

**The Nature of Value and the Value of Nature:
A Review of Appraisal Methodology Concerning Natural Resource and Environmental
Values**

Adam I. Davis

© 2014 Lincoln Institute of Land Policy

**Lincoln Institute of Land Policy
Working Paper**

The findings and conclusions of this Working Paper reflect the views of the author(s) and have not been subject to a detailed review by the staff of the Lincoln Institute of Land Policy.

Contact the Lincoln Institute with questions or requests for permission to reprint this paper. help@lincolninst.edu

Lincoln Institute Product Code: WP14AD1

Abstract

The rules governing appraisal of real estate in the United States are set by the Appraisal Foundation and these rules determine the economic value of environmental features on land as well as the 'fair market value' of conventional real estate and natural resources.

In 2013, the Sonoran Institute convened the Asset Management Research Roundtable for State Trust Land Managers, during which appraisal methodology emerged as a core area of interest. Questions were raised regarding the effect of appraisal standards and practices on a variety of land uses, such as conservation or provision of ecosystem services. This working paper provides a summary of the issues affecting determination of fair value for environmental attributes of individual land parcels, and some suggestions for further engagement to update appraisal standards and practices such that they would better incorporate conservation in financial valuation decisions.

About the Author

Adam I. Davis is Partner and Director of Policy and New Markets at Ecosystem Investment Partners, a private investment firm active in land-based offset markets in the United States. He also provides advisory services to clients with conservation, restoration and related interests through EIP Advisory.

EIP Advisory
1005 A Street, Suite 313
San Rafael, CA 94901
415-462-0163
adam@ecosystempartners.com

Table of Contents

Introduction.....	1
Who Defines ‘Conventional’ Value.....	3
Two Examples of Environmental Value Appraisal: Water Rights and Wetlands	5
Limitations on Value Recognition in the Appraisal Process	8
Discussion and Conclusions: What is ‘Conservation Value’?.....	12
Some Thoughts on Direction for Future Research	12
References.....	13

The Nature of Value and the Value of Nature: A Review of Appraisal Methodology Concerning Natural Resource and Environmental Values

Introduction

Appraisal (noun): “The act or process of developing an opinion of value; an opinion of value.”

This paper addresses a conundrum: the line between the private financial value and the public value of environmental attributes on private property is becoming blurred. Conventional and recognized appraisal methods distinguish between the ‘total economic value’ and the market value of a private interest in wetlands, streams or unique habitats. The total economic value includes the whole array of ecosystem services that are provided by a parcel of land, but the private property interest that is the legitimate subject of a financial value assessment must necessarily be restricted to those aspects of the land that affect comparable transactions or income.

The Appraisal Institute Handbook on The Valuation of Wetlands (the ‘Handbook’) cautions that the presence of public benefits can confuse or distort a dispassionate evaluation of private property interests, and that care must be taken to disregard “social benefits, which include flood buffer, water reclamation and wildlife habitat, among others... Since a private property owner has no way to make money off these features, the value of the private ownership interest likely will be less than the property’s total economic value.”(Keating 2002, 34) The ‘Handbook’ argues further that transactions involving governmental or ‘environmental’ entities do not provide a legitimate basis for comparison, because these transactions are likely distorted by undue consideration of social benefits and therefore do not reflect ‘typical conditions of sale’. The Uniform Appraisal Standards for Federal Land Acquisition state unequivocally that, “an appraisal based on a highest and best use of preservation, conservation, natural lands and the like is not an appraisal of fair market value and is unacceptable...” (Appraisal Institute 2000)

The argument here, essentially, is that because these deals are informed by recognition of public values, they do not represent ‘typical’ conditions of sale—even in cases of willing buyer, willing seller cash transactions. Ironically, while instructions to appraisers negate consideration of public values on the ‘plus side’ of valuation, they are quite explicit in consideration of these same values on the ‘minus side’. If presence of environmental features on a parcel may result in governmental regulation or provoke engagement by environmental entities that would restrict development, natural resource extraction or other ‘highest and best use’, these features must diminish an objective appraisal of value. As the ‘Handbook’ states in a valuation methodology case study: all else being equal, “...parcels with a greater percentage of wetlands sell for less than parcels with a lower percentage of wetlands.” (Keating 2002, 47)

