

Environmental Conservation Activities along Railway Lines

Biodiversity

■Hometown Forestation Program

In 2004, in order to protect biodiversity and contribute to a sustainable society, while cherishing our sense of gratitude for nature, we began Hometown Forestation Programs to plant trees native to each region and revitalize the forests. We undertook these programs with the cooperation of Fukushima Prefecture from 2004 to 2009 and with the cooperation of Niigata Prefecture, the town of Tsunanmachi and Tokamachi and Ojiya Cities in the prefecture from 2010 to 2014. In FY2017, we began forestation activities in Naruko Hometown in Osaki City, Miyagi Prefecture.



Naruko Hometown Forestation Program in October 2017

■Forest development along railway lines*

Beginning in 1992, we have been organizing tree planting activities along JR East railway lines. By FY2018 a total of approximately 51 thousand people had participated in planting about 347 thousand trees*. Today, planting has gone beyond the trackside and is done in cooperation with local communities.

*The number of trees includes flower seedlings

■Development of railway trees

Along some JR East railway lines, we have planted railway trees to shield the tracks from blowing snow and wind.

The first railway trees were created in 1893 for disaster prevention. As living disaster prevention facilities, railway forests are playing their role. JR East now owns approximately 5.8 million railway trees on a total of about 3,900 hectares along our lines at approximately 1,080 locations. The trees absorb 15 thousand tons of CO₂, equivalent to 0.7% of the CO₂ that JR East emits (this is the actual amount in FY2018). In this way, they also contribute to preserving the environment.

In 2008, after fundamentally reviewing the role of railway trees from the viewpoints of both disaster

prevention and environmental preservation, we launched a new project to plant trees to replace those that will require replacement over the coming 20 years.



Sashimaki No.1 railway forest on the Tazawako Line (forest to protect against blizzards)

Planting new railway trees

Ceremonies for the planting of new railway trees have been held in various locations, as shown in the table below, starting with the Kakizaki No. 1 railway forest in September 2008. During these ceremonies, native tree species were planted, with many local residents participating.

[Past Tree Planting Ceremonies]

Date	Location
September 2008	Shin-etsu Main Line, Kakizaki No. 1 railway forest
July 2009	Okitama No. 2 railway forest
May 2010	Ôu Main Line, Jinguji No. 2 railway forest
September 2012	Tazawako Line, Ôkama No. 1 railway forest
September 2013	Ôu Main Line, Sekine No. 1 railway forest
September 2014	Uetsu Main Line, Hirakida No. 3 railway forest
September 2015	Ôu Main Line, Kado No. 6 railway forest
September 2016	Tazawako Line, Akabuchi No. 1 railway forest
September 2017	Banetsu-Sai Line, Nakayamajuku No. 6 railway forest



Tree planting ceremony for Nakayamajuku No.6 railway forest on Banetsu-Sai Line (September 2017)

Basic thoughts on noise reduction

In the operation of trains, noise is created by the train cars pushing air aside, by the wheels travelling on the rails, by the motors, and by other sources. In order to reduce noise, we are working in various ways to improve both the trains and our ground equipment.

JR East also endeavors to reduce noise during maintenance work on track and structures to further improve the lineside environment.

■Measures for the Shinkansen

In accordance with the Japanese government's Environmental Quality Standards for Shinkansen Superexpress Railway Noise, JR East has taken many steps to reduce this noise, such as with the installation of soundproof walls and sound-absorbent materials, rail grinding^{*1} and the modification of our railcars to operate more quietly. We have already completed the implementation of measures to reduce noise levels to 75dB or lower in densely populated residential areas along our railway lines. At present, we plan countermeasure construction for the other areas in incremental steps. Also, based on the knowledge gained from running tests using the Shinkansen "FASTECH" test train, JR East is working to improve the environment even as we increase train speed, including further reduction of noise and micro-pressure waves in tunnels^{*2}.

*1 Rail grinding A measure to smooth out uneven places in rails caused by wheel movement. This reduces noise by controlling car vibration.
*2 Micro-pressure waves in tunnels An explosive sound caused by forced air compression.



E5 Series trains have low-noise pantographs

■Measures for conventional lines

We have implemented measures for conventional lines to minimize noise, such as installation of long rails^{*1}, rail-grinding and wheel-truing^{*2}. We also comply with the Japanese government's Policy on Noise Measures for Construction of New Conventional Railways or Large-Scale Remodeling when we engage in this kind of construction or modification of our conventional lines.

*1 Installing long rails Rail joints are welded such that the length of a single rail becomes more than 200 meters. With fewer rail joints, these rails reduce noise produced at joints when trains pass.

*2 Wheel truing A measure to grind the unevenness of wheels caused by wear, to restore their circular shape.

■Measures for maintenance work

As maintenance work is usually done during the night, we give advance notice to residents in surrounding areas about the schedule and details of the work. We also make utmost efforts to minimize noise by using modified equipment that produces lower noise. Furthermore, by using types of track that are designed to resist deformation, JR East is reducing the volume of required maintenance work.



Safety



Society



Environment