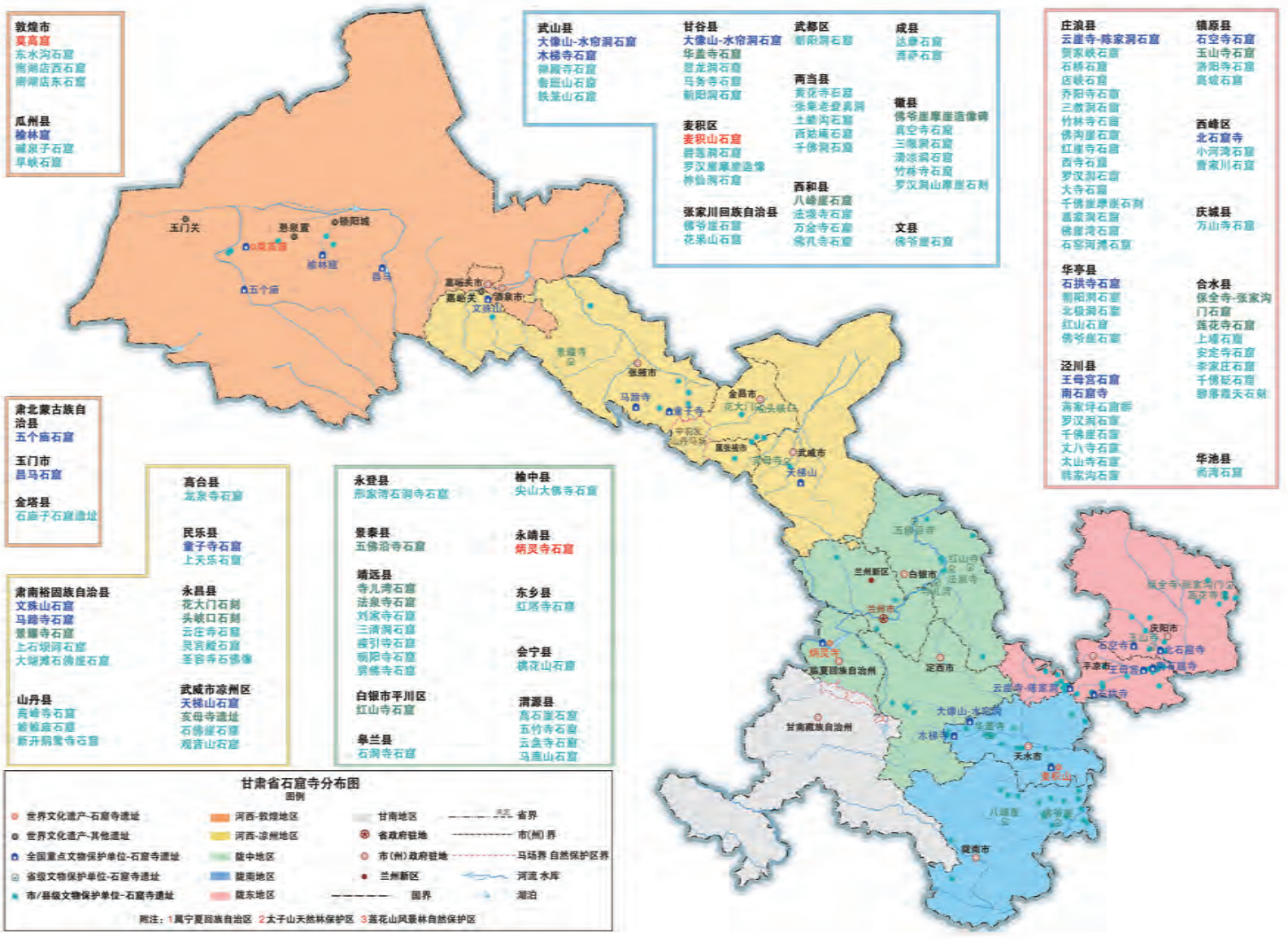
附录 4　甘肃省石窟寺位置图

4.1 甘肃省世界文化遗产、全国重点、省级石窟寺文物保护单位分布图



审图号：甘S（2024）6号

4.2 甘肃省石窟寺分布图（按市县区列出各区域石窟寺）



审图号：甘S（2024）6号

后记

《甘肃省石窟寺保护管理导则》的编写耗时八年。在2017年至2019年间，团队成员实地调查了全省35处全国重点、省级、市县级石窟寺文物保护单位。实地考察离不开甘肃省文物局的支持和敦煌研究院、盖蒂保护研究所各位专家的深厚学识和丰富经验，以及与当地石窟寺工作人员的交流和咨询。此外，《甘肃省石窟志》《甘肃省河西中小石窟调查报告》，以及甘肃省文物局的石窟寺清单名录，都是本团队使用的重要资源。2020—2024年进行文本撰写、修改、完善工作。

《甘肃省石窟寺保护管理导则》使用的石窟寺照片由以下机构提供：甘肃省文物局、敦煌研究院、盖蒂保护研究所、炳灵寺文物保护研究所、北石窟寺文物保护研究所、麦积山石窟艺术研究所，以及相关石窟寺遗址的保护管理机构。

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Chapter 1 Introduction

Chapter cover image: Maijishan exterior façade and walkway

Statement of Purpose

Gansu is well-known for its grotto arts. The large-scale and complete range of grotto temple sites, distributed throughout the province, represents the highest development of Chinese grotto arts and culture. Among the sites, the Dunhuang Mogao grotto site is the largest in scale, the longest in duration, and the richest in Buddhist content, an artistic treasure-house of the world. The Maijishan grottoes are known for their refined sculpture. The Tiantishan grottoes are known as the origin of grottoes in China's central plain. According to the results of the special survey (December 2021) for grotto temples in Gansu Province, there are 128 county level and higher protected sites, including cliff face sculpture (145 cultural heritage locations) in the province. Among them are 3 World Cultural Heritage sites,18 national level cultural heritage sites (34 cultural heritage locations), 14 provincial level cultural heritage sites (15 cultural heritage locations), and 96 municipal/county level cultural heritage sites. They are mainly distributed in 13 cities and 53 counties, except the Gannan area. In addition, there are also about 91 unclassified grotto temple sites.

Gansu's many grotto temples[①] are diverse in date, style, locations, and size, but they share many attributes and challenges that lend themselves to a uniform approach to conservation and management:

- Chronologically they cover a period from about the fourth to the early nineteenth centuries; however, some grottoes in the eastern part of the Yellow River (Huanghe) in Gansu were constructed in the Ming dynasty (1368-1644).
- They are located on cliff faces along rivers, streams, or oases and most have wall paintings and sculptures.
- Wall paintings and statues reflect Buddhist and, in some cases, include Daoist and Confucian traditional culture and beliefs. They also show differences in artistic expression and styles over 1600 years and in different geographic regions.
- They suffer from natural damage and disasters related to the rock type and the environment (desert in the west, forests and mountains in the east) in which they were created.

① Grottoes are also referred to, or translated, as'caves,''grotto temples'or'cave temples' (in Chinese *shiku, shikusi, dong*)

- Some important sites are adequately staffed for protection, maintenance, research, and management, while many of the smaller or less significant ones lack adequate staffing and expertise.
- There are imbalances in the level of presentation, utilization, and facilities. The larger grotto temples receive excessive tourism raising concerns about problems and damage caused by exceeding their visitor carrying capacity; the smaller grotto temples want more visitors to generate additional income.
- Some grotto temples are still used as religious sites and lack strict management. These religious activities may have some unforeseen negative impacts to the sites.

In recent years, the national and Gansu provincial governments have recognized that due to the opening of the grotto sites, serious challenges have arisen; thus, the government is paying more attention to their protection and utilization. From 2002 to the present, the Gansu Provincial Government promulgated the Regulations on the Protection of Mogao Grottoes in Dunhuang, the Regulations on the Protection of Binglingsi Grottoes, the Measures for the Protection of the Maijishan Grottoes, the Measures for the Protection of the Yulin Grottoes, and other regulations on the protection of grottoes. The State Council and Gansu Provincial Government also issued the Guidance of the General Office of the State Council on Enhancing Protection and Utilization of Grotto Temples, and the Suggestions of the General Office of the People's Government of Gansu Province on Enhancing Protection and Utilization of Grotto Temples, respectively. They put forward overall objectives and specific tasks to increase the efforts for protection and utilization of grotto temples.

In 2002, within the framework of the Chinese system of laws and regulations on the protection of cultural heritage, based on the Law of the People's Republic of China on the Protection of Cultural Heritage and related regulations, and in accordance with relevant international principles, the China National Committee of the International Council on Monuments and Sites (ICOMOS), in cooperation with international entities, developed the Principles for the Conservation of Heritage Sites in China (China Principles), which were revised in 2015. This is the first set of cultural heritage conservation principles for the nation. Since the promulgation and implementation of the China Principles, the document has been widely accepted by Chinese cultural heritage professionals. The

main principles and spirit of the China Principles have been increasingly reflected in the relevant regulations promulgated by the Chinese cultural heritage authorities.

Beginning in 2003, the Dunhuang Academy, Maijishan Grottoes Art Research Institute, and other institutes were organized by Gansu Provincial Cultural Heritage Bureau to carry out the Small and Medium Size Grotto Sites Survey. The project was carried out continuously for more than a decade to investigate grotto sites in Gansu in order to develop a comprehensive understanding of the state of preservation of the grottoes and their contents, and to update relevant information. In 2020, the National Administration of Cultural Heritage organized a nationwide grotto site survey, aiming to fully grasp their protection and management status, systematically analyze their protection situation, and establish a foundation to develop scientific protection policies and medium- and long-term planning.

In August 2016, the Gansu Provincial government re-assigned Maijishan grottoes in Tianshui County, Binglingsi grottoes in Yongjing County, and Beishikusi grottoes in Qingyang County to the management of the Dunhuang Academy; consequently, the Academy needed regional grotto management guidelines, which could also provide strong support to the macro-management of Gansu Cultural Heritage Bureau. In September 2017, the Dunhuang Academy and the Getty Conservation Institute (GCI), with ICOMOS China, delivered a five-day training course on the China Principles for professionals from 32 heritage sites in Gansu. The consensus that emerged from the training course was that the many grotto heritage sites in Gansu would benefit from a comprehensive and systematic conservation management methodology for their protection, utilization, and management, which are not all at the same level. The protection and management expertise at Mogao has reached an international level and can serve as a model for other grotto sites in the province.

For all the reasons above it was deemed beneficial to develop a set of guidelines for conservation and management that accords with national and provincial policies and regulations and is consistent with the China Principles but is more specific to the problems and conservation needs of grotto sites. The Guidelines for Conservation and Management of Grotto Sites in Gansu Province (Grotto Guidelines) can be applied to all grotto sites but are especially aimed at promoting and enhancing

the conservation, research, utilization, and management of sites with few resources and trained staff.

Implementation of the Grotto Guidelines is important for perfecting and enhancing grotto site protection, utilization, and their influence on society. Furthermore, they can consolidate and expand benefits through study of the values of grotto temples, archaeological research, scientific and technical site protection, personnel training, and site presentation and utilization. The Guidelines are also important and significant for cultural development in the province and for promotion of the Belt and Road initiative.

Historical and cultural background of Gansu grotto sites

Gansu is in the northwest of China and extends from northwest to southeast. Its western boundary is near Hami in Xinjiang and its southeast end adjoins the Weihe (Wei River) Plain in Shaanxi and the Sichuan Basin. The history of grotto temples in the province, with their diverse cultural forms and rich content, is a long one. The sites are scattered throughout the province and their geographical environments are complex and diverse, mainly in remote and sparsely populated and mountainous areas. These practical facts entail new requirements, direction, and challenges for protection, research, utilization, and management.

Historical overview

Gansu has a long history. In the Palaeolithic and Neolithic periods, humans created splendid cultures and artistic works, such as represented in the Dadiwan and Majiayao cultures. During the pre-Qin period, the inhabitants of eastern Gansu and the Central Plains developed the early Central Plains culture. By the Qin and Han dynasties, the Gansu area had been culturally integrated with the Central Plains.

In the early years of the Western Han Dynasty, emperor Han Wudi established four prefectures and two control stations, Yumenguan and Yangguan, and thus “broke the right arm of the Xiongnu.” He first set up Jiuquan and Wuwei prefectures in 121 BCE, then in 111 BCE Dunhuang and Zhangye were separated from them, thus forming the so-called “Hexi Four Prefectures.” At the same time, emperor Han Wudi twice sent Zhang Qian to drive out the Xiongnu from the Western Regions, and so gradually created the ancient route to Central and Western Asia from the Han capital Chang’an

through the Hexi Corridor – today known as the "Silk Road." With the development of the political and economic power of the Han Dynasty, exchange between China and the western countries became close. Chinese culture spread westward via the Silk Road while western civilization entered China by way of the same route. Dunhuang, as the westernmost city in Gansu connecting the Hexi corridor and the Western Regions, was "the gateway to China and the West" (*Sui Shu, Pei Jui Chuan*) and thus became an important city. (*Shui Jing Zhu Shu, Vloume*2) Discovered documents, and literary and artistic works, revealed a flourishing culture in Dunhuang during the Han and Tang Dynasties.

Between the Western Han and Eastern Han, Buddhism reached China through the Western Regions. At the end of the Eastern Han dynasty and the beginning of the Wei and Jin dynasties (third-fourth century CE) wars raged and regimes changed frequently, but Buddhism continued to develop and flourish. The Hexi area, adjacent to the Western Regions, was one of the earliest areas in China to be in contact with Buddhism. In the early days of Buddhism, high monks who traveled along the Silk Road to and from the Western Regions and Central Plains often stayed at Dunhuang, Liangzhou, and other places, directly or indirectly influencing and promoting the development of Buddhism in China. The flourishing of Buddhism contributed to making these places influential at that time.

Especially from the Sixteen Kingdoms to the Northern and Southern Dynasties, most of the rulers of the northern regimes practiced Buddhism. Under their strong promotion, large amounts of money were spent to build monasteries and grottoes. Grottoes started to be constructed in the Dunhuang area in the second year of the Former Qin Jianyuan regime (366 CE) [see Chronology table]. Among them, the Dongyang king, Yuanrong, and the Jianping lord, Yu Yidu constructed large caves at the Mogao Grottoes. The ruler of the Northern Liang, Juichi Mengsun, constructed the "Liangzhou Grottoes" with 5.3 meter-high Buddha statues (possibly Tiantishan grottoes) at the southeast part of Liangzhou city. During the same period, Matisi Grottoes at Zhangye and Wenshushan Grottoes at Jiuquan were also constructed successively. After the Northern Wei conquered the Northern Liang, all grotto artisans and high monks at the Northern Liang Grottoes were taken to its capital city Pingcheng (present-day Datong, Shanxi Province) by the rulers of the Northern Wei to construct grottoes. One of the famous high monks from Liangzhou named Tanyao presided for a time over the construction of Yungang Grottoes, which show the profound stylistic influence of Liangzhou

Buddhism. At the Binglingsi Grottoes, located at the central part of Gansu Province in Yongjing County, there exists an inscription from the first year of the Western Qin Jianhong regime (420 CE), which according to research, indicates that some wall paintings and statues were most likely created before 420 CE. A famous high monk, Xuan Gao, who was secluded at Maijishan in Tianshui (in the eastern part of Gansu) during the Western Qin regime, commissioned grottoes at the site. After the Northern Wei period, Buddhism spread throughout the country. A Jingzhou high official, Xi Kangsheng, constructed Beishikusi and Nanshikusi in the second year of Yongping's reign (509 CE). Around that time, at Longdong area, construction of Wangmugong Grottoes in Jingchuan County, Shigongsi Grottoes in Huating City and Lashaosi Grottoes in Wushan County also began. Many grotto temples had already been developed in the Sixteen Kingdoms and from this base they were continuously expanded and further developed. This shows that the construction of grotto temples all over Gansu not only took place at an early period and spread widely but was also closely related to political figures during various periods. Therefore, it can be said that Gansu grottoes embody important historical information for the study of ancient Chinese politics, economy, culture, art, social life, and other aspects, with very high historical, cultural, artistic, scientific, technological, social, and research values.

Origins of the grottoes

Buddhism was founded in ancient India in the sixth century BCE where it subsequently evolved. Buddhism reached its peak during the Maurya Dynasty in the third century BCE and began to spread into neighboring countries. By the first century BCE, Buddhism had been introduced into the Khotan area (Hetian, in present day Xinjiang Autonomous Region) via Central Asia and reached central China in the first century CE. When Buddhism first reached China, it encountered fierce opposition from both native Confucianism and Daoism, and competed with them, but gradually emerged as a fully Chinese Buddhist system.

Grotto arts were introduced into China with Buddhism and spread into Central China through multiple channels. As a result, the grotto arts in China are different in styles and characteristics due to the cultural differences at each place of origin. Gansu Buddhism was mainly introduced by land via the Silk Road, so the early grottoes show the characteristics of Indian and Western Regions styles. For instance, Mogao Grottoes caves nos 268 and 285 and Wenshushan meditation caves

imitated the Indian style of *Vihara* Grottoes with multiple meditation niches. The Qiuci style of large statues from the Western Regions also appeared at the Matisi Thousand Buddha cave. These styles are found only in the Hexi area, not in the Central Plains. Northern Liang wall paintings at Dunhuang and the early period of wall paintings at Binglingsi Grottoes show both the Western Regions style and Chinese painting characteristics after the Wei and Jin dynasties.

Following the significant influences of the Central Plains culture, grotto arts spread throughout the country and reached its maturity, then the style of the Central Plains flowed back into Gansu, especially during the Sui and Tang dynasties. Re-unification and prosperity of the whole country greatly promoted the development of grotto arts. The art of Buddhist sculpture and wall painting, centered on the capital Chang'an, soon spread throughout the country. Grotto arts in Gansu became stylistically in line with those of the Central Plains. Today, Tang dynasty temple sculptures and wall paintings are rarely preserved in central China, making the surviving wall painting and polychrome sculpture in Gansu extremely important.

After the Tang and the Five Dynasties, due to separation by local regimes, the connection between the Central Plains and most of the Gansu area, especially the Hexi area, was intermittent with little cultural exchange between the regions, resulting in a reduction in grotto development in Gansu. During the Western Xia and Yuan Dynasties, newly excavated grottoes or repainting of walls developed different styles from those of previous dynasties as well as those of central or southern China. This was because Gansu Buddhism had absorbed new ethnic arts, especially the style of Tibetan Buddhism. But overall, Gansu grottoes were no longer prosperous and on a path to gradual decline.

During the Ming and Qing Dynasties, under a unified political authority, grotto arts began to converge. In the Ming dynasty, grotto construction in Gansu and the style of grottoes was simplified. In the Qing dynasty, due to the political mandates of emperors, Tibetan Buddhism was vigorously promoted. During this time grottoes in Gansu were mainly influenced by Tibetan Buddhism. At the same time, some grottoes decorated with Daoist features and folk beliefs also appeared. These new grotto styles were the main characteristics of Gansu grottoes at this time.

Overview of the Gansu grottoes

Grotto temples are widely distributed throughout Gansu and comprise a major characteristic of Gansu traditional culture. Although Gansu has many grottoes, they are diverse in style, date, location, scale, and size, but have a high degree of consistency and similarity in many aspects. According to their geographic locations, they are divided into five regions: Hexi Dunhuang, Hexi Liangzhou, Longzhong, Longnan, and Longdong (see Inventory in Appendix 1 and map in Appendix 4.2). In the development of the ancient culture of Gansu (formerly called Helong), these four areas are not only interrelated, but also have their own distinctive characteristics; together they constitute the rich and colorful culture of Gansu's grottoes.

1. Hexi area grottoes

The Hexi area became the hub of northwestern China after the Han Dynasty had established the four Hexi prefectures and the area had already developed a profound Han cultural background by the time of the Wei and Jin dynasties. Due to its proximity to the Western Regions (today's Xinjiang and areas further west), the Hexi area was the first region in China where Buddhism took root. During the Wei and Jin dynasties the Central Plains area was in chaos, but the Hexi area remained stable for a long period and was the first area in Gansu where grottoes were created. During the Sui and Tang dynasties, as Buddhism continued to develop, grottoes were constructed in the Hexi area with a focus on Dunhuang. In the late Tang, Five Dynasties, and Northern Song dynasties, the so-called "Return to Allegiance Army" of the Zhang and Cao families controlled the regions centered around Guazhou and Shazhou and maintained their stability and developed politically and economically. At the same time, the Return to Allegiance Army promoted Buddhism and constructed more caves at Mogao and Yulin. Thereafter, additional grotto sites and temples were constructed, and old ones were restored or repainted during the Western Xia, Yuan, Ming, and Qing dynasties.

The Hexi area[①] can be divided into two regions: Dunhuang and Liangzhou. Grottoes of the

①Dunhuang and Guazhou in the western part of the Hexi region were ruled by the "Return to Allegiance Army" from 851-906, by the Jinshan Kingdom of the Western Han Dynasty from 906-914, restored to "Return to Allegiance Army" from 914-1028, and ruled by the Shazhou Uighur from 1028-1037.

