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Royal Land Use and Management in Beijing in the Qing Dynasty

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Abstract: Management is an important factor affecting the formation and development of a landscape. This study concludes that royal land use is planned by specifying the land type, while the economic benefits and landscape value are also taken into account. The royal land has landscape value, with the core being the royal garden, the background being farmland, and the connecting line being water. Meanwhile, the royal garden management organization has a high level of authority. Based on the rules of the Imperial Household Department (Neiwufu) of the Qing Dynasty, the present paper extracts the royal land use and management records. This paper discusses the characteristics of royal land management from the spatial distribution and utilization of types of land. It analyzes the specific revenue, expenditure, and fund flow of land in detail and summarizes the land management model. Land management is based mainly on directional revenue and expenditure as well as quota revenue and the expenditure system. The management system is established to support the gardens’ construction.

Keywords: royal land; management and operation; Qing Dynasty; imperial garden; landscape

1. Introduction

Royal land refers to the private land belonging to the emperor and the royal family. The royal land in Beijing primarily includes royal gardens, family-owned farmlands, woodlands, and water systems. Beijing’s royal land is an important cultural heritage, which has witnessed the development of the city throughout its expansion (see Figure 1). It is closely connected with social, economic, and cultural development, and was an important symbol of national power and culture in the Qing Dynasty (1636–1912). From the perspective of landscape architecture, Beijing’s royal land has the urban ecological function and cultural function [1–4]. Of all the royal land, the opened farmlands, woodlands, and water areas have undertaken the modern public recreational function from the period of the Qing Dynasty to the modern era, becoming an important part of Beijing’s residential environment. At present, due to the transformation of land nature use, the royal garden has been upgraded from the royal hunting grounds and palace villas to a public park, establishing it as an important public location in Beijing with both recreational and historical value (see Figures 2 and 3).
In summary, the royal land in Beijing is an integration of regional landscape and cultural inheritance, having a relatively unified landscape feature. Modern researchers have come to realize that this uniformity of landscape is created through both historical evolution and long-term management by the managers and designers of the royal lands [10].

Analyzing the landscape from the perspective of management was an important research method for traditional landscape study in the Qing Dynasty. Concerning previous
research, the relevant records of the Qing Dynasty mainly included court rules, picture files, and written files. Hou Renzhi, from Peking University, studied the evolution of Beijing’s urban designing plans throughout different periods in terms of physical geography and development needs, and examined the construction and evolution of the royal water systems and royal gardens [11].

Fu Xinian likewise systematically studied the management and hierarchical systems of construction projects, including construction management organizations, project operation methods, funding management, etc., and studied the impact of business management on the landscape of historical buildings. He conducted these investigations by sorting out the laws, regulations, construction norms, and standards of the past dynasties [12]. Wei Zhang, from Tianjin University, studied the management system of the Winter Palace (Xiyuan) and the Summer Palace (Yiheyuan) gardens based on the architectural archive of Yangshi Lei. He sorted out the systems of garden officials and the management of project funds from the perspective of garden architecture, thus further exploring the systems, garden design methods, and achievements of the Qing Dynasty [13]. As suggested from the previous studies, researchers have realized that management and landscape are interrelated. However, the recording characteristics in the Qing Dynasty tend to emphasize the overall pattern at the urban and architectural level. Therefore, the relevant research mainly includes urban and architectural research, while research on land management is scarcely analyzed and is lacking in terms of comprehensive understanding.

The royal land in the Qing Dynasty is an important constitute of Beijing’s urban landscape. This paper takes the royal land as the research subject and analyzes the formation and development of the landscape with respect to land management. To have a thorough exploration, this study first integrated the Qing Dynasty literature, sorted out the rules of the Imperial Household Department (Neiwufu) of the Qing Dynasty, and summarized the records related to land management in each sub-volume and sub-item of the rules, to carry out a holistic study. Secondly, a data analysis was carried out regarding land use and land management, and the land management system and methods were restored from the whole royal land, to analyze the relationship between land management and the royal land landscape.

2. Data Processing and Research Methods

The research method is divided into three parts: raw data collection, data processing and spatial analysis to draw the final research conclusion (see Figure 4).
Figure 4. Research method roadmap [14].

2.1. Demarcation of the Study Area

The subject of this study is Beijing’s royal land in the Qing Dynasty (1636–1912). In the early Qing Dynasty, Beijing’s urban administrative boundaries were the customary boundary lines of the Yuan and Ming dynasties. Since there were no clear legal boundaries, several “enclaves” had arisen, being overlapped in administrative jurisdiction. In the middle of the YongZheng Period in Qing Dynasty (1723–1735), to clarify administrative management, public security management and economic development authorities of the government sent commissioners to conduct field investigations in order to set up boundary markers for the administrative boundaries between Beijing and the surrounding counties. A royal decree was issued, stating: “At the city border which connects the outside of the city and several states, censors from three different divisions should be arranged to inspect, and delve into every inch of the border, to set clear boundary monuments”\(^1\). Another rule was set as: “According to the traditional rules in the Beijing Camp, in terms of residents in the city, those belonging to the outside of the Camp are governed by Daxing County and Wanping County (Wanping county and Daxing County are actually two districts of Beijing). Besides, those residents of the Camp, but within areas of Da and Wan County are governed by four cities around by the principle of proximity. Boundary monuments are also set according to the borders and should be followed forever\(^2\). As such, this decree clarifies that the division borders under the jurisdiction of the Beijing Masters Patrol Camp were set as the administrative boundary in the Qing Dynasty.

