

# New York State forest ecosystem benefits from ISO 14000-based fire management

While uncontrolled wildfires threaten lives, property, and natural resources, planned fires play a significant role in maintaining the vigour of many protected areas. This article describes a novel use of ISO 14001 and ISO 14031 environmental performance evaluation guidelines in fire management carried out under a project to improve stewardship of the fire-prone Central Pine Barrens ecosystem in Suffolk County, New York State, USA.

**U**ncontrolled wildfires extend beyond political, geographical and economic boundaries to threaten lives, property, and natural resources. Yet fire plays a significant role in maintaining the health and vigour of many park and protected areas and is used as a prescribed fire management tool.

Few are aware that effective fire management planning can benefit from the application of ISO 14001 environmental management system (EMS) requirements and ISO 14031 environmental performance evaluation (EPE) guidelines, and that these standards can also become a substantive force in the conservation sector as well. Quality Parks, Inc. has taken up this challenge.

Quality Parks is an incorporated, non-profit organization with US federal 501 (c)(3) certification. Our mission is to improve the stewardship and care of park and protected areas by applying ISO 14001 and ISO 14031 guidelines. We help public land managers by providing technical expertise on a wide array of environmental issues and by assisting in the coordi-



nation and implementation of natural resource management and restoration projects, often with the direct involvement of local businesses and their employees.

Strategic alliances offer our members the opportunity to support these non-confrontational alternatives to environmental degradation.

tion, develop new core competencies, and explore joint EPE development and action.

Though ISO 14031 (see box p. 31) is a guideline standard requiring neither certification nor an EMS to be in place, our internal goal will be to

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BY MINDY BLOCK

The author, Mindy Block, seen here replanting wild flowers in a prescribed burn area, is President of Quality Parks, Inc.

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Photo taken by Chief Dean Culver of Westhampton Beach Fire Department, NY State, taken during the Sunrise Wildfire of 1995, shows the wall of fire as it raced southwards in a flaming front that swept over fire trucks like an ocean wave.

Although it jumped the major inter-state Sunrise Highway and reached urban areas, no one was hurt.



The author, photographed by NY State Forest Ranger Mark St. Claire, participated in a prescribed burn in the protected Central Pine Barrens area of Long Island during 2001, involving application of ISO 14031 EPE guidelines.

prepare the necessary documentation to become ISO 14001 certified.

### Wildfire Task Force

Currently, one of our charitable projects is to improve the stewardship of New York State's protected 100 000 acre Central Pine Barrens (CPB) area located within the southeastern county of Suffolk, Long Island. It is a fire-prone, pine forest ecosystem that has seen tremendous residential, commercial, and industrial growth (the wild land-urban interface).

The CPB stewardship work is overseen by three task forces, one of which is the Wildfire Task Force

facilitated by CPB staff and representing the 42 federal, state, county, local, private and the volunteer fire service agencies involved in local fire management efforts. This task force recently developed the CPB Fire Management Plan, similar in purpose to an EMS, that provides more consistent environmental management of wildfires and associated tasks, including the ecological protection of its pine forests, and the social and cultural protection of its community.

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In applying ISO 14031 to the plan, we found it necessary to avoid the politically sensitive environmental "impacts" terminology in favour of "aspects." But in determining environmental aspects, the life cycle analysis approach was not working. Though some fire processes can be thought of as cyclical (fire prediction, detection, suppression and rehabilitation) others are less directly related to this fire service cycle

(for example, maintaining the social and cultural values of grasslands by use of prescribed fire).

In a second attempt to identify environmental aspects, we referred to the CPB's resolution that created the task force, and to the plan's stated goals and objectives. However, we soon found the compiled list too long and unmanageable. Finally we selected the following key environmental aspects – generating accurate and reliable wildfire predictions, reducing wildfire danger, minimizing wildfire suppression impacts, maintaining the ecological and sustainable use of grasslands, providing a continual learning environment, and obtaining financial support for this EPE effort.

### Ground truthing

We also had to rethink performance indicators. Typically, operational performance indicators (OPI) identify and measure manufacturing discharges. Instead, we identified and measured operations related to the key environmental aspects (for example, in reducing fire danger, prescribed burns – where, when, fuel load reductions).



## What is ISO 14031 all about?

As quoted in its scope statement, ISO 14031, *Environmental management – Environmental performance evaluation – Guidelines* is an International Standard that gives guidance on the design and use of environmental performance evaluation within an organization. It is useable by all organizations, regardless of type, size, location and complexity. ISO 14031 does not establish environmental performance levels. It is not intended for use as a specification standard for certification/registration purposes or for the establishment of any other environmental management system conformance requirements.

The standard is intended to be broadly applicable to all organizations wishing to evaluate their environmental performance, whether or not they have established environmental management systems. In addition, ISO 14031 is written to be applicable to any environmental management system, including those that are not based on ISO 14001.

It describes two general categories of indicators to support the implementation of EPE:

- environmental performance indicators (EPI's)
- environmental condition indicators (ECI's)

(Management performance indicators (MPI's) and operational performance indicators (OPI's) are types of EPI).

ISO 14031 also includes supplemental guidance on:

- identifying the views of interested parties in the context of EPE
- considerations the organization should take into account when selecting indicators for EPE
- examples of approaches for selecting indicators for EPE
- examples of indicators for EPE.

Fire fighters try to contain raging forest fires during the Sunrise Wildfires of 1995.

(Photo: Sonny Day Photos).



Typically, environmental condition indicators (ECI) identify and measure, for example, air and water quality. Instead we chose local and very specific “ground truthing” measures. Ground truthing is a multidisciplinary term involving the collection of field data, in our case, fire-related, to confirm what we, indirectly, suspected.

Management performance indicators (MPI) relate to the overall planning and policy objectives. Instead, we chose to more directly compare

our OPI’s against our ECI’s in order to reveal shortcomings (for example, do the areas selected for prescribed burns match the areas designated as high fuel load sites? – not at all obvious in a multijurisdictional environment).

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Aerial view of the fire-prone Central Pine Barrens pine forest ecosystem in Suffolk County, New York State, a beneficiary of a charitable stewardship project operated by Quality Parks Inc., following ISO 14001 and ISO 14031 guidelines.

(Photo: Raymond P. Corwin).

Some of the Central Pine Barrens Wildfire Task Force participants, drawn from 42 federal, state, county, local, private and the volunteer fire service agencies involved in local fire management efforts.

(Photo: Raymond P. Corwin).





Photo by author Mindy Block illustrating how the pine barrens area recovers after fire management.

We found it necessary to incorporate the checking and corrective actions more typically achieved within the EMS to our EPE effort. In reviewing processes, we realized that the task force had difficulty

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centralizing information, increasing community education and involvement, and improving fire fighting training opportunities. Some of our corrective actions to date include comparing regional differences in fire danger prediction methods, and generating data files that compare fire-weather data to wildfire danger predictions and occurrences.

Overall, we found the EPE process ascertained those environmental aspects and performance indicators that were key to addressing critical, root causes instead of



minor problems. We also effectively prioritized our actions, considered, compared, and benchmarked alternatives in the team environment that ISO 14031 provides, and enabled improved inter-agency support, all of which make our interventions more effective.

In applying ISO 14031 to the conservation sector, both public land management agencies and businesses, each concerned with improving environmental performance, can benefit from our integrated approach to natural resource conservation. After all, we are dealing with the same environment. ■

Wildfire Task Force participants plant new pine trees to rehabilitate an area bulldozed as part of an approved ISO 14001- and ISO 14031-linked wildfire control programme.

(Photo: Raymond P. Corwin).