



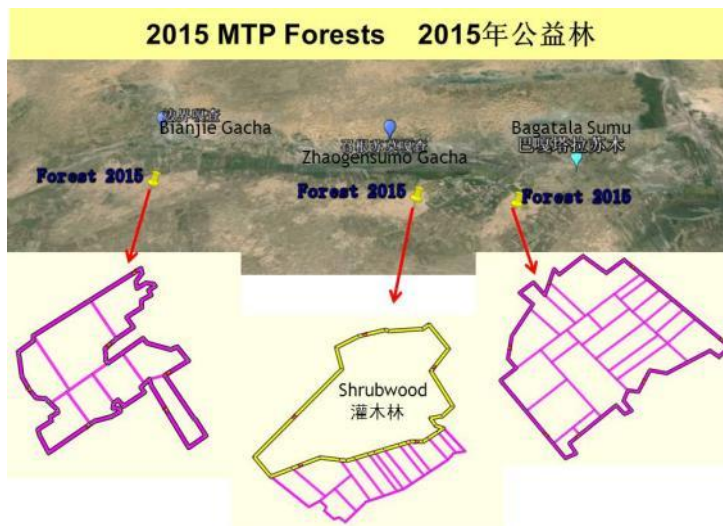
The Million Tree Project 2015 Yearly Report

The Shanghai Roots& Shoots Million Tree Project aims to raise community awareness of the Earth's precious environment while focusing on steps individuals can take to lessen their negative impact on the natural world. By planting trees in Inner Mongolia, the Million Tree Project designed an opportunity to improve both ecological and humanitarian conditions there. From 2007 till now, over 1,712,000 trees have been planted, covering an area of 1516 Hectares. In 2015, we continued our efforts to raise environmental awareness of the general public while improving the ecological conditions in Inner Mongolia. It is our belief that every individual makes a difference. The Million Tree Project is the living proof of how change can happen when people are determined to make things better.

I. Updates of the Million Tree Project Forests in 2015

1. New Forests in Inner Mongolia in 2015

2015 is the ninth year of the Million Tree Project (hereinafter referred to as 'MTP'). Three new plots of forests were planted, all of which are located in Bagatala Sumu, KeerqinzuoyiHouqi, 60 kilometers south of Tongliao, covering an area of 138.5 hectares (2077 Mu). Two of the three plots are afforested in cooperation with Zhaogen Village and the third one with Bianjie Village. All of the three plots are owned by local farmers and the farmers are primarily responsible for planting, pruning and day-to-day care for the trees.



In view of local circumstances such as little rainfall and frequent sandstorms, MTP decided to experiment with an integrative method of controlling sand movement by planting a mix of trees and shrubs in 2015. *Caragana microphylla Lam* is the selected shrub species, a native shrub species

in Inner Mongolia. It forms a very dynamic protection system with its flourishing branches above the ground and extended roots beneath. It provides a solid foundation for soil development and restoration of vegetation diversity. In addition to its significant biological value, *Caragana microphylla Lam* is also an ideal grazing plant. Its fast growth makes it tolerant for herding, therefore maintaining the balance between biological restoration and economic benefits.

2. Pilot Project in Ningxia



In cooperation with Ningxia Baijitan tree farm (Management Bureau of Ningxia Baijitan National Nature Reserve), MTP started a pilot afforestation project in the southwest border of the Maowusu desert in the spring of 2015, with a total area of 33.33 hectares which is spread out in the desert wasteland in the Baijitan Reserve. The local climate is adverse with annual rainfall being approximately 200mm and evaporation capacity of 2862.2mm. The MTP team chose the shrub species that could easily adapt to the local environment, including Calligonum, Caragana, and Hedysarum Scoparium. We also placed straw-checker boards in the area in order to ensure a higher survival rate of shrubs by fixing the sand. The images taken before and after the straw-checkerboard pavement are shown as below.