Dunhuang region include Mogao and Xiqianfodong near Dunhuang city; Wugemiao in Subei County; Yulin, Dongqianfodong, which comprise the ancient Dunhuang cultural cluster, with Mogao at the center, and have the longest history and the greatest number of caves. Located along the main cultural and transportation routes between the East and West (the Silk Road), they reflect the prosperous and extensive cultural exchanges between China and other countries. Among them, the Mogao grottoes were founded in the Former Qin, in the second year of the Jianyuan reign (366 CE), then continuously developed for more than 1000 years under ten dynasties: Northern Liang, Northern Wei, Western Wei, Northern Zhou, Sui, Tang, Five Dynasties, Song, Western Xia, and Yuan. Mogao has 735 caves, 45,000 square meters of wall paintings, and more than 2000 polychrome statues. The site preserves the largest number of caves, longest duration, richest content, and the most exquisite art of Buddhist grottoes in China and beyond. At Mogao, the characteristics shown in the cave architecture, sculpture, and wall paintings are comparatively complete and reflect a thousand years of grotto art history. Dunhuang polychrome sculptures were beautifully produced with outstanding artistry. The paintings are rich in content and style. Early period murals were painted with vibrant colors and convey a strong religious atmosphere. The narrative story paintings are fascinating and the images of bodhisattvas and apsaras reflect different styles and influences from both the Western Regions and the Central Plains. During the Tang dynasty, large-scale murals of sutra narrative stories became popular and reflected the maturity of Chinese Buddhist art. These grand scenes portray the Chinese aesthetic at that time, with many different characters, and large spaces with perspective, depicting the splendid western paradise that was quite different from its origin in Indian Buddhism. Donor portraits from different periods show individuality and allow understanding and study of ancient portraiture and dress.

Grottoes of the Liangzhou_region mainly include Tiantishan in Wuwei, and Jingtasi, Matisi, Wenshushan, and Tongzisi in Zhangye. These grotto sites were constructed during the early dynasties. Tiantishan grottoes is possibly the historically recorded Liangzhou grottoes since they match those that were made by the family of Juqi Mengsun. The surviving earliest grottoes may have been constructed in the Northern Liang dynasty, but the majority were constructed in the Northern Wei dynasty. Their statues basically reflect the original Buddhist statue style, which was under the influence of the Western Regions. As the Liangzhou grottoes had a major stylistic influence on the Yungang Grottoes in Shanxi Province, they have significance for the study of the

early grottoes in northern China. At the same time, the Hexi area grottoes also include Jingyaoxi grottoes and other Qing Dynasty grottoes in Sunan County. These display strong Tibetan Buddhist characteristics of the Qing dynasty grottoes and represent the last flourishing of the late Chinese Buddhist culture in the ethnic areas.

2. Longzhong area grottoes

Grottoes in the Longzhong area mainly include Binglingsi in Yongjing County; Wufoyansi in Jingtai County; Sierwansi and Faquansi in Jingyuan County; and Hongshansi in Baiyin City. Among them, cave no. 169 in Binglingsi was constructed in the first year of the Jianhong reign (420 CE) in the Western Qin period. This grotto was carved out of a natural cave and is the earliest dated cave site in China. There are some murals or polychrome statues made earlier before Jianhong's first year and they reflect the initial situation of Chinese Buddhist art and are of significance for the study of the origin of grotto arts. Binglingsi has paintings and polychromed sculptures from the Northern dynasties (Northern Wei, Western Wei, and Northern Zhou), Sui, and Tang through the Ming and Qing dynasties. Some caves also have stone statues, a rarity among Hexi grotto sites. In addition to Binglingsi, the original and ancient art works of other grotto sites in the Longzhong area are not well preserved and most of them were restored or repainted in modern times (late Qing dynasty). However, these grotto temples largely reflect the historical development, prosperity, and decline of grotto culture in this area.

3. The Longnan area grottoes

Grottoes of Longnan area include Maijishan in Tianshui; Daxiangshan and Huagaisi in Gangu County; Mutisi and Shuiliangdong grotto cluster in Wushan County; and Bafengya in Xihe County. Among them, Maijishan grottoes is the most representative and sometimes called the "Sculpture Gallery of the East." The earliest part of Maijishan grottoes was built in the Sixteen Kingdoms, thereafter, continuously developed in the Northern Wei, Western Wei, Northern Zhou, Sui, Tang, Song, Yuan, Ming, and Qing dynasties. The site has 211 caves and niches and 7200 statues. The sculpture is of great significance for understanding and studying Buddhist art of the Northern dynasties.

The Wushan Shuiliandong grotto cluster includes Lashaosi, Qianfodong, Xianshengchi, and others.

Most of the relief carvings and polychrome painting and statues were made on cliff faces, especially the Lashaosi grotto site, with important historical and artistic values in its large-scale cliff face relief sculpture and inscription by Wei Chijiong [also known as Yu Chijiong], a famous general of the Northern Zhou dynasty.

4. The Longdong area grottoes

Grottoes of the Longdong area include Beishikusi and Yushansi in Qingyang City; Nanshikusi and Wangmugong in Jingchuan County; Baoquansi, Zhangjiagoumen, and Lianhuasi in Heshui County; Shikongsi in Zhenyuan County; Shigongsi in Huating City; and Yunyasi and Chenjiadong grottoes in Zhuanglang County. The largest one is Beishikusi with 295 caves and niches constructed in the Northern Wei, Western Wei, Northern Zhou, Sui, Tang, and Song dynasties; the number of caves constructed in the Tang dynasty is greater than other dynasties. Among them, cave no. 165 constructed in the Northern Wei in the second year of the Yongping reign (509 CE) is the largest, housing seven large Buddha statues. According to the inscription on a stele at the site, the cave was constructed by Xi Kangsheng, a high official of the Jingzhou area. The grottoes in the Longdong area have stone statuary, different from those in the Hexi area, which are mainly earthen plaster with polychrome painting. Geographically this region is near Shaanxi Province; consequently, most of the grottoes have a close stylistic relationship to Buddhist grottoes of the Central Plains, which has important reference value for the study of the Central Plains grotto culture and the evolution of its artistic style.

Gansu Province Dynastic Chronology

甘肃西部地区 **Western Part of Gansu**		时 间 **Time Period**	甘肃东部地区 **Eastern Part of Gansu**		时 间 **Time Period**
汉 Han	西汉 Western Han	前 206- 公元 25 206 BCE-25 CE	汉 Han	西汉 Western Han	前 206- 公元 25 206 BCE-25 CE
	东汉 Eastern Han	25-220		东汉 Eastern Han	25-220
三国 Three Kingdoms	魏 Wei	220-265	三国 Three Kingdoms	魏 Wei	220-265
晋 Jin	西晋 Western Jin	265-317	晋 Jin	西晋 Western Jin	265-317
	东晋 Eastern Jin	317-320		东晋 Eastern Jin	317-319
十六国 Sixteen Kingdoms	前凉 Former Liang	320-376	十六国 Sixteen Kingdoms	前赵 Former Zhao	319-329
	前秦 Former Qin	376-386		后赵 Later Zhao	329-351
	后凉、北凉 Later Liang Northern Liang	386-400		前秦 Former Qin	351-386
	西凉、南凉、北凉 Western Liang Southern Liang Northern Liang	400-411		后秦、西秦 Later Qin Western Qin	386-406
	西凉、北凉 Western Liang Northern Liang	411-421		南凉、西秦 Southern Liang Western Qin	406-415
	北凉 Northern Liang	421-439		西秦、仇池、大 夏 Western Qin Chou Chi Da Xia	415-426
南北朝 Northern and Southern Dynasties	北魏 Northern Wei	439 - 534		大夏 Da Xia	426 - 428
	西魏 Western Wei	535 - 557	南北朝 Northern and Southern Dynasties	北魏 Northern Wei	428 - 534
	北周 Northern Zhou	557 - 581		西魏 Western Wei	535 - 557
隋 Sui		581 - 618		北周 Northern Zhou	557 - 581
			隋 Sui		581 - 618

<table>
<tr><th colspan="2">甘肃西部地区
Western Part of Gansu</th><th>时 间
Time Period</th><th colspan="2">甘肃东部地区
Eastern Part of Gansu</th><th>时 间
Time Period</th></tr>
<tr><td rowspan="3">唐
Tang</td><td>唐
Tang</td><td>618-764</td><td rowspan="3">唐
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Tang</td><td>618-763</td></tr>
<tr><td>吐蕃
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Tibetan</td><td>763 -851</td></tr>
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Dynasties</td><td>后梁、甘州回鹘
Later Liang
Ganzhou Uighur</td><td>907-923</td><td rowspan="5">五代
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Dynasties</td><td>后梁
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Later Tang
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Later Tang
Later Shu</td><td>923-936</td></tr>
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Later Jin
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<tr><td>后汉、甘州回鹘
Later Han
Ganzhou Uighur</td><td>946-948</td><td>后汉、后蜀
Later Han
Later Shu</td><td>946-948</td></tr>
<tr><td>后周、甘州回鹘
Later Zhou
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Later Zhou
Later Shu</td><td>948-960</td></tr>
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Song</td><td>北宋、甘州回鹘
Northern Song
Ganzhou Uighur</td><td>960-1036</td><td rowspan="3">宋
Song</td><td>北宋、西夏
Northern Song
Western Xia</td><td>960-1127</td></tr>
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Southern Song
Western Xia
Jin</td><td>1127-1214</td></tr>
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Western Xia
Jin</td><td>1214-1235</td></tr>
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Mongol tribes</td><td>1368 - 1644</td><td colspan="2">明
Ming</td><td>1368 - 1644</td></tr>
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Qing</td><td>1644 - 1912</td></tr>
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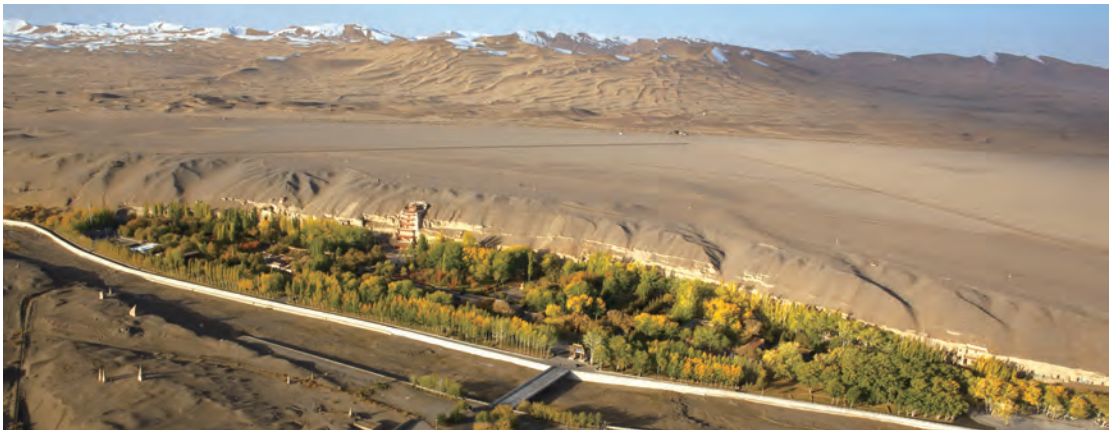
</table>

1. Hexi Corridor Grotto Regions

The Hexi Dunhuang grotto region is located in the desert at the western end of the Hexi Corridor. Most of cave temples here were built on both sides of the oasis of the Dang and the Shule Rivers and mainly Include Dunhuang Mogao Grottoes, Xiqiangfodong, Guazhou Yulin Grottoes, Subei Wugemiao, and Yumen Changma Grottoes. The Mogao Grottoes, a World Heritage site and the representative site of this region, was begun earlier than the others, and has the longest time span, largest number of grottoes, highest values, and richest contents. The Mogao grottoes reflect the political, economic, and cultural conditions of feudal society, and provide a glorious chapter in Chinese ancient art and history. There are 10 protected cave temple sites in the Hexi Dunhuang region.



Mogao

Xiqiangfodong

Subei Wugemiao

Yumen Changma

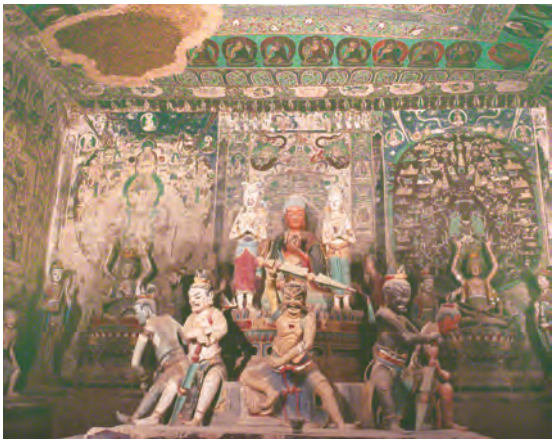
Guazhou Yulin

Hexi-Dunhuang grotto region – wall painting and sculpture




Mogao





Yulin


Wugemiao

Changma

The Hexi Liangzhou grotto region is in the central part of the Hexi Corridor. Most of the cave temples in this area were built along the river valleys arising from the Qilian Mountains, whose geographical location and environment are unique. In the earlier period of grotto construction, a considerable number of sites were created, but not many have survived. The wall paintings and sculpture are rich and diverse. The exfoliating paintings from the central pillars of caves nos 1 and 4 of the Tiantishan Grottoes exposed remnant painting from the Northern Liang through the Ming period, reflecting almost the whole history of Buddhist grotto culture in the Hexi region. There are 20 protected cave temples in this region.

Tiantishan

Tiantishan

Landscape of Matisi area

Matisi (Sanshisantian grotto)

Matisi (Jintasi)

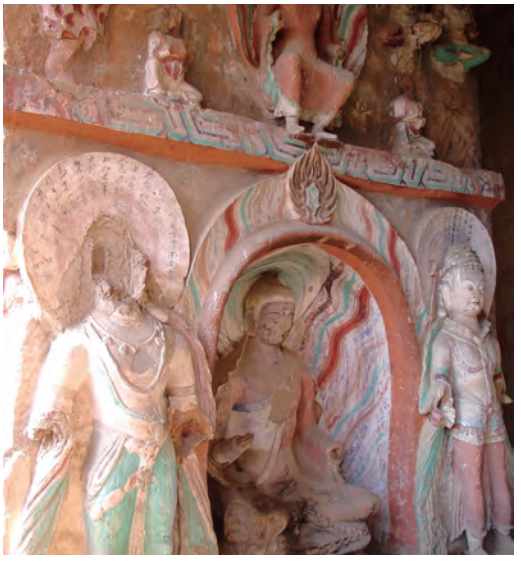
Matisi (Qianfodong)

Hexi Liangzhou grotto region – wall painting and sculpture

Tiantishan

Tiantishan

Wenshushan



Xiku of Jintasi grottoes

Beisi of Cangfodong

Cave No. 4 of Qianfodong

Dongku of Jintasi grottoes

2. Longzhong Grotto Region

The Longzhong grotto region is mainly around the Lanzhou area on the Huanghe (Yellow River) and its tributaries. The World Heritage site of Binglingsi at Yongjing is the representative site in this region. The other grotto sites preserve little of original art. There are 19 protected grotto sites in this region.

Binglingsi

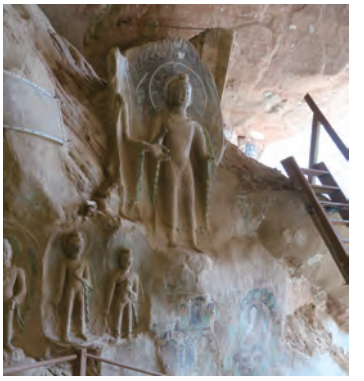
Sierwansi

Wufoyansi

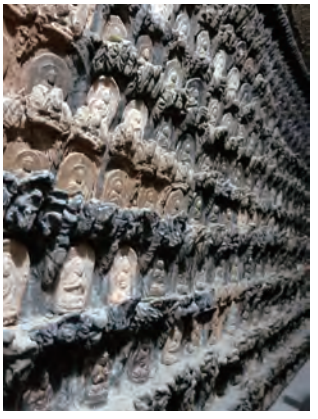
Binglingsi

Faquansi

Longzhong grotto region –wall painting and sculpture



Binglingsi



Wufoyansi

Sierwansi

3. Longnan Grotto Region

The Longnan grotto region is mainly in the forested southeastern part of Gansu and the western end of Qinling at Tianshui and Longnan areas. These grottoes in this region cover a long time period and have varied styles and rich contents, especially the World Heritage site of Maijishan, which is renowned as the “Sculpture Gallery of the East.” There are 34 protected grotto sites in the region.

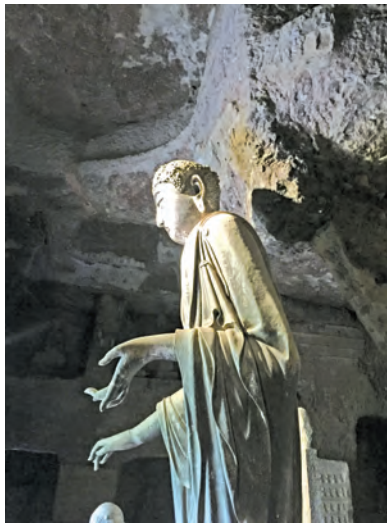
Maijishan

Shuiliandong-Daxiangshan (Lashao grottoes)

Daxiangshan

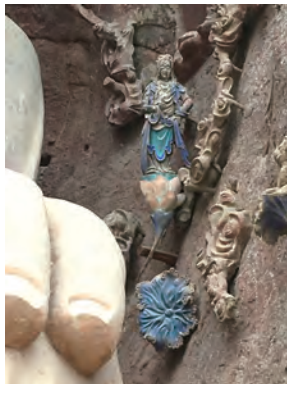
Mutisi

Longnan grotto region – wall painting and sculpture



Maijishan

Lashao



Daxiangshan

4. Longdong Grotto Region

Longdong grotto cluster is mainly in the easternmost part of Gansu comprising sites in Qingyang and Pingliang prefectures. These grottoes are located on the loess plateau and along the numerous rivers and gullies. The loess overlies the sandstone into which the grottoes are carved. Grotto sites in this region are numerous, but they are often poorly preserved. There are 45 protected grotto sites in this region.

Beishikusi

Wangmugong

Shikongsi

Nanshikusi

Yunyasi

Longdong grotto region– wall painting and sculpture

Beishikusi

Yunyasi

Shikongsi

Nanshikusi

Chapter 2 Basic Requirements for Grotto Heritage Sites

Chapter cover image: Plaque declaring the Mogao grottoes a World Heritage Site

Law of the People's Republic of China on the Protection of Cultural Relics Article 26:

People's governments of provinces, autonomous regions, municipalities directly under the Central Government and of district-constituted cities and counties shall respectively delimit and announce the necessary area of protection, put up signs and notices, and establish records and files for the historical and cultural sites protected at the corresponding levels and shall, in the light of different circumstances, establish special organs or assign full-time persons to be responsible for control over these sites. The area of protection and records and files for the major historical and cultural sites protected at the national level shall be reported by the administrative department for cultural relics under the people's gov ernments of provinces, autonomous regions, or municipalities directly under the Central Govern ment to the administrative department for cultural relics under the State Council for the record.

China Principles. Article 19. Formal proclamation:

Sites are managed by government according to their level of protection as determined through an assessment of significance. Each level of government (national, provincial, and local) should expeditiously proclaim a list of protected sites under its jurisdiction. Officially protected sites must ensure that boundaries are demarcated, a plaque erected declaring the site's status as an officially protected entity, archives and records maintained and supplemented, and a dedicated organization established or person appointed to manage the site. A buffer zone should be established around the site's boundary to control development and production activities.

Introduction

In accordance with the Law of the People's Republic of China on the Protection of Cultural Relics and the Principles for the Conservation of Heritage Sites in China, as well as the relevant laws and regulations (see Appendix 3), the basic standards or requirements for the protection and management of World Cultural Heritage, national, provincial, municipal, and county-level grotto temples in Gansu Province are put forward. Subsequent chapters detail the main points, processes, and procedures for conservation, research, management, and utilization of grotto sites.

The basic requirements for the protection and management of grotto temples are as follows:

- Compliance with the Four Legal Prerequisites, from Article 26 of the Law of the People's Republic of China on Protection of Cultural Heritage, and as described in Article 19 of the China Principles, is mandatory for all heritage sites.

