# E Source

# Vegetation management solution
## Data science case study

## Key highlights

The E Source data science division has helped dozens of utilities optimize and streamline their vegetation management operations. We calculate vegetation risk scores across our clients' transmission lines, allowing them to cut costs, improve system reliability, and optimize crew work plans and schedules.

## Challenges

Managing vegetation and tree growth around power lines is an important utility responsibility. It plays a critical role in mitigating fire hazard and ensuring the reliability of the grid, but it's a costly process.

Historically, utilities have approached vegetation management using a cyclical, time-based approach—inspecting and trimming the areas around their lines on a set schedule. This approach has worked well enough for decades, but there are obvious inefficiencies to treating all areas of the grid as equal in terms of vegetation management risk. Advances in predictive data science and new technologies provide an opportunity for you to reevaluate existing processes to achieve operational efficiencies and save money.

## Solution

If you're pursuing operational enhancements to your vegetation management processes, you'll reap transmission and distribution benefits from granular data analysis. This is where the E Source data science team can help. Our vegetation management module—part of our GridInform suite of asset life-cycle management solutions—shows you a view from above, representing individual trees mapped onto the grid.

Combining methodologies from environmental science, forestry, statistics, and computer science with historical utility data such as outage records, asset types, maintenance and inspection records, and lidar scans (if available), our artificial intelligence and machine learning models calculate a vegetation risk score. You can then use the risk scores to prioritize areas to focus on, reducing operating costs while maintaining reliability.

Budget planners can also use our risk scores and propensity models to forecast the effects of initiatives like spraying a certain herbicide or deferring the removal of hazard trees in certain areas.

## Results

The E Source vegetation management solution typically saves utilities 10% to 20%, with no negative effects on safety or reliability. Our approach will help you dramatically reduce the amount you spend on expensive data-collection methods such as lidar. For example, one client fully funded its data-science-based optimizations with the money it saved on lidar scans.

Another client was planning to do midcycle tree-trimming work when our analysis revealed that 28% of the predicted outage duration was being created by only 4% of the utility's high-risk areas. By targeting only the highest-risk areas, our client optimized vegetation management, reducing its targeted trim miles by 80%—from 800 to 180 circuit miles—while simultaneously improving overall grid reliability.