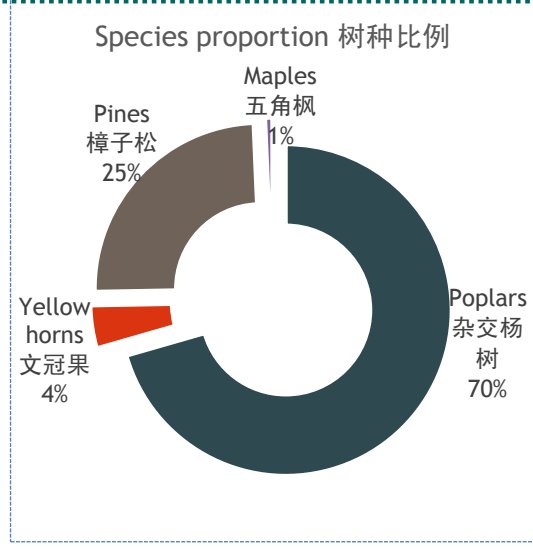


Before paving straw-checkerboard



After paving straw-checkerboard

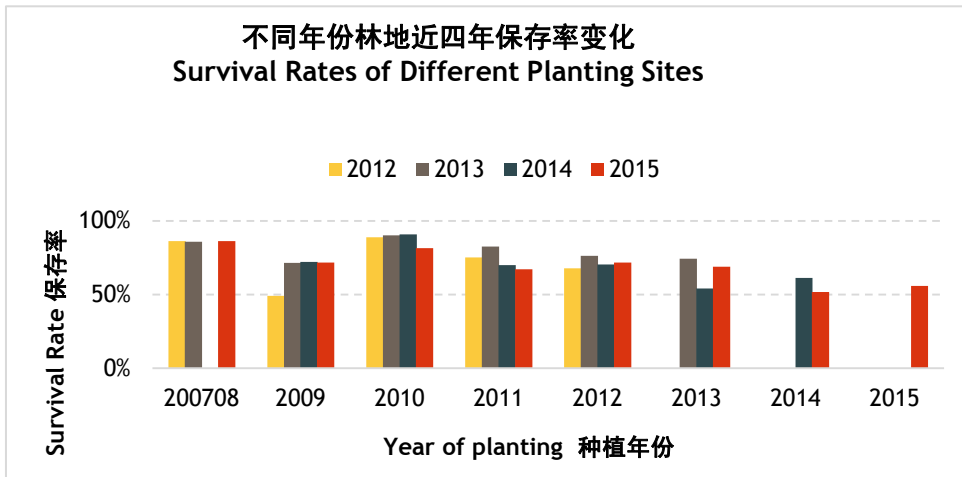
林地 Forest	面积 Area (亩/HA)	棵数 (棵) Trees
200708	1185/79	80,000
2009	1,641/109.4	120,000
2010	2,662/177.5	200,000
2011	2,146/143.1	240,000
2012	6,269/417.9	390,000
2013	3,873/258.2	222,700
2014	2,890/192.7	249,700
2015	2,077/138.5	210,000
总计 In total	22,743/1516	1,712,400



From 2007 till now, the MTP has planted over 1,712,000 trees, covering an area of 1516 Hectares. The tree species planted include Poplars, Pines, Maples and Yellow horns.

3. General information of 2015 Annual Forest Investigation

The graph below shows the survival rates of the planting sites we have afforested since the beginning of the project in the past four years.



The Million Tree Project places an important focus on supervision and surveys of the trees after planting in order to ensure consistent ecological and environmental benefits. The 2015 investigation sampled 7,900 trees in 274 random spots in 25 forest plots and took us 31 days from September to November to complete. The general survival rate of all MTP forests is 67.92%.

Over 7 to 8 years, significant impact is observed in terms of vegetation restoration and ecosystem reconstruction in the forests planted in 2007 and 2008. Flourishing tree canopies together with diverse undergrowth provide shelter for different types of organisms, while benefiting soil enrichment and water conservation. The following images show the forest growth in different years.



4. General information of 2015 Ecological Investigation



Since 2013, the Million Tree Project has been planting trees mainly in places with harsh environmental conditions, especially places with sparse vegetation and covered with widespread moving and semi-moving sand dunes. Our objective is to gradually immobilize the moving sand dunes and rehabilitate the ecosystem through restoration of native vegetation by afforestation.

Meanwhile, we started to notice that the very few trees growing on these plots looked more like shrubs without strong tree trunks, and other than growing upwards, growing horizontally due to the frequent wind drafts and the limitation of water resources, which means that the height and DBH (Diameter at Breast Height) would not necessarily increase as trees grew older, and would not necessarily have direct relevance to the overall vegetation restoration and ecosystem rehabilitation. Therefore, in 2014, the project began to focus on ecological investigation, directing its efforts to understanding restoration of the overall ecosystem and biodiversity. The ecological investigation includes three main parts: species diversity, vegetation structure, and vegetation coverage.