- A master plan for conservation and in accordance with the conclusions of the plan, or its evaluation, to prioritize and step by step to implement conservation, research, promotion, and management.
- Regular monitoring and routine maintenance measures.
- Necessary safety facilities, management system, and staff.
- Safety and precautionary measures for visitors on sites open to the public.
- Investigation, design, implementation, and evaluation must follow the relevant national and Gansu provincial requirements and procedures of management measures for cultural heritage conservation projects.
- People's government at the county level and above shall incorporate the protection of cultural heritage into economic and social development plans of the region. The requirements for the protection of cultural heritage are included in the budget of the same level of government to ensure that the grotto temples can carry out archaeological investigation, security, protection, repair, and maintenance, as well as the basic needs of collection and display.
- The governing entity should be fully aware of the potential for the grotto temples to be used by local communities and tourists as a place of religious activity or to be over-commercialized. The values of grotto temples should not be adversely affected by religious activities, tourism development, commercial activities, and tourist behavior in the grottoes. This is achieved by complying with the laws and regulations of the state and Gansu Province on the management, protection, and use of cultural heritage sites and adopting appropriate measures that can benefit all parties to achieve rational utilization.
- If necessary, the managerial entity of a grotto site should seek assistance from a higher level professional institution or entity.

Basic requirements of grotto sites based on protection status

In addition to the above requirements for all sites, basic requirements for management, conservation, research, and utilization of each level of protected sites are detailed in the following table. The higher the level of protection, the more stringent the requirements. World Heritage grotto sites are the most important and therefore deserve the highest attention to ensure that all their values are protected. The basic requirements for higher level grotto sites can be used as the criteria for advancing a site to a higher protection level. National level protected sites should strive to achieve the standard of World Heritage sites. Provincial and County level protected grotto temple sites

should strive toward a higher status by following these standards. At the same time, all grotto sites should pay attention to balanced development in conservation, management, research, and utilization.

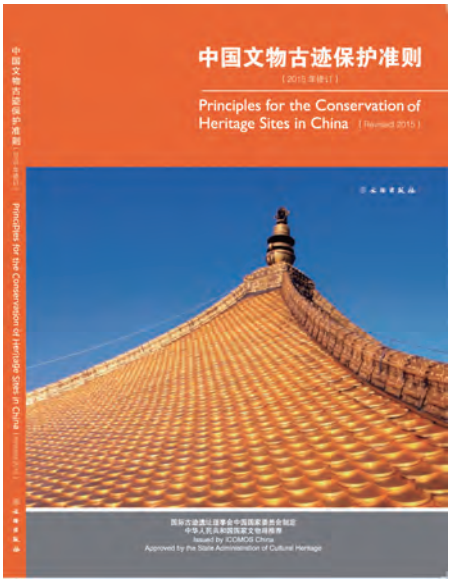
World Cultural Heritage Sites	**National Level Protected Sites**	**Provincial Level Protected Sites**	**City /County Level Protected Sites (and unclassified sites)**
Management requirements			
• A grotto temple managerial office with multiple departments including management, conservation, research, and utilization. that can deal with all relevant issues effectively and be familiar with World Heritage regulations	• A grotto temple managerial office with multiple departments including management, conservation, research, and utilization, that can deal with most relevant issues effectively	• A grotto temple managerial office with a management division that can deal with basic issues of the site.	• An assigned managerial office or a security office responsible for the grotto site.
• Multi-disciplinary professional staff capable of conducting systematic research, conservation, utilization, management, and maintenance.	• Professional staff capable of conducting basic research, conservation, utilization, management, and maintenance.	• Professional staff capable of dealing with routine matters, including conservation, utilization, management, and maintenance.	• Staff to deal with routine matters.
• A master plan for the site, periodically reviewed.	• A master plan for the site, periodically reviewed.	• A master plan for the site, periodically reviewed.	• An assessment of conservation needs, security, and risk.
• A comprehensive prevention system and disaster response plan for theft and looting, fire, flood, earthquakes, extreme weather, and accidents.	• A comprehensive prevention system and disaster response plan for theft and looting, fire, flood, earthquakes, extreme weather, and accidents.	• A disaster response plan for theft and looting, fire, flood, earthquakes, extreme weather, and accidents.	• A site response plan for theft and looting, fire, flood, earthquakes, extreme weather, and accidents.
Conservation requirements			
• Conduct research and interventions to meet international standards for cultural heritage conservation and management.	• Conduct conservation research and interventions to meet national level requirements.	• Conduct daily maintenance and all tasks meet provincial level conservation and management requirements.	• Conduct daily maintenance and all tasks to meet county and city level requirements.

World Cultural Heritage Sites	National Level Protected Sites	Provincial Level Protected Sites	City /County Level Protected Sites (and unclassified sites)
• Recognize threats and deterioration mechanisms affecting grottoes, and effectively treat and eliminate potential disasters in a timely manner.	• Entrust professional institutions to research deterioration, assess threats, and effectively address and eliminate potential problems.	• Entrust professional institutions to address urgent problems affecting the site.	• Entrust professional institutions to address urgent problems affecting the site.
• Have a preventive protection system to monitor and record all kinds of risk factors.	• Implement systems and daily work standards for monitoring and recording principal risk factors.	• Implement systems and daily work standards for monitoring and recording principal risk factors.	• Implement a periodic inspection system and daily work standards.
• Collect and digitize cultural heritage data.	• Entrust a professional institution to collect and digitize cultural heritage data.	• Entrust a professional institution to collect and digitize cultural heritage data.	• Periodically take digital photos to record condition of important cultural heritage features.
• Conduct archaeological investigations, explicate site values, undertake art historical research, and disseminate results.	• Conduct archaeological investigations, explicate site values, undertake art historical research, and disseminate results.	• Develop a workplan for important archaeological investigations at key protection zones.	• Entrust professional institution to conduct archaeological investigations.
• Launch international research collaborations and carry out academic exchange activities.	• Undertake domestic or international research collaboration and academic exchange activities.	• Collaborate with domestic academic institutions for research and participate in academic exchange activities.	
Visitor Management requirements			
• A scientific visitor management system that ensures safety of the site and an excellent visitor experience.	• A visitor management system that ensures safety of the site and an excellent visitor experience.	• A visitor management system that ensures safety of the site.	• A visitor management system that ensures safety of the site.
• A carrying capacity based on scientific data and visitor surveys.	• A carrying capacity based on scientific data and visitor surveys.		

World Cultural Heritage Sites	National Level Protected Sites	Provincial Level Protected Sites	City /County Level Protected Sites (and unclassified sites)
• Explanation of site values based on sound research and using diverse methods of interpretation in accordance with international standards.	• Explanation of site values based on sound research to develop high quality interpretation.	• Basic but comprehensive information and interpretation of the site's values.	• Basic information about the site and its values using simple methods.
• Well-trained guides fluent in several major languages for narration.	• Well-trained guides fluent in English for narration.	• Guides for basic narration.	• Staff or custodian able to provide basic information about the site.
• A multi-functional visitor center and other services and infrastructure that meet expectations of visitors and in accord with international and World Heritage standards.	• Based on visitor numbers and national requirements, a reception and service area and other services and infrastructure that meets visitation requirements.	• Based on visitor numbers, a reception and basic visitor services and infrastructure.	
• High-quality and well-designed signage, walkways, railings, benches, trash receptacles, and other visitor amenities.	• High-quality and well-designed signage, walkways, railings, benches, trash receptacles, and other visitor amenities.	• Adequate interpretive signage and visitor facilities.	
Documentation requirements			
• A designated archive management department.	• A capacity to maintain an archive.	• A capacity to maintain an archive.	
• A comprehensive archival system including a heritage inventory, images, textual information and drawings, conservation projects, intervention records, and bibliographic research.	• An archival system including a heritage inventory, images, textual information and drawings, conservation projects, intervention records, and bibliographic research.	• Basic information including a heritage inventory, images, textual information and drawings, conservation projects, intervention records, and bibliographic research.	• Designated organization or managerial office to collect and archive basic information and records, including a heritage inventory.
• A digital archive management system with collected and stored digital resources.	• A designated department and personnel to manage archives in line with national storage and utilization criteria.	• An archival management system with information relevant to the site.	

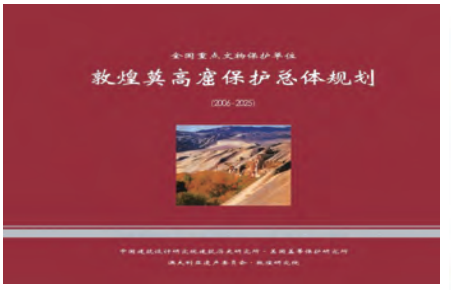
World Cultural Heritage Sites	National Level Protected Sites	Provincial Level Protected Sites	City /County Level Protected Sites (and unclassified sites)
• Archival management in line with national standards and criteria.	• Archival management in line with national standards and criteria.	• Archival management in line with national standards and criteria	
Infrastructure requirements			
• Offices and infrastructure adequate to deal with all site business.	• Offices and infrastructure adequate to deal with basic site business.	• Basic office and facilities to deal with necessary business.	• Advise establishing basic office and facilities to deal with necessary business.
• Quality of infrastructure in line with national construction criteria or standards.	• Quality of infrastructure in line with national construction criteria or standards.	• Quality of infrastructure in line with national construction criteria or standards.	• Quality of infrastructure in line with national construction criteria or standards.
• Newly constructed infrastructure meets the requirements of the master plan with minimal visual intrusion to the site, and in harmony with the landscape.	• Newly constructed infrastructure meets the requirements of the master plan with minimal visual intrusion to the site, and in harmony with the landscape.	• Newly constructed infrastructure meets the requirements of the master plan with minimal visual intrusion to the site, and in harmony with the landscape.	• Newly constructed infrastructure meets the requirements of the master plan with minimal visual intrusion to the site, and in harmony with the landscape.
• Archaeological investigation prior to infrastructure construction.	• Archaeological investigation prior to infrastructure construction.	• Archaeological investigation prior to infrastructure construction.	• Archaeological investigation prior to infrastructure construction.

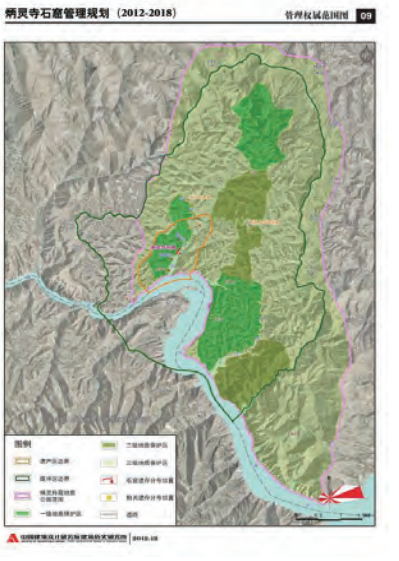
Basic Requirements for Grotto Sites



The Principles for the Conservation of Heritage Sites in China provide the basis for the Grotto Guidelines.

One of the Four Legal Prerequisites, from Article 26 of the Law of the People's Republic of China on Protection of Cultural Heritage, is to erect a plaque declaring the site an officially protected entity, as shown here.





A basic requirement for grotto sites at the National and Provincial level is a Master Plan, which includes a statement of the site's values, goals, threats and conditions, as well as basic documentation, and physical planning, as illustrated here in pages from the Mogao, Maijishan, and Binglingsi Master Plans.

Chapter 3 Planning Process

Chapter cover image: Xiqianfodong (Western Grottoes) on the Dang River near Dunhuang city

China Principles. Article 16. Conservation and management process (Commentary)

Conservation and management must be undertaken in accordance with the relevant laws and technical standards and should not result in damage to a site. Site conservation and management are both complex and interdisciplinary, and require a holistic approach. Following the steps of the process ensures that conservation will accord with the law and meet technical standards, and be feasible, technically appropriate and effective.

Introduction

The planning process is a means of making decisions about conservation, management and use of grotto sites. Taking care of heritage sites presents major challenges for managers and conservation professionals. Long-standing threats from neglect and exposure to the environment have acted upon grottoes for decades and, in most cases, centuries. When causes of deterioration remain undiagnosed, and suitable methods of prevention, treatment, or management are poorly practiced, they remain a threat to the site. Inappropriate and damaging methods and materials may also result in further harm over the long term.

In recent decades new pressures and challenges have emerged to threaten grotto sites. These new challenges arise from the varied uses of the sites, especially tourism and renewed religious use, from rapid economic growth and development, and climate change.

To overcome these problems requires a methodological process. This process is used to develop a master plan, which is a requirement of all national and provincial level sites. Today, an effective plan for conservation and management of sites should follow national and provincial laws, regulations, and policy documents (see Appendix 3), such as Guidance of the General Office of the State Council on Enhancing Protection and Utilization of Grotto Temples, and the Gansu Provincial Government General Office document on Enhancing Protection and Utilization of Grotto Temples, as well as in the China Principles, and international practice.

The procedure for drawing up the plan is important for site managers to understand. Site managers should go through the process with site staff, and identify gaps in documentation, collect needed information, clearly define why the site has significance, undertake assessment of the problems, and begin to make decisions and plans about how best to preserve the site for the future.

Good decisions are based on good information and complete understanding of the site and its significance. Poor decisions result from inadequate or faulty information and incomplete understanding of significance. The conservation process is a sequence of steps, each one building on the previous one, to ensure that good decisions are made.

Steps in the planning process

The planning process steps are outlined below, with key questions for each step. The questions are a helpful way to begin discussion with staff and others about the needs of the site.

step 1 Investigate and collect information

- What is known about the site and what are the sources?
- Has an inventory been done?
- Has the site been mapped?
- Has documentation (written and photographic) about the site been collected?
- Has the history of modern (post-Qing Dynasty) interventions and events at the site (excavation, conservation, use) been recorded?

step 2 Assessment and analysis

2.1 Values & significance	2.2 Condition & threats	2.3 Management context
• Why is this site important? • What are the values? • Who values it? • What benefits derive from it? • Where are the gaps in research to understand the site?	• What is the condition of the site and its grottoes? • What are the threats to the site? • What are the causes and rates of deterioration?	• Have the Four Legal Prerequisites been complied with? • What are the legal & financial conditions? • What social, political, and economic factors affect the site? • What opportunities & constraints exist for sustainable use? • Who are the key stakeholders?

step 3 Decision-making

3.1 Determine the goals and appropriate conservation and management options

- Considering the condition and management context, what is the best way to preserve the site's values?

3.2 Develop strategies

- What strategies will be used to achieve the goals and preserve the site and its values?
- If these require major proposed undertakings, organize an experts' committee for review and input. Testing and evaluation of materials and methods may be warranted in many cases.

step 4 Implementation of strategies

4.1 Draw up plans and implement them

- Develop detailed plans for each strategy so that the process and intended results are evident to staff, officials, and experts

4.2 Monitor and evaluate the results

- Develop a plan to review and monitor the results
- Periodically revise the plan.

Key steps in the planning process

• Step 1 Investigation and collection of information

Making decisions and planning for the protection and care of a grotto site begins with investigation and collection of pertinent information about the site and its components. This step is important for all levels of decision-making. It is the basis for the assessments that come in Step 2 and for more in-depth site research, as discussed in Chapter 6.

- Investigation and collection of information is especially important for a site that is beginning a master planning process, and for updating the master plan.
- Collecting information to evaluate planned major interventions is necessary before making a decision.
- For grotto sites that are well advanced in their planning and management, Step 1 represents an opportunity for staff to update and synthesize information on the art, history, conservation, geology, and the setting and environment.
- For sites whose management is less developed, this step is an opportunity to undertake or update an inventory of individual grottoes and site components, and to consider the need for mapping, for photographic documentation, and for recording the modern history.

• Step 2 Assessment and analysis

This step is the most important one in making decisions about a site. There are three main components in the assessment process: Significance, Condition, and Management, which includes the Four Legal Prerequisites. They are all important and interconnected.

Step 2.1 Assess values and significance

Assessment of significance is the primary basis for making decisions. It requires:

- a deep knowledge of the history of the site and its relationship to other sites and historical developments in the region;
- a recognition of the site's artistic and aesthetic values, including its landscape and setting;
- an understanding of all the social values attributed to the site in the contemporary world such as cultural and educational values;
- a clear articulation of the site's significant attributes or characteristics such as wall paintings

and sculpture, cave architectural types, cultural features in the landscape such as stupas, and natural elements, such as rivers, trees, and plants.

Information gathered in Step 1 and historical research is fundamental to understanding significance (Historical Research is discussed in Chapter 4).

Significance derives from a site's values. Best practice in the conservation and management of a heritage site today is to preserve its values and not to sacrifice or diminish one value for another. An outcome of this assessment is a statement of significance that clearly states why the site is important and why it is valued.

Historic, artistic, and scientific values

Historic, artistic, and scientific values are usually interrelated at grotto sites and they have long been the core values of ancient sites. Because ancient sites are repositories of information and artistic creations essential to understanding the past, their historic, artistic, and scientific values are of fundamental importance in guiding decisions made today.

Grotto sites, as witness to history along the Silk Road, tell the stories of Buddhism's introduction, development, practice, and decline of dynastic and local politics, of artistic practices and styles over centuries, of trade products and networks, of the diversity of people, and of the actual words and thoughts as recorded in inscriptions on stele and in documents, as for example, from the Library Cave (no. 17) at Mogao.

The physical remains of the grottoes are as much a witness to ancient times as the written documents that survive. For instance, wall paintings in the Mogao grottoes are a rich source of information on farming, costumes, musical instruments, entertainment, warfare, and architecture, in addition to Buddhist iconography.

Grottoes are also a source of information for understanding the interchange of ideas, artistic tradition, and religious practice with regions further west and beyond China. Scientific examination of the physical substance of grottoes - pigments, artefacts, trade goods and so on - provides

information on sources of materials, their processing, manufacture, and origins. Scientific results yield new insights to the technology of the time and the geographic reach of trade with the West.

Grotto sites record evidence from antiquity of the exceptional creativity and artistry in the sculpture and wall paintings that survive. These arts also reveal achievements and ingenuity and technological advances in the materials utilized, such as in the use of mineral and organic pigments, and techniques like the use of stencils and pounces and the preparatory sketches discovered in Mogao cave no. 17 (Library Cave), in 1900. All grotto sites show evidence of how the caves were constructed and the techniques and technology of painting and sculpture.

The Gansu grottoes collectively contribute substantially to the World Heritage listing, Silk Roads: The Routes Network of Chang'an-Tianshan Corridor, one of China's most important heritage routes.

Social and cultural values

Social and cultural values share attributes that derive from connections with contemporary society. These values today relate to how people use a site, whether for research, recreation, education, religion, or as an expression of greater social cohesion, such as regional or national pride.

The educational value of a grotto site lies in its ability to impart knowledge and understanding of the past to the public, usually visitors and local community members.

Grotto sites have played a social and educational role in serving as creative inspiration to modern and contemporary artists since renewed awareness of their values in the twentieth century. Copying of mural paintings, beginning in the 1940s, was a principal means of promoting the sites to a wider public through exhibitions, as well as a means of documentation and study of the artistry of the ancient craftsmen.

Intangible values associated with grotto sites are often connected with both Buddhism and Daoism. In ancient times, their social value was mainly reflected in religious and political purposes, but in today's world the social value of these sites is reflected principally in tourism and cultural education, but also in local festivals and traditions, such as the annual celebration of the Buddha's Birthday.

When managed well, these activities benefit a site and its preservation, but when not properly managed, such use can be destructive to historic and aesthetic values.

Religious, or cultural identity of specific groups may find expression in grotto sites, which were associated in ancient times with ethnic groups whose influence may be seen in the artwork. In contemporary society the association may survive through religious expressions. Such groups may feel a special affinity with a site.

Cultural landscapes and natural values

Situated in the cliff faces in valleys and along rivers in both desert and mountain environments, the distinctive and often dramatic settings of grotto sites are important as cultural landscapes and have high aesthetic and natural values. Natural landscape and environment strongly influenced the location of sites.

Natural values are evident in the survival of habitats of flora and fauna and the landscapes of rivers, trees, mountains, and desert in which grotto sites exist. Preserving landscapes intact can be difficult if a site does not have a clear boundary and sufficient buffer zone. When settings are compromised by new construction and other development, their integrity and authenticity are diminished. Other interventions, such as construction of a water reservoir, as was done at Binglingsi and Tiantishan, change the original setting, but the new setting may nevertheless retain aesthetic and natural values.

In todays' increasingly developed world, the natural setting of a grotto site, when untouched by modern development, may have a contemporary social value as open space for recreation and contemplation. Both Buddhism and Daoism express a high regard for the values of nature. Preserving those values is thus aligned with the original use of the sites.

Preserving natural values through scientific management also accords with the constitutional principle of 'ecological civilization,' which aims to protect and enhance the environment, and is reflected in the Chinese saying, "green mountains and clear water are as good as mountains of gold and silver." Adhering to this principle protects an essential value of grotto sites while contributing to the greater goals of the nation.

Step 2.2 Assess Condition and Threats

Assessing the threats and condition of a site requires understanding the following:

Threats

Typical natural threats to grotto sites are rock instability, earthquake, flood and severe rainstorms, and fire. Threats to grotto sites may happen rarely, but can cause tremendous damage when they do occur, such as flooding that has occurred at Mogao, Yulin, Binglingsi, and many other sites over the centuries. Earthquakes are a particular danger to grotto sites in Gansu, which has experienced large ones. The consequences of climate change may well impact the grotto sites. Although these consequences are not fully predictable at present, they will likely exacerbate environmental conditions in the future.