Even the well-established precedent set by sales of restored wetlands for compensatory mitigation is discounted by the ‘Handbook’. The market for offsets produced through protection and restoration of wetlands to allow ‘third party’ compliance with provisions of the Clean Water Act is in the range of \$3 billion per year, according to studies by the Environmental Law

Institute. (Environmental Law Institute 2007) These are not the theoretical calculations of academic economists; they are actual sales of credits representing the quantitative assessment of wetland function. Yet the 'Handbook' states that, "The value paid for such properties is not so much a function of the market value of the mitigation lands as it is a function of the development property itself." (Keating 2002, 39)

It appears that there is a significant gap between the way that appraisal standards define the private interest in ecological features of a property and the way these features are affecting actual transactions in new 'environmental markets'. The putative value that economists have ascribed to ecosystem services and natural capital has made headlines since Robert Costanza and his colleagues estimated an average annual value of \$33 trillion in a *Nature* article back in 1987 (Costanza et al. 1997), but the estimates by ecological economists of social value do not play into real estate deal-making. As we've seen already, appraisal standards recognize that 'total economic value' is much greater than the private property interest that can normally be sold—but to what extent does the social benefit of an ecological feature legitimately affect price discovery in a willing buyer, willing seller transaction?

Could it be that ecosystem services are valuable only as generalized 'public goods', and that the methods we use to measure ecological value are too vague and imprecise to allow disciplined translation into financial terms? As we examine the way that appraisal works it becomes clear that this is simply not the case; from *Antiques Road Show* on public television to a live cattle auction, it's obvious that the notion of identifying specific attributes and then examining comparable sales is applied to an enormous range of objects and markets.

The contention of this paper is that the organizations that oversee and regulate appraisal standards are not 'up to date' with a new and important trend: a new set of buyers for properties with important ecological features has emerged. These buyers are not seeking to provide 'social value' for its own sake, nor compliance with environmental laws per se, but rather the cash flow and return on investment opportunity provided by environmental markets. The ecological restoration activities undertaken by these new buyers are directly analogous to more 'conventional' entitlement and development, and the 'income approach' for determining highest and best use is an appropriate approach to appraising these properties.

In many instances, the use of the income approach to valuation will certainly not show that the economic value of restoring ecological function is superior to the economic value of development, nor will this approach contradict the notion that the presence of wetlands can restrict development and valuation. But the mitigation banking business developed to provide outsourced compliance to third parties over the past two decades clearly shows that the additional value created by restoration is a market activity that creates cash flow and opportunity to assess net present value without reference to social or public values.

Who Defines ‘Conventional’ Value

“An appraisal must be numerically expressed as a specific amount, as a range of numbers, or as a relationship (e.g. not more than, not less than) to a previous value opinion or numerical benchmark.” (Appraisal Standards Board 2013)

The ‘bible’ of real estate appraisal in the United States is the Uniform Standards of Professional Appraisal Practice (USPAP), published by the Appraisal Foundation. Although the Appraisal Foundation is not a government entity, the USPAP standards are recognized throughout the United States as the ‘generally accepted standards’ of professional appraisal practice.

The Appraisal Foundation was formed through the cooperative effort of nine separate appraisal organizations in 1986 in order to improve appraisal practices. Through these ‘sponsoring organizations’ and Advisory Councils, today over 80 organizations, corporations and government agencies are affiliated with The Appraisal Foundation.