The ecological survey of Year 2015 sampled 57 spots on 6 plots, two of which we sampled in 2014, and the other four were under initial survey. All of the six plots are located at Zhaogensumo Gacha and Bianjie Gacha, Horqin Left Back Banner. The preliminary results show that there are a total of 36 types of grass and shrub species in the forests. The biodiversity of 2013 and 2014 forests is twice as much as that of the forest planted in 2015. The vegetation coverage of the initial investigation plots is only 12% with simple structures, and the sand dune is still semi-moving; whereas, the vegetation coverage of 2013-1, 2014-2 forests has increased to 33%, indicating that forest restoration has proven effective, and the semi-moving sand dunes are gradually transitioning to semi-stable sand dunes.

Desertification degree	Vegetation coverage degree
Stable sand dune	Higher than 50%
Semi-stable sand dune	30-50%
Semi-moving sand dune	10-30%
Moving sand dune	0-10%

Classification of Desertification Degree, cited from 'China's Deserts, Desertified Lands, Desert Plants', China Agricultural Science and Technology Press, published in 2013.

The following images show the contrast in vegetation appearance in different years on the sand dunes near the forest planted in 2013. More shrubs and grasses are seen in the picture taken in 2015 than the one taken in 2014. This is called the integrative effect of Seed Accumulation (The growing saplings are working as windbreak to catch more seeds.), Nursing Effect (Trees have an effect on improving soil moisture content, temperature and other microclimate conditions, inducing sprouting and growth of other vegetation.), and Islands of Fertility (The roots of shrubs improve the nitrogen level in the soil, accelerate the accumulation of organic matter and vitalize micro-organisms.), all of which could not have been achieved without tree planting. The native vegetation is in the process of recuperating and we are confident that in the long term we can achieve the goal to restore the ecosystem and



stabilize the moving sand dunes.



Vegetation condition in 2013 forest, taken on 2014.7.16 Vegetation condition in 2013 forest, taken on 2015.7.3


We appreciate that while it is important to look after every individual tree, it is imperative that we see the bigger picture, the bigger forests as a whole to fully evaluate the overall ecological benefits of MTP. The annual ecological investigation will continue to carry out in the future and will contribute to a more comprehensive understanding of the environmental impact of the forests we planted.

II. Updates of Coveme in 2015


1. General information of Coveme Forest

As a big sponsor, Coveme has been supporting the Million Tree Project since 2012. After years' contributions, 2, 000 trees were planted on ,1.8 hectares of lands in the name of Coveme.

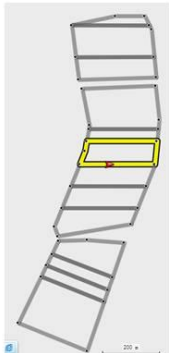
Map of Coveme Forest




Coveme Forest
康维明公益林



位置: 2012-4 林地;	Location: Plot 2012-4;
面积: 27 亩;	Size: 1.8 hectares
树种: 杨松混交林	Tree species: Poplars & Pines







Basic Information of Coveme Forest

年份 Year	位置/Location	面积/Area (亩/Hectare)	树种及数量 /Tree species& Amount
2012	2012-4, 通辽市库伦旗六家子镇袁家窝堡村南 Yuanjiawobao, Liujiazi, Kulun Qi, Tongliao	27.0/1.8	2,000 棵 (杨松混交林 /Poplars& Pines)
	康维明公益林 Coveme Forest	27.0/1.8	2,000