Having identified threats and risk, preparedness assessment requires expert input on their likely severity and frequency. For example, earthquake is an enormous threat to grotto sites; the risk is the probability of a severe earthquake occurring in a particular area within a given timeframe.

Authenticity & Integrity

Authenticity and integrity are crucial concepts in considering the significance of a site. With any ancient place that has been used over centuries and then abandoned, there will have been loss and change. The goal of modern conservation and management is to prevent or slow further loss and change in order to retain a site in its historic condition. The degree of loss and the type of change will affect a site's authenticity and integrity, and therefore its significance.

Ancient grotto sites are often categorized as archaeological sites because of their age and the fact that archaeological methods are frequently used to study them. Like archaeological sites, grotto sites are fragile and precious remains of the past and are accorded the same degree of caution when making decisions to intervene. Obscuring or destroying original materials, workmanship and design through modern repainting or inappropriate restoration of statuary, or neglect of the site's setting, diminishes its authenticity and integrity.

Some grotto sites have experienced a resurgence in the religious practices of Buddhism and Daoism. Such religious practice may retain aspects of cultural traditions such as local festivals and reflect aspects of traditional spiritual practice. Given the history of grotto sites, disruption rather than continuity of traditions is more common, and many current practices may reflect recent traditions rather than continuity with ancient practice. Nevertheless, these uses, mainly by local communities, constitute an important social value. The challenge in these cases is to find the right balance such that contemporary uses do not diminish the authenticity and historic values of the grottoes and their setting.

When a authenticity and integrity are much diminished a site's rank may be downgraded and it may no longer qualify as a protected heritage site.

Values & Benefits

Values yield benefits. One of those benefits is economic, whether to government, or local communities and businesses. Economic benefits are derived from the primary historic and cultural values of a site and they are linked most closely with social values by way of tourism. When not managed properly, tourism infrastructure, such as poor signage and inappropriate siting of shops and visitor facilities can destroy or obscure historic and landscape values. If those primary values are destroyed through exploitation for short-term economic gain, there will be little benefit remaining in the future. This is a danger that every grotto site must guard against.

Condition

Deterioration is the cumulative effect of processes: chemical change, erosion, color fading of pigments, exfoliation of painted surfaces due to salts, biological growth, and human induced change.

The physical condition of a grotto site at the time of assessment needs to be determined: is the grotto stable or deteriorating? If deteriorating, as determined by examination, monitoring, and comparison with past documentation, what is the rate of deterioration and what is the cause?

Some deterioration may have happened long ago and is no longer active. All actual and potential problems need monitoring and testing and research before intervening.

Damage is immediate harm due to natural and human causes such as fire, earthquake, flood, breakage, physical impact, or theft.

Once threats and condition have been assessed, priorities are decided. Careful consideration must be given to determine the most urgent needs of particular aspects or components of the site. Questions such as the severity of deterioration and the risk of further harm if the situation is not remedied; the need for expert outside assistance and for testing before intervention, must be weighed and decided before proceeding with a plan.

Many problems are difficult to understand and require the sort of expertise that site personnel do not possess. All sites, however, are capable of continuous care and maintenance and careful observations and record keeping of potential problems in order to reduce the need for future interventions.

These issues are discussed in more detail in Chapter 5 on Conservation Principles and Measures.

Step 2.3 Assess the Management Context

Management assessment considers all the factors that may affect daily operations and future preservation of the site and its values. Together with condition assessment, the management assessment is necessary to an understanding of how the site's values may be endangered and how they can be preserved. The role of site management is discussed further in Chapter 6.

Assessment involves analyzing the sort of information relevant to daily operations that managers routinely deal with, such as:

- Staff competencies, expertise, training needs, motivation, salaries and benefits, and job satisfaction
- Financial resources
- Visitor statistics and profiles
- State of research and site documentation
- Security of the site and its contents
- Basic needs, such as water, power, waste disposal, and communication systems
- Maintenance regimes and schedules

- Presentation of site (signage, cleanliness, etc.)
- Facilities for staff and visitors
- Site collections and storage conditions

Assessment of the management context also requires understanding of:

- The economic, social, and political context in which the site must operate, such as regional development plans and projections of tourism to the area. These can have a major influence on the site and the site manager needs to understand what is happening in the district and make connections with local officials.
- The local community, including governmental, entrepreneurial, and business activities since all of these may have positive or negative influence on the site.
- The Four Legal Prerequisites are the four pillars of management: boundaries (protected zones, construction restriction zones, buffer zones), the official designation plaque; archives; and the management organization and personnel. All sites must undertake these requirements at some level, but they need regular assessment to determine whether they are adequate and functioning to protect and meet the needs of the site.

Strengths and weaknesses

When assessing the management context, it is a useful for the management to discuss with site staff the strengths and weaknesses of their organization and daily operations. This means asking difficult questions about what is being done well and whether there are existing or emerging problems. This can involve a wide-ranging discussion about whether the site is adhering to national or World Heritage standards, which all sites should aim for, no matter their designation, and how well a site's values are being preserved.

Even with few resources, it is always possible to make improvements in how a site is managed and staff involvement is frequently the key to such improvements.

• Steps 3 and 4 Decision-making and implementation of strategies

Assessments provide the information needed to make good decisions. These decisions may apply to the whole site, or only to a specific problem area. The process remains the same – collect

information, understand the context and constraints, and then consider the options.

When considering options, the question always to ask is – what is the best way to preserve the site's values? If an action only preserves one value or enhances one benefit, but destroys or diminishes the others, it is not a good solution.

For instance, decisions to use sites principally for religious purposes, repainting statuary, or building new structures may promote one value - the social and economic value for a local community or religious group, but such actions severely compromise the grotto site's historic values.

Sometimes compromises must be made, but the ideal strategy is one that allows all the site's values to be preserved and presented. Most important for a grotto site are its original wall paintings and sculptures, stele, and its natural setting.

Considerations in making decisions and implementing them are:

- Resources available: The need for expert outside assistance, budget, and staffing resources must all be assessed.
- Intervention plans: For large-scale stabilization or infrastructure interventions, it is essential to have detailed architectural or engineering plans. For conservation work, the approach to be taken and materials to be used should be clearly stated, and reviewed by a panel of experts.
- Tests, trials, and prototypes: It is often necessary to do testing before making a final decision to implement treatments. For interventions such as barriers or signage, trials can save time and money. For interventions on the wall painting, sculpture or rock of the grottoes, tests and trials may save the site from inappropriate interventions and can be the difference between success and failure, or lasting, irreversible damage. Tests should be conducted over a sufficiently long period for valid results to be obtained.
- Expertise and expert committees: Major strategies for conservation, interpretation or presentation and use need outside expertise. This is commonly done in the form of an expert committee, but it is important that the committee be composed of acknowledged professionals in the relevant field. The site manager and staff must be involved in such committees and ensure that decisions made accord with the site's values. Because

grotto sites share similar characteristics, they often share similar problems, such as rock stabilization and drainage. There is much to learn from colleagues who have faced similar problems and assessed how well their approach has worked.

- Work sites: The condition of a work site may reflect the quality of the work. An untidy work site may indicate sub-standard work. It is the responsibility of the site manager to oversee all interventions, require a report of the interventions, and ensure that interventions do not harm the site and are carried out in an orderly manner with attention to keeping the site tidy and safe during work. Depending on the type of intervention, there may be opportunity for archaeological investigations.

Historic, Artistic, Scientific Values

Historic, artistic, and scientific values are interrelated at grotto sites and have long been core values of ancient sites. Because ancient sites are repositories of information and artistic creation essential to understanding and appreciating the past, preservation of these values is of fundamental importance.

Historical, natural, and spiritual landscapes in wall paintings (Mogao).

Artistry in wall paintings (Yulin).

Artistry in sculpture (Yunya).

Rarity and artistry in stele (Maijishan).

Evidence of everyday life (Mogao).

Evidence of customs and costumes of court life (Mogao).

Historic documents (Mogao).

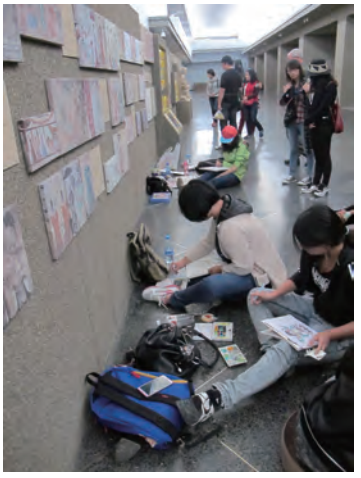
Painting materials (Mogao).

Techniques of replication (Sierwansi).

Social and Cultural Values

Social and cultural values reflect contemporary uses of grotto sites for research, education, recreation, inspiration, religious practice, or as an expression of regional or national pride. Among the social values, education, which takes many forms, is of foremost importance.

Education through exhibits (Mogao).



Art education (Mogao).

Learning from guided tours (Maijishan).

Recreational activities on festival days (Mogao).

Traditional spiritual practices (Sierwansi).

Study by students (Maijishan).

Contemporary artistic inspiration (Chang Shuhong painting, Zhejiang Museum).

Cultural and Natural Landscape Values

The natural landscapes and settings of ancient sites are modified by humans. Grotto sites, which are constructed and created out of the natural world, exemplify cultural and natural values. Situated in mountains, river valleys, and deserts, grotto sites often encompass outstanding natural features and vistas, which also need to be protected.

Desert and mountain landscape of Mogao.

Forested mountain landscape of Maijishan.

View to the distant Qilianshan from Wenshushan.

Mountain landscape of Matisi.

Rock formations and Huanghe (Yellow River) reservoir at Binglingsi.

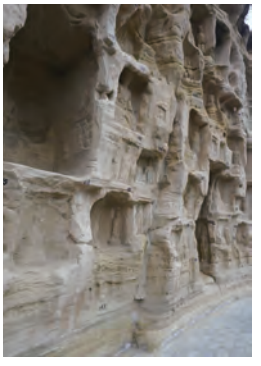
Forested river valley of Yunyasi.

Threats and Conditions

Grotto sites have been subject to natural and human threats for centuries. The aim of conservation is to understand those threats and conditions in order to eliminate or mitigate them and thereby preserve these places for future generations.

Heavy rainfall caused floods, which washed away the road and bridges leading to Mogao (June 5, 2012)

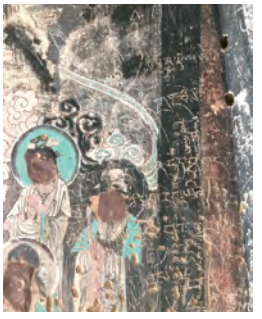
Damage and loss from floods and sand accumulation, fire, and earthquake before the mid-20th century (Mogao).



Rock erosion and instability of cliff face (Beishikusi; Wugemiao).

Deterioration and loss due to abandonment and natural erosion (Tongzisi).

On-going deterioration from natural soluble salts (Mogao, now repaired).



Damage from graffiti and fire before the beginning of the last century (Wugemiao).

Inappropriate contemporary use (Jingyaosi, now removed).

Weathering of cliff face (Xianrenya).

Microbiological growth due to moisture (Yunyasi).

Chapter 4 Historical Research and Archaeological Investigation

Chapter cover image: Mogao staff in the 1960s conducting archival research

China Principles, Article 5. Research

Research is fundamental to every aspect of conservation. Each step in the conservation process should be based on the results of research. Research results should be made public through an effective channel or published so as to promote further research into the conservation of heritage sites and assist the public to gain an appreciation of their values.

Introduction

Historical research includes archival and documentary, archaeological, art historical, and bibliographic investigations to understand the values and significance a site. Scientific research and investigation to identify original materials and techniques, and their deterioration and its causes are covered in Chapter 5 on Conservation. Research is essential to understanding the historical significance of a site and what has happened to it over the course of its history, both ancient and modern. This knowledge is necessary for making decisions about conservation, management, and interpretation. Grotto sites have been constructed and used since the fourth century in Gansu Province and many have complex histories of renovation and re-use.

Research can be undertaken at many levels and for different purposes. The most important purpose of research is to understand historical developments, significance, the history of conservation, and for interpretation and presentation to the public. Some grotto sites are well researched, documented, and published, while others lack documentation and archival records.

Regardless of the state of research, all the staff at grotto sites should contribute, to the extent they are able, to gathering and assessing information and historical records. Research is an essential tool: the results of research will inform assessments and contribute to establishing policies and priorities for further research, archaeological investigation, interpretation, conservation, and use of the site.

Large grotto complexes such as Mogao, Maijishan, and Binglingsi are especially rich in information, but not all sites preserve such evidence. Clusters of smaller, more remote, or abandoned grotto sites are more plentiful. Individually, these sites may not be of great significance, but collectively they contribute greatly to an understanding of the overall picture of historical development in the region and the function of grottoes in different periods. For these reasons, sites need to be investigated and

assessed in their larger context and in relation to each other.

Gansu grotto sites are part of a network of sites on the ancient Silk Road, extending beyond Gansu and China to Central Asia and the Mediterranean. The World Heritage transnational designation, The Silk Road: Routes Network of Chang'an–Tianshan Corridor, underscores the far-reaching connections to be considered when undertaking research on Gansu sites.

Key questions to ask when assessing research needs:

- Have research priorities for the site been established?
- What are the most important research questions that must be addressed?
- Has a site archive been established and maintained?
- Has archival research on the site been done?
- Is there need for further archaeological survey or excavation?
- Have historic photos, maps, and sketches been collected?

Key sources of information about Gansu grotto sites

- Archaeological report on small and medium size grotto sites in Gansu
- Annals of the Gansu Grotto Sites (Gansu Shiku Zhi, 2011)
- National, provincial, city/county, and museum archives
- Stele and inscriptions at sites and in museums
- Dunhuang Academy Information Center
- Gansu Provincial Cultural Heritage Bureau web site, archives, and library

Key research activities

- Identification of cultural boundaries of the grotto site
- Historical and archaeological research
- Compilation of the history of modern interventions and management
- Publication of research results

Identification of cultural boundaries of the grotto site

Identifying the historic cultural boundary of a site is an essential research activity. A site's

administrative (legal) boundary is necessary for its protection and is one of the Four Legal Prerequisites as stated in Chapters 2 and 3. Cultural boundaries are not precise like legal boundaries. They define a geographic area that contains evidence of a particular culture or a chronological period related to the site.

The cultural boundary contributes to an understanding of the associations and extent of the site and its setting. Grotto sites tend to be well defined by geographical features such as rivers, mountains, and valleys, but they often have had a relationship with a local monastery, other cave complexes, a nearby town or cemetery, or places and features beyond their specific borders. These relationships may be established or confirmed through historical research and, if necessary, archaeological survey and test trenches. Stele, historical records, and inscriptions help define cultural boundaries and relationships between a single grotto site and grotto clusters.

It is also important to try to identify in the landscape the original access routes since these may

assist in understanding how the site was approached and may have been experienced by pilgrims in ancient times.

When cultural boundaries have been identified, they should be marked on the site map as part of the documentation activities of Site Management described in Chapter 6. For many sites identifying cultural boundaries is an on-going process as new information is discovered or revealed through archaeological excavation.

Historical and archaeological research

The historical and archaeological record of a grotto site should include the following:

- Basic information on the site:
    - Location, founding period, and subsequent restoration data; and
    - Description of current condition, information on site use, restoration and/or alteration, and historic records and photographs. Early documentation contains valuable information as a record of the past, which may help an understanding of current site conditions.
- Research on the site's values includes:

- Historical values reflecting the background of the founding period, the changes and developments recorded in local history, major historical events and important historical figures and their impacts on local history;
- Artistic and cultural values reflecting culture, traditions, schools of religious ideology, artistic styles, and evidence of cultural dissemination and influence, as well as attributes unique to the site compared with similar domestic and international sites;
- The special contribution of the grotto to cultural exchange, ethnic integration and social development in history, the artistic characteristics of the site, the unique value of artifacts, and contributions of grotto sites to the cultural and economic development of the Silk Road; and
- Comparative research on similar cultural heritage, including the sites in Gansu, but also grottoes and grotto clusters in other provinces, and other countries along the Silk Road.

• Archaeological investigation and survey includes:

- Investigation, survey, and where appropriate, excavation, of exposed and underground remains, as well as study of excavated artefacts in storage areas and museums, in order to establish the cultural boundary of a site and understand its significance. Although many sites were abandoned long ago, and have little or no original contents, their location in the landscape is important for understanding regional developments, such as the spread and practice of Buddhism, the relationship among clusters of grotto sites, and between them and nearby towns and monasteries.

Compilation of the history of modern interventions and management

An important component of information collection is the history of modern (beginning in the late Qing Dynasty) interventions and relevant events, from the site's earliest known documentation in the modern era, to its formal declaration as a protected site, to subsequent events and any interventions of importance up to the present. The period from the early 1900s to the 1950s witnessed the slow revival of grotto sites as historic and cultural places, many of which had been abandoned for centuries. Compilations of their modern history are particularly useful as conservation and management becomes ever more complex and as the history of their scientific management, which began in the 1940s, now exceeds 70 years.

Large grotto complexes such as Mogao and Maijishan have rich documentation of their modern histories, dating back to the end of the nineteenth and early twentieth centuries, deriving from active exploration and photographic documentation of the sites, and from Qing dynasty historical documents. Research on their use in the late Qing is important since restoration of statuary and temple facades was often carried out at this time and Daoist practices were revived at some grottoes. The late 1940s and 1950s were also a time of renewed interest as official protection and documentation began. Smaller, remote sites may have little documentation of their modern history since they were investigated in more recent times, but local and provincial archives should be examined in depth.

Another avenue of investigation for an understanding of the modern history of a site is to undertake oral histories of local people. Capturing the knowledge of elderly villagers assists in understanding the changing use in modern times, and provides a record of legends and stories, as well as contemporary religious use. This type of research is often done by anthropologists, and it may be possible to interest a university department to undertake oral histories of communities with long connections to a site.

Publication of research results

New studies and publications on grotto sites should be made widely available to staff, scholars, and the public. Increasingly, publications are electronic and can be easily shared.

Periodically, studies, articles, photographic documentation, and archival information about a site should be compiled into a synthesis in book format.

Historical Research

Research is an essential tool for understanding the history and development of a site. The results inform assessments and contribute to establishing policies and priorities for further research, archaeological investigation, interpretation, conservation, and use.

Historic photographs show site conditions of the past century and are essential for understanding their modern history. Such photographs can also be used to inform visitors about the history of conservation efforts.

Mogao 1907 (British Library)

Mogao 1954

Maijishan 1941

Tiantishan 1959

Mogao 1963

Binglingsi 1963

Archaeological Investigation

Archaeological investigation and survey are critical components of regional research on grotto sites, many of which are located in remote areas.

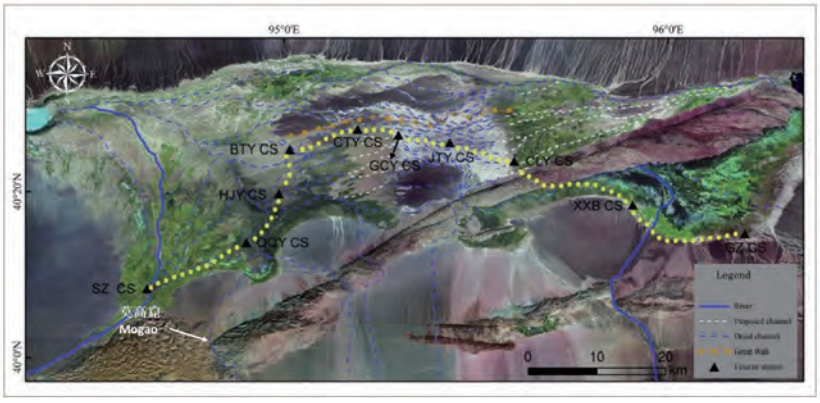
Zhangba

Jingyao

Luohan

Many grotto sites were abandoned long ago, but nevertheless receive protected status. Their distribution in the landscape is important for understanding the history of regional developments, such as the spread and practice of Buddhism, the relationship between clusters of grotto sites, and between sites and nearby towns and monasteries.

Regional surveys, such as the Gansu Province Medium and Small Grotto Sites Investigation Project, directed to be undertaken by the Gansu Provincial Bureau, are the most important tool for understanding and documenting the location, distribution and general condition of the many small and medium grotto sites dispersed throughout the province. This type of field work is challenging but yields great benefits. It is the most informative method of research and investigation at a regional level.



Non-destructive methods of acquisition and analysis of data utilizing remote sensing and GIS technology are becoming an important tool for archaeological investigation. These yield interesting results, as for instance in this example identifying ancient courier stations and the royal road system on the Hexi corridor near Dunhuang (LUO L, WANG X Y., et al. Journal of Archaeological Science. 2014, 50,178-190).

Chapter 5 Conservation Principles and Measures

Chapter cover image: Evidence of moisture related deterioration to wall paintings at Yunyasi

China Principles, Article 9. Historic condition

An essential requirement in the conservation of a heritage site is to preserve its historic condition. The historic condition of a site embodies its values, authenticity and integrity as they have evolved during the course of its history. Through good conservation practice, a site's historic and cultural context and its cultural traditions are preserved and retained for the future.

