

# *Investigation Characteristics and Influence of Manchurian Railway on Forest Resources in Northeast China*

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**Abstract:** Northeast China is rich in forest resources, and it is also a resource that Japanese invaders covet and demand. At the beginning of the 20th century, Japan began to investigate China's forest resources, and Japan carried out nearly half a century's investigation and plunder of forest resources in Northeast China, among which Manchuria was the main economic institution for Japan to investigate and plunder forest resources, and fully met Japan's military needs. Therefore, through the main statement of Manchuria Railway's investigation of forest resources in Northeast China from 1906 to 1936, and the main characteristics of Manchuria Railway's investigation of forest resources, the historical influence of Japan's plundering of forest resources in Northeast China is finally explained.

## **1. Analysis on the Characteristics of Manchurian Railway Survey on Northeast Forest**

### **1.1 Investigate the continuity of time and place**

From the first northeast forestry survey carried out by Manchurian Railway in 1907 to 1936, Manchurian Railway handed over the right to investigate forestry resources to the forestry department of the pseudo Manchurian State. The nearly three decades of survey fully reflected the continuity of Manchurian Railway survey. At the beginning of the investigation, the forest resources investigation of Manchurian Railway in Northeast China was hindered and prevented by the local authorities of China, so Manchurian Railway only carried out the investigation along the South Manchurian Railway and its affiliated areas as the benchmark, and then deepened the investigation to take the river basin as the area. From the affiliated areas of South Manchuria, Manchurian Railway extended to the investigation of forests in the eastern part of Jilin, the northern part, the eastern part of Liaoning, and the southern part of Heilongjiang. Then, in-depth investigation was carried out along the Mudanjiang River, Yalu River and other basins. Moreover, Manchurian Railway also has a focus on forest resources investigation. Due to geographical conditions, Manchurian Railway actually only made achievements in the Mudanjiang River basin investigation in the east of Liaoning, the east of Jilin and the south of Heilongjiang. These areas are close to North Korea, and also belong to places with few people in the northeast. The local authorities of China control major cities in the northeast, but the control over these places is slightly weak. In addition, the branch line of the South Manchurian Railway crosses some areas. Therefore, the

Manchurian Railway can investigate this specific area by relying on the railway line and affiliated areas. For the Great Khingan Mountains region, Japan's influence was weak. After the October Revolution, Russian businessmen lost the patron of Russia, and there was a vacuum in the region's sphere of influence. Manchurian Railway was keenly aware of the changes in the situation. After its investigation of the Great Khingan Mountains region, Manchurian Railway adopted a joint venture to obtain the ownership of the forest farm operated by Chevkeqian in the Great Khingan Mountains. In 1926, when the Jidun Railway was built, the Manchurian Railway cooperated with the Japanese intelligence department in Korea to investigate the Yanji and Mudanjiang River basins along the Jidun Railway. During the investigation, the forest timber resources in the basin were also stolen and used in the railway construction. After the fall of Northeast China, the Manchurian Railway lost the hindrance of Chinese local governments, so the investigation of forest resources in Northeast China was deepened and the investigation sites were gradually expanded. Until 1936, the Manchurian Railway basically realized the investigation of most forest areas in South and North Manchuria. After the investigation of forest resources, the Manchurian Railway continuously updated the data, charts and tree varieties of forest resources. It provides data and reference for the further development of forest resources by Manchurian Railway.

### **1.2 Consistency of investigation purpose**

From the initial forest survey carried out by Manchurian Railway to the forest survey after the founding of Manchukuo, the main purpose is to understand the specific situation of forest resources in Northeast China, and to understand the important information such as the distribution area of forest resources in Northeast China, the volume of trees, and the varieties of trees. Japan's economic development is highly dependent on logs, and the forest survey of Manchurian Railway in these places has fully updated the basic situation of forest resources. The Manchurian Railway has basically made plans for the development of forest resources based on the update of forest survey resources and these data. At that time, wood was used in paper making, chemical industry, fuel and other industries. There were more than 350 kinds of trees in the northeast forest, and precious trees were also sent to Japan for scientific research. After Manchurian Railway investigated the forests in South Manchuria and North Manchuria, Manchurian Railway established a large number of wood processing plants, paper mills and chemical plants in the affiliated areas, and further developed the forest resources along the railway. Forest products are strategic materials with rigid demand in Japan, Therefore, Manchurian Railway used wood processing products to support the Kanto Army or to transport them to Japan. During the period of the puppet Manchukuo, the puppet Manchukuo managed the data and information obtained from the forest resource survey with the help of the Manchukuo Railway, thus "escorting" the massive development of the Manchukuo Railway and the Japanese army. During the period of Manchukuo, timber was a strategic material valued by Japan. The forest products processed, produced and transported in the Manchukuo railway affiliated areas were all used preferentially for military aggression.

### **1.3 Diversity of investigation means**

In 1907, this was the first forest survey conducted by the Manchurian Railway. This time, the investigators organized by the Manchurian Railway, mainly students majoring in forestry, had a narrow survey scope. However, after that, Manchurian Railway began to organize professional forestry investigators to carry out forest surveys. In 1914, it even organized Japanese university professors as the investigation team of the delegation. From 1907 to 1931, the forest investigators of Manchurian Railway were composed of university professors, forestry investigators and engineering surveyors. While conducting forestry investigations, they also investigated the local

economic environment, geographical environment and soil. After the fall of the Northeast, the means of investigation began to diversify. First, the Manchurian Railway set up an aviation company, which was responsible for aerial photography of forests. At the same time, the Manchurian Railway investigators were mixed with the Japanese army to investigate by armed means. Before the fall of the Northeast, due to the vigilance and defense of the Chinese local government on forests, the investigation was carried out by civilian personnel. After the fall of the Northeast, it used more means, which fully reflected Japan's ambition for forest resources.