For example, the American Society of Farm Managers and Rural Appraisers (ASFMRA) is a not-for-profit professional appraisal society and sponsoring member of the Appraisal Foundation. ASFMRA has provided professional designations, education, advocacy, appraisal news and networking since 1929, and the appraisals provided through this organization deal with unique and unusual valuation questions not often found in more conventional commercial and residential development cases. These questions include scenic rights, the value of potential alternative energy siting, and other valuation factors akin to the kinds of questions of ecological value raised in this paper.¹

In addition to the Appraisal Foundation, there are two other institutions that set forth rules, standards and criteria that govern appraisal. These are the Appraiser Qualifications Board (AQB) and the Appraisal Standards Board (ASB). The AQB establishes the qualification criteria for state licensing, certification and recertification of appraisers. The 1989 Financial Institutions Reform, Recovery and Enforcement Act (FIRREA) mandates that all state certified appraisers must meet the minimum education, experience, and examination requirements promulgated by the AQB. The AQB has also developed voluntary criteria for personal property appraisers. The ASB establishes the rules for developing an appraisal and reporting its results. In addition, it promotes the use, understanding, and enforcement of the USPAP.

¹Personal communication, Ed Thornton, Area Appraisal Manager, AgStar Financial, April 28, 2014

FIRREA requires that real estate appraisals used in conjunction with federally related transactions be performed in accordance with USPAP. More than 80,000 state certified and licensed appraisers are currently required to adhere to USPAP. USPAP contains the recognized standards of practice for real estate, personal property, and business appraisal, and the authority of USPAP extends beyond FIRREA. Since 1992, the Office of Management and Budget (OMB) has required federal land acquisition and direct lending agencies to use appraisals in conformance with USPAP.

Finally, there is the Appraisal Practices Board (APB), which identifies and issues opinions on valuation methods and techniques. The APB opinions are issued by a board of leading professionals, and provide non-mandatory guidance for navigating specific topic areas of interest or concern to Appraisal Foundation affiliates.

The Appraisal Institute

The ‘Member of the Appraisal Institute’ (MAI) membership designation is held by appraisers who are experienced in the valuation and evaluation of commercial, industrial, residential and other types of properties, and who advise clients on real estate investment decisions.

Currently, to receive MAI designation appraisers must:

- pass rigorous education requirements;
- pass a final comprehensive examination;
- submit specialized experience which must meet strict criteria;
- receive credit for a demonstration appraisal report;
- conduct professional activities in accordance with the Appraisal Institute’s Code of Professional Ethics;

How is Conventional Value Defined?

The essential elements of a value determination are the *definition* of market value, the *conditions* within which market value is determined, and the notion of *highest and best use*.

Definition of Market Value:

A type of value, stated as an opinion, that presumes the transfer or sale of a property as of a certain date, under specific conditions set forth in the definition of the terms identified by the appraiser as applicable in an appraisal

The ‘*conditions of market value*’:

1. Relationship, knowledge and motivation of the parties
2. The terms of sale (i.e. cash v terms)
3. The conditions of sale (exposure to a competitive market for a reasonable length of time)

‘*Highest and Best Use*’:

1. The physical use
2. The timing of the use and
3. The market participants associated with the use—the users and most probable buyers

From USPAP:

“Value expresses an economic concept. As such, it is never a fact but always an opinion of the worth of a property at a given time in accordance with a specific definition of value. In appraisal practice, value must always be qualified—for example, market value, liquidation value or investment value.” (Ventolo and Williams 2001, 368)

- be subjected to a peer review process, which enforces the Code of Professional Ethics; and
- adhere to strict continuing education requirements to ensure they are up-to-date with the evolving real estate field.

While this can be quite a confusing array of organizations, the important point is that there is a well structured and legally recognized process for setting the standards for a legitimate appraisal and for determining who is qualified to make an appraisal.

Two Examples of Environmental Value Appraisal: Water Rights and Wetlands

Discussion of Water Rights

Water rights are typically sold by agricultural landowners or irrigation districts, and the buyers include irrigation districts and urban water suppliers. State and federal agencies are also buyers—primarily for ecosystem enhancement obligations.