Introduction

Grotto sites have undergone physical changes over the course of their history and have deteriorated and lost original material. Their primary components include the setting, the rock, and site elements such as wall painting, painted statuary, and stone carving. Conservation principles and measures for sites and their elements are described and illustrated in this chapter. Setting is discussed in Chapter 6.

The main aim of conservation is to preserve a site's values by preventing or slowing as much as possible damage and deterioration. A requirement is to preserve a site in its historic condition. Historic condition embodies the values that have evolved over the history of the site. Changes to the material fabric are considered part of its history and use and should therefore be respected and preserved. Restoration is not, in general, an accepted measure for ancient sites since it introduces non-original materials and diminishes authenticity.

Although each grotto site is unique and has a different history and can exhibit a range of conditions, many share common deterioration phenomena arising from exposure to the environment. These conditions include moisture and salt-related deterioration, erosion with consequent loss, and human-induced changes. Areas of deterioration and loss are considered part of the history of the site and should not be restored or made new again. Instead, the site is conserved in its existing historic condition with elements stabilized to minimize or prevent further loss.

Key conservation principles and measures

- Conservation Process
- Scientific research and investigation
- Minimal intervention
- Site Protection

- Preventive measures
- Conservation measures
- Monitoring and maintenance

Conservation process

Conservation to preserve the historic condition of sites and their elements follows a holistic, integrated, and methodological approach that fits within the overarching Planning Process outlined in Chapter 3.

Conservation is undertaken only after researching, understanding, and documenting the ongoing risks, causes, and mechanisms of deterioration. If this is not done and actions are not taken to counter these risks then conservation interventions may fail and even exacerbate problems causing further deterioration and loss.

The conservation process involves the following steps:

- Site investigation, historical research, and collection of information (discussed in Chapter 4);
- Assessment and analysis of threats and risk:
    - Identification of ongoing threats and evaluation of risks;
    - Understanding causes and mechanisms of deterioration;
- Site protection and prevention of inappropriate use by management (see Chapters 6 and 7);
- Documentation of existing condition;
- Assessment of the need for intervention and its feasibility;
- Development of a conservation intervention plan:
    - Use of preventive measures, to the extent needed;
    - Remedial stabilization, to the extent needed;
- Research and testing to understand any adverse consequences and the appropriateness of interventions;
- Identification of available resources necessary to undertake work, including professional personnel for conservation planning, design and implementation, materials and equipment, and an overall budget;
- Implementation of conservation measures according to the conservation plan;

- Evaluation of the conservation plan by a panel of experts during and after completion of the work;
- Documentation of the work;
- Maintenance and monitoring to evaluate the effects of conservation measures and to determine ongoing stability of the site; and
- Archiving of monitoring and intervention records.

Prior to any intervention an application to undertake the work must be submitted to the relevant authorities for approval. After a project has been approved, detailed and extensive survey and research should be undertaken to develop an action plan that also needs to be reviewed and approved prior to implementation. Rigorous quality control and a process to ensure that interventions will be effective must be established before beginning work. If new major issues are identified during implementation, work should stop, the plan be revised and resubmitted for approval.

During the project tendering process, priority should be given to the use of appropriate and safe technology; a plan should not be selected based solely on cost.

Documentation of the entire conservation intervention process is compulsory, including materials used and techniques employed, and these documents must be archived and made available so that those involved in the future care of the site can know what was done to it.

Scientific research and investigation

Scientific research and investigation, based on a thorough understanding of the site's history and its values, are essential for good conservation.

In-depth investigation should be undertaken on aspects of the climatic and physical environment and setting that may affect the site and its elements. Research can also identify materials, such as pigments, components of plaster layers, and wooden parts to understand the causes of deterioration, through for example, analysis of salts that may be damaging wall paintings, and to develop appropriate conservation responses. Research involves acquisition and evaluation of existing publications, laboratory or field testing, and assessment of previous interventions. While grotto sites

share many characteristics and much can be learned from the problems and solutions at other sites, there is never one approach that can be applied to all sites. Each site is unique in its setting, rock type, climate and microenvironment, and past interventions, and must be understood in that context.

Monitoring is a form of data collection to improve management and conservation and inform research into causes of deterioration. There are different types of monitoring such as:

- regular inspection and recording of the physical condition to understand the causes and rate of deterioration; scientific evaluation of tests, and previous interventions;
- where feasible, environmental monitoring of the microclimate (temperature, humidity, and carbon dioxide) within the grottoes and meteorological monitoring (rainfall, wind, temperature) outside the grottoes; monitoring stability, moisture, and salt content of the rock body;
- other kinds of monitoring that are helpful for management, such as observations of visitor behavior and conducting visitor surveys.

All testing and investigations must be subject to appropriate scientific evaluation and result in written reports for the archives.

Sites may lack personnel with the ability and resources to undertake the documentation, technical and scientific research, and monitoring necessary to provide information about ongoing risks, causes of damage and deterioration, and rates of change before deciding whether to implement interventions. In such cases, it is important to seek professional assistance, as conservation work undertaken without these categories of information can lead to adverse consequences. Stabilization treatments may fail and increase damage if causes of deterioration are not dealt with first.

Minimal intervention

It is important to be aware that conservation measures intervene in the natural lifespan of a site and can alter the condition of individual components. Interventions should therefore be undertaken only when there is likelihood of imminent damage and deterioration, and then applied only where most needed.

Excessive intervention often diminishes the values of a site. Interventions should therefore be minimal—do as much as necessary but as little as possible—so as not to limit the possibility of future interventions.

All site interventions should, therefore, as far as possible, be reversible and not harm historic fabric or site elements, and the area treated should be re-treatable in the future without adverse effects.

While conservation of all grotto sites should follow the same methodological process, the extent of intervention will differ depending on the severity of deterioration, the intended use of the site, and resources and expertise available. For example, if a site is remote and will not be opened to visitors then only basic site protection such as stabilization and maintenance to prevent damage and deterioration should be undertaken. At sites that will be opened to visitors, areas of loss to wall paintings and sculpture may be filled with plaster repairs or compatible material in order to improve presentation and to prevent further damage.

Site Protection

Protection of sites is needed to prevent damage and threats due to human and animal (usually rodents and birds) activities and to reduce deterioration from exposure to the environment. Typically, site-wide protection is undertaken in the early stages, while continuing the necessary research, scientific investigation, and monitoring to better understand the problems before developing and implementing preventive and conservation measures. The type of protection can vary: at remote sites only basic protection such as provided by fencing or signage may be sufficient, while other sites may require the construction of walls and doors to close off the caves (such as the cliff facade at Mogao) and to create a more secure and stable environment for preservation of the painting and sculpture.

Grotto front structures or temple facades are another example of grotto protection that also can serve a presentation function. Originally, wooden cave facades (as in Caves 96 and 16/17 at Mogao) functioned as formal entrances to grottoes. Almost all were lost during long periods of abandonment or limited use of the site. Today it has been decided in some instances to erect new wooden facades for purposes of presentation or restoration, as well as to protect and buffer the interior of grottoes

from the external environment. Constructing new temple fronts can alter the appearance and integrity of a site and must only be undertaken based on historic or archaeological documentation, minimal interventions, and use of traditional materials, design, and scale appropriate to the site, but without necessarily attempting to create a facsimile. These structures do not serve to stabilize the cliff face rock, which is an engineering intervention discussed below under Conservation Measures: Site-wide stabilization.

Preventive measures

Conservation should follow a general hierarchy that aims to focus on prevention before undertaking remedial treatments. Preventive measures are actions that slow deterioration, for instance by improving environmental conditions or erecting protective structures. Grotto sites have mostly uncontrolled environmental conditions. Consequently, painting and sculpture are subject to fluctuations in temperature and humidity as well as exposure to water from rain, ground water, and flood. In such cases, preventive measures should first be implemented to minimize environmental damage prior to remedial stabilization.

A preventive measure can be a protective structure, shelter, or eaves that prevent rain from directly falling on exposed sculpture. Constructed interventions should be unobtrusive and only protect those parts most in danger to ensure that the site's original physical characteristics are retained and the aesthetic values are not adversely affected.

Preventive measures should take into consideration changes that may need to be made in the future and should therefore not be undertaken in haste nor preclude subsequent implementation of more effective measures.

Archaeological survey must precede construction of a protective shelter to avoid destruction of historic subsurface deposits when foundations are excavated.

The installation of a preventive structure must not change or damage what it is designed to protect. Since such structures change the environment and can lead to unintended consequences it is essential to regularly monitor conditions after installation. Regular maintenance is also required on

these structures.

Above all, preventive measures should be part of an overall plan for how to stabilize and protect the entire site, taking into consideration the need for rock stabilization, protection of exposed grottoes, security doors, and other modifications to the exterior facade.

Conservation measures

In the case of grotto sites, the conservation emphasis is generally on direct measures such as stabilization to slow or arrest deterioration and to strengthen components that are unsafe in order to return them to a stable condition.

Interventions should not affect or alter original materials such as pigments in wall paintings, degrade aesthetic value of original site elements, or cause damage to other parts of the site during or after implementation.

Project design and implementation typically require specialized knowledge and experience such as geotechnical and wall painting conservation expertise and therefore must be undertaken by qualified professional organizations under supervision to ensure consistency in quality, design, and implementation.

Appropriate materials and technology

In the past, many sites have suffered damage from use of inappropriate or incompatible materials and methods. These include coatings and chemical consolidants that are film-forming, which when used inappropriately act as a barrier by slowing or inhibiting moisture evaporation and salt movement, leading to exfoliation of the surface. The use of these materials should be avoided, particularly on painted surfaces. The use of modern cement in contact with historic fabric is usually damaging and should be avoided.

Other treatments such as cross-bracing to secure areas of detached wall painting have been replaced with less visually obtrusive methods such as injection grouting. Lightweight grouts have been used in Cave 85 at Mogao and over more than 15 years have performed well. However, both cross-

bracing and grouting can eventually fail, and they require skilled and experienced personnel for implementation, and subsequent periodic monitoring.

The use of chemical consolidants to strengthen or sterilize an object, including biocides and fumigants, is intrusive on the physical fabric and impossible to completely reverse. Conservation measures and the selection of treatment materials, as advised by experts, should first undergo investigation, research, scientific testing, and evaluation and only those techniques and materials proven to be effective and safe in the long term may be used.

Treatment materials can also affect research potential by compromising future scientific analyses. The importance of scientific value should always be considered when reviewing or developing a conservation plan.

Site-wide stabilization

Large scale engineering stabilization interventions may be needed to address major threats. These may be flood control channels, sand control wind fences (both synthetic fabric and vegetation wind breaks), and cliff stabilization. The latter includes sealing cave roofs weakened or collapsed due to water and sand intrusion into cracks and construction of supporting structures to prevent rock failure and rock-bolting necessary for geological stabilization, protection against earthquakes, and for construction of walkways (as at Mogao, Yulin, and Maijishan); however, drilling is damaging and dry coring using air cooling is essential. In some cases, masonry facades with security doors, as at Mogao and Yulin, were included as part of the stabilization. All such site interventions must consider the visual effects on the site and landscape.

Conservation of site elements

Painted plaster, stone and polychrome sculpture, and stone inscriptions represent the most significant historic and artistic values of grotto sites.

Wall painting

Wall paintings should be conserved in situ and not removed from their original location. At some grotto sites, evidence of past lifting and failed attempts to remove painting can be seen.

On-site security protection is needed, especially in remote sites, to prevent theft and vandalism.

Historically, some grottoes have undergone redecoration many times, including overpainting of the entire grotto. Research, analysis, assessment, and documentation should be undertaken on all periods of redecoration. Removal of later periods of redecoration to uncover earlier painting will adversely affect the authenticity of a site, as will restoration of lost areas, and should not be undertaken.

Research to diagnose causes of damage and deterioration of wall paintings is needed so that appropriate conservation plans can be drawn up. The focus of plans should be on preventive measures and stabilization to slow deterioration.

Conservation measures for paintings should focus on stabilization such as edging repairs where loss of painted plaster has occurred, grouting of detached plaster, and localized relaying of paint flakes.

Currently in conservation science, outstanding research questions still exist, such as salt-related damage to wall paintings, and the removal of soot from wall paintings. Though soot affects the aesthetic value it is not a form of deterioration. Cleaning methods can be very damaging to original materials and there is no urgent need to remove soot until safer techniques have been developed. There are other ways to appreciate and present the original appearance of these elements, for example, through imaging techniques and digital reconstruction based on scientific analysis of original materials.

Statuary

Both painted clay statues and carved stone statues exist in Gansu grottoes. The former are usually on a wooden armature or a solid stone core. This is typical of Mogao and other Hexi Corridor grottoes where the rock is unsuited to fine carving and is therefore plastered and painted. Stone sculpture is often carved directly into the rock body as for instance at Beishikusi and Maijishan. It may be plastered and painted but was often unpainted to reveal the carving of fine-grained sandstone.

The focus of conserving statuary should be on stabilizing the current condition to ensure structural safety and prevent damage, particularly overturning during earthquake. An unresolved research question is the determination of appropriate materials and methods for consolidating eroding carved sandstone. In such cases, preventive measures should be implemented to inhibit further deterioration until proven and safe consolidants have been identified for use.

Painted sculpture should be investigated to identify and understand earlier decorative layers, if present. Statuary, whether on a stone base or wooden armature, may have undergone repair or redecoration several times over its lifetime. Research, analysis, assessment, and documentation should be undertaken on all periods of redecoration. Removal of later periods of redecoration to uncover earlier decorative schemes or reinstatement of decoration to a particular historic period is not appropriate as it adversely affects the values.

The painted surfaces of statuary are similar in materials and techniques to wall paintings and thus similar intervention principles and criteria must be applied.

As noted in Chapter 6, fallen fragments of wall paintings and sculpture should be archived and properly stored.

Inscriptions and stele

The value of stone carvings such as inscriptions and stele lies in the symbols and the records of written language that have historic, artistic, and cultural significance and may provide information about the history of the site (for example, dates, donors, and historical context).

If exposure of stone carvings to natural environment and weather is causing deterioration, the construction of a protective shelter can control or slow the processes of weathering.

Relocation of stone carvings may only be considered when conditions do not allow conservation in situ, where it is not possible to ensure effective protection, and after approval by the authority. Prior to relocation thorough documentation, assessment, and discussion must

be undertaken. A replica or marker should be placed at the original location with signage of explanatory and interpretive information.

Monitoring and maintenance

Monitoring and maintenance of grottoes needs special attention because statues and wall paintings are fragile, and the site's geological formation may be unstable.

Monitoring, as mentioned above in the discussion of scientific research and investigation, is a method of data collection used to inform the conservation needs of a site. Monitoring of overall condition after completion of conservation measures is undertaken in order to ensure that the site remains stable or to identify any new problems that may emerge.

Maintenance refers to regular and ongoing actions undertaken in a timely manner to eliminate problems that could lead to further deterioration. For grotto sites, maintenance includes measures such as the removal of plant growth that may cause damage, sand accumulation, and ensuring site drainage, as well as repair of infrastructure such as walkways, and upgrading safety, security and monitoring equipment. Certain types of maintenance, such as removal of accumulated sand, may require monitoring and documentation to create a baseline record.

Regulations should be drawn up with explicit scheduled monitoring plans and written procedures and basic maintenance operations and requirements to prevent damage through neglect or inappropriate actions.

Monitoring and maintenance should be included in conservation plans and the associated costs be provided by entities with authority over the site.

Summary requirements for conservation of grotto sites

- Create and implement a holistic, integrated, and methodological conservation plan that preserves the values.
- Build a core conservation and scientific team, or seek professional assistance, to review and evaluate proposed measures, provide necessary expertise, oversee work, and monitor

condition. This group will also be essential in liaising with local staff regarding their role in grotto documentation, monitoring and maintenance.

- Establish permanent staff positions and build staff capability through training in all areas of conservation and use of the site.
- Recognize the role of site management in making conservation sustainable.

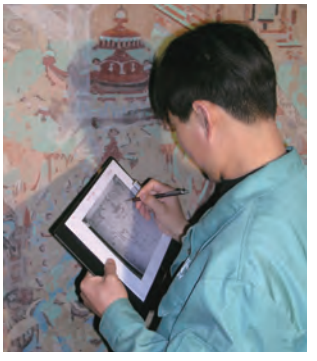
Scientific Research and Investigation

Scientific research and investigation grounded in a thorough understanding of the site's history are essential for good conservation. These include identifying threats and risks, causes of deterioration, and treatment design.

Study of original materials and techniques of execution includes the use of non-invasive methods of examination such as Fourier Transform Infrared Spectroscopy (FTIR) to identify pigments (Mogao).

Investigation into the causes of deterioration found that salts and high relative humidity (RH) led to exfoliation in paintings previously treated (Mogao, repaired again now).

Scientific lab analyses, if available, contribute to an understanding of materials and deterioration; shown here a greatly enlarged image from a scanning electron microscope (SEM).



A record of the investigations undertaken is essential for future understanding, assessment, and research.

Field testing is an important part of scientific research. Here, replica painted coupons are placed in situ for exposure testing (Maijishan).

Research helps to identify and test treatment methods and materials to slow deterioration. Sandstone consolidation is an important area currently being studied. (Nanshikusi).

Site Protection

Site Protection prevents damage from humans and animals and reduces deterioration from exposure to the environment. The extent of intervention may differ depending on the severity of deterioration and the intended use of the site.

At remote sites with little or no visitation, fencing or signage, together with routine inspection, may be sufficient protection from human and animal damage. At other sites containing painting and sculpture additional protection may be required (Wugemiao, Jinyaosi).

Roofed enclosures can be considered and constructed to protect surviving statues from the elements (above left image). The location of this grotto is indicated in the above right image (Zhangbasi).

For the purpose of safety and environmental protection, it may be necessary to build walls and other structures at the entrance of a cave (Tongzisi).

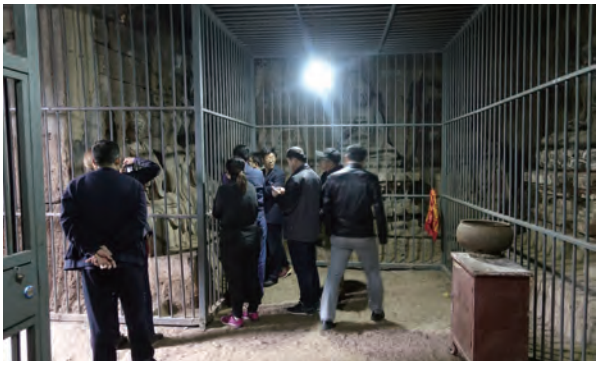
Restored temple eaves can be used to protect caves but should be based on historical research and the use of traditional materials and designs (Mogao).

Preventive Measures

Preventive measures are actions that slow deterioration, for instance, by improving environmental conditions inside the grottoes, or erecting protective structures. Materials and design for these interventions should be compatible with the ancient site and not detract from its historic and artistic values.

Protective structures are a means of safeguarding a site. In the example above, the design and materials of the structure adversely affects the aesthetic values of the site and the sculpture it intends to protect (Chenjiadong).

Eaves provide protection to large statues and relief sculpture from rain and runoff (Tiantishan, Beishikusi).



Metal cages have been installed to protect statuary from theft and touching, although they affect the experience of visitors (Yunyasi).

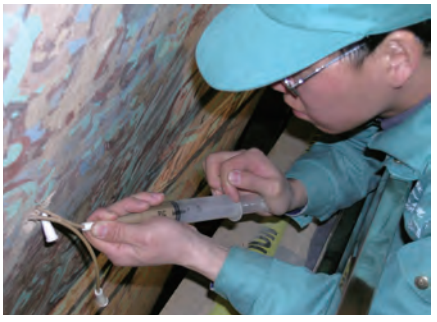
A sign directs visitors to put away photographic selfie sticks and umbrellas to prevent damage to the cultural heritage (Maijishan).

Umbrellas on narrow walkways, which risk damage to the historic fabric and to visitors, can be addressed through management measures (Maijishan).

Site management is important. During the late Qing Dynasty and the Republic of China, there were no protection and management measures, resulting in graffiti and scratches to wall paintings from humans and animals (Changma).

Conservation Measures

Conservation measures for grotto sites emphasize stabilization to slow deterioration and strengthen components that are unsafe. They require investigation of causes of decay and selection of appropriate materials and methods, which may require testing and involvement of experienced professionals.



Treatments such as cross-bracing to secure areas of detached plaster (left, middle of the last century) have been replaced with less visually obtrusive methods such as injection grouting (right). Anchors caused more damage and placed pressure on fragile areas of painting. Today, injection grouting with a liquid grout, compatible with the original painted plaster, is a safer method (Mogao).

Deterioration due to moisture is visible in the form of disruption in the lower part of the statues (left). This is due to environmentally driven salt deterioration. The implemented solution was isolation by tunneling behind the grotto (right). In such cases expert advice must be obtained and scientifically evaluated to avoid harm to the cliff face, wall paintings, and statues (Sierwan).

