

Spatial Development of Dataset of 5058 National Key Protected Cultural Relic Units of China

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Abstract: The National Key Protected Cultural Relic Units have the highest level of protection designated by China for immovable cultural relics, and have extremely high historical, artistic, and scientific value. The spatial distribution dataset of 5058 National Key Protected Cultural Relic Units in eight batches of China was developed based on the list of those units issued by the State Council in eight batches from 1961 to 2019, which was integrated with Baidu Maps. The dataset includes information on the units such as name, classification number, type, period, batch, and address. The dataset is also archived in .shp and .xls formats and consists of eight files with a size of 25.8 MB (compressed into one 839 KB file).

Keywords: national key cultural relic protection units; national level; immovable cultural relics; spatial point; China

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The dataset supporting this paper was published and is accessible through the *Digital Journal of Global Change Data Repository* at: <https://doi.org/10.3974/geodb.2024.01.09.V1> or <https://cstr.escience.org.cn/CSTR:20146.11.2024.01.09.V1>.

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[2] Ye, P., Wang, S., Chen, P., *et al.* Spatial distribution dataset of 5058 National Key Protected Cultural Relic Units in eight batches of China [J/DB/OL]. *Digital Journal of Global Change Data Repository*, 2024. <https://doi.org/10.3974/geodb.2024.01.09.V1>. <https://cstr.escience.org.cn/CSTR:20146.11.2024.01.09.V1>.

1 Introduction

The system of “Protected Cultural Relic Units” is a fundamental mechanism for the management of the protection of immovable cultural relics in China. Since its implementation in 1956, it has effectively safeguarded many cultural heritage resources. The National Key Protected Cultural Relic Units have the highest level of protection designated by the State Council of the People’s Republic of China for immovable cultural relics^[1]. The State Council announced eight batches of units in 1961, 1982, 1988, 1996, 2001 (with three supplementary additions thereafter), 2006 (with one supplementary addition thereafter), 2013 (with one supplementary addition thereafter), and 2019, totaling 5058 projects (excluding newly added merged projects). These units are cultural legacies of human activities throughout history, bearing witness to the rise and fall of Chinese civilization. They possess significant historical, artistic, and scientific value, not only inheriting the unique genes of Chinese culture but also showcasing the global identity and status of Chinese civilization^[2].

The categories of units are inconsistent across different batches. The first three batches were divided into six categories: revolutionary sites and revolutionary memorial buildings, grotto temples, ancient buildings and historical memorial buildings, stone carvings and others, ancient ruins, and ancient tombs. Starting from the fourth batch, they were reclassified into six categories: ancient sites, ancient tombs, ancient architectures, grotto temples and stone carvings, important modern historical sites and representative buildings, and others. Therefore, the State Administration of Cultural Heritage reclassified the first three batches according to the new classification. The category “Revolutionary Sites and Revolutionary Memorial Buildings” was changed to “Important Modern Historical Sites and Representative Buildings”. The majority of the previous categories “Grotto Temples” and “Stone Carvings and Others” were merged into “Grotto Temples and Stone Carvings”, with a few being classified under “Others”. Most of the original categories “Ancient Buildings and Historical Memorial Buildings” were reclassified as “Ancient Architectures”, with a few categorized under “Important Modern Historical Sites and Representative Buildings”.

With the recent introduction of a series of cultural revitalization and cultural power strategies by the Party and State, cultural heritage units, as the core carriers of culture, have become a hot topic for scholars to explore in terms of their spatiotemporal distribution and development^[3–5]. The dataset of this paper provides spatial point data for the eight batches, totaling 5,058 National Key Protected Cultural Relic Units on a national scale, and includes specific categories, administrative divisions, and announcement batches of those units. It serves as fundamental data support for describing the distribution characteristics of these units in historical space and time. It is crucial for revealing the evolutionary patterns of regional culture and for the protection and inheritance of regional cultural resources.

2 Metadata of the Dataset

The metadata of the Spatial distribution dataset of 5058 National Key Protected Cultural Relic Units in eight batches of China^[6] are summarized in Table 1. It includes the dataset full name, short name, authors, year of the dataset, temporal resolution, spatial resolution, data format, data size, data files, data publisher, and data sharing policy, etc.

