

Featured Forest: Marchel Tract

The Marchel Tract is one of nine forests that make up the OSU Research Forests. This research site



supports several hardwood studies on a 71-acre tract that lies in the Willamette River floodplain. The Marchel Tract is not open to the public, and is reserved as a

research area only. The main purpose of the Marchel Tract is to have a clone bank and test plantations where one can see what genes go into the trees and what genes cause certain predispositions to certain consumer products with the goal of being able to grow the trees quickly and efficiently in a small area of space.

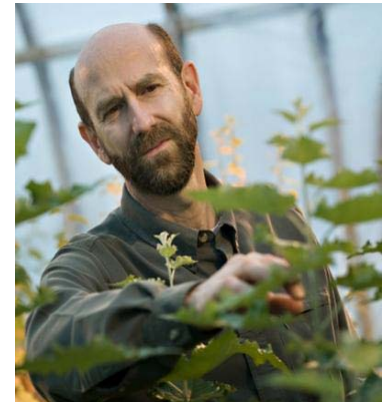
Four studies are being conducted on-site by scientists in the fields of botany, genetics, biology, and the Department of Forest Ecosystems and Society (FES):

- Research on wild bottomland cottonwood
- Production of forest products (wood, nuts, fertilizer, wildlife habitat) through mixed species planting
- Testing of genetic engineering and genetic containment of hybrid poplars
- Genetic sequencing of wild black cottonwoods with the goal of determining what specific genes affect the growth and quality of trees.

An alumnus of the College of Forestry at Oregon State University donated the Marchel Tract in the mid-1980s when Principal Investigator Dr. Steven H. Strauss had just begun his career at OSU in the Department of Forest Ecosystems and Society. Strauss is a Distinguished Professor of Forest Biotechnology and is the Director of the Tree Biosafety and Genomics Research Cooperative at OSU, a university-public agency consortium formed in 1994. Originally from Brooklyn, New York, Strauss grew up a city-boy with the drive of environmental awareness behind him. He has

been at the forefront of forest biology and genetic engineering of trees, contributing greatly to the understanding of fundamental tree biology, as well as the development of techniques and tools to perform genetic engineering in tree species. He has been working in the field of tree and plant biotechnology for more than 30 years, and was crucial in making the Marchel Tract what it is today. Throughout his educational career at institutions like Cornell, Yale, and Berkley, he developed interest in tree genetics and using sequencing to grow a lot of wood for various purposes in a small area. When the Marchel Tract became a reality, Strauss finally had an outlet for that interest.

With a recent \$4 million grant from the National Science Foundation, Strauss



says OSU researchers hope to develop new ways of peering into the genetic engineering process, identifying what influences an engineered cell to succeed or fail in becoming a new plant. OSU will work on cottonwood trees, which the U.S. Department of Energy views as a potential feedstock for biofuels, but Strauss said the research could apply to other plants as well. "With the population growth, growing demand, and climate issues, we're in trouble, and we don't have simple answers that are ready to answer for those issues. Trees are hard to breed, slow to grow, have messy genetics, and genetic engineering has the ability to bypass all of that. It is not the answer, but it is a powerful tool." Strauss says, "I am just thankful that the OSU College of Forestry has this resource. I want to do things that you can prove in the field. I do not want to just publish papers in the laboratory and not have real life data to back it up. Having the Marchel Tract allows me to do just that."

Steve Straus, Distinguished Professor of Forest Biotechnology