Stabilization is needed here in order to prevent future loss (Luohandong, repair plans have been drawn up).

Loss and flaking of wall paintings requires stabilization to prevent further loss (Tongzisi, now repaired).

Site-wide Stabilization

Site-wide stabilization comprises large scale engineering work needed to address major threats. Such major site interventions must take into account the visual effects on the landscape.

Cliff stabilization included consolidation and rock bolting with cable (Mogao).

Sand control measures (Mogao).

The condition of the cliff body may require stabilization in order to prevent rock loss or collapse (Changma).

Cliff stabilization, walkways, and cave doors contribute to stabilizing the cliff face (Yulin).

Modern façades, walkways, and doors provide access to and protect the caves but may detract from the site's aesthetic value (Mogao).

Cliff stabilization work was undertaken, and walkways and doors installed (Maijishan).

Monitoring and Maintenance

Monitoring is done to ensure that the site remains stable and to identify whether new problems have emerged. Maintenance includes regular and ongoing monitoring and actions to eliminate problem s that could lead to further deterioration. Both require good record-keeping.

Monitoring of environmental conditions helps to identify and understand causes of deterioration. This knowledge is then used to develop conservation measures (Mogao).

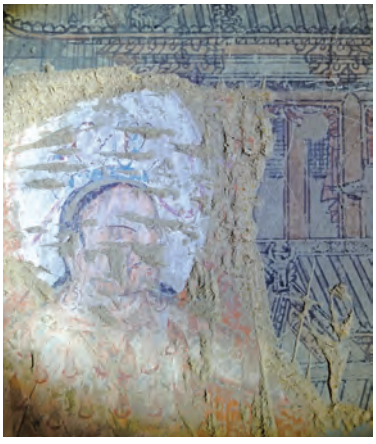
Regular condition monitoring is necessary in order to identify changes in condition (Mogao).

Some grottoes are located in remote areas where few people visit. Conservation and regular maintenance should be undertaken to prevent theft and reduce the risk of further deterioration (Jingyaosi).

Sweeping up sand that hinders entry into the caves is a form of maintenance (Mogao).

Conservation of elements

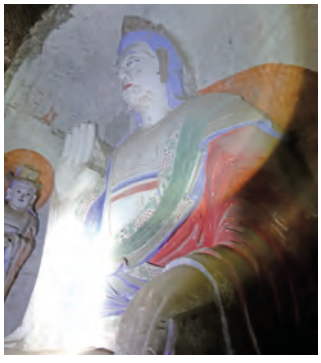
Conservation of site elements refers to wall paintings, stone and polychrome sculpture and stone stele, which represent the most significant historic and artistic values of grotto sites. They should be conserved in their historic condition in situ and not removed from their original setting.



Wall paintings may have more than one period of decoration visible. All layers of painting are historically significant. There have been instances in the past of destroying one layer of painting to expose a lower scheme. Such interventions should be avoided (Tongzisi, Qianfodong).

Removing paintings from their original support is not permitted without good cause since it is damaging and changes the historic context (Matisi).

Painted surfaces of statuary are similar in material and techniques to wall paintings and thus similar intervention criteria must be applied (Nanshikusi).



Restoration or reconstruction of painting (left) or damaged sculpture (right, whose head and hand are reconstructed) are generally not allowed since they introduce non-original materials and affect authenticity. They should only be undertaken in rare situations, with conclusive historical evidence, careful reasoning, and approval by the cultural heritage authority (Wangmugong, Yunyasi).

Stele are sometimes moved from their original location and placed inside for protection.
In such cases, replicas or markers should be placed at the original location if possible (Wangmugong, Yunyasi).

Chapter 6　Site Management

Chapter cover image: Satellite image used for site management in the Mogao Grottoes Master Plan

China Principles, Article 23. Site management

Management is fundamental to the conservation of heritage sites. The role of site management is to understand, promote and protect the site's values through providing long-term planning and vision, establishing policies and regulations, coordinating activities among departments, identifying and taking action to eliminate potential threats, controlling development in the buffer zones, liaising with stakeholders and local community, providing site staff with educational and training opportunities, regular maintenance of the site, providing quality exhibitions and interpretation, collecting and compiling archival documents, managing tourism, providing security, and ensuring sources of finance.

Introduction

Site management is the active engagement of staff in all aspects of taking care of a site and preserving its values. It ensures that the daily operations of the site, such as protection, conservation, use, monitoring, and maintenance, are carried out routinely, and staff are trained and motivated. Site management provides the framework, systems, and standards by which all activities are undertaken.

Site management responsibilities and functions are common to all types of heritage site, but grotto sites have particular attributes and challenges (outlined in Chapter 1) that need to be considered. The key categories of site management are discussed below (Conservation Principles and Measures are discussed in Chapter 5).

Key site management categories

- Policies and procedures
- Financial resources
- Personnel and training
- Monitoring and maintenance
- Treatment of the setting
- Documentation, archives, and collections management
- Infrastructure, water, power, and waste management
- Personnel safety and site security
- Research (discussed in Chapter 4)

• Appropriate use (discussed in Chapter 7)

Policies and procedures

The site manager is responsible for establishing general policies and procedures for management and conservation of a grotto site. The site's Master Plan for conservation and management provides direction and guidance on all aspects of taking care of the site. It is also important, however, to make staff aware of relevant national, provincial, and international regulations, guidelines, and policy documents that address management, conservation, and the use of a heritage site (see Appendix 3).

Financial resources

Adequate financial resources are essential for good management and conservation of sites. According to a directive of the State Council, the relevant government administration responsible for the protection of a site must provide a budget, adequate to guarantee its basic management and conservation. Additionally, however, the site management department, especially of small and medium size sites, should take the initiative to understand the policies of the state and local government for cultural heritage conservation; actively seek guidance and resources; accurately identify the key issues impacting management and conservation; and strive to obtain funds for conservation from various sources.

Personnel and training

Many kinds of expertise are needed to preserve grotto sites, notably documentation, research, monitoring, conservation, management, engineering, architecture, interpretation, and visitor management. Not all sites need such expertise on a regular basis and few sites have all these areas of specialization among their staff. For this reason, assistance from other grotto sites, or other institutions is usually needed.

Site managers and professional staff at grotto sites should:

• know the basic principles of conservation and management;

• observe closely any work being undertaken at the site;

• record and photograph all work; and

• ensure that follow-up monitoring occurs.

Training opportunities and visits for staff to well-managed grotto sites should be arranged by the site manager so that useful experience is gained.

Staff cannot become conservators, engineers, or specialists in any area with only limited training, but they can be trained in good maintenance practices, in monitoring potential problems, and in undertaking basic documentation and record keeping. Staff need also to be aware of their own limitations and knowledge and not undertake work beyond their competencies.

Some grotto sites employ guardians from the local community. This can be an excellent way to garner public support, but it must be accompanied by training in all the values of the site and raising consciousness of conservation.

A good site manager will improve the standard of management of the site by ensuring that staff are well trained and motivated.

Monitoring and maintenance

Site-wide monitoring involves regular inspection and documentation of the condition of the site and all impacts that may require response; it should also include climatic records, which should be kept as part of the site archives.

Maintenance is one of the most important activities on a heritage site. It is a preventive measure that has broad application and includes actions that range from preventing or slowing deterioration to ensuring that services and facilities function properly and addressing problems promptly to avoid further and more extensive and expensive damage.

Whether the grotto site is well maintained and its management orderly, reflects the importance the staff attaches to the site. Neglect by management will lead to poor maintenance. Reasonable and timely maintenance of the grotto site is the responsibility of the managerial personnel.

Routine maintenance of the site includes the following:

- Remove all trash and dispose of it appropriately, including recycling of materials; special

attention should be given to safe disposal of toxic waste (such as batteries, pesticides, and toxic solvents);

- Inspect the protected zone on a regular basis for any signs of potential problems or improper use; ensure that all systems are running normally, including monitoring and security systems, trash disposal facility, and other essential services;
- Carry out regular grotto conservation maintenance based on monitoring the grottoes (ee Chapter 5);
- Care for, repair, and maintain all types of infrastructure in a timely manner to ensure proper functioning; and
- Pay special attention to keeping altars and incense containers clean and orderly. Incense containers must be located only outside the grottoes.

Treatment of the setting

Treatment of the setting is a means of revealing and sustaining the cultural and natural values of a site. Grotto sites have special landscape attributes, being located in scenic mountains and river valleys. For these reasons, the landscape setting is of utmost importance and constitutes an integral part of the site and its values. As noted in Chapter 3, the protection of natural values accords with the constitutional principle of 'ecological civilization' and is reflected in the Chinese saying "green mountains and clear water are as precious as mountains of gold and silver."

Protecting the historic, natural, and social values of the setting requires doing the following:

- Define the setting in relation to the legal boundaries. The setting of a site usually extends outside its protection zone and may even extend outside the construction control zone (the buffer zone). To better protect the grotto site and its setting as a whole it is important to define the legal boundary of the setting and extend it when possible (see also the discussion of cultural boundaries in Chapter 4).
- Define and map the approximate limits of the setting. Settings of grotto sites usually include a much larger landscape, principally the natural surroundings of the site (such as mountains, rivers, valleys, and vegetation). While protected grotto sites have legal boundaries, the setting has no fixed limits and may decrease over time as a result of human activities and new development.

- Define the site's viewshed. A viewshed is what can be seen of the physical environment within the setting in which the site is located and includes all the visible natural and historical landscapes. Within the viewshed interventions should be appropriate and be continuously monitored to ensure that they do not change the qualities, character, and conditions of the setting. Visual intrusions, such as telecommunication towers and urban development should have no or minimal impact on the site. Wherever possible, they should be located outside the protected area.
- Identify how the setting contributes to the values of the site. The setting normally comprises the natural landscape of a grotto site, but may also have historic associations or attributes, and ecological and natural values. In some cases, the setting may include a village, agricultural land, cemetery, and other modern built features that embody social values.
- Maintain the historic and natural appearance of the setting as follows:
    - locate utility wires, pipelines, security cameras and equipment, and communication towers at less visible places and reduce their impact on the appearance and setting of the site.
    - care for gardens and trees; plantings within the protected zone should be non-destructive to potential archaeological remains;
    - use plants that were traditionally grown or native to the region and remove elements of modern landscaping and gardens;
    - remove buildings that visually intrude on the protected site and have no historic value or essential function;
    - locate new roads and parking lots so that they visually and acoustically impact the site and its setting as little as possible;
    - eliminate activities that cause pollution, traffic congestion, noise, and waste of water;
    - monitor and inspect any changes to the environment, such as vegetation, rivers, hill slopes, and man-made activities, and constructions.

Documentation, archives, and collections management

Documentation, archiving, and care of collections are essential responsibilities of the management department. It is the duty of the site manager to ensure that they are undertaken by trained personnel.

Documentation management. A site must create records for present and future research,

conservation, and utilization. Documentation requirements:

- Describe the site: A first step in documenting a site is describing and delineating its components and collecting and synthesizing information. This involves:
  - identifying and inventorying important documents, records, archives, photographs, maps, and artifact collections;
  - identifying site components for consistent naming and reference;
  - identifying and documenting legal administrative boundaries, one of the Four Legal Prerequisites (identifying cultural boundaries is described in Chapter 4 as a research activity);
  - creating or enhancing an archive for the site and ensuring that it meets standards for preservation, access, and retrieval of records.
- Photograph the site: Documenting the setting and interiors of grottoes by photography is a basic activity that is needed for research, condition monitoring, conservation, interpretation, and publicity. Photographic documentation normally involves:
  - Photographing the site's key components on a regular basis for monitoring purposes;
  - Photographing, with written description, the wall paintings, sculpture, and grottoes whenever physical change is evident (see Chapter 5).
  - Photographing and recording any major changes to the site's setting.
- Apply new technologies for documentation: 3D digital photography, photogrammetry, and drones are used to capture a full record of grottoes' interiors and exteriors. Important considerations for new documentation technologies are:
  - Proper storage of electronic data is essential so that it is available in the future. Many grotto sites may not have the ability to undertake high-tech documentation and maintain it for the long term. The Gansu Provincial Heritage Bureau, universities, and large sites with digital departments, such as at the Dunhuang Academy, may assist less technically advanced sites, but the site management should know where the data will be kept and what the policy is for access.
  - Mapping of a grotto site may have been undertaken in the past using traditional survey and hand drawings. These are often detailed and provide useful information about condition. Such maps should be considered as historic documents and be preserved. But newer technologies, such as laser scanning and photogrammetry, have become

more accessible and allow for rapid recording to produce elevation drawings, plans and topographical maps of a site and setting. Aerial photography using drones is also now common and provides affordable and immediate information on the condition of a site and its setting.

- Satellite remote sensing techniques may allow identification of features in the landscape that are not visible on the ground or from aerial photography. Academic institutions and the Chinese Academy of Sciences are increasingly using these methods, especially in the arid desert regions of the Hexi corridor along the Silk Road. These institutions may be able to assist smaller grotto sites. This technology may also be used to monitor damage from development or looting in large areas and changes over time.
- GIS (Geographic Information Systems) are being increasingly used in archaeology and other disciplines to create, manage, analyze, visualize, and map geographically referenced data. It is a very useful tool for management of heritage data on a regional scale, such as Gansu Province.

Archive management: Records and archives are among the Four Legal Prerequisites for cultural heritage sites. A staff person should be assigned responsibility for managing archives. Creating and maintaining archives requires doing the following:

- Establish comprehensive information collection systems to record, screen, and organize relevant information including text, images, videos, and other types of data.
- Manage information and records associated with the values, interventions, setting, and important events of the site.
- Collect and keep information complete and up to date.
- Ensure that digital data are stable and can be accessed in future.

Collections management: Grotto sites have collections of various types and sizes. A few sites, such as Mogao, have large, important collections, including archaeological materials. Most others will have small collections. These may consist of fragments of fallen wall paintings or sculpture collected from the caves over time. Documenting where these fragments came from and protecting them is important. They may be able to be returned to their original location, or they may be useful for taking samples for analysis, or they may retain original colors that have since faded in the caves.

Local or regional museums may be the best location for small collections since they can provide storage space, security, and archival care of fragmentary materials.

Less significant, but still important for the modern history of sites, are the everyday instruments, tools, and equipment no longer in use from the nineteenth and twentieth centuries; geological specimens; and relevant traditional items donated by local villagers.

Site infrastructure, water, power, and waste management

A grotto site should contribute to a healthy environment and promote sustainability through use of renewable resources, green energy, water conservation, and attention to the ecology of the site and its setting. This means:

- Regularly monitor site infrastructure, new construction projects, and their impact on the site, with respect to form, size, materials, and style, and the safety of visitors;
- Assess existing buildings and temporary structures on a site to determine if they should be removed or, if judged to have value or important function, repaired and maintained;
- Ensure the design of new buildings is consistent and compatible with the site and its setting;
- Make water conservation a priority. Garden maintenance and irrigation should be in line with the principle of saving water and using river water and/or reclaimed water as far as possible;
- Make energy conservation a priority action and utilize sources of green energy in heating, air conditioning, and lighting;
- Waste materials and trash should be sorted first then, in compliance with relevant regulations of local government, delivered for treatment. Wastewater after reclamation should be re-used or discharged. Construction waste must be buried or treated according to the instructions of relevant governmental departments.

Security and safety

Safety of people and security of the heritage must be assured. Sites open to the general public must draw up contingency plans for health and safety, dealing with sudden weather change, and protection and security of cultural heritage that is subject to natural disasters (fire, flood, earthquakes, strong wind, and rainstorms). Site authorities should follow the safety requirements for museums and heritage sites and set up a first-aid station with trained personnel. The following

should be addressed:

- Emergency response plan, site evacuation, and medical rescue;
- Upgrading and testing of public health and safety equipment;
- Roads or facilities that may affect the safety of visitors;
- Threats from flooding;
- Cliff face and slope instability;
- Fire prevention and proper equipment (especially on sites with religious activities and functions);
- Installation of lightning conductors to prevent fires and electrical outages;
- Identification and timely elimination of fire hazards (electrical, burning incense and paper money, fireworks, and hazardous materials);
- Regular patrol and inspections of open areas;
- Anti-terrorism threats, where warranted; and
- Inebriated or unruly persons on the site.

Site Management

Site management is responsible for all aspects of conservation and Site Management management of a grotto site. Site personnel are the most important contributors to achieving successful site management. Without welltrained and motivated staff, a grotto site will not survive intact into the future.

Training opportunities for staff, conference attendance, participation in expert committee deliberations, regional or site workshops, and study tours all contribute to building expertise and increasing motivation and morale among staff.

Local custodians are important caretakers and often have a special connection to remote sites. They also need training in proper care of a site.

A site's master plan and policies must be shared with and understood by all staff so they can contribute to achieving its objectives.

Documentation, whether a hand drawing or done with newly developed technologies, is used to record and study a site or its elements, make replicas, record condition, monitor change, and assist with interpretation. As indicated in Chapter 4 on Historical Research and Archaeological Investigation, it is an invaluable resource for the future and must be preserved, properly archived, and made accessible to researchers and conservation professionals.

Treatment of the Setting

The setting of a grotto site is one of its principal values. Proper treatment and protection of the setting and its natural and cultural landscape is a means of revealing and sustaining historic and natural values.

A natural landscape, not impacted by modern development, enhances a site's value (Maijishan; Yunya).

New construction and buildings in urban areas in proximity to grottoes have changed the site's cultural and natural setting (Daxiangshan).

Compatibility of furnishings, signs, and colors with the surrounding natural environment is important to consider (Lashao).

A beautiful river setting of the grotto site is affected by the color, form, and volume of a modern structure. Compatibility and coordination between modern buildings and the historical setting should be considered (Wufoyansi).

Monitoring and Maintenance

Monitoring and maintenance are of central importance in ensuring a site's long-term safety and preservation. Both monitoring and maintenance can require instrumentation and expertise, but equally beneficial is careful observation and recording of changes, and simple routine cleaning of a site.

Monitoring of the environment usually requires sophisticated instrumentation and specialists.

Regular site-wide monitoring and inspections are needed to ensure infrastructure such as drainage channels are functioning properly and being maintained .

Simple basic tools used to conduct daily maintenance to prevent accumulation of trash and waste.

Wiring from monitoring instruments should be minimized or hidden as much as possible, not exposed to view as here.

The maintenance of a clean and orderly work site, as shown here, contributes to safety and effective results.

Grottoes located in humid areas require regular maintenance to prevent deterioration caused by soil accumulation and vegetation growth.

Chapter 7　Use and Presentation

Chapter cover image: Visitors admiring and photographing statues at Maijishan.

China Principles, Article 40. Appropriate use.

Appropriate use can be an important means of conserving a heritage site. Use should take into consideration the values, attributes, state of preservation and setting, as well as the possibility of the site being used for research, presentation, continuation of original function or adaptation for an appropriate modern use. Use of a site should both be sustainable and promote community well-being. Overuse must be avoided.

Introduction

Use of heritage sites is an increasingly important and multi-faceted component of site management in today's world. Use can bring benefits to the site, the local community, and the general public, but it can also be a threat to the site's values and authenticity. In Chapter 6, it was noted that the use of sites is integral to site management; however, because of its great impact on management, it is discussed in detail here.

Typical uses of a heritage site include:

- Scientific research and archaeological investigation;
- Education through promotion and presentation of the site and its values;
- Traditional cultural and religious customs and practices;
- Public access for tourism, recreation, and economic benefit.

Rational use of a grotto site contributes to its social value and provides economic benefits to society. Some uses, however, may conflict with other heritage values (historic, artistic, and natural). It is important that conservation and management staff understand these potential conflicts in order to avoid damage to the site.

The aim of managing the use of a site is to sustainably preserve all its values, history, and culture. Where this cannot be achieved, a decision needs to be made about which values will be affected. This is a decision that requires input from both site authorities and professional experts. Such cases are rare since preserving historic and artistic values along with social values is achievable if creative thinking and planning is employed. If the historic values of a site have been too diminished by overuse, it may no longer retain its status as protected cultural heritage.

Key uses of grotto sites

- Scientific Research
- Education
- Traditional and religious uses
- Public access for tourism and recreation

The main uses of grotto sites are described here together with potential conflicts of values that site managers may need to consider in order to avoid harm that may result from over use and development.

Scientific Research

Research of all kinds, including archaeological, historical, scientific, and social science research of grotto sites on the Silk Road has been important in modern times, as described in Chapter 4. Research contributes to a site's educational value and rarely has negative impacts. However, archaeological investigations requiring excavation should only be undertaken with minimal impact after approval following careful planning and assessment. As noted in Chapter 4, a priority action should be to undertake oral histories of local people in order to record the knowledge of older members of the community about traditional practices and meanings of these places. This is especially important in rural areas where local traditions often survive, but which are vulnerable to ever increasing social and economic change.