Water values are determined by physical conditions of abundance or drought, and basic issues of supply and demand, but the primary factor in determining the value of any private property rights related to water is the legal context. Water, being essential to life, is in some sense the ‘ultimate public good’; nonetheless, U.S. law recognizes private property rights under the doctrine of prior appropriation (the first user of the water maintains a legal right to use it into the future), and the riparian doctrine (landowners adjacent to a watercourse have the right to use the water that flows in it).

Water law is an enormously complex and sophisticated area of jurisprudence, and individual states address water law using various combinations of the riparian and prior appropriation doctrines. There are also entire categories of water rights such as prescriptive rights, pueblo rights, groundwater rights, federal reserved rights, and particular contractual entitlements that are well beyond the scope of this paper to describe.

What is germane to this discussion, however, is an overview of the ways in which water rights are appraised, and the implications of the legal context within which water rights are defined for valuation.

Environmental Aspects of Water Rights

While most water rights are purchased by agricultural, urban, or industrial users for consumptive use, there are particular legal structures that recognize the economic value of purely environmental water uses. Dedicated instream flows are a mechanism that allows a water rights holder to legally convert a consumption or diversion right to one that requires water to stay in the river or stream and prevents it from being diverted by another downstream user. In these instances, the maintenance and enhancement of wetlands, aquatic habitat or recreation is considered a ‘beneficial use’ that allows ongoing recognition of the water right.

Because water rights are almost always associated with a particular piece of property, a water right can be purchased by acquiring fee title to the property, or in some cases through the purchase of a conservation easement that provides for contractual obligations that allow water to flow to, or remain in, a natural watercourse. Because water rights are part of the ‘bundle’ of rights (including access rights, development rights and others), their value is determined by the highest and best economic use (HBU) in the context of the particular piece of land in its landscape context. The definition of HBU is a use that maximizes value and is legally permissible, physically possible, financially feasible, and maximally productive.

There are certainly cases where allowing water to remain in the watercourse rather than removing it for irrigation or other consumptive use meets this definition. Ensuring adequate flows to a cold-water fishery that allow for high value recreational use could easily be more profitable than irrigating for pasture. The fundamental approaches to valuation—comparison with sales of comparable water rights, comparison with the cost of obtaining ‘replacement’ water rights, or comparing the income from land that is irrigated with land that is not irrigated—are applied to ecologically oriented or commercial uses of water in equal measure.

Water Rights Case Study: Montana Instream Flow Transaction

In 2005, heavy restoration work was completed on over 23,000 linear feet of stream channel and 260 acres of wetlands on a ranch just three miles above the Blackfoot River in the Upper Clark Fork drainage basin. The owner, Fred Danforth, had purchased the ranch from The Nature Conservancy four years earlier, and had embarked on a conservation and restoration project that resulted in the first Clean Water Act (CWA) mitigation bank in the state of Montana.

Because the water rights associated with the ranch and its restored aquatic features enabled consistently cold clean water to flow to the important Blackfoot River fishery, the Western Water Project of Trout Unlimited was interested in appraising the value of these rights and acquiring them to assure their use as instream flow to benefit fish rather than for irrigation. All of the water rights associated with the ranch are in a category of rights known as a Statement of Claim. All assertions of beneficial water use that occurred before 1973 in the state of Montana must undergo a final adjudication process; this is one of the legal complications that make water transactions for environmental benefit challenging to execute.

Two different appraisals have been obtained to determine the value of converting to instream flow. The first used both an income approach (for irrigation water) and a replacement cost approach (for stock water). The income approach calculates the irrigation water’s contribution to net farm revenues, while the replacement cost approach is based on the cost required to develop an alternative groundwater source for stock water.

The second appraisal used a comparable sales approach that reviewed conventional water rights transactions for consumptive use in the Blackfoot valley and throughout Montana. Ultimately, the ranch partners received compensation for three quarters of the appraised value of their water right from the Columbia Basin Water Transactions Program. They are currently seeking recognition from the IRS for the value of the remaining portion as a charitable gift to Trout Unlimited.