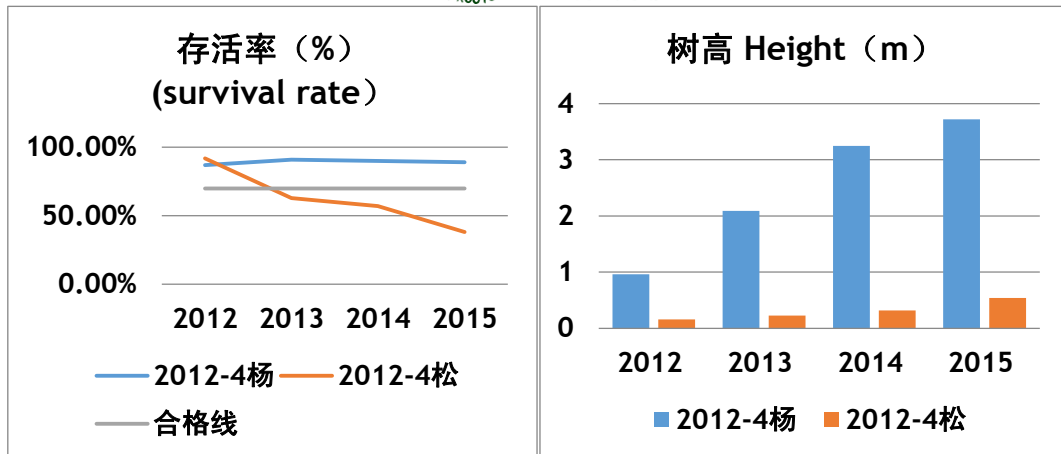
2. Coveme Forests Condition in 2015

2012-4

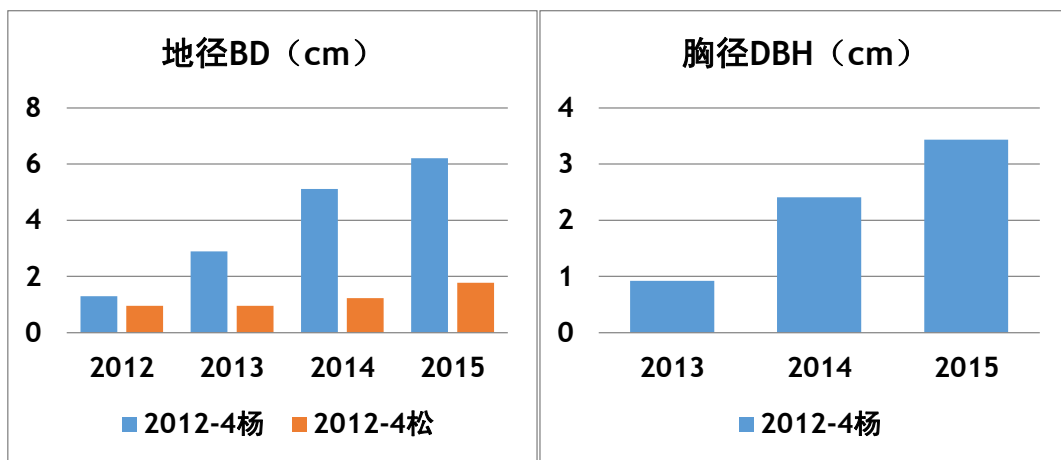
Plot 2012-4 was planted with a mix of poplars and pines. MTP team members visited the forest on 6 May 2015. The missing of pines is still considerable, and there is no sign of replanting.



The annual investigation shows that the survival rate of the poplars is still relatively high, being 89% in 2015, and tends to be stable. Due to the impact of intercropping, the survival rate of the pines is still not ideal and is only at 38%.



The average increase in the height of the poplars is 0.47m, reaching 3.72m in 2015; the increase in the height of the pines is 0.22m, reaching 0.54m in 2015; the poplars and the pines have both shown an increase in average basal diameter, reaching 6.51cm and 1.78cm respectively; the DBH of the poplars in 2015 is 3.43cm, having increased by 1.03cm as compared to last year; As shown by the afforestation index, the growth of the forest is fair, but further communication and coordination with the local partners is necessary in order to strengthen the management of the method of intercropping and to replant the pines next year.



III. Highlights of the Million Tree Project in 2015

1. Raising Environmental Awareness

- a. MTP organized 5 planting trips to Inner Mongolia in 2015 and coordinated with 3 sponsor companies to involve their staff and media to help plant trees as part of their corporate team building outings. The total number of volunteer participants was over 400. They included students, teachers and corporate employees from a dozen countries. Together they planted about 3000 poplar saplings and 10,000+ *caragana* seedlings. Among them, there were dedicated



volunteers who had been on planting trips nine times over the past six years. Some of them were first-time visitors from warm, humid Hong Kong and Taiwan who were not used to the dry sandy environment in north China. All the volunteers worked hard, hoping to bring more green to the bio-degraded land.



Planting trip in April, 2015



Planting scene in April, 2015

b. We included interactive experiments in the trip itinerary in order to deliver more scientific information of the significant role afforestation plays. The experiment of ‘Soil Degradation and Development’ introduced the mechanisms of desertification and soil development as well as the current situation of desertified lands in Tongliao and other regions in China by demonstrating the functional difference between desertified soil and zonal soil. The ‘Vegetation Restoration in Desert’ experiment helped participants to understand different roles trees, shrubs and grasses play in the process of vegetation recovery via scenario simulation.



