



REMOTE SENSING IN CONSERVATION EASEMENT

An easy way to manage a property's health while improving landowner relations

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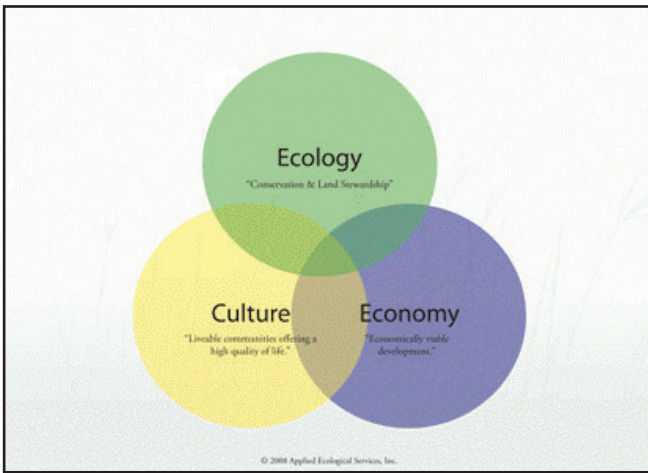
Like the majority of property transactions, communication between the various parties requires good communication. This is especially true when the property involves a conservation easement.

With a conservation easement or land trust, a landowner gives power to a private organization or government agency to achieve certain objectives on their behalf. It is an interest in real property established by an agreement, and like other real property interests, it is recorded in the local land records and becomes a part of the chain of title for the property. The

easement “runs with the land,” which means it is applicable to both present and future landowners. Its most distinguishing feature is that it enables users to achieve specific conservation objectives while remaining in the ownership and control of the landowner.

Establishing Clear Objectives

The relationship between a land trust steward and a landowner must be lasting and respectful, especially to avoid transitional conflicts when the land passes over to a second generation



The plan should balance the need for responsible land stewardship, economic viability and long-term sustainability.

of a conservation easement agreement is a necessity. In accepting a conservation easement, an easement holder has a responsibility to monitor future uses of the land to ensure compliance with the terms of the easement and to enforce the terms if a violation occurs.

Easement agreements and Land Trust Alliance accreditation requirements necessitate an annual inspection and confirmation to protect against illegal land-use activities on the property. Some of the issues detected during an annual inspection can include fencing violations around easement boundaries, hunting, off-road vehicle use, logging, disposal or dumping of garbage and construction activities, such as placement of buildings and roads.

or new owners, who may not understand or agree with the original intentions of the conservation easement. Without a clear understanding about the intent of the easement protection program and what it actually does for the land itself, frustration and conflict can quickly surface.

To ensure the continued protection of the land easements, open communication between all the parties involved is essential. The specific objectives will vary depending on the character of the particular property, the goals of the land trust or government unit and the landowner's needs. Some examples might be to maintain and improve water quality; perpetuate and foster the growth of a healthy forest; maintain and improve wildlife habitat and migration corridors; protect scenic vistas visible from roads and other public areas; or ensure that lands are managed so that they are always available for sustainable agricultural and forestry.