Discussion of Wetland Values

In contrast to water rights, where environmental value is posited as an alternative to commercial use of a particular ownership interest in water, wetlands are typically appraised as a *negative factor* in determining the value of a parcel of land. Because wetlands have a scientifically verifiable connection to water quality, they are considered to have a nexus to ‘waters of the United States’, and are therefore a protected category of land under provisions of the CWA. This limits the ability of development or other commercial use to proceed, and implies various obligations of protection and stewardship.

However, as with water rights, the ecological characteristics of wetlands have potential to yield direct commercial value to a landowner, and that commercial value may be appraised using conventional appraisal techniques of cost comparison, replacement value, or income value. For example, fishing, hunting, and recreation activities all depend directly on the breeding and nursery habitat provided by wetlands for various species, and properties adjacent to protected wetlands may have additional value because of the fish and wildlife provided by the neighboring environment.

In the case of wetlands, however, there is an additional form of economic value that is created by requirements for compensatory mitigation under ‘no net loss’ provisions of the CWA. Unavoidable impacts to wetlands must protect and restore at least equivalent acreage and quality of wetland in order to receive building permits, and this demand for permits in turn creates an active market for protected and restored wetlands. It is important to note that while the requirement for mitigation is set by law, the price for purchase of ‘credits’ (units that represent a property interest in restored wetland) is set only by willing buyer, willing seller transactions.

This legal structure for ‘outsourced compliance’ has created a vibrant marketplace for wetland credits and the practice of ‘mitigation banking’ in which capital is invested in restoring wetland to a government standard in order to earn credits for later sale to third parties. Mitigation banks have been in place in the United States for over 20 years, and they have protected and restored approximately one million acres of wetlands through private investment.

Wetlands Case Study: Minnesota

A 650 acre parcel in Itasca County, Minnesota was appraised in 2012; the property was originally a wetland area that had been drained and farmed. Water levels are controlled on the property through a system of ditches and pumps to allow for production agriculture.

In a state-driven process parallel to the federal wetland banking program, wetland credits in Minnesota must be approved by a state agency, the Board of Water and Soils Resources (BWSR). This agency provides a detailed description of the process required to entitle and register credits with the state that may be used by third parties to address liability incurred under the Minnesota Wetland Conservation Act of 1991.

Because the BWSR requirements provide additional incentives in addition to those created by the CWA 404 program, Minnesota has a robust market for the development of wetland

mitigation banks. There are 276 banks approved, or in process, that have invested in the creation of projects that meet the protection and restoration requirements of the state or federal programs. (U.S. Army Corps of Engineers)

In the case of the subject property, the appraiser determined that regional transaction history was sufficient to allow an objective analysis of willing buyer, willing seller price discovery. A cost approach and sales comparison approach were used to determine the value of entitled credits, and a reconciliation of these methods was developed to generate an opinion of value. Importantly, a risk factor was applied that took into consideration the timing of entitlement for wetland credits, timing of sales, and various other factors that would likely affect supply and demand.

Summary

In water rights and wetlands valuation, the standard definition of ‘highest and best use’ (HBU) must be met to support the highest present value as defined. The HBU standard requires that a use must be legally permissible, physically possible, financially feasible and maximally productive. In the cases described above, an ‘environmental use’ was determined to meet these standards as a rational economic choice for a landowner considering the options available.

Limitations on Value Recognition in the Appraisal Process

The fundamental challenge facing appraisers as they evaluate the effect of environmental features on particular properties is how to distinguish between total economic value (TEV) and private property interest. Because TEV includes all of the public benefits provided to society through the functioning of natural systems, it reflects the recreational, water, biodiversity, and climate-stability related attributes and characteristics of a given property. An appraisal of the economic value of a property to a particular owner at a given point in time, however, is necessarily limited to situations in which:

- There is a willing buyer and willing seller
- Both buyer and seller are informed and acting in their best interests
- Reasonable time for the transaction is allowed
- A payment in cash or reasonable terms actually occurs
- The price represents ‘normal consideration’ for the property

While social benefits like biodiversity or downstream water quality may not influence a transaction in a manner that meets these threshold criteria, there is no *prima facie* reason why they cannot.