Accordingly, the scope of this study (see Figure 5) is based on the boundary under the jurisdiction of the Beijing Masters Patrol Camp. The scope includes: the eastern area far reaching the East Dam and Shuang Bridge; the southern area far reaching the north...
wall of Nanhaizi in Nanyuan and the Sanguan Temple of Xihongmen; the western area far reaching Dajing Village, Tian Village, and Xiangshan; and the northern area far reaching Tree Village, Lishui Bridge, and Yangfang Village. As a royal hunting ground, Nanyuan is directly under the jurisdiction of the royal family. Additionally, since it is close to the southern boundary under the jurisdiction of the Beijing Masters Patrol Camp, there was no “enclave” situation, resulting in Nanyuan being analyzed in this study.

![Figure 5](image_url). Simulated boundary under the jurisdiction of the Beijing Masters Patrol Camp [15].

2.2. Data Source

2.2.1. Map Data

The present study selected an authoritative map of the Qing Dynasty containing a number of location names, including a revised and detailed map of Beijing (1900–1911) [16], a full map of Beijing drawn by the German Far East Expedition in 1903 [16], a Beijing city and suburbs map in 1886 [17], a map depicting areas both within and outside of Beijing by Zhao Hong [16], and the detailed map of four suburbs in Beijing reflecting the spatial information of Beijing’s city and suburbs, respectively, by Wang Hualong [16]. By having graphic superposition and geographical registration of the same location names in ArcGIS software (version 10.2), matched and positioned with 2018 landsat8 Beijing remote sensing spatial data in the geospatial data cloud platform, the Beijing map with geographic information from the Qing Dynasty was obtained (see Figure 6).

Based on the system of five cities and towns in “Ri Xia Jiu Wen Kao” (which is the largest and most complete book material about Beijing’s history, geography, city defense, palaces, scenic spots, and so on), Beijing is divided into five regions, including the inner city, outer city, northwest suburb, northeast suburb, and Nanyuan (the palace of royal hunting, also called Nanhaizi) [18]. This defined division subsequently served as the basis for the spatial positioning discussed in this paper.
2.2.2. Data of Land Management

The Imperial Household Department was an organization in charge of royal affairs in the Qing Dynasty. In other words, this was the administrative unit managing royal clothing, food, housing, transportation, etc. [19]. The "Collected Statutes of the Great Qing, Volume 8 and 9", published in the Guangxu Period (1871–1908), recorded that the Imperial Household Department "manages affairs including the clothing of the royal family, leveling of upper three banners, along with the rules in the palace. All work related to the officials, households, salutes, soldiers, punishment, and labor are under its management". This made it clear that the Imperial Household Department was responsible for dealing with the financial receipts and expenditures of the palace, various ceremonies, repairment and construction works, staff management, etc.

Zeli refers to the codification systems thereof in the Qing Dynasty. Specifically, Ze (rule) refers to the guidelines for dealing with affairs, and Li (example) refers to the cases and regulations in official business. In the Qing Dynasty, each department had records of its establishment, functions and responsibilities, rules of handling affairs, and rules for archives. The compilation of Zeli was a major event of the Qing government, as Zeli needed revising every ten years. The compilation process required an analysis of historical data and examples to ensure accuracy. After the compilation was completed, it was submitted to the emperor for approval, and then implemented as administrative regulations through various departments. Therefore, Zeli is one of the most authoritative documents in the historical research of the Qing historical record.

The management of the royal land is within the purview of the Imperial Household Department. This study uses the only existing book of the period, known as "Imperially Commissioned Precedents of the Imperial Household Department" (see Figure 7). This book was written in the Xianfeng Period (1831–1861), engraved in 1866, published and included within "Two kinds of Imperially Commissioned Precedents of the Imperial Household Department" in 2000. This book contains the most complete Zeli of the Imperial Household Department, detailing the location, area, use, management methods, and expenditure of royal land between the Kangxi and Daoguang periods (1662–1850), thus providing authoritative and reliable historical information for this study.
2.3. Research Methods