Education

Education and site interpretation, which are based on results of research by scholars, keep alive the ancient and modern history of a site through accurate narration of the site's story. Education is a primary obligation of managers whereby new generations learn to value the artistic, historic, scientific, natural, cultural, and social significance of a site. In addition to visits to grottoes themselves, educational goals are achieved through various means of interpretation and presentation, including:

- developing interesting exhibits for schools and the community, as well as for domestic and international audiences
- tour guides
- informative web sites

- mobile phone apps
- digitization of grottoes
- replication of grottoes
- quality souvenirs
- publications
- festivals and performances

Remote sites should use the local township or city for their promotion and interpretation. Large sites may also be used as venues for conferences, professional meetings, and workshops, which contribute to the educational value of the site.

Traditional and religious uses

Contemporary religious practices (Buddhism, Daoism) and traditional folk customs may differ from the original purpose, although continuity of certain aspects occurs, such as festivals (notably the Buddha's Birthday), burning incense and making offerings, and local community participation in custodial duties. These practices provide a strong bond with local communities who participate in them. This is especially the case with grotto sites in rural areas where familiar historic landmarks serve to transmit history and traditional practices. As stated in the China Principles (Article 10) with respect to authenticity, "The continuation of long-established cultural traditions associated with a particular site is also a means of retaining authenticity."

Potential conflicts of values: It is important that traditional practices are recognized by the authorities, but some inappropriate uses may conflict with the site's historic values. For instance, burning incense and lighting candles are common practices which, if permitted inside a grotto, will deposit soot on wall paintings and sculpture over time, obscuring the site's artistic and historic values.

Most conflicts can be resolved, but resolution requires a clear understanding of what is most important and valued about a site and finding alternative ways of expression or practice. For instance, burning incense outside grottoes is an appropriate means of resolving the conflict between preserving historic and artistic values and religious use. Similarly, keeping grottoes free of religious paraphernalia and offerings such as plastic flowers, food, and other modern embellishments helps to maintain the historic values and authentic character. Additionally, broadcasting loud music or chanting

in key protection areas is not appropriate since it detracts from the ambience of the ancient site.

Repainting and restoration of grottoes are not permitted because they cause a conflict of values that cannot be resolved. The integrity, authenticity, and historic value of a grotto site may be severely affected if the site retains only a small percentage of its original elements, especially statuary and paintings, because of loss and subsequent restoration or reconstruction.

Over time, individual and community memories of history gradually fade, and religious practices and beliefs are transformed. As a result, over the centuries, many grotto sites have lost their original historic fabric and character. In recent decades, some sites have undergone extensive restoration and reconstruction, rebuilding of temple fronts, and renovation, accompanied by new constructions, to accommodate contemporary Buddhist and Daoist religious use. Much of this development is not appropriate for an ancient grotto site that is protected as cultural heritage. As discussed in Chapters 5 and 6, interventions on historic sites must be done minimally and with regard for the historic character and the natural setting

if they are to retain their authenticity and status as protected cultural heritage.

Inappropriate interventions such as repainting or making new statues to recreate an ensemble of statues for contemporary religious use may further diminish the historic value. If such interventions have been done in the past, they need to be recorded in the site archive and sign-posted so that visitors are able to identify what is historic and what is new fabric. Repainting and restoration may also conflict with the potential research value of a site since it may remove or obscure traces of historic materials.

Public access for tourism and recreation

Tourism of various sorts (both group tourism and individual travelers) is common to large and well-known grotto sites, such as Mogao, Maijishan, and Binglingsi, but less well-known sites may also receive substantial numbers of visitors, mainly from the local or surrounding region.

Religious tourism and pilgrimage have become more popular in recent years, especially among ethnic minorities of western China and from other regions and countries where religion is strongly represented

in the social life of the community. Recreational uses of sites, for walking, hiking, picnics, festivities, and the enjoyment of the natural setting, generally accompanies tourism, especially during holiday periods.

Visiting grotto sites contributes to the public's understanding and respect for these ancient places and is how the site's educational values are conveyed to the public.

Potential conflicts of values: Tourism represents both an opportunity and a potential threat to grotto sites. It must be carefully assessed for adverse consequences and planned in order that it remains a sustainable benefit. Visitors to grotto sites contribute to local economic development and a site's revenues. But this economic benefit may result in pressures from local government and community to increase visitor numbers beyond the visitor capacity of the site. Too many visitors result in traffic congestion and over-crowding, which diminishes the visitor experience, may cause harm, and may allow the spread of infectious diseases.

Understanding the level of visitation appropriate for a site requires analysis, including:

- Visitor numbers and times of visitation.
- Survey of visitors to know where they are from and why they are visiting, and level of satisfaction.
- Documenting areas of congestion and assessing potential risks.
- Observations of visitor behavior to understand how they relate to the site, where they congregate, and to what they are most attracted.

Based on results from visitor surveys strategies may be needed to solve existing and potential problems and provide a safer and better visitor experience.

Visitor infrastructure at highly visited grotto sites is visually intrusive if not well designed. Design guidance should be sought for walkways, route layout, barriers, safety exits, and other interventions needed to protect site paintings and sculpture.

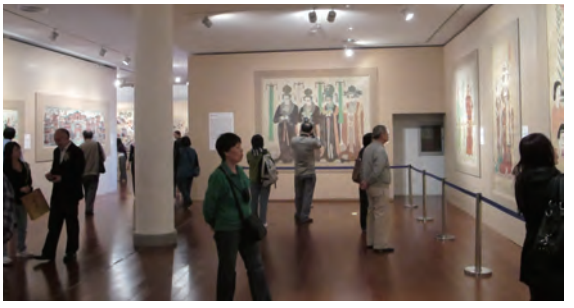
Original historic layout of a site, its facilities, and its setting and natural environment are essential values that should not be compromised by modern usage. For this reason, infrastructure for managing and servicing visitors should be carefully situated and designed so as not to detract from

the setting and the natural values.

In summary, the overall objectives of site management and conservation should be the use of grotto sites for the maximum enjoyment, education, and benefit to society without damage or impairment to the historic and artistic values. Continuation of an original or historic use, as noted in Article 10 of the China Principles, is a means of retaining authenticity and values. But a site that has lost continuity with its past and most of its historic fabric due to extensive repair is no longer a cultural heritage site reflecting historic values. Such a site may demonstrate strong social value by providing benefits to society such as spiritual fulfillment and social cohesion but will have lost the attributes that make it a cultural heritage site deserving of special recognition and protection. The historic and artistic values of ancient sites are rare, and once lost cannot be regained.

Research and Education

Use of grotto sites for research and education is one important reason for their protection. Research informs education, which is a benefit to society, enhances social cohesion, and instills pride in the achievements of the past.



People visit grotto sites for many reasons, but the desire to learn about history is often important. Exhibitions are a primary means of educating visitors, whether it be on the site or in a museum. Sites with limited resources can rely on the local county museum for interpretation, but even a few panels in the site office helps visitors to understand the site.

The paintings and sculpture of grotto sites cannot be removed for exhibition, but hand-painted replicas using authentic pigments produces beautiful and exacting copies that can be seen and studied by many more people. Digital replication and virtual tours extend the viewing and research possibilities even further, although they cannot capture the feeling of the originals or hand-painted copies by skilled artists.

Artistic inspiration and creativity is sparked by visiting grotto sites. Performances, educational activities, and festivals can be an appropriate way to utilize grottoes.

Traditional and Religious Use

Traditional and religious uses are important social values and provide strong connection to local communities. Offerings from local people and visitors are an expression of these values. But these uses also carry with them potential for adversely affecting the authenticity and historic values of a grotto site and therefore all activities on the site require careful consideration before approval and effective supervision.





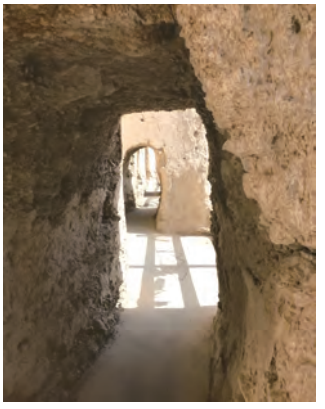
Practices that involve offerings, donation boxes, and prayer flags can usually be accommodated at a heritage site since they are reversible, which is a key concept in conservation that needs to be considered. In all cases, however, the practices and materials that are introduced should not damage or overwhelm the physical remains. Practices, such as incense burning and food offerings, can be undertaken outside.



Complete renewal and repainting of statues in poor condition, or recreation of lost statues, is not generally appropriate for an ancient site. If approval is granted for limited restoration, it needs to be undertaken with great caution and with professional advice. The example of the reconstructed, gilded statue (on the right) is acceptable in as much as it does not impact the physical remains and can be removed at any time.

Public Access for Tourism and Recreation

Uses of heritage sites for tourism and recreation areas closely connected with education and religious use since they are activities that allow public access to a site. Tourism to heritage sites generally is increasing substantially. Visitors benefit from the educational and recreational opportunities afforded by the site, and they provide an economic benefit to both the site and local communities if well managed. If the site is not well managed, benefits are short term and the harm caused is irreversible.


Ancient grotto sites were not built for modern tourism. They are accessed by steep stairs, narrow walkways and passageways, resulting in congestion that impacts both the safety of the art and the visitor experience.


Establishing a visitor capacity is essential for highly visited sites to ensure a good experience and prevent harm to the grottoes. Other safety measures include well designed barriers to prevent visitors from touching the art but do not obscure viewing; signage to caution visitors; and staff to guide and monitor tourists.


Interpretive signage is helpful to visitors. It needs to be readable (not reflective as seen on the left), carefully located so as not to be visually intrusive, and made of robust, long-lasting materials.

The settings of grotto sites offer tourists a place to enjoy the natural world.

Appendix

Appendix 1. Inventory of World Cultural Heritage, National, Provincial, City/County Level Grotto Sites in the Five Regions of Gansu

Brief List

Region/ Protection level	Hexi Dunhuang 10 sites total	Hexi Liangzhou 20 sites total	Longzhong 19 sites total	Longnan 34 sites total	Longdong 45 sites total
World Cultural Heritage 3 sites	莫高窟 Mogao	——	炳灵寺石窟 Binglingsi	麦积山石窟 Maijishan	——
National Protected 18 sites	莫高窟 榆林窟 五个庙石窟 昌马石窟 Mogao Yulin Wugemiao Changma	马蹄寺石窟 天梯山石窟 文殊山石窟 童子寺石窟 Matisi Tiantishan Wenshushan Tongzisi	炳灵寺石窟 Binglingsi	麦积山石窟 大象山－水帘洞石窟 木梯寺石窟 Maijishan Daxiangshan - Shuiliandong Mutisi	北石窟寺 南石窟寺 云崖寺－陈家洞石窟 王母宫石窟 石拱寺石窟 石空寺石窟 Beishikusi Nanshikusi Yunyasi - Chenjiadong Wangmugong Shigongsi Shikongsi
Provincial Protected 14 sites	——	景耀寺石窟 亥母寺遗址 头峡口石刻 花大门石刻 Jingyaosi Haimusi Touxiakou Huadamen	红山寺石窟 寺儿湾石窟 法泉寺石窟 五佛沿寺石窟 Hongshansi Sierwan Faquansi Wufoyansi	华盖寺石窟 八峰崖石窟 佛爷崖摩崖造像碑 Huagaisi Bafengya Foyeya Zaoxiang	莲花寺石窟 保全寺－张家沟门石窟 玉山寺石窟 Lianhuasi Baoquansi-Zhangjiagoumen Yushansi
City /County Protected 96 sites	6 sites (see Appendix 2)	12 sites (see Appendix 2)	14 sites (see Appendix 2)	28 sites (see Appendix 2)	36 sites (see Appendix 2)

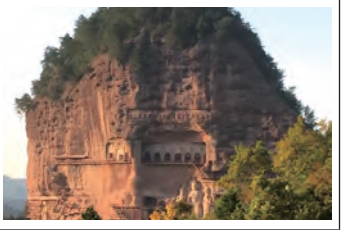
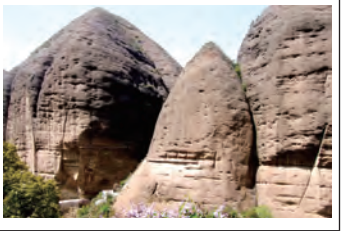
Inventory of Grotto Sites listed by geographical location and protection level

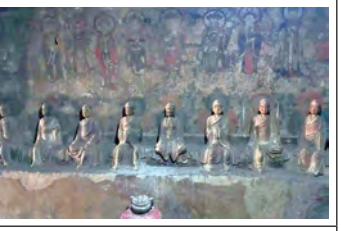
(above provincial level protected site)

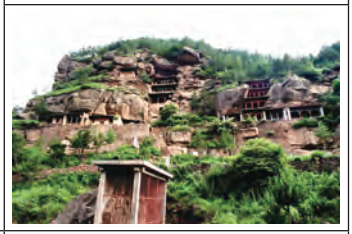
Principal Grottoes	Associated Grottoes	Dynasty	Location	Protection level	Images
HEXI DUNHUANG and HEXI LIANGZHOU REGIONS					
莫高窟 Mogaoku, Mogao Grottoes	西千佛洞 Xiqianfodong Western Thousand Buddha Grottoes	Northern and Southern to Yuan Dynasties	Dunhuang City, Jiuquan City	World Heritage	
				National	
榆林窟 Yulinku, Yulin Grottoes	小千佛洞 Xiaoqianfodong shiku 东千佛洞 Dongqianfodong Eastern Thousand Buddha Grottoes (Northern and Southern to Qing Dynasties)	Tang to Qing Dynasties	Guazhou County, Jiuquan City	National	 
马蹄寺石窟 Matisi shiku, Mati Temple Grottoes	千佛洞，北寺，上观音洞，中观音洞，下观音洞，金塔寺，药草窟等 Qianfodong, Beisi, Guanyindong, Jintasi, Yaocaosi, etc.	Northern Liang to Ming, Qing	Sunan County, Zhangye City	National	
天梯山石窟 Tiantishan shiku, Tiantishan Grottoes		Northern and Southern to Tang Dynasties	Liangzhou District, Wuwei City	National	

Principal Grottoes	Associated Grottoes	Dynasty	Location	Protection level	Images
文殊山石窟 Wenshushan shiku, Wenshushan Grottoes	前山千佛洞，万佛洞，后山千佛洞，古佛洞 Qiangshan Qianfodong, Wangfodong, Houshan, Gufodong Qianfodong	Northern and Southern to Western Xia Dynasties	Sunan County, Zhangye City	National	
五个庙石窟 Wugemiao shiku, Wugemiao Grottoes		Northern and Southern, Five Dynasties, Song Dynasty	Subei County, Jiuquan City	National	
昌马石窟 Changma shiku, Changma Grottoes		Northern Wei to Qing Dynasties	Yumen City, Jiuquan City	National	
童子寺石窟 Tongzisi shiku, Tongzi Temple Grottoes		Northern and Southern to Qing Dynasties	Minle County, Zhangye City	National	
景耀寺石窟 Jingyaosi shiku, Jingyao Temple Grottoes		Qing Dynasty	Sunan County, Zhangye City	Provincial	
亥母寺遗址 Haimusi yizhi, Haimusi site		Western Xia, Yuan, Ming, Qing Dynasties	Liangzhou District, Wuwei City	Provincial	

Principal Grottoes	Associated Grottoes	Dynasty	Location	Protection level	Images
头峡口石刻 Touxiakou shike, Touxiakou stone carving		Qing Dynasties	Yongchang county, Jinchang City	Provincial	
花大门石刻 Huadamen shike, Huadamen stone carving		Western Xia，Qing Dynasties	Yongchang county, Jinchang City	Provincial	
LONGZHONG					
炳灵寺石窟 Binglingsi shiku, Bingling Temple Grottoes		Northern and Southern to Ming Dynasties	Yongjing County, Linxia Hui Autonomous Prefecture	World Heritage	
红山寺石窟 Hongshansi shiku, Hongshan Temple Grottoes		Yuan to Qing Dynasties	Pingchuan District, Baiyin City	Provincial	
寺儿湾石窟 Sierwan shiku, Sierwan Grottoes		Tang to Qing Dynasties	Jingyuan County, Baiyin City	Provincial	
法泉寺石窟 Faquansi shiku, Faquan Temple Grottoes		Northern Wei Dynasty	Jingyuan County, Baiyin City	Provincial	

Principal Grottoes	Associated Grottoes	Dynasty	Location	Protection level	Images
五佛沿寺石窟 Wufoyansi shiku, Wufoyan Temple Grottoes		Northern Wei Dynasty	Jingtai County, Baiyin City	Provincial	
LONGNAN					
麦积山石窟 Maijishan shiku, Maijishan Grottoes	鲁恭姬造像碑 Lugongji Zaoxiangbei 仙人崖石窟 Xianrenya shiku Xianrenya Grottoes (Northern and Southern Dynasties)	Sixteen Kingdoms	Maiji District, Tianshui City	World Heritage	
				National	
大象山 — 水帘洞石窟 Daxiangshan-Shuiliandong shiku, Daxiangshan-Shuiliandong Grottoes	千佛洞石窟 显圣池石窟 拉梢寺石窟 Qianfodong shiku Xianshengchi shiku, Lashaosi shiku	Northern and Southern Dynasties to Republic of China	Wushan County, Tianshui City — Gangu County, Tianshui City	National	
					
木梯寺石窟 Mutisi shiku, Muti Temple Grottoes		Northern and Southern to Yuan Dynasties	Wushan County, Tianshui City	National	

Principal Grottoes	Associated Grottoes	Dynasty	Location	Protection level	Images
华盖寺石窟 Huagaisi shiku, Huagai Temple Grottoes		Ming and Qing Dynasties	Gangu County, Tianshui City	Provincial	
八峰崖石窟 Bafengya shiku, Bafengya Grottoes		Song to Qing Dynasties	Xihe County, Longnan City	Provincial	
佛爷崖摩崖造像碑 Foyeyamoya zaoxiangbei, Foyeya relief sculpture		Northern Zhou	Hui County, Longnan City	Provincial	
LONGDONG					
北石窟寺 Beishikusi, Beishikusi Grottoes (Northern Grottoes)		Northern and Southern to Song Dynasties	Xifeng District, Qingyang City	National	
南石窟寺 Nanshikusi, Nanshikusi Grottoes (Southern Grottoes)		Northern and Southern to Tang Dynasties	Jingchuan County, Pingliang City	National	

Principal Grottoes	Associated Grottoes	Dynasty	Location	Protection level	Images
云崖寺—陈家洞石窟 Yunyasi-Chenjiadong shiku, Yunya Temple-Chenjiadong Grottoes		Northern and Southern to Qing Dynasties	Zhuanglang County, Pingliang City	National	 
王母宫石窟 Wangmugong shiku, Wangmugong Grottoes		Northern and Southern Dynasties	Jingchuan County, Pingliang City	National	
石拱寺石窟 Shigongsi shiku, Shigong Temple Grottoes		Northern and Southern to Sui Dynasties	Huating City, Pingliang City	National	
石空寺石窟 Shikongsi shiku, Shikong Temple Grottoes		Song to Ming Dynasties	Zhenyuan County, Qingyang City	National	
莲花寺石窟 Lianhuasi shiku, Lianhua Temple Grottoes		Tang and Song, Dynasties	Heshui County, Qingyang City	Provincial	

Principal Grottoes	Associated Grottoes	Dynasty	Location	Protection level	Images
保全寺—张家沟门石窟 Baoquansi-Zhangjia goumen shiku, Baoquan Temple-Zhangjia goumen Grottoes		Northern Wei Dynasty	Heshui County, Qingyang City	Provincial	 
玉山寺石窟 Yushansi shiku, Yushan Temple Grottoes		Song and Jin Dynasties	Zhenyuan County, Qingyang City	Provincial	

Appendix 2. Inventory of City /County Level Protected Grotto Sites

HEXI DUNHUANG REGION 6 sites	
东水沟石窟 Dongshuigou shiku	碱泉子石窟 Jianquanzi shiku
南湖店西石窟 (已迁至莫高窟) Nanhudianxi shiku (moved to Mogaoku)	旱峡石窟 Hanxia shiku
南湖店东石窟 (已迁至莫高窟) Nanhudiandong shiku (moved to Mogaoku)	石庙子石窟遗址 Shimiaozi shiku
HEXI LIANGZHOU REGION 12 sites	
龙泉寺石窟 Longquansi shiku	上石坝河石窟 Shangshibahe shiku
高峰寺石窟 Gaofengsi shiku	云庄寺石窟 Yunzhuangsi shiku
娘娘庙石窟 Niangniangmiao shiku	灵官殿石窟 Linggongdian shiku
新开阴骘寺石窟 Xinkaiyinzhisi shiku	石佛崖石窟 Shifoya shiku
上天乐石窟 Shangtianle shiku	观音山石窟 Guanyinshan shiku
大湖滩石佛崖石窟 Dahutan Shifoya shiku	圣容寺石佛像 Shengrongsi shifoxiang
LONGZHONG REGION 14 sites	
邢家湾石洞寺石窟 Xingjiawan Shidongsi shiku	朝阳寺石窟 Chaoyangsi shiku
石洞寺石窟 Shidongsi shiku	劈佛寺石窟 Pifosi shiku
尖山大佛寺石窟 Jianshan Dafosi shiku	红塔寺石窟 Hongtasi shiku
桃花山石窟 Taohuashan shiku	高石崖石窟 Gaoshiya shiku
刘家寺石窟 Liujiasi shiku	马鹿山石窟 Malushan shiku
三清洞石窟 Sanqingdong shiku	五竹寺石窟 Wuzhusi shiku
接引寺石窟 Jieyinsi shiku	云盘寺石窟 Yunpansi shiku