Table 1 Metadata summary of the dataset

Items	Description
Dataset full name	Spatial distribution dataset of 5058 National Key Protected Cultural Relic Units in eight batches of China
Dataset short name	CulRelPro_China_1961-2019
Authors	Ye, P., Urban Planning and Development Institute, Yangzhou University, 007839@yzu.edu.cn Wang, S., State Key Laboratory of Resources and Environmental Information System, Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences; Jiangsu Center for Collaborative Innovation in Geographical Information Resource Development and Application, wangshu@igsnrr.ac.cn Chen, P., Key Laboratory of Virtual Geographic Environment, Nanjing Normal University, Ministry of Education, 221302184@njnu.edu.cn Jia, Z. Y., Key Laboratory of Virtual Geographic Environment, Nanjing Normal University, Ministry of Education; China Institute of Geotechnical Investigation and Surveying Limited, 231301038@njnu.edu.cn Lu, Y. X., Key Laboratory of Virtual Geographic Environment, Nanjing Normal University, Ministry of Education, 191301019@njnu.edu.cn
Geographical region	China, covering 31 provincial-level administrative regions (excluding data for Hong Kong, Macau, and Taiwan)
Year	1961–2019
Temporal resolution	Year
Spatial resolution	County level
Data format	.shp, .xls
Data size	25.8 MB (compressed into one file with 839 KB)
Foundations	National Natural Science Foundation of China (42101467, 42301522); Chinese Academy of Sciences (XDA23100101); Humanities and Social Sciences Foundation of Yangzhou University (xjj2021-08)
Data publisher	Global Change Research Data Publishing & Repository, http://www.geodoi.ac.cn
Address	No. 11A, Datun Road, Chaoyang District, Beijing 100101, China
Data sharing policy	(1) Data are openly available and can be free downloaded via the Internet; (2) End users are encouraged to use Data subject to citation; (3) Users, who are by definition also value-added service providers, are welcome to redistribute Data subject to written permission from the GCdataPR Editorial Office and the issuance of a Data redistribution license; and (4) If Data are used to compile new datasets, the ‘ten per cent principal’ should be followed such that Data records utilized should not surpass 10% of the new dataset contents, while sources should be clearly noted in suitable places in the new dataset ^{17]}
Communication and searchable system	DOI, CSTR, Crossref, DCI, CSCD, CNKI, SciEngine, WDS/ISC, GEOSS

3 Methods

Eight batches of National Key Protected Cultural Relic Units, spanning from 1961 to 2019, were collected separately. The administrative divisions and geographical coordinates of each unit were obtained using the geographic coding interface of internet maps. These data were then visualized for the spatial distribution of those units based on ArcGIS.

3.1 Data Sources

The list of units was sourced from notifications published on the official website¹. The names of each notification, their publication dates, and the number of announcements are provided in Table 2.

¹ Chinese government website. <https://www.gov.cn>.

Table 2 Relevant notices of National Key Protected Cultural Relic Units

Batch	Notice	Release time	Unit quantity ^①
The first batch	Notice of the State Council on Publishing the List of the First Batch of National Key Protected Cultural Relic Units	1961.03.04	180
The second batch	Notice of the State Council on Publishing the Second Batch of National Key Protected Cultural Relic Units	1982.02.23	62
The third batch	Notice of the State Council on Publishing the Third Batch of National Key Protected Cultural Relic Units	1988.01.13	258
The fourth batch	Notice of the State Council on Publishing the Forth Batch of National Key Protected Cultural Relic Units	1996.11.20	250
The fifth batch	Notice of the State Council on Publishing the Fifth Batch of National Key Protected Cultural Relic Units	2001.06.25	518 ^②
The fifth batch of supplements	Notice of the State Council on Supplementing the Ruins of Liye Ancient City as the Fifth Batch of National Key Protected Cultural Relic Units ^③	2002.11.22	1
	Notice of the State Council on Supplementing the A'erzhai Grottoes as the Fifth Batch of National Key Protected Cultural Relic Units ^④	2003.03.02	1
	Notice of the State Council on Supplementing the Martyr Jiao Yulu's Tomb as the Fifth Batch of National Key Protected Cultural Relic Units ^⑤	2003.04.03	1
The sixth batch	Notice of the State Council on Approving and Publishing the Sixth Batch of National Key Protected Cultural Relic Units	2006.05.25	1,080
The sixth batch of supplements	Hunan Province Held A Conference on the Inclusion of Anjiang Agricultural School Memorial Park in National Key Protected Cultural Relic Units ^⑥	2009.08.20	1
The seventh batch	The Seventh Batch of National Key Protected Cultural Relic Units List	2013.05.03	1,943
The seventh batch of supplements	Notice of the State Council on Supplementing Babaoshan Revolutionary Cemetery as the Seventh Batch of National Key Protected Cultural Relic Units	2014.04.25	1
The eighth batch	Notice of the State Council on Approving and Publishing the Eighth Batch of National Key Protected Cultural Relic Units	2019.10.16	762

Notes: ① The lists of National Key Protected Cultural Relic Units announced in the fourth to eighth batches also contain numbers for the merged units. As these mergers represent an expansion of the original scope and content of the units, this study did not conduct separate statistical analyses. ② The Great Wall (No. 442), a National Key Protected Cultural Relic Unit, comprises eight sections: the Great Wall site of Qi State, the Great Wall site of Qin State, the Great Wall site of Yan State, the Simatai section, the Wulonggou section, the Yanmen Guan section, the Qingshui River section, and the Zhenbeitai section. Therefore, there are 526 units in the fifth batch. The following lack numbering and classification codes: ③ the newly added Ruins of Liye Ancient City, ④ the newly added A'erzhai Grottoes, ⑤ the newly added Martyr Jiao Yulu's Tomb, and ⑥ the newly added Anjiang Agricultural School Memorial Park.