2.3.1. Semantic Analysis

The research used content mining software ROST CM (version 6.0, WHU) to conduct a text analysis on ancient books and complete the collation of plot information. The software integrates automatic word segmentation, a word frequency analysis, co-occurrence matrix analysis, and other functions. In this paper, a custom dictionary related to the research object was established, and then the software automatic word segmentation and word frequency statistics were carried out to obtain the high frequency characteristic words. The specific steps were divided into three steps: sample extraction processing, word frequency statistics, and field attribute sorting [20,21]. Firstly, the study collected 153 Chinese texts of plot points through textual extraction of Zeli. For example, “道光 23年，圣化寺后金河两岸大东门等处水稻田，3 顷 5 亩 2 分 5 厘 6 毫 3 丝，淤高不能得，改为旱田，每亩租银 3 钱” (The 21th year in Daoguang Period (1843), Rice field in the gold river bank of the Shenghua temple east gate, 3 qing 5 mu 2 fen 5 li6 hao3 si 6 si 3 silt high cannot get, changed to dry field, per mu rent 3 qian) [22] is a text sample. After effective information screening, text samples of 147 effective plots were finally obtained. Then, the word segmentation of the original text was processed to remove function words in ROSTCM6.0 according to the place word, location word, nature word, organization word, number unit, and other elements to build a custom segmentation dictionary. Finally, land use type, management organization, land plot location, land plot area, business situation, and other fields were sorted out.

2.3.2. Spatial Statistics

The study matched the site extracted from the land management records with the obtained base map and converted it into the current site. ArcGis10.2 was used to transform the land information into discrete point information with attributes. This study has obtained the land area information but, due to the limitation of historical literature, it lacked specific spatial configuration data. Therefore, the map cannot be directly drawn, and the plot areas were used as the pointing source data. By using ArcGis10.2 for nuclear density statistics with the plot area as the weight field, this study, to a certain extent, reflects the space distribution of plot size and quantity. It further analyses the range and core of various royal land plots.

The formula of kernel density estimation (KDE) is expressed as:
\[ f_n(x) = \frac{1}{h_n} \sum_{i=1}^{n} w_i k \left( \frac{x - x_i}{h_n} \right) \]

Equation: \( k \left( \frac{x - x_i}{h_n} \right) \) represents the nuclear density equation; \( h \) represents the search range and \( h > 0; \) \( n \) represents the number of plots points in the search range; \( w_i \) represents the corresponding weight assigned to each plot point \( x_i \).

### 3. Results

#### 3.1. Land Use

3.1.1. Analysis of the Land Use Types

The research of the land use types is based on the information about the land nature and location features retrieved from recorded documents. In this research, the grounded theory [23] is employed to merge the most basic types until they can no longer be merged, a method of qualitative research, and the main purpose is to establish a theory based on empirical data. The research goes on to calculate the total area of each type after 22 basic types, 15 subdivisional types, and five heading types are determined. In the process of merging the types of plots, some basic types are classified singly as subdivisional types. Finally, 15 subdivisional types can be merged into five heading types for an intuitive analysis. The spatial quantitative analysis of the research mainly focuses on the land type I (heading type) and II (subdivisional type) (see Table 1).

**Table 1.** Statistical chart of royal land use types [22,24–27].

| Land Type | Land Type II | Land Type III | Number | Area (%) | Area (mu) | Area (ha) |
|-----------|--------------|---------------|--------|----------|-----------|-----------|
| I-1 Farm-| II-1 Rice land | | 49 | 29.4% | 7294 | 447.84 |
| land      | II-2 Dry land | Dry field | 25 | 1.7% | 428 | 26.29 |
|          |              | Wheat field | 2 | 48.3% | 12,000 | 736.80 |
|          |              | Pasture field | 2 | Unknown | Unknown | Unknown |
| I-1 Farm-| II-3 Lotus pond | | 21 | 10.8% | 2691 | 165.23 |
| land      | II-4 Cattail field | | 3 | 2.2% | 534 | 32.76 |
| I-2 Water| II-5 Vegetable land | | 3 | Unknown | Unknown | Unknown |
| land      | II-6 Scenic rice land | | 1 | 0.1% | 12 | 0.74 |
| I-3 Garden| II-7 Scenic land | | 1 | Unknown | Unknown | Unknown |
| land      | II-8 Fruit land | | 4 | 0.0% | 4 | 0.25 |
|          | II-9 Common fry land | | 7 | 1.1% | 267 | 16.36 |
|          | II-10 Building base land | | 7 | 0.4% | 105 | 6.47 |
|          | II-11 Shops | | 3 | 0.6% | 146 | 8.98 |
| I-4 Constr-| II-12 Houses | General houses | 4 | 0.4% | 94 | 5.78 |
| uction land|              | Tile house | 3 | 0.0% | 1 | 0.06 |
|          |              | Clay house | 1 | 0.0% | 0 | 0.02 |
|          |              | Mud house | 1 | 0.0% | 1 | 0.05 |
|          |              | Uninhabited house | 1 | 0.0% | 0 | 0.01 |
|          |              | Subtotal | 1 | 1.0% | 348 | 21.35 |
| I-5 Other| II-13 Sand land | | 5 | 2.6% | 643 | 39.48 |
| land      | II-14 Flower field | | 3 | 2.4% | 600 | 36.84 |
|          | II-15 Reed land | | 1 | 0.9% | 210 | 12.90 |
|          | Subtotal | | 6.0% | 1453 | 89.22 |

**Note:** The data in the table represents the total area of each type of land use. The area is calculated based on the recorded documents and the research conducted. The area is expressed in hectares (ha) for the total land area, and in mu or mu (Chinese measurement) for specific types of land. The table shows the distribution and area of each type of land use, which can be further analyzed for agricultural planning and resource management.
As production land, most farmland is used for rice and wheat planting and a small amount for pastures. According to the water condition, farmland is classified into rice land and dry land. The latter is further classified into the categories of wheat field, pasture field, and dry field that are free for any kind of planting. Among these, the wheat and dry field are charged rent and the pasture field is court-planted.