## **2. Discussion on the influence of manchurian railway survey on northeast forests from the perspective of resources, ecology and environment**

### **2.1 Resource dimension: leading to the loss of a large number of high-quality wood resources in China**

From the perspective of resources, after the survey of forest resources in Northeast China by Manchurian Railway from 1906 to 1936, a large number of high-quality wood resources in China were lost. The forestry development department of Manchurian Railway secretly carried out the plan of plundering forest resources in Northeast China according to the data, information and charts obtained from the survey. During the period from 1907 to 1931, due to the vigilance and defense of Chinese local authorities on forest areas, the development of forest resources in Northeast China by Manchurian Railway was mainly limited to the Yalu River basin in the east of Liaoning Province, the east of Jilin Province, and the south of Songhua River in Heilongjiang Province. Manchurian Railway chose forest areas with few people and weak control of Chinese local authorities for development. Although Manchurian Railway strictly controlled the development process and area during the development, it also led to the loss of a large number of timber resources in Northeast China. In 1931 alone, the timber developed by the Jidun Railway reached 194000 cubic meters, and the timber developed by the Songhua River reached 56400 cubic meters. These superior logs, after being processed by Manchurian Railway, were transported to Japan, which promoted the comprehensive development of Japanese paper industry and wood processing industry. After the fall of Northeast China, Manchurian Railway increased the development of forest resources in Northeast China. In 1936, Manchurian Railway processed and transported 1.714 million tons of forest products<sup>[1]</sup>, which not only supplemented the use of Manchurian Railway and the Japanese army, but also satisfied the domestic use. The Japanese army used the forest products and forest resources provided by the Manchurian Railway to supplement military supplies and prepare for further expansion of aggression. The massive exploitation of forest resources by Manchurian Railway has led to a significant reduction in China's forest reserves, and the economic value of these plundered timber is difficult to estimate.

### **2.2 Ecological dimension: causing damage to the forest ecological environment in Northeast China**

Japan's forest development in the Yalu River basin, Songhua River basin and the eastern part of Jilin Province has inevitably led to the destruction of the ecological environment in this region. The forest has the function of water conservation and ecological cycle protection. At that time, there were more than 350 kinds of forests in Northeast China. However, the continuous expansion of the development of forest resources by Manchurian Railway has directly led to the reduction of forest species in these areas, and also affected the soil and water cycle of the river banks in the basin. Moreover, the wood processing and paper making industries of Manchurian Railway will discharge heavily polluted sewage, which contains adsorbable organic halogen. This harmful substance will

kill fish organisms in a short time. The Songhua River, Yalu River and Nenjiang River basins are very rich in their own fish resources. However, the wood processing plants and paper mills established in the areas attached to Manchurian Railway have caused significant harm to local fish organisms and devastating damage to the local ecological environment. The forest provides an environment for the existence of biodiversity. There are a large number of rare animals living in the Songhua River, Yalu River and Nenjiang River basins. After the survey by Mantie, the number of Amur tigers, black bears, sika deer, wild boars and other animals in the basin has decreased significantly, and the number of birds has decreased dramatically. After investigating the forest resources in Northeast China, Manchurian Railway adopted the mining method of "fishing with all one's might", and did not care about the local ecological environment at all. During the period of Manchukuo, on the basis of Manchukuo railway investigation and development, the puppet Manchukuo regime intensified its exploitation and made the ecological environment more fragile.

### **2.3 Environmental dimension: aggravating water and soil loss and flood disaster in Northeast China**

Before the Manchurian Railway carried out the investigation on the forest resources in Northeast China, the Qing government implemented the policy of prohibiting the development of Northeast China for more than 200 years. The forest coverage in each basin in Northeast China was high, and the water and soil conservation was in good condition. Since Manchurian Railway carried out its investigation on forest resources, the data and reports obtained have further stimulated Japan's ambition to invade forests in Northeast China. Under the guidance of the Japanese government, Manchurian Railway has cut down a large number of trees and established wood processing plants, paper mills and other enterprises near the river basin. Wood processing and paper making have prompted Manchurian Railway to increase its efforts to develop forests. If forests are overexploited, a large amount of water and soil loss will be caused, It leads to frequent floods. Before the intervention of Manchurian Railway, the drought and flood disasters in the northeast forest basin were only 12%. In 1925, the forest coverage was reduced to 37%, and the frequency of drought and flood disasters reached 26%. In addition, after the September 18th Incident, major floods occurred in the basin 1-2 years apart<sup>[2]</sup>, The flood in 1932 caused nearly 80% of the cultivated land in Heilongjiang to be damaged, and the flood in 1934 damaged the north of Harbin to varying degrees. The frequent flood disasters are closely related to Japan's massive theft of forest resources. After the September 18th Incident, Japan's overall invasion of the Northeast no longer limited its theft of forest resources to Manchuria Railway. The Japanese development groups began to settle in the Songhua River, Yalu River and other basins.

### **3. Conclusion**

The main purpose of Manchurian Railway's forest survey and control in Northeast China is consistent, that is, to master the specific situation of forest resources in Northeast China. Moreover, the resources investigated by Manchurian Railway are specific in scope, continuous in time and place, and the investigation means have also developed from single to diverse. The survey of forest resources in Northeast China by Manchurian Railway has caused a large amount of wood loss in Northeast China, and also caused damage to the ecological environment in Northeast China.

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