The notifications for National Key Protected Cultural Relic Units include attributes such as serial number, code number, name, type of cultural relic, era, and address. Address refers to the administrative division in which the cultural relic protection unit is located according to the published list of that year. It should be noted that data for Hong Kong, Macau, and Taiwan are currently unavailable.

3.2 Data Processing

(1) Coordinate acquisition

The list of National Key Protected Cultural Relic Units published in the official website notifications does not display their geographical coordinates. It is necessary to utilize the Baidu Map Place API to geocode the names and addresses of these units, and then use a coordinate conversion tool² to convert the coordinates from the Baidu Map BD09 to the WGS84 system.

For units where coordinate information cannot be obtained from the Baidu Map Place API, this study relied on the National Cultural Heritage Administration's comprehensive administrative management platform³ for retrieval. Utilizing its cultural heritage map

² Map coordinate system conversion. <https://tool.lu/coordinate>.
³ National Cultural Heritage Administration's comprehensive administrative management platform. <http://gl.ncha.gov.cn/#/public-service>.

service display interface, relevant spatial location information for these units was directly accessed.

(2) Administrative division supplementation

The list of National Key Protected Cultural Relic Units, when released, includes address information. However, due to the large time span of each batch’s publication, many of the locations and spatial extents of the original administrative divisions have changed. To meet the analysis requirements of the current data situation, we obtained the latest administrative divisions they belong to with the help of the Baidu map global inverse geocoding service interface, according to the geographical coordinates of the units.

(3) Data storage

The obtained geographical coordinate data for National Key Protected Cultural Relic Units, along with administrative division data, were merged to generate a data file in .shp format. The attributes such as name, era, batch, and type of cultural relic for each unit were stored in .xls format. The field names and their examples are shown in Table 3.

Table 3 Attribute fields of dataset

Attribute	Description
Index	0, 1, 2, 3, ..., 5065
Number	101, 210, 1972, ...
Classification	45, 7-1972-3-008, 8-0000-1-009, ...
Unit name	Former Residence of Situ Meitang, Wan Mu Cao Tang, Former Site of Chao Customs, ...
Period	Han dynasty, Jin dynasty, the Northern and Southern dynasties, ...
Address	Yanqing county of Beijing city, Qinhuangdao city of Hebei province, Jiuquan city of Gansu province, ...
Type	Important Modern Historical Sites and Representative Buildings, Ancient Sites, Ancient Architectures, ...
Batch	The first batch, the second batch, the third batch, ...
Province name	Jiangsu province, Beijing city, Xinjiang Uygur autonomous region, ...
City name	Nanjing city, Changsha city, Kaifeng city, ...
County name	Jiangyuan district, Wutai county, Jiangchuan district, ...

4 Data Results and Validation

4.1 Data Composition

The spatial distribution dataset of 5058 National Key Protected Cultural Relic Units in eight batches of China consists of two parts: (1) location vector data (.shp format) and (2) attribute data (.xls format) for National Key Protected Cultural Relic Units, including name, year, batch, type, and administrative division.

4.2 Data Product

In terms of spatial distribution, National Key Protected Cultural Relic Units are widely distributed throughout various regions of China, covering 31 provinces, autonomous regions, and municipalities directly under the central government (Figure 1). Of these, the top ten provinces with the highest number of National Key Units are Shanxi (the highest), Henan, Hebei, Zhejiang, Shaanxi, Sichuan, Jiangsu, Hunan, Shandong, and Anhui. Shanxi has 530, accounting for 10.4% of the total nationwide, which is equivalent to the sum of the ranks of the last ten provinces. In contrast, the three provinces with the fewest are Tianjin, Hainan, and Ningxia, with 33, 35, and 36, respectively.