The water land refers to water plantation areas in the Forbidden City, the palaces, and the Chang River. It can be subdivided into river land, cattail field beside the dockyard, and lotus pond, with both scenic and economic value. Both cattail field and lotus pond subdivisions are charged rent, and the only difference between the two is that only lotus can be planted in the lotus pond.

The garden land refers to the scenic land with additional productive and rental functions inside the royal gardens. It is used mostly for court plantation yielding vegetables, oilseed, and fruits like peaches and apricots for the daily supply of the royal palace. This land can be used in many ways, including vegetable land, scenic rice field, scenic land, and fruit land. Few exceptions of uncultivated land are charged rent as dry land such as “the garden of Guan Yu Temple in Liulang Village” and “the garden land of Jingming Garden at the foot of Yuquan mountain” [28].

The construction land is divided into houses, shops, and building base land. The residence house refers to the general houses belonging to the Imperial Household Department that are rented to eunuchs and officials. Other scattered mud-building houses are rented to the common people. Shops are royal-owned buildings outside of the royal palace. Building base land refers to those spare land areas without constructions and are all utilized for renting. Other land refers to scattered lands that are not clearly registered, including sand land without an exact location record, reed land, and some flower fields designated for breeding flowers specifically for court use. Within the broader category of other lands, the crop types planted have not been clearly recorded, but it is referenced that the lands are rented out to farmers. Therefore, it is safe to conclude that the royal land in the scope of this study is all fully and properly utilized.

The next step is to analyze the land use proportion based on the land area originally recorded (see Figure 8). The unit of the Qing Dynasty mu (about 614 m²) is employed. Of the general land use scale, besides some court-planted vegetable land, pastureland, and scenic land without exact area data, farmland and water land take the highest proportion of 79% and 13%, respectively, with a total amount of 10 thousand mu. Garden land and construction land take only 1% each and other land takes 6% altogether. Of the subdivisional land types, rice land and wheat land take the largest proportion in farmland, and lotus ponds with both a scenic and economic function are a major part of the water land. The exact data of the garden land area are incomplete due to the missing record. It can only be concluded that the general dry land and scenic rice land take a higher proportion. Shops in the construction land represent the highest proportion, with the total number of shops reaching 4000 in three locations.
3.1.2. Analysis of Land Use Types

Through the longitude and latitude positioning of parcel points, the location information of each parcel point is reflected on the map (see Figure 9). In general, the royal lands form two groups, primarily around the river system in the northwest suburb and around Nanyuan. Between the northwest suburb and the inner city, the royal land is distributed along the Chang River, with some small groups in Bagou, Leshan Garden, and so on. Importantly, there are fewer plots in Nanyuan, but each with a larger scale.

Farmlands are mainly distributed in Nanyuan, the royal gardens in the northwestern suburbs, and the Jin and Wanquan River areas, with some scattered throughout other areas (see Figure 10). Farmlands are packed around Kunming Lake and the Wanquan River, where there are rich water resources, flat terrain, and beautiful scenery. All of these characteristics benefited from Qianlong’s attention to agriculture and the expansion of water conservancy, which formed a mosaic of paddy fields and gardens [29].
Water lands are centered around the Xinggong, Sanhai, and Chang River water system in the northwest suburbs, forming a continuous and banded group. Water lands in the northwest suburbs are denser, while the plots in the Chang River system are larger (see Figure 11). At the same time, the river course, as a public tourist site, forms a unique royal river scenery belt [30,31]. The lotus pond is the largest subdivision type in the water land category. As an important ornamental and economical plant in the royal gardens of the Qing Dynasty, lotus was widely planted in various water systems. In addition to the royal garden, the royal lotus pond outside of the palace reached 2691 mu.

Garden lands inside the royal lands are mainly distributed in the Qingyi Garden and Old Summer Palace. Some are also sporadically distributed in other royal lands and temples (see Figure 12).
Construction lands center around the inner city (see Figure 13). General houses and shops can mainly be seen in the Old Summer Palace and the Imperial Academy (Guozijian). Tile and clay houses are sporadically distributed in other areas. Building base lands are mainly distributed in the Leshan Garden (now Beijing Zoo) and the Imperial Rice Growing Estates (Daotianchang) on the north side of Qingyi Garden (now Qinglong Bridge).

