

## Electric Tow Tractor: An Alternative Fuel Vehicle at Redwood National & State Parks



### **National Park Service Expands Alternative Fuels Fleet**

If you're among the millions visiting national parks in the U.S. during the next few years, you'll be breathing a little easier because a growing number of vehicles serving the parks will not be powered by gasoline or diesel fuel. The national parks are adding more vehicles using alternative fuels as part of a federal program to reduce vehicle pollution in those treasured environments.

The program is sponsored by the U.S. Department of Energy (DOE), U.S. Department of the Interior (DOI), DOE's National Renewable Energy Laboratory (NREL), and the National Park Service (NPS). The objective is to demonstrate how using alternative fuel vehicles (AFV) can improve the environment at the parks, while allowing the vehicles to perform efficiently and cost-effectively.

### **About the Electric Tow Tractor**

One of the "cleaner air" vehicles—an electric tow tractor pulling a wagon—is being used for routine maintenance work in the Redwood National & State Parks (RNSP). The wagon was built by the park's maintenance staff.

The tractor's engine runs on electricity instead of gasoline and is much quieter than a gasoline-powered engine. The electric engine operates at less than a 50-decibel level. This quiet operation is important among the redwoods, where from February 1 to September 15 noise must be kept at very low levels to avoid disturbing wildlife. The electric tow tractor allows maintenance work to continue during this "quiet" part of the year.



*An electric tow tractor like this one pulls a wagon used for maintenance work in the Redwood National & State Parks. The quiet operation ensures the wildlife will not be disturbed.*

### The What & Why of Alternative Fuels

Alternative vehicle fuels include electricity, ethanol, methanol, natural gas, propane, and biodiesel. These fuels are currently powering a variety of commercial, personal, and government vehicles, including heavy-duty long-haul trucks, garbage packers and dump trucks, snow plows, package delivery vans, buses, taxicabs, and passenger cars.

Government agencies and many companies are in partnerships to expand the use of alternative fuels in vehicles. They share the national concern for the environment and recognize the need to reduce the nation's dependence on petroleum from foreign sources. The transportation sector currently accounts for approximately two-thirds of all U.S. petroleum use and roughly one-fourth of the total U.S. energy consumption.

#### Visit the "clean air" partners

U.S. Department of Energy (DOE), <http://www.doe.gov/>

DOE's Office of Transportation Technologies, <http://www.ott.doe.gov/>

DOE's Alternative Fuels Data Center, <http://www.afdc.doe.gov/>

U.S. Department of the Interior, <http://www.doi.gov/>

National Park Service, <http://www.nps.gov/> or Redwood National & State Parks at <http://www.nps.gov/redw/>

For additional information about the alternative fuel vehicles used at Redwood National & State Parks, contact: Dick Mayle, 707-464-6101, ext. 5072.

For information about alternative fuels, contact Helen Latham at Battelle, 614-424-4062 or [lathamh@battelle.org](mailto:lathamh@battelle.org).

### Other AFV Locations

Alternative fuels are now being used in nearly 600 light-duty and transit vehicles in national parks and facilities nationwide. In addition to electricity, the alternative fuels powering these vehicles include compressed natural gas (CNG), ethanol, methanol, propane, and biodiesel. The first alternative fuel vehicle in this program – a CNG-powered trash packer – began service in December 1997 at the National Capital Parks' Central District in Washington, D.C.

Here are examples of other parks and facilities participating in this federal program where you can see a heavy- or medium-sized alternative fuel vehicle at work or have the opportunity to ride in one.

Park/Facility Location	Fuel	Vehicle Type
Grand Canyon National Park, AZ	CNG	Dump Trucks
Gateway National Recreation Area, NY	Electric	Tram
Cumberland Island National Seashore, GA	Electric	Tram Engine
Bureau of Indian Affairs Schools, NM	CNG	School Buses
Zion National Park, UT	Electric	Tram Engines
LBJ National Historic Park, TX	Electric	Bus
George Washington National Parkway	CNG	Maintenance trucks

Before the new or re-powered alternative fuel vehicles can be used, park facilities may need to be modified, such as by installing fuel storage facilities and dispensing equipment. People who refuel, repair, or drive the vehicles may need to be trained in using the new fuels. Information is collected to judge the performance of the vehicles, cost-effectiveness, and emission reductions.



*Scenes from Redwoods National & State Parks. Management of these parks includes a conservation strategy for protecting threatened and endangered species.*