LONGNAN REGION 28 sites	
碧莲洞石窟 Biliandong shiku	法境寺石窟 Fajingsi shiku
罗汉崖摩崖造像 Luohanya moya zaoxiang	万金寺石窟 Wanjinsi shiku
神仙洞石窟 Shenxiandong shiku	真空寺石窟 Zhenkongsi shiku
朝阳洞石窟（甘谷县） Chaoyangdong shiku（Gangu County）	三眼洞石窟 Sanyandong shiku
马务寺石窟 Mawusi shiku	佛孔寺石窟 Fokongsi shiku
显龙洞石窟 Xianlongdong shiku	罗汉洞山摩崖石刻 Louhandongshan moya shike
禅殿寺石窟 Chandiansi shiku	清凉洞石窟 Qingliangdong shiku
鲁班山石窟 Lubanshan shiku	竹林寺石窟 Zhulinsi shiku
铁笼山石窟 Tielongshan shiku	黄花寺石窟 Huanghuasi shiku
佛爷崖石窟 Foyaye shiku	张果老登真洞 Zhangguolao dengzhen dong
花果山石窟 Huaguoshan shiku	土蜂沟石窟 Tufenggou shiku
朝阳洞石窟（武都区） Chaoyangdong shiku（Wudu District）	西姑庵石窟 Xiguan shiku
达摩石窟 Damo shiku	千佛洞石窟 Qianfodong shiku
菩萨石窟 Pusa shiku	佛爷崖石窟 Foyeya shiku
LONGDONG REGION 36 sites	
罗汉洞石窟（泾川县） Luohandong shiku (Jingchuan County)	佛爷崖石窟 Foyeya shiku
千佛崖石窟 Qianfoya shiku	朝阳洞石窟 Chaoyangdong shiku
丈八寺石窟 Zhangbasi shiku	北极洞石窟 Beijidong shiku
韩家沟石窟 Hanjiagou shiku	贺家峡石窟 Hejiaxia shiku
蒋家坪石窟群 Jiangjiaping shikuqun	石桥石窟 Shiqiao shiku
太山寺石窟 Taishansi shiku	店峡石窟 Dianxia shiku

红山石窟 Hongshan shiku	乔阳寺石窟 Qiaoyangsi shiku
三教洞石窟 Sanjiaodong shiku	曹家川石窟 Caojiachuan shiku
竹林寺石窟 Zhulinsi shiku	小河湾石窟 Xiaohewan shiku
佛沟崖石窟 Fogouya shiku	万山寺石窟 Wanshansi shiku
红崖寺石窟 Hongyasi shiku	尚湾石窟 Shangwan shiku
西寺石窟 Xisi shiku	千佛砭石窟 Qianfobian shiku
罗汉洞石窟（庄浪县） Luohandong shiku (Zhuanglang County)	安定寺石窟 Andingsi shiku
大寺石窟 Dasi shiku	李家庄石窟 Lijiazhuang shiku
千佛崖摩崖石刻 Qianfoya moya shike	上壕石窟 Shanghao shiku
葛家洞石窟 Gejiadong shiku	碧落霞天石刻 Biluoxiatian shike
佛崖湾石窟 Foyawan shiku	洛阳寺石窟 Luoyangsi shiku
石窑河滩石窟 Shiyaohetan shiku	高坡石窟 Gaopo shiku

Appendix 3. Selected National and Gansu Provincial Regulations, and International Guidelines on Conservation and Management of Heritage Sites

一、国家法律、法规与文件

National Laws, Regulations and Guidelines

1、《中华人民共和国文物保护法》(2024 年修订)

People's Republic of China Cultural Heritage Protection Law (2024 Revision)

2、《中华人民共和国文物保护法实施条例》(2017 年修订)

Regulations for the Implementation of the Cultural Heritage Protection Law (2017 Revision)

3、《中华人民共和国旅游法》(2018 年修订)

Tourism Law of the People's Republic of China (2018 Revision)

4、《中华人民共和国城市规划法》(2008 年)

Urban Planning Law of the People's Republic of China (2008)

5、《风景名胜区条例》(2016 年修订)

Scenic Area Regulation (2016 Revision)

6、中共中央办公厅、国务院办公厅《关于加强文物保护利用改革的若干意见》(中办发〔2018〕54 号)(2018 年 10 月 1 日)

Guidance of the Central Office of the Chinese Communist Party and the General Office of the State Council on Enhancing Cultural Heritage Protection and Utilization Reformation. (2018) No. 54 issued by the Central Office of the Chinese Communist Party on October 1, 2018

7、国务院关于进一步加强文物工作的指导意见(国发〔2016〕17 号)。国务院 2016 年 3 月 4 日发布。

Guidance of the State Council on Further Enhancing Tasks Related to Cultural Heritage (2016) No. 17. Issued by the State Council on March 4, 2016

8、国务院办公厅关于进一步加强文物安全工作的实施意见(国发办〔2017〕81 号。国务院办公厅 2017 年 9 月 9 日发布。

Guidance of the General Office of the State Council on Further Enhancing Cultural Heritage Safety and Security implementation (2017) No. 81. Issued by the State Council on September 9, 2017

9、国务院办公厅关于加强石窟寺保护利用工作的指导意见(国办发 2020，41 号)

Guidance of the General Office of the State Council on Enhancing Protection and Utilization of Grotto Temples (2020), No. 41

10、《中国文物古迹保护准则》(2015)

Principles for the Conservation of Heritage Sites in China (2015 Revision)

11、《全国重点文物保护单位保护规划编制审批办法》(2004)

Measures for Approval of Conservation Plans for National Protected Cultural Heritage Sites (2004)

12、《全国重点文物保护单位保护规划编制要求》(2004)

Requirements for Development of Conservation Plans for National Protected Cultural Heritage Sites (2004)

13、《全国重点文物保护单位保护范围、标志说明、记录档案和保管机构工作规范(试行)》(1991)

Operational Standards for Protection, Signage, Documentation, Archive, and Managerial Organnzation of National Protected Cultural Heritage Sites (Provisional) (1991)

14、《全国重点文物保护单位记录档案工作规范(试行)》(2003)

Operational Standards for Documentation and Archives of National Protected Cultural Heritage Sites (Provisional) (2003)

15、《文物保护工程管理办法》(文化部，2003)

Cultural Heritage Conservation Project Management Measures (Ministry of Culture, 2003)

16、《世界文化遗产保护管理办法》(2006 年 11 月 14 日文化部部务会议审议通过，自 2006 年 11 月 14 日起施行)

World Cultural Heritage Site Conservation and Management Measures (2006)

17、《中国世界文化遗产监测巡视管理办法》(2006)

Management Measures for Monitoring and Inspection of World Cultural Heritage in China (2006)

18、国家文物局关于加强文物保护单位游客承载量研究的通知(文物保函 2013〕943 号)

Notice of the National Administration of Cultural Heritage on Enhancing the Study of Visitor Carrying Capacity of Cultural Heritage Sites (2013), No. 943

19、国家文物局 文化和旅游部《关于加强石窟寺等文物开放管理和实行游客承载量公告制度有关工作的通知》(文物保发〔2020〕32 号)

National Cultural Heritage Administration, Ministry of Culture and Tourism Notice on Enhancing Management for Cultural Heritage and Grotto Temples Open to the General Public and Implementing a Visitor Carrying Capacity System (2020), No. 32

20、《国家文物保护专项资金管理办法》财文〔2018〕178 号，财政部　国家文物局 2018 年 12 月 29 日发布。

Management Measures for Special Funds for National Protected Cultural Heritage (2018) No. 178. Issued by the Ministry of Finance and National Administration of Cultural Heritage on December 29, 2018

21、《国家文物局关于进一步加强文物消防安全工作的指导意见》（文物督发〔2019〕19 号），国家文物局　应急管理部 2019 年 11 月 6 日发布。

Guidance for further enhancing Fire Safety of Cultural Heritage (2019) No. 19. Issued by the Contingency Management Department of the National Administration of Cultural Heritage on November 16, 2019

22、国家文物局《文物博物馆单位文物安全直接责任人公告公示办法（试行）》（文物督发〔2020〕39 号）

Measures announced by the National Cultural Heritage Administration on announcing and identifying personnel responsible for Cultural Heritage Safety and Security of Museums (Provisional) (2020) No. 39

23、国家文物局关于加强基本建设工程中考古工作的指导意见（文物保发〔2006〕42 号）

Guidance of the National Administration of Cultural Heritage on enhancing archaeological work in capital construction projects (2006) No. 42

24、石窟寺开放管理导则（试行）（文物保发〔2024〕58 号），国家文物局 2024 年 11 月 14 日印发

Guidelines for grotto sites of open management (Provisional) (2014), No. 58, issued by the National Cultural Heritage Administration, November 14, 2024

二、地方政府文件

Gansu Provincial Regulations

1、《甘肃省文物保护条例》（2010 修订）

Gansu Province Cultural Heritage Conservation Regulation (2010 revised)

2、《甘肃省环境保护条例》（2019）

Gansu Province Environmental Protection Regulation (2019)

3、《甘肃省旅游管理条例》（2021 修订）

Gansu Province Tourism Management Regulation (2021 revised))

4、甘肃省非物质文化遗产条例（2022 修订）

Gansu Province Intangible Cultural Heritage Regulation (2022 revised)

5、甘肃省人民政府办公厅关于加强石窟寺保护利用工作的实施意见（甘政办发〔2021〕27 号）

Documents from Gansu Provincial Government General Office: Suggestions on Enhancing Protection and Utilization of Grotto Temples (2021), No. 27

6、《甘肃省文物安全管理办法》（2018）

Gansu Province Cultural Heritage Safety and Security Management Measures (2018)

7、《甘肃省文物保护单位保护范围和建设控制地带划定办法》（2007）

Measures for Defining the Conservation Area and Buffer Zone of Heritage Sites in Gansu (2007)

8、《甘肃省文物保护工程管理办法（试行）》（甘文局发〔2018〕208 号）

Management Measures for Gansu Province Cultural Heritage Conservation Project (Provisional) (2018), No. 208

9、《甘肃省石窟寺保护利用规划（2023-2035 年）》（甘文局〔2023〕16 号）

Gansu Province Cave Temples Protection and Utilization Plan (2023-2035)（2023）

三、国际宪章、公约与文件

International Charters, Conventions, and Documents

1、《国际古迹保护与修复宪章》（1964）

International Charter for the Protection and Restoration of Monuments (1964)

2、《保护世界文化和自然遗产公约》（1972）

Convention for the Protection of the World Cultural and Natural Heritage (1972)

3、《实施保护世界文化与自然遗产公约的操作指南》（2017）

Operational Guidelines for the Implementation of the Convention for the Protection of World Cultural and Natural Heritage (2017)

4、《考古遗产保护与管理宪章》（1990）

Charter for the Protection and Management of Archaeological Heritage (1990)

5、《奈良真实性问题文件》(1994)

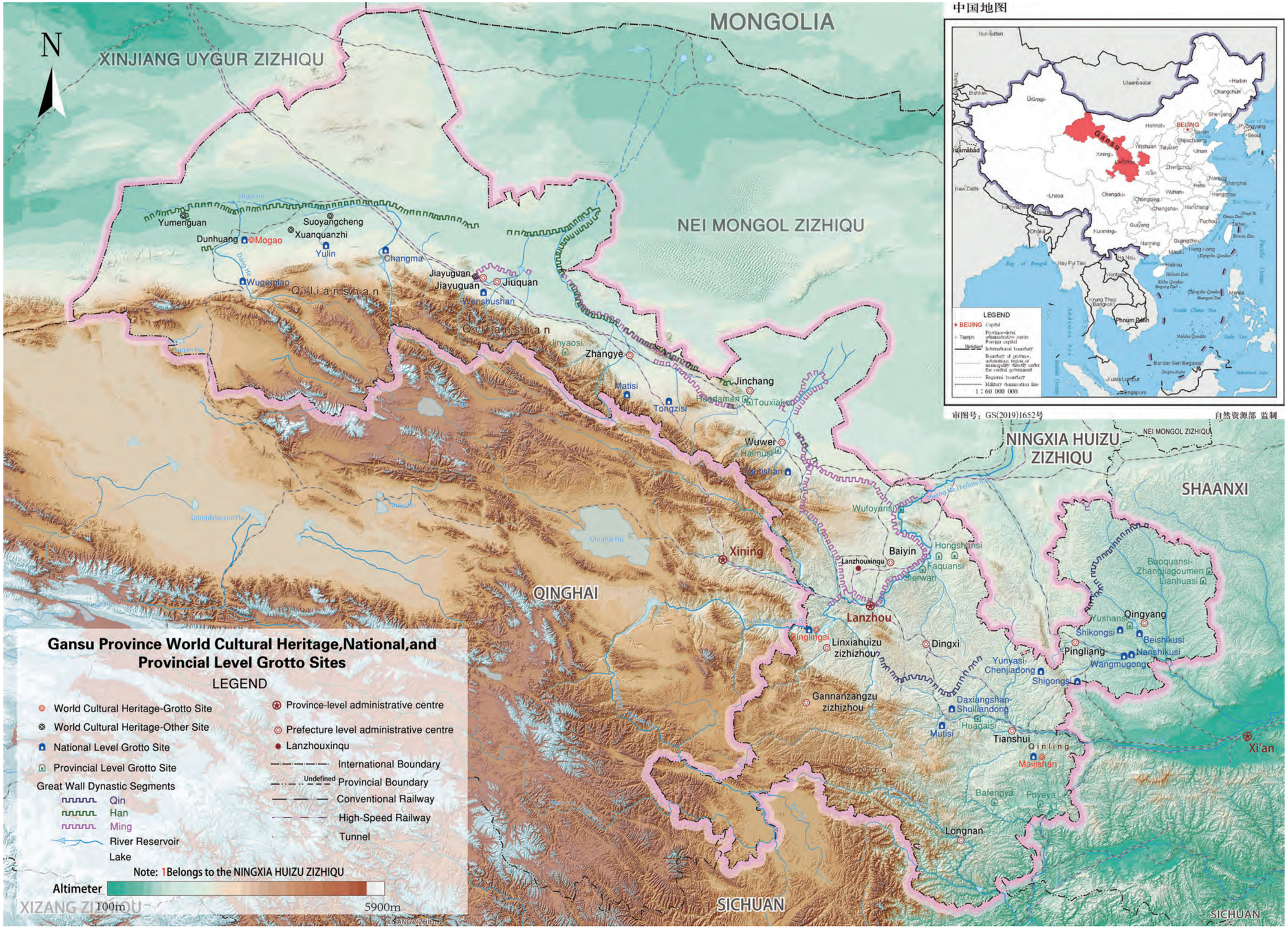
Nara Document on Authenticity (1994)

6、《国际文化旅游宪章》(2002)

International Charter on Cultural Tourism (2002)

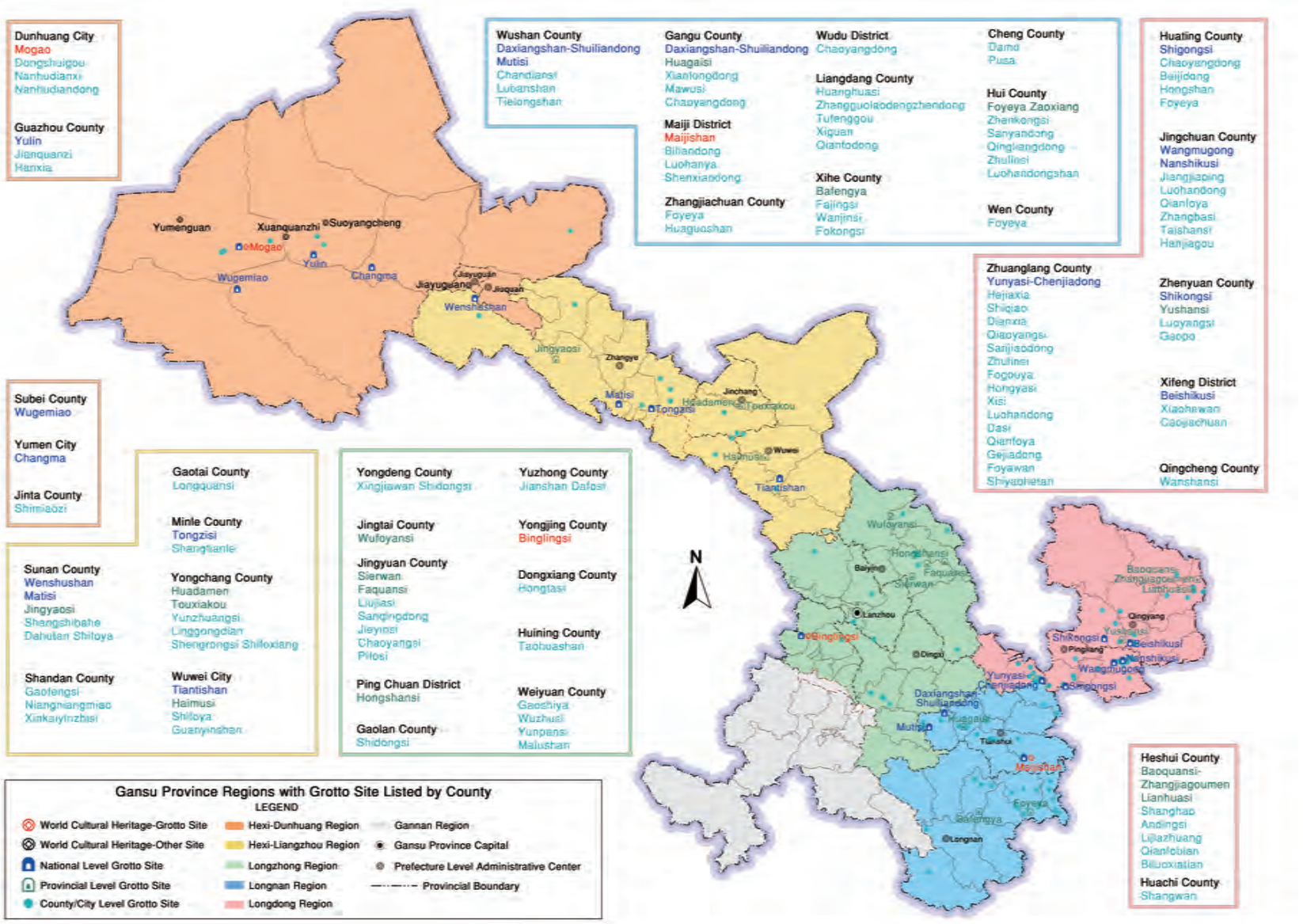
Appendix 4. Maps of grotto site locations in Gansu Province

4.1 Gansu Province World Cultural Heritage, National, and Provincial Level Grotto Sites



审图号：甘S（2024）6号

4.2 Gansu Province Regions with Grotto Sites Listed by County



审图号：甘S（2024）6号

Afterword

The writing of the Guidelines for Conservation and Management of Gansu Province Grotto Sites took place over a eight-year period from 2017-2024. From 2017-2019 team members undertook study tours to thirty-five grotto sites, at the National, Provincial, and County/City level, throughout the province. Extensive knowledge and prior experience of staff from the Gansu Cultural Heritage Bureau, the Dunhuang Academy, and the Getty Conservation Institute, discussions with site personnel, and background research informed these site visits. Additionally, the Annals of the Gansu Grotto Sites (Gansu Shiku Zhi), the Report for Survey of the Hexi Small and Medium Grottoes, and inventories of sites by the Gansu Cultural Heritage Bureau were important resources utilized by the team. From 2020-2024 team members drafted and revised the guidelines text.

Photographs of the grotto sites used in the Grotto Guidelines document were contributed by several organizations: Gansu Cultural Heritage Bureau, Dunhuang Academy, Getty Conservation Institute, Binglingsi Grottoes Research Institute, Beishikusi Grotto Research Institute, and Maijishan Grottoes Research Institute, and other grotto temple management offices.

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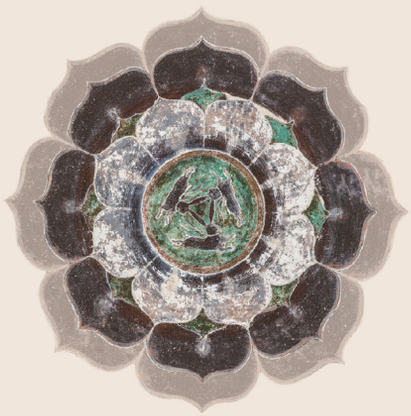

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