Other lands, including sand land, reed land, and flower field land, are dotted and scattered throughout the royal land. They form groups at the southern moat, and the north side of the Old Summer Palace (see Figure 14).
3.1.3. Land Management Organization and Regionalization

From the perspective of spatial layout, this paper analyzed the relationship between management organizations and land locations, confirming that the land location and environment are closely related to the management organization. The royal land plots are managed by different organizations, such as the Imperial Household Department (Neiwufu), the Imperial Parks Administration (Fengchenyuan), the Old Summer Palace (Yuanmingyuan), and so on. Additionally, there exists a clear hierarchy between agencies. From top to bottom, the Imperial Household Department is the highest administrative body for the “palace rules”, with seven offices and three courts under its authority. Likewise, all the financial receipts and expenditures of the palaces, various ceremonies, construction projects, and other affairs are undertaken by the Imperial Household Department. The Imperial Parks Administration, one of the three courts, is responsible for the management and renovation of the royal garden. It was established in the 23rd year of Kangxi’s reign (AD 1684), and mainly manages Jingshan, Xiyuan (Sanhai water system), Nanyuan, and so on. The Old Summer Palace and Qingyi Garden have separate management ministers because of the royal activities (see Figure 15).

From the point of land use, considering the relationship between land and management organizations, this paper found that only part of the royal lands fell under the authority of a corresponding management organization. The pastureland is managed by Nanyuan, while the paddy field in the farmland, the lotus pond in the water land, and the building base land in the construction land are managed by the Imperial Rice Growing Estates. Large-scale construction with high specifications is directly managed by the
Imperial Household Department. Garden lands are managed by different organizations under different parts of royal land.

Nanyuan, Qingyi Garden, and the Old Summer Palace are respectively in charge of their surrounding garden lands, water lands, and other lands. The lotus ponds widely distributed in the Chang River and Sanhai water system are managed by the Imperial Rice Growing Estates. The houses and shops around Zhengyang Gate and the Imperial Academy are managed by the Imperial Household Department. As a result, the royal land is mainly divided according to palaces, gardens, and water systems to distinguish management organization authority. The remaining land is managed and levied by the Imperial Parks Administration and the Imperial Rice Growing Estates (see Figure 16).

![Figure 16. Map of management organization and plot location.](image)

### 3.2. Land Management

#### 3.2.1. Income Analysis of Land Management

The royal land generates income in various forms through rent collection and court plantation. Rent collection means that the royal class leases part of the lands or houses to farmers to meet their needs. The farmers in turn pay the rent to the royal family according to the land types. The business model of the court plantation is similar to that of royal self-sufficiency. It is a system wherein royal lands are directly used to produce products for use or to be sold in exchange for money.

Rent collection can be divided into house rent, land rent, and sharecropping. This paper statistically analyzed the area, scale, and income of leased land (see Figure 17). In terms of the land scale, the maximum size of rice fields and lotus ponds is 7294 mu and 2691 mu, respectively. From the perspective of income, the income generated from shops was recorded as the highest, followed by rice land, houses, and lotus ponds in turn. From the unit prices of various types of land recorded by Zeli (see Figure 18), it can be determined that even though houses and shops are relatively small in scale, their respective high rents of 12 qian and 8 qian per room make the income of their land the highest yielding of all types, totaling 5255 liang per year. Lotus ponds and rice lands are the largest in scale, and their respective rents of 6 qian per mu and 8 qian per mu also make their income higher, totaling 3840 liang per year. In addition to the high-income generated through house rent and lotus pond rent, the royal family created income through the remaining...
thousands of mu of reed land, general dry land, sand land, and building base land further utilized through land rent and sharecropping. The dry land levies 2 to 3 qian, while sand land and reed land are leased at lower prices. Even uncultivated idle land is leased in the way of a lower rent in the beginning, with an increasing rent year by year. For example, around Nanyuan, “instead of letting the grassland laying idle, the government now recruit tenants to use the land in exchange for a share of the crop. With heavy labor cost in the first year, the rent is 150 wen per mu. More than 4500 chuan of money per mu can be earned in the first year. With the rent rising to 200 wen, more than 600 chuan of money per mu can be earned in the next year. In the third year the rent will be 250 wen per mu, and more than 7500 chuan of money per mu can be earned” [25].

| Land Type       | Area (mu) | Income (Qian/Year) |
|-----------------|-----------|--------------------|
| Building base land | 106.3     | 232                |
| Rice land       | 2901.8    | 290175             |
| Sand land       | 643.0     | 638                |
| Reed land       | 210.0     | 767                |
| Common fry land | 315.6     | 858                |
| Cattail field   | 333.6     | 2812               |
| Lotus pond      | 2691.0    | 9927               |
| Houses          | 96.2      | 16540              |
| Dry Field       | 428.2     | 666                |
| Shops           | 146.2     | 36012              |

