

# AT A GLANCE

## Transmission & Distribution: Environmental Issues

### Program 51

#### Research Value

- Reduces costs for:
  - Right-of-way (ROW) maintenance
  - Management of utility pole and other assets
  - Management of mineral oil spill
  - Compliance of spill prevention, control, and countermeasure (SPCC) plans
- Improves power system reliability through:
  - Decreased potential for T&D outages from avian/animal interactions
  - Informed enhanced and emerging vegetation management leading practices
  - Reducing vulnerabilities and risks to substation reliability
- Reduces ecological and human health risks along T&D ROWs through:
  - Optimized vegetation management
  - Prevention of avian and other wildlife impacts
  - Prevention or remediation of soil and water contamination related to T&D activities
- Enhances T&D line permitting and regulatory compliance along ROWs and substations
- Helps utilities to attain strategic corporate goals by reducing financial risk as well as balancing the economic and environmental challenges of siting, constructing, and upgrading T&D infrastructure and ROWs

Electric transmission and distribution (T&D) systems are increasingly interrelated with the surrounding environment. As they design, construct, and operate T&D infrastructure, many utilities seek to minimize and mitigate environmental impacts and costs.

EPRI's research regarding T&D environmental issues (P51) is designed to help utilities reduce costs, increase reliability, and manage the environmental aspects of T&D infrastructure. The team conducts research on evaluating emergent technologies, protecting resources, managing environmental impacts, protecting human health, and informing permitting, regulatory compliance, corporate strategy, and social responsibility.

The program provides practical knowledge to help utilities manage the various environmental aspects associated with T&D assets and infrastructure. Specific research activities include:

- Evaluation of emergent technologies to optimize vegetation management efforts
- Experimental design and field trials for wildlife deterrents
- Field assessment of different vegetation management methods
- Studies on mitigation and remediation of chemicals of concern
- Analysis, modeling, and remediation of environmental issues in substations
- Laboratory assessment of the potential environmental impacts of utility poles and utility pole preservatives
- Development of tools for siting, restoration, and resource protection during construction and maintenance

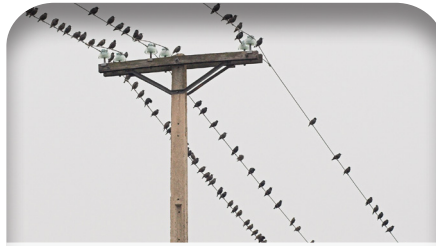


## Research Highlights



### Vegetation Management and Remote Sensing (P51A)

- Field evaluation of localized LiDAR checks as a tool to extend LiDAR collection cycles
- Utility data collection to estimate the cost of Integrated Vegetation Management (IVM) programs
- Document the value of rights-of-way (ROWs) as roosting sites and critical foraging grounds for bats



### Wildlife Interaction with T&D Assets (P51B)

- Field demonstration of fogging methods to deter avian activity in substations and laboratory tests to determine if fogging increases the risk of flashover on insulating surfaces
- Test unmanned aerial vehicles (UAVs) for woodpecker damage inspection in wood poles



### Environmental Aspects of Substations (P51C)

- Study the use of vegetative screen to reduce heat island and light pollution impacts from substations
- Investigate predicted changes in rainfall patterns to estimate what changes may occur in stormwater management over the next 20 years for different regions of the country



### Environmental Aspects of T&D Lines (P51D)

- Study of revegetation methods and post-construction monitoring to improve regulatory compliance for new T&D construction
- Laboratory tests to assess fate and transport of DCOI from treated wood poles in soil and groundwater
- Study the effects of anthraquinone (woodpecker deterrent) upon wood pole performance



### Strategic T&D Environmental Topics (P51E)

- Carry out a proof-of-concept study to evaluate how local variables influence pest pressure at substations
- Document the state of the industry for vegetation management data collection, including tree databases, outage investigation, vegetation management workflows, etc.

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