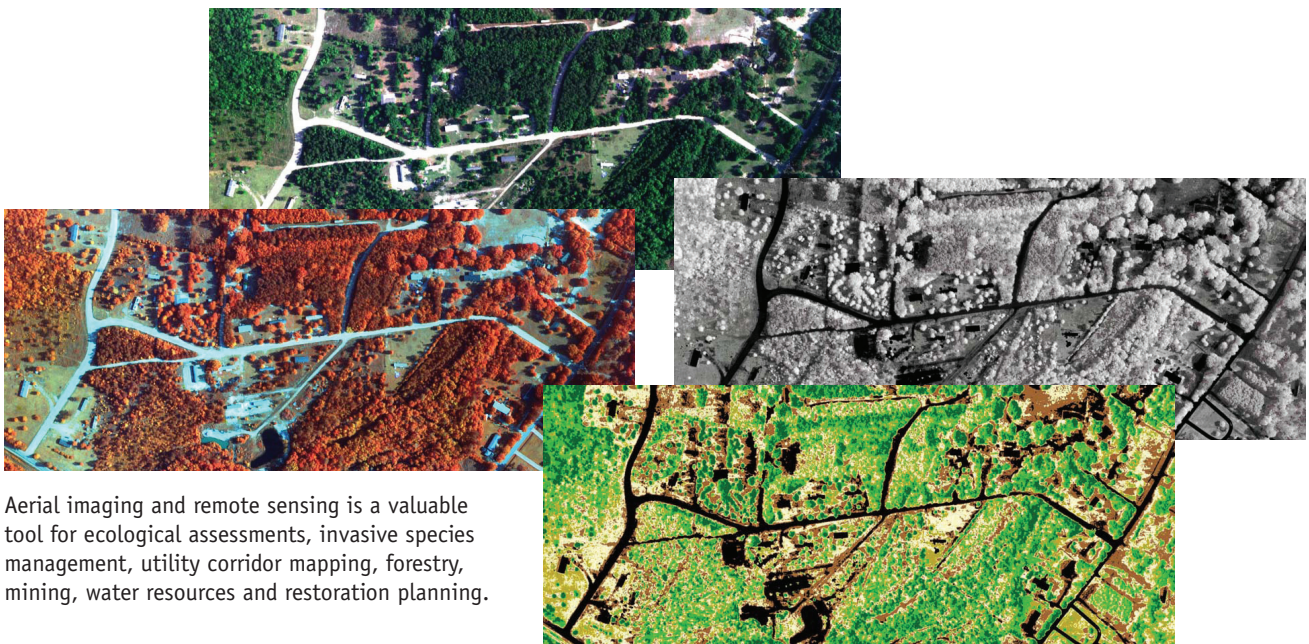
Easement monitoring and land protection services are offered by land trusts and managers, whose main focus is on the legal obligations tied to protecting these lands from ill treatment. Many landowners want visible reassurance that their land is ecologically healthy and prefer not to oversee the legal terms of their easement agreement. Unfortunately, monitoring efforts usually fall short when it comes to evaluating, documenting and planning for ecological improvement. It is often difficult for land trustees to do a full examination of a piece of property every year, especially if they would have to walk over many acres of land.

Upholding the Responsibilities

Many landowners are perfectly willing to contribute to the public good by preserving the conservation values associated with their land for future generations. However, confirming that the responsible parties are upholding the legal terms

Cost-Efficient Strategy

Recently, an aerial imagery and remote sensing method was developed that offers a cost-effective approach to serving both the legal and ecological monitoring obligations of conservation easements. This visible proof is available in the form of high resolution multi-spectral imaging aerial



Aerial imaging and remote sensing is a valuable tool for ecological assessments, invasive species management, utility corridor mapping, forestry, mining, water resources and restoration planning.

A conservation easement “runs with the land,” and is applicable to both present and future landowners.

photography that contains data about the ecology of the land, benefitting landowners, trustees and, most importantly, the land itself.

Aerial imagery provides an ecological snapshot of the land. It can be used to identify and map invasive species, erosion, tree and other vegetation diseases, as well as provide dozens of other types of clear and precise measurements. The imagery can also show if and where perfunctory legal terms of the agreement are being violated. Nearly everything required of a conservation easement can be monitored.

With aerial imaging, land trustees and landowners can discuss specifics openly and easily. Being able to visually show landowners their declining ash trees or pointing out where erosion of an agricultural ditch upstream is contributing to in-stream turbidity and sedimentation of a wetland actively engages the landowner and land trustees in the continued health of their land.

High resolution multi-spectral imagery also allows for very precise characterizations of on-the-ground conditions. The high resolution provides clarity so that the user can interpret detail, and the combined infrared reflectance data offers a unique tool for ecological mapping and interpretation. Photography is also useful, but it is not able to provide the same level of depth and use for measuring, documenting and deciphering what is actually present on the site. Current methods use various wavelengths tied to the reflectance of multi-spectral data to characterize the health of the land. However, imagery can detect if a tree is stressed due to pests such as gypsy moths or emerald ash borers.

Using aerial imagery allows for uniform and comprehensive annual monitoring and can cover an entire area quickly any time of the year. It provides an extremely accurate record of the ground conditions and can also focus on designated areas of risk, problem and uncertainty, providing annual records that are standardized and reproducible. Instead of having to superficially cover all 500 acres of an easement, with imagery, a steward can focus where problems are detected and only address ecological and legal violations or concerns, which saves time and money.

Summary

In maintaining a property’s health and maintenance, imagery is an excellent tool for easement monitoring and provides all stakeholders with an accurate, comprehensive record that can be used as a foundation for all future conservation efforts. Using multispectral imagery to monitor conservation easements is cost-efficient, allows for



consistent, comprehensive ecological monitoring and is a way for land stewards to actively engage landowners.

Fulfilling the ultimate, long-term conservation vision or purpose of the easement will only be possible if land trustees and landowners are able to efficiently communicate about the health and maintenance of the land. Educating landowners can be a new way to build durable and next generation relationships. These relationships may benefit from technology that provides all users with a clear picture of current ecological health of the land.



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