**Figure 17.** Two-way comparative chart of land scale and levied land income.

| Land Type       | Rent (Qian) |
|-----------------|-------------|
| Building base land | 10          |
| Houses           | 8           |
| Common fry land  | 3           |
| Garden land      | 3           |
| Rice land        | 8           |
| Reed land        | 2           |
| Sand land        | 1           |
| Lotus pond       | 6           |
| Cattail field    | 2           |
| Shops            | 12          |

**Figure 18.** Comparative chart of rent per mu (per house) of levied land.

The products produced by the court-planted rice lands, lotus ponds, and pasture lands would be directly used by the inner court, and the remaining products would be sold in exchange for money, mainly for planting peaches, apricots, lotus, forage grass, and other designated planting areas in the royal garden. Except for the forage grass recorded in Nanyuan, the other court-planted products were planted on a small scale to meet the needs of temples near this plot, such as fruits and vegetables, flower landscapes, horse feed, and so on. “There is no fixed number selling pastures in Nanyuan. After the sixth year of Jiaqing era, scarce pastures can only be sold for 200 liang. In addition, these money are used for staff salaries” [25]. Large-scale court-planted pastures, and rice lands, among
others, were sold for money, or stored in departments such as the General Reserve Department (Guangchusi).

In terms of spatial distribution, the income of the plot was used as the weight of spatial points to conduct a spatial thermodynamic analysis, and a more intuitive conclusion was obtained and reflected in the map. The income of royal land was directly affected by the distribution of land parcels, and then showed a linear change from the Sanhai to the northwest suburbs and formed a trend of decline from the inner city to the northwest suburbs (see Figure 19). The inner city and the Beihai are the areas with the highest incomes due to a higher house rents. The water system of the Chang River has a higher income due to the high rent of the lotus pond, while the dry land around the royal garden in the northwest suburb has a lower rent, whose lotus ponds in the internal water system are mainly self-planted, so the income is relatively low. The Nanyuan area has a low income due to a large area of official pasture. By contrast, the land distribution of royal land is not consistent with the spatial distribution of income, which is not a simple additive and multiplication relationship, but related to both area and nature.

**Figure 19.** Spatial 3D analysis of plot income.

3.2.2. Expenditure Analysis of Land Management

The specific expenditure of royal land management can be classified into three forms: fixed allocation, disbursement, and reimbursement.

The fixed allocation figure is the regular and fixed expenditure of the royal garden, including salaries, food, incense and candles, and annual reserve repair funds. The salary and food money are paid monthly to the employees in the royal garden: “The monthly salary for officials is 2 liang 2 qian, each month garden ministers get 2 liang 2 qian, deputy ministers get 1 liang 8 qian, and writing staffs get 1 liang”. According to the recorded number of employees [32], the public expense (or salary) can be calculated at 1989.6 liang. “Garden minister and other staffs get 1 liang 5 qian for meal subsidy each month, and others get 1 liang each month, the number increases by 5 qian in the winter for three months”. The meal subsidy is paid by the rents collected by the Imperial Rice Growing Estates and the lotus land rent. Incense and candle expenses are included in the temple’s daily expenses, along with incense lamps and fruit expenses. For example, “Longwang Temple spends 2 liang for incense every month” [22], and Daxitian Temple receives 13 liang and 1 qian 2 fen for incense and fruits every month [22]. Reserve funds for annual repairs are issued annually in case gardens and temples need small repairs. Yingtai, Yongan Temple, and Chengguang Temple have a total of 700 liang in reserve repair funds each year, which are paid for by the Imperial Rice Growing Estates, while the 100 liang fund for Guangfu Temple is paid by selling rice [22].
The disbursement figure, taken from the corresponding income items, shall be used for daily expenditure and annual repair projects at any time, and is summarized at the end of each year. Daily expenditures are used for the garden flowers, foods, fruits and vegetables, tile flowerpots, and other consumable purchases. Although these funds can be used at any time, they are limited within specific monetary amounts. For example, the tile flowerpots in the back garden can only be bought from the income selling lotus root, while the money paying for food by the Imperial Parks Administration must come from rent collected by the Imperial Rice Growing Estates and the lotus pond rents. The annual repair funds cover the repair costs of the Old Summer Palace, Qingyi Garden, and the royal gardens in the Sanhai areas, as well as the annual repair costs of rice lands, ditches, bridges, and gates. Among them, the annual maintenance costs of the royal gardens in the Sanhai areas are retained by the Imperial Rice Growing Estates. The bridge gates in the Old Summer Palace and the Qingyi Garden water system are repaired by different gardens. The repair expenses of bridge gates in the public water system are paid by the lotus land rent of the Imperial Parks Administration. The repair expenses of rice lands and ditches in the Imperial Rice Growing Estates are paid for by reserve funds.

The reimbursement figure is counted as non-recurring expenses, such as small facility repairs. Such expenses are reimbursed to the higher authority within the time limit and approved after review [25]. Repairs include beds in the Imperial Parks Administration, Nanyuan raincoats, boats of various Gardens, etc. Such maintenance is not frequent and does not require annual repair funds. Therefore, money is issued in the form of reimbursement. Among these repair costs, the amounts for both beds and raincoats are paid by lotus land rents.