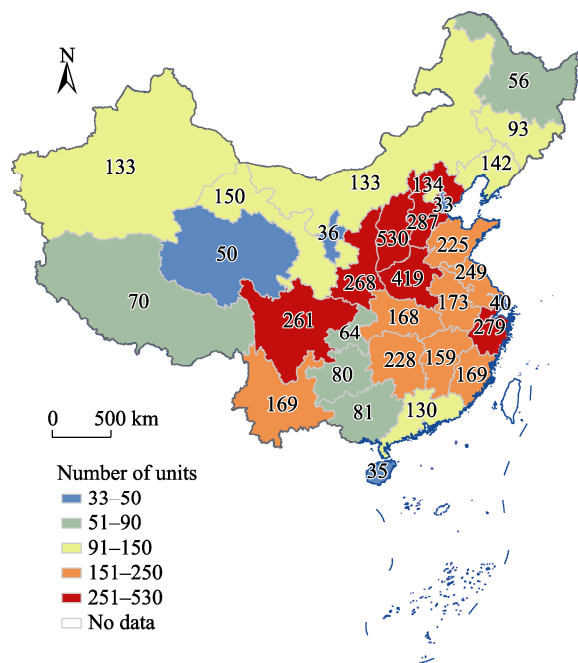


Figure 1 Provincial distribution map of National Key Protected Cultural Relic Units

In terms of era distribution, the National Key Protected Cultural Relic Units are roughly divided into 22 eras. The Ming and Qing dynasties have a greater number of units due to their long duration and relatively recent history. Those from the Republican era are mainly concentrated in the category of “Important Modern Historical Sites and Representative Buildings”. Dynasties such as Xia, Shang, and Jin have a limited number of surviving units of 30 either due to their ancient age, short duration, or frequent conflicts. The Han and Tang dynasties, as periods of great unity, social prosperity, strong national power, and long duration, have left behind numerous culturally significant heritage sites. Therefore, the quantity of surviving relics from each era is closely related to factors such as the proximity to the present era, the duration of existence, and the frequency of human activities.

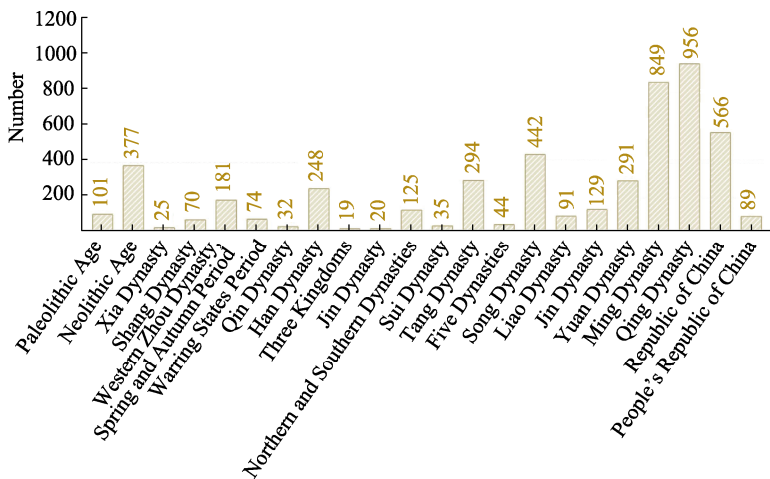


Figure 2 Statistics of the number of National Key Protected Cultural Relic Units in each era

In terms of cultural relic types, ancient architectures constitute the largest proportion of existing units in China, accounting for 42.7%. Following this are ancient sites (24.5%), important modern historical sites and representative buildings (18.7%), ancient tombs (8.3%), grotto temples and stone carvings (6%), and others (0.6%), as detailed in Table 4.

5 Discussion and Conclusion

A comprehensive understanding of the spatial distribution of National Key Protected Cultural Relic Units is of great significance for in-depth research, overall protection, rational

Table 4 Statistics of the number of National Key Protected Cultural Relic Units of each type

Type	The first batch	The second batch	The third batch	The fourth batch	The fifth batch	The sixth batch	The seventh batch	The eighth batch	Total
Ancient sites	26	10	49	56	145	220	516	167	1,189
Ancient tombs	19	7	29	22	50	77	186	30	420
Ancient Architectures	77	28	111	110	248	513	795	280	2,162
Grotto temples and stone carvings	21	5	27	10	32	63	110	39	308
Important modern historical sites and representative Buildings	33	10	41	50	41	207	329	234	946
Other	4	2	1	2	5	1	8	12	33

development, and the formulation of policies regarding Chinese traditional culture represented by these units. This dataset collects information on eight batches of those units (5,058 in total) announced by the State Council from 1961 to 2019. It includes detailed attribute information such as unit number, name, type of cultural relic, batch, and spatial information such as geographical coordinates and administrative divisions for each unit. This dataset holds considerable potential for data mining, and it is hoped that the attribute and spatial information provided by this dataset can serve as a reference and data foundation for exploring and analyzing deeper patterns in related research fields.

Author Contributions

Ye, P. and Wang, S. conducted the overall design of the dataset development; Chen, P., Jia, Z. Y., and Lu, Y. X. collected and processed the data of National Key Protected Cultural Relic Units; Ye, P. wrote the data paper; Wang, S. reviewed the data paper.

Conflicts of Interest

The authors declare no conflicts of interest.

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