‘Vegetation Restoration in Desert’ Experiment



Demonstration of ‘Soil Degradation and Development’

c. The summer camp of Shanghai Roots & Shoots [YES program](#) also took place on the MTP’s planting site. 18 outstanding volunteers took part in making straw-checkerboards and the forest eco-survey. They also had a chance to catch the sunset in the wild desert. By the end of the five-day camp, the volunteers had experienced the difficulties living in a harsh environment and came to understand it is crucial to stop the desert from expanding.



Paving straw-checkerboard



Conducting Eco-survey

d. Students and teachers from Beijing BISS International School volunteered to participate in the 2015 annual forest investigation in September. 830 trees in 24 sample plots were measured during their four-day stay. Students from various countries and regions gathered at the remote village in Inner Mongolia, where the living standards and environment were completely different from what the students are used to. By helping the locals with their own hands, the students ended the trip with a better understanding of the importance of environment protection.



Volunteers listening to instructions



Volunteers measuring trees

e. MTP staff member Tianli attended the International Educator Institute organized by World Forestry Center this summer. Participants from different countries and backgrounds learned and shared the experience of environmental education and visited forestry management projects in the United State. Information and knowledge taken from the training will be applied to MTP to improve forest management methods and to strengthen the education component of the project, getting more people involved.



MTP staff sharing project info with training participants

Visiting forest sites during training in US

2. Gold Standard Certification¹

Some of the forests planted in Zhaogen Village have gone under Gold Standard Certification application process since 2013 with the support of Climate Bridge to attain measurable carbon credits and long-term benefits. Two years after we started the application process, the 2013 forests were finally granted the Gold Standard Certification at the end of 2015.

The Gold Standard was developed by the World Wide Fund for Nature (WWF), the world largest environmental NGO, as a methodology for use within the voluntary carbon market to ensure that carbon credits are not only real and verifiable but also make measurable contributions to sustainable development worldwide. The Gold Standard is recognized worldwide as an effective and reliable tool for creating high-quality emission reduction projects by government departments, corporates and non-profit organizations since 2003. Being approved by Gold Standard is not only a recognition for the project's standardization and sustainability but will also benefit the local communities in long-term by trading the carbon credits generated by MTP forests on the international carbon market after audited by a third party in the coming future. Climate Bridge is one of the first companies to have focused on the voluntary carbon market, striving to leverage the global carbon and capital markets, and bridge resources and opportunities between the developed and developing worlds since 2006.

3. Project Sustainable Development

a. Go plaque-free

MTP has been promoting the plaque-free campaign in the past few years to improve environmental benefits and optimize resource allocation, which has gained support and understanding from our sponsors. From 2016, instead of setting up one plaque for each sponsor, MTP will set up one big plaque to acknowledge all sponsors of that year.

b. New Project in Ningxia

Systematic measurement of newly planted shrubs in Ningxia was put off due to the heavy snow although shrubs were visible as we cleared the snow and checked randomly on the newly paved straw-checkerboards. The shrubs were about 6 to

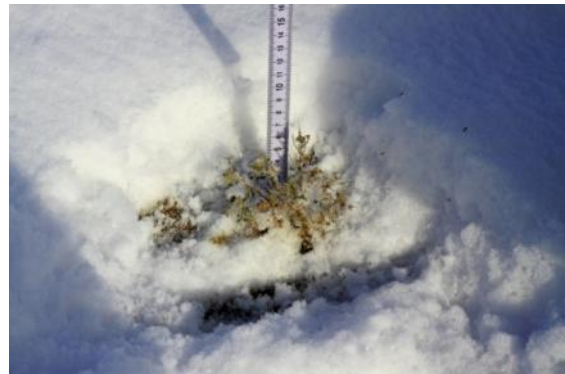
¹ <http://www.goldstandard.org/> , https://en.wikipedia.org/wiki/CDM_Gold_Standard



10 centimeters high, indicating a promising survival rate. Baijitan Tree Farm has sound experience on desertification control and has profound knowledge of the local environmental conditions. In the coming years, MTP plans to dedicate more efforts and resources to working with Ningxia Tree Farm, joining hands to fight desertification in the local area.



straw-checkerboards covered by snow



caragana microphylla covered by snow

We thank each and every one of you for your continuous support and generous donation in the past years. 2016 is the 10th year of the Million Tree Project, we look forward to achieving the second million goal together with all of you.





Appendix. Forest coordinates and highlighted map

年份 Year	位置/Location	面积/Area (亩/Hectare)	树种及数量 /Tree species& Amount
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