From the overall income and expenditure, the funds for royal land flow in various ways. In terms of monetary income, there exist clear and convenient land income items for easy management. According to Zeli, the land income items can be classified into four categories: lotus pond rent, the rent collected by the Imperial Rice Growing Estates, product sales, and other rents. The first three items are the largest income amount with a clear flow. In terms of expenditures, a variety of expenses, counted through Zeli, are classified into three forms. Various types of purchases, annual repairs, and public expenditure items have clear corresponding income items (see Figure 20). In addition to the recruitment fees paid by the Imperial Household Department, and a small number of temple incense costs which are paid by the Department of Ceremonies (Libu), the various fixed funds and daily expenses are paid by land rent and sales incomes. Furthermore, even if there are no spendable expenditures, the reserve fund [33] can also be used and will only be reported to the Imperial Household Department when it is insufficient to meet the cost.
Figure 20. The flow of funds for royal land management (taking the Imperial Parks Administration as an example).

4. Discussion

4.1. Land Planning That Balances Landscape and Economy

As seen in the above analysis, the royal land required effective land planning in two main aspects. On the one hand, the Qing royal family valued the economic benefits of the royal land. When managing the royal land, they made detailed statistics on all the land and had full distribution. Every piece of the land was put to the best use, either for court-planting or for rentals, and even land with poor soil was used for production. At the same time, the rental price was set by the government based on the land condition and the market price, which demonstrates the characteristics of the macro-control in land use.

On the other hand, the royal land, unlike ordinary rented farmland, was restricted in terms of its crop cultivation. For example, an area of farmland could only be used for rice production if it was defined as a paddy field. The lotus land delineated in the water land could only be used to grow lotus, and cattails field could only be used to grow cattail. Concerning the price of these crops, planting rice, lotus, and so on, was not the most profitable way to use the land. Regarding the unit price, it is obvious that, if the Qing government changed the farmland into houses or increased the number of shops, it could have profitted from benefit of multiple streams of revenue growth. However, the Qing government did preserve the strict restrictions of the land use. In combination with traditional Chinese culture, rice, lotus, and cattail are plants with strong cultural and landscape value, symbolizing bucolic pleasure and literati aesthetic appreciation. Therefore, it can be inferred that landscape value is yet another factor affecting land planning and utilization.

In summary, the royal land in the Qing Dynasty needed planning. By the regulation of land use types and crop cultivation to control the landscape and economic benefits, the royal land in the Qing Dynasty has always made the use of whatever it could.

4.2. Spatial Distribution with the Intersection of Water and Crop

In this paper, a kernel density analysis was carried out on various types of royal land. From the overall layout characteristics, the royal lands are mainly distributed in the northwest suburbs and Nanyuan.

The largest proportion of farmland is mainly concentrated in Kunming Lake, the Chang River, and the Nanyuan area. Specifically, Qingyi Garden, Jingming Garden, and others, are the core. Lotus planting areas are mainly concentrated in the water system of Kunming Lake, Chang River, and the Leshan Garden. The garden land is mainly
distributed around Kunming Lake and the eastern section of the southern moat. Other lands are located in the Old Summer Palace, Chang River, and the western section of the southern moat. Construction lands are concentrated in the inner city Shichahai to Sanhai area, along the Chang River to the Old Summer Palace with a small amount of distribution.

It can be seen from the kernel density analysis that the northwest suburb of Beijing is the most concentrated area of royal land. The northwest suburbs were the most concentrated areas of imperial gardens and farmland. Hou Renzhi believed that this was because the northwest suburb was an important water source in the Qing Dynasty, with a beautiful landscape and easy irrigation [11]. The results of this study are consistent with Hou Renzi’s view.

Nanyuan, Sanhai, and the northwest suburb are connected by the southern moat and the Chang River. The surrounding farmland dominated by rice fields and the water area where lotus is widely planted form a continuous and patellar bucolic landscape. Scattered among them are royal gardens, such as the Old Summer Palace, Qingyi Garden, Changchun Garden, Zizhu Garden, and Leshan Garden, which portray a bucolic landscape with the water land as the background.

The farmland and river landscape connected the nodes of the royal garden in the form of surface and line, to ensure the continuity and appreciation of the background of the royal garden landscape.

4.3. Organization Setting Focusing on Garden Management

Royal land management in the Qing Dynasty operated under a strict and mature system. In the process of textual research of the imperial state organs, Zhang Deze [19] arranged the administrative institutions of the imperial gardens and surrounding rice fields as Fengchenyuan, the Old Summer Palace, and Qingyi Garden. Based on Zhang Deze’s theory, this paper further clarified that the water area, construction land, farmland other than rice fields, and other land in the royal land were also managed by the same organization. In terms of the organizational setting, the Imperial Household Department was the head, under which were a number of administrative organizations, such as the Imperial Parks Administration, Old Summer Palace, and Qingyi Garden. The Old Summer Palace and Qingyi Garden managed large royal gardens and surrounding land in the northwestern suburbs, while Qingyi Garden managed additional farmland and water systems. Concerning the management authority, the status of the royal garden was higher than other types of land. In addition, at the organizational level, although the status of the Imperial Parks Administration was parallel to the Old Summer Palace and Qingyi Garden, when the old Summer Palace and the Qingyi Garden were underfunded, they each had the right to use the reserve funds of the Imperial Parks Administration for the construction and maintenance of gardens in the northwest suburbs. This suggests that the royal garden played an important role in the management of internal affairs.

