The bark of the mature kauri is gray. The shape of the leaves is oval and flat and turns bright green when mature. Mature kauri develops massive column-like trunks, with spreading crowns supported by whorls of large branches. Based on the collected data and pictures from other academic articles, I relied on Unity’s tree generation modeling to restore the appearance of a mature Kauri.

and then, In future work, I will add more tree branches to make the model look lusher. And I will make new textures to make the bark look more realistic. Adjust the shape of the big branches to make them look more spiral. Apply algorithm to tree generation. May compare the manually generated model and the algorithm generated model which is more like the

Kauri dieback is a forest dieback disease of the kauri trees which is also called Phytophthora agathidicida. Phytophthora agathidicida is a recognized dead pathogen in New Zealand native Kauri, posing a major threat to the long-term survival of Kauri. The disease is spread only through soil, and it spreads from the roots of the tree to the other roots of the tree mainly in infected soil. The disease spores can be carried in very small soils. The main disease transmission is human activities. Because people's shoes may contact soil that contains diseases, when people get close to healthy kauri, they will bring diseases to them through the soil. Now in New Zealand, all parks or sanctuaries that can be approached to visit kauri trees require people to clean their shoes and keep their distance from the kauri trees.

Since people have now realized the importance of environmental protection, large-scale logging of kauri has become a thing of the past. And the natural disaster and climate factors are not controllable. Therefore, the disease is now the main reason that threatens the growth of Kauri.

Symptoms of kauri dieback are excessive resin production in the collar and underside of the trunk, as well as a decline in the crown, and turn the leaves into yellow, which usually results in the death of the tree. These symptoms can only be observed after a few years of infection of roots and are due to dysfunction of the external vascular tissue. The time span of kauri from symptom onset to death is relatively large, usually1-10 years, and small trees usually die faster than large trees.

the picture a is Two Kauri trees standing side by side. The tree on the left has died by kauri dieback, while the tree on the right is healthy or asymptomatic. The symptoms of kauri dieback are only observed in the chronic stage of the disease and are crown decline (a, left), From the picture, we can see that the branches of healthy kauri grow upward, while the crown of the dead tree is lower, and the branches are scattered around.

Problems:

The branches and leaves of the mature kauri tree are very lush, and the computer runs very slow when making the model.

How to model resin spillage is a big challenge.

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