There are two basic categories of transactions that, although they may meet the five criteria that constitute a basis for comparability listed above, are discounted or discouraged by the Uniform Appraisal Standards for Federal Land Acquisition (USPAP) and the ‘Handbook’. It is assumed for the purposes of discussion here that these categories of transaction, and the related concerns with them, exist for other ecological features apart from wetlands, so wetlands serve here as a proxy for environmental features on land generally.

The first category of exemption from normal consideration is the case where the government is a direct buyer.

According to the 'Handbook', "Governments typically obtain appraisals on such properties (wetlands) prior to acquisition and try to negotiate purchase prices that do not exceed the appraised value. However, governments *may* be willing and able to pay more than the appraised value to protect an important property." (Keating 2002, 38) The USPAP standards state specifically that, "Government is a different type of player, not considered to follow market economic rules, thus sales to government should immediately be viewed as suspect. An appraisal based on a highest and best use of preservation, conservation, natural lands and the like is not an appraisal of fair market value and is unacceptable..."(Appraisal Standards Board 2013)

While this paper recognizes that there may be particular circumstances in which a transaction involving a government purchase of fee title or easement interest in a parcel may not reflect normal market conditions, the type of proscriptive language in USPAP excludes even those transactions where government is the buyer, but under condition of a bona fide appraisal that reflects HBU in a conventional sense. The fact that environmental features of a property may influence HBU because of recreational, aesthetic, or compensatory mitigation factors does not in and of itself disqualify an economic valuation that considers these features.

The second category of exemption from normal consideration is the case where the transaction is influenced by government regulation.

The 'Handbook' argues that because the cost of mitigating impacts to wetlands is a result of government regulation, reflective of 'social value' rather than 'true market value', actual cash transactions for wetland properties are not a legitimate source of price discovery for the private property value of such wetland properties. One example cited in the 'Handbook' describes an industrial complex proposed for development on a 150-acre tract that must drain and fill 40 acres of wetlands. A second example describes a shopping center that must drain and fill two acres of wetlands. Let's take a look at the logic used to articulate why the wetland related transactions in these cases are not recognized as 'comparable' to reveal the value of similar wetland properties.

In the first case, the developer is given several options to mitigate the 40-acre impact, and decides to acquire a nearby tract of degraded wetlands and then enhance and restore the wetland features of that property. The cost of mitigation is described as being "a function of the industrial property's budget, the cost of mitigation alternatives and the influence of the regulatory agency." (Keating 2002)

In the second case, the shopping center developer is required by regulators to create four acres of wetland as compensation for the two-acre impact of construction. Later, the developer will "donate the fee title to the four acres of created wetlands to a nature conservancy as a tax write-off, subject to a five-year monitoring and maintenance agreement." (Keating 2002) When the donation of the four-acre wetland parcel is made, the 'Handbook' states that the value of the donation should be based on comparison to similar wetland tracts in the area.

In both cases, the ‘Handbook’ tries to argue that because mitigation is only occurring so that commercial development can proceed, there is no basis to independently appraise the wetland parcels that provide the mitigation. This is like arguing that because air bags for automobiles are required by law, there is no independent basis to appraise the value of a company that produces air bags—that the ‘value’ of the air bag manufacturing facility is somehow already included in the value of the car manufacturing plant. This is obviously not the case, and the fact that there is an underlying regulatory driver that motivates the purchase of airbags does not delegitimize the competitive marketplace in which airbags are manufactured.

In fact, social value may be reflected in entitlements of various kinds including, of course, the basic notion of zoning. There are permits required for building density or height, setback requirements, and recognition of mineral, timber, or other rights. All of these entitlements are factors included in the appraisal process, and the difference between entitled and unentitled property is a common basis for speculative value and investment. In the case of mitigation lands, speculative value exists for raw environmental features that require both physical work and legal entitlement to realize. The fact of the matter is that government policy plays a central role that influences economic values—for *both* ‘conventional’ and ‘environmental’ markets.

Conventional vs. ‘Ecosystem’ Value Determination

	Conventional	Ecosystem
	Zoning	Service Area
	Development Entitlement	Mitigation Bank Approval
	County or Regional Planning	Interagency Review Team
	Timber or Mineral Rights	Wetland or Species Credit Rights

At the time the ‘Handbook’ was written, in 2002, there was less of a robust marketplace for wetland credits than there is today. Wetland credits are units of measure that reflect permanent protection of land, ecological performance criteria, and financial assurance that those criteria will be met and maintained over time. It is perhaps understandable, then, that appraisal guidelines did not incorporate the market value of credits, just as there was no basis for appraising an airbag manufacturing company before there was regulation that created the demand for airbags. The fact that there is additional social value created by wetland functions, or that compliance with regulation is a primary motivation for buyers, is no longer an impediment for willing buyer, willing seller price discovery.

Over the past 20 years or so, a ‘mitigation banking industry’ has grown in the United States to provide third party compliance through for-profit investment, purchasing, entitling, and restoring mitigation banks of credits that can be purchased in willing buyer, willing seller transactions. Mitigation bankers evaluate market factors—both supply and demand—in a manner directly analogous to conventional project developers of all kinds. As purchasers of land with ‘environmental features’ on it, these buyers are not seeking to provide ‘social value’ for its own sake, nor compliance with environmental laws per se, but rather the cash flow and return on investment opportunity provided by environmental markets. Because this is the case, the ‘income approach’ for determining highest and best use is an appropriate approach to appraising these properties.

It should be emphasized that, in many instances, the use of the income approach to valuation will not show that the economic value of restoring ecological function is superior to the economic value of conventional development, nor will this approach contradict the notion that the presence of wetlands can restrict development and valuation. However, the mitigation banking business—which has used a for-profit model to protect and restore approximately one million acres in the United States to date—clearly shows that the additional value created by restoration is a market activity that, in some cases, creates cash flow and opportunity to assess net present value.²

The bottom line here is that public values affect conventional real estate appraisal all the time—zoning and building codes are the key examples. If a property is rezoned, then its value changes even if nothing physically changes on the property. The zoning decision may be made because of social factors outside the purview of traditional economic boundaries; nonetheless the decision affects the value of a property relative to other comparable options. Similarly, environmental regulation changes the economic use value of a property, but the *fact that social considerations drive the economic use value* is not sufficient reason to disregard these factors.

When the ‘Handbook’ states unequivocally that fair market value according to HBU cannot be determined by direct government purchase of land or land purchases influenced by government regulation, it is making a determination that natural attributes of a property *cannot* be the basis of valuation for a willing buyer, willing seller transaction. This determination runs counter to the evidence provided by environmental market scale, volume, and trends as institutional capital continues to invest in wetland restoration and begins to expand into species habitat and carbon sequestration properties.

In conclusion, despite the prohibitions on consideration of government procurement transactions or transactions influenced by government regulation, there appears to be nothing in the definitions of market value, conditions of sale or ‘highest and best use’ that preclude formal recognition of:

1. Public benefits from land, as long as those benefits are the factors influencing the price a willing buyer will pay for a property relative to other comparable properties.
2. Natural features present on a property, including aesthetic, open space, or ecosystem service related aspects, as long as these factors are ‘typical conditions of sale’ in a particular region.
3. The market value of the mitigation lands, as long as the ability of a property to provide compensatory mitigation is the factor influencing the price a willing buyer will pay for a property relative to other comparable properties.

² <http://res.us/2014/05/wetlands-banking-arrives-gas-boom-draws-program-to-offset-ecosystem-disturbances/>

Discussion and Conclusions: What is ‘Conservation Value’?