4.4. Operation and Management Focusing on Garden Construction

Existing studies have not clearly sorted out the specific way of royal land management, and the relationship between the income of the royal land and the expenditure of royal garden construction is not clear. However, some folk views hold that the funds needed for the construction of the royal garden were obtained through the appropriation of other government funds, which is not a fixed security expenditure. Based on the fixed revenue and expenditure system, the royal land established a long-term management mechanism with the garden construction as the central focus. First, all the expenditure items had targeted sources, such as the lotus land rent, rent collected by the Imperial Rice Growing Estates, the General Reserve Department, and targeted expenditures including annual repairs. At the same time, according to the areas registered in the Zeli, the annual repair funds and the reported salaries of the gardeners demonstrate that all expenses had a clear flow of direction with clear numbers. Concerning the overall situation of revenue
and expenditure, the royal land was used in diverse ways to create a certain amount of revenue by using advantageous land and idle land simultaneously. The revenue funds were provided by several departments and were mainly used for the royal gardens’ annual repair projects, the purchase of necessary items, and the distribution of personnel salaries. The remainder was used to maintain other types of land operations, such as the repair of farmland ditches, water bridges, etc.

4.5. Research Limitations

This study is mainly based on the book *Imperially Commissioned Precedents of the Imperial Household Department*, revised and compiled in the Daoguang Period of the Qing Dynasty. Since then, the government’s rent regulations and the data concerning expenditures have been missing, which also affected the integrity of this study to some extent.

5. Conclusions

In conclusion, through the systematic arrangement of historical materials and a quantitative spatial analysis, this study obtained the characteristics of the type, distribution, and management of royal land in Beijing in the Qing Dynasty. Rice land and lotus ponds accounted for the highest proportion of royal land, forming a banded group distributed along the water system from the inner city to the northwest suburb of Beijing. Furthermore, the use and management of royal land shows the idea of “garden as the core”, which is embodied in the following. Firstly, land management organization was established based on palace division. Among the Imperial Household Department of the Qing Dynasty, the Imperial Parks Administration, the old Summer Palace, and the Qingyi Garden specially managing garden affairs were directly subordinate to the Imperial Household Department, juxtaposed with the Construction Department (Yingzaosi), the Horse Management Department (Shangsiyuan), and other directly affiliated departments. Secondly, the land use and management method for the purpose of garden construction was as follows. Various management organizations have formed a long-term land management and garden management mode through the land quota rent collection and expenditure system. Ultimately, the relevance between management and the regional landscape characteristics of the royal land in the Qing Dynasty was demonstrated. Through the control of the unit plot, the crop planning obtains the beauty of the regional landscape [34], and the rent benefit obtains the cost of the garden repair and management. Its essence is a meticulous management that balances the landscape and benefits.

The research made a correlation analysis from the perspective of the integration of landscape architecture, land management, and historical research. Although the management method of “garden raising garden” is subordinate to the feudal society, it still has enlightenment significance for the current intensive land management. With more historical materials being excavated and sorted out, the research in this direction is expected to be further deepened.

**Author Contributions:** Conceptualization, Y.X.; methodology, Y.X.; software, L.L.; validation, Y.X., L.L.; formal analysis, L.L.; resources, Y.X.; data curation, L.L.; writing – original draft, Y.X. and L.L.; writing – review & editing, Y.X.; visualization, L.L.; supervision, Y.X.; All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Data Availability Statement:** The data that support the findings of this study are available from the corresponding author upon reasonable request.
Acknowledgments: We sincerely thank Bingjie Gao, Leyi Mou for their support with visualization. We thank the two reviewers for their valuable comments and suggestions that improved our manuscript considerably.

Conflicts of Interest: The authors declare no conflict of interest.

Notes
1 Source: Yong Zheng’s “Qing Dynasty’s Hui Dian”. Volume 27, “House Department—Field and Land”.
2 Source: “Cases and Examples in Qing Dynasty’s Hui Dian”. Volume 1090 “Shuntianfu Demarcation”.
3 Source: (The Qing Dynasty) Shen, Yunlong. Guang Xu Hui Dian, Volume 89.
4 “Qing, mu, fen, li, hao, si” are units of measurement for area. (1 qing = 10 mu = 100 fen = 1000 li = 10,000 hao = 100,000 si). One mu is equal to 614 m².
5 “Qian” is a traditional Chinese measurement of weight in East Asia. It is equal to 1/10 of a “Liang”.

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