Appraisals are, by their nature, retrospective. They are based on comparison to prices for comparable sales that have occurred in the past. This makes it especially challenging to identify the manner in which new forms of value will be integrated into appraisal rules and decisions.

While there have long been academic theories of ecosystem value making use of ecological economics methodologies such as contingent and hedonic valuation, appraisers cannot and must not make use of these methods, and are restricted to specific approved techniques for assessing comparable economic value based on transactional evidence.

We have seen that conventional forms of valuation are being applied to environmental uses of water rights in the case of instream flow for fisheries in Montana, and that conventional forms of valuation are being applied to wetlands restoration in Minnesota. Still, the exemptions from fair market consideration—if government is a buyer or if a transaction is influenced by government regulation—would seem to complicate any expanded recognition of environmental values in the appraisal process.

Because of the nature of environmental attributes provided by land management decisions, there is necessarily a public goods aspect of the value created. However, because of greater clarity around private property rights—and a larger market—for things like wetland credits and instream flow water rights, there is an argument to be made that appraisal rules should reconsider the explicit rejection of environmental markets encouraged by government policy as a basis for fair market valuation.

Some Thoughts on Direction for Future Research

As wetlands mitigation banking has developed in the United States, it has left a track record of transactions that reveal pricing trends and deal terms. This body of transaction history provides the basis for an analysis of comparable transactions that is the essence of the sales comparison approach used in appraisals. To the extent that other environmental market transactions are beginning to develop their own history of transactions and process of price discovery, it provides an opportunity to research and establish the value of various pollution reduction, land stewardship, and ecological restoration activities.

In addition to mitigation banking under the CWA, conservation banking under the Endangered Species Act, ‘restoration up front’ under Natural Resource Damage provisions of the Oil Pollution Act and ‘Superfund’, and banking of carbon or water quality credits are all land-based offsets that provide revenue to private landowners. While mitigation banking is the most advanced, all of these activities generate revenue through the production of measurable units of environmental benefit. Ongoing study of these various developing environmental markets could provide the basis for a productive engagement with the appraisal community over time, and improved assessment of the ‘value of nature’.

References

- Appraisal Institute. 2000. *Uniform Appraisal Standards for Federal Land Acquisitions*. Chicago, IL: U.S. Department of Justice. <http://www.justice.gov/enrd/land-ack/Uniform-Appraisal-Standards.pdf>.
- Appraisal Standards Board. 2013. *Uniform Standards of Professional Appraisal Practice, 2012–13*. Annapolis Junction, MD: The Appraisal Foundation. <http://icapweb.wordpress.com/2012/01/10/the-2012-2013-uspap-is-now-available-free-online/>.
- Costanza, Robert, Ralph d'Arge, Rudolf de Groot, Stephen Farber, Monica Grasso, Bruce Hannon, Karin Limburg, Shahid Naeem, Robert V. O'Neill, Jose Paruelo, Robert G. Raskin, Paul Sutton, and Marjan van den Belt. 1997. The value of the world's ecosystem services and natural capital. *Nature* 387(May): 253–260.
- Environmental Law Institute. 2007. Mitigation of impacts to fish and wildlife habitat: Estimating costs and identifying opportunities. Washington, DC: Environmental Law Institute. http://www.eli.org/sites/default/files/eli-pubs/d17_16.pdf.
- Keating, David Michael, 2002. *The valuation of wetlands, second edition*. Chicago, IL: Appraisal Institute.
- U.S. Army Corps of Engineers. RIBITS (Regulatory In lieu fee and Bank Information Tracking System). <http://geo.usace.army.mil/ribits/index.html> and then <https://rsgisias.crrel.usace.army.mil/ribits/>.
- Ventolo, William L., and Martha R. Williams. 2001. *Fundamentals of Real Estate Appraisal*. 8th edition. Kaplan